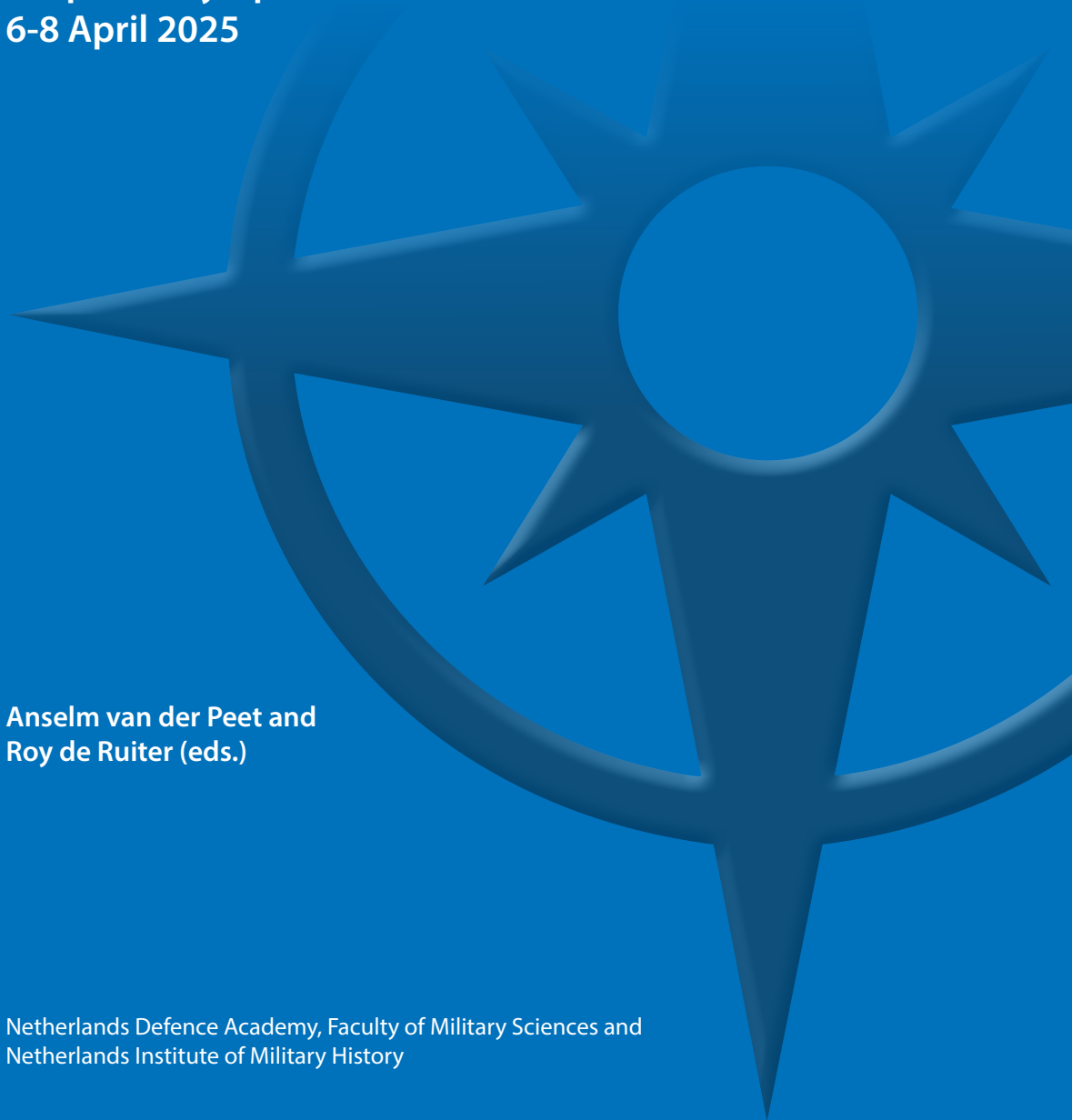


European Navies and Global Challenges

Proceedings of the Rotterdam
Seapower Symposium
6-8 April 2025

Anselm van der Peet and
Roy de Ruiter (eds.)

Netherlands Defence Academy, Faculty of Military Sciences and
Netherlands Institute of Military History



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Abbreviations

A2/AD	Anti-Access and Area Denial
AAR	<i>Auslandsausbildungsreisen</i>
ACE	Allied Command Europe (NATO)
ACLANT	Allied Command Atlantic (NATO)
AFNORTH	Allied Forces Northern Europe (NATO)
AMS	Alliance Maritime Strategy (NATO)
ASM	Anti-Ship Missile
ASW	Anti-Submarine Warfare
BRI	Belt and Road Initiative
C2	Command and Control
CMI	Critical Maritime Infrastructure
CMM	Chinese Maritime Militia
CMP	Coordinated Maritime Presence (EU)
CONMAROPS	Concept of Maritime Operations
COSCO	China Ocean Shipping Company
CSG	Carrier Strike Group
CCG	Chinese Coast Guard
CTF Baltic	Combined Task Force Baltic
CUI	Critical Underwater Infrastructure
EASTLANT	Eastern Atlantic Command (NATO)
EDF	European Defence Fund
EDIP	European Defence Industry Programme
EEZ	Exclusive Economic Zone
ENTSO-E	European Network of Transmission System Operators for Electricity
FREMM	<i>Frégate Européenne Multi-Mission</i>
GCSG	Geneva Centre for Security and Governance
GDP	Gross Domestic Product
GIUK	Greenland-Iceland-United Kingdom
IAMD	Integrated Air and Missile Defence
ILT	<i>Inspectie Leefomgeving en Transport</i>
IS	Influential Shareholders
JEF	Joint Expeditionary Force
JFC	Joint Forces Command (NATO)
JOC	Joint Operations Centers (US)
LNG	Liquefied Natural Gas
MARCOM	Maritime Command (NATO)
MCM	Mine Counter Measure

MDAP	Mutual Defense Assistance Program
MOC	Maritime Operations Center (US)
NSR	Northern Sea Route
OAE	Operation Active Endeavour
OEF	Operation Enduring Freedom
OOTW	Operations Other Than War
PLAN	People's Liberation Army Navy
PMarSCs	Private Maritime Security Companies
PMSCs	Private Military Security Companies
PoAB	Port of Antwerp Bruges
PRC	People's Republic of China
RIMPAC	Rim of the Pacific (exercise)
SACEUR	Supreme Allied Commander Europe
SACLANT	Supreme Allied Commander Atlantic
SLOC	Sea Lines of Communication
SNMG	Standing NATO Maritime Group
SOE	State-Owned Enterprise
SOSUS	Sound Surveillance System
STANAVFORLANT	Standing Naval Force Atlantic
SWF	Sovereign Wealth Fund
TACTAS	Tactical Towed Array Sonar
UBO	Ultimate Beneficial Ownership
UNCLOS	United Nations Convention on the Law of the Sea
USSOCOM	United States Special Operations Command
VLS	Vertical Launching System
WESTLANT	Western Atlantic Command (NATO)

Foreword

Foreword

In April last year I had the privilege to address the endnotes of the Seapower Symposium in the Marine Barracks in Rotterdam. With this Rotterdam Seapower Symposium we re-established a Dutch tradition of organizing international conferences on maritime history and strategy. In the current world it is important to strengthen global maritime partnership in general and especially with like-minded nations. Symposia like the one in Rotterdam help to invest in partnerships.

I started my brief with two quotes. The first was from Dutch Minister of Defence Ruben Brekelmans. Earlier in 2025 he had stated that “It is not war, but it is not peace either.” The second quote was from Dutch Chief of Defence General Onno Eichelsheim: “The world is a bit confused at the moment and a confused world is a dangerous world.” The ChoD made his remark after president Volodymyr Zelensky’s notorious visit to the White House in February 2025. Now, a year later, I can say that the only thing that changed is that the confusion is fading away and a new reality is sinking in. We are closer to war than to peace. After the end of the Cold War we tumbled into a period of strategic hibernation. The year 2025 was a wake-up call. Or should I say *another* wake-up call? We are in a new world in which the world order is changing. And in this new world the maritime domain is getting more dynamic by the day.

The sea is important for our safety and security, for energy supply and energy transition, for food supply, for climate adaptation, for innovation and of course for the transfer of data. It is therefore not surprising that the indicators of a looming conflict will show first in the maritime domain. Within the Royal Netherlands Navy we have been observing preparations for sabotage and a rising threat to our critical underwater infrastructure and our sea- and airports. Next, we have seen an increasing number of breaches of the economic sanctions against Russia by the so-called shadow or dark fleet. Furthermore, this fleet is stepping out of the shadows by reflagging its ships. In 2025 at least 40% of these vessels have been reflagged and are now sailing under the Russian flag again. On top of that, subversive activities in space and in the information and cyber-domain, like Automatic Identification System (AIS) spoofing, cyberattacks on port facilities and GPS jamming, similarly affect the maritime domain.

Staying safe and secure is to be regarded on a world scale. Providing security by NATO or by collective European capabilities and actions is not geographically limited to the NATO Area of Responsibility or to the land mass of Europe. We face a challenge on a global scale. If an enemy cannot hit us close to home, it will seek opportunities to do so somewhere else. An example of this is witnessed in the Red Sea and the Gulf of Aden where Houthi rebels, supported by Iran, have been threatening and hitting our flow security.

We not only need to act, but we also have to think on a world scale as well. The things we do in the North Sea, for example, might affect the Indo-Pacific region. If we conduct a boarding operation on a Russian merchant vessel outside our territorial waters that is suspected to destroy undersea cables with its anchor, what do we signal to China? Are we inviting Beijing to do the same to our ships? Will it trigger a next level of 'lawfare'?

All these challenges, and more, were discussed during the two days of the Rotterdam Symposium. An increase of European autonomy as a way to face the threats was discussed as well. This leads to more cooperation of likeminded nations within Europe. As an alumnus of the Naval War College I know that personal relations still matter and that we, members of the international maritime community, are willing to travel the world to invest in strengthening these relationships and building new ones. It is our second nature. So, I am confident that you will enjoy the papers of this volume of the Rotterdam Seapower Symposium Conference Proceedings.

Rob de Wit
Major General Netherlands Marine Corps
Deputy Commander Royal Netherlands Navy

Introduction

Introduction

In the 1980s and 1990s, the Netherlands organized several international conferences on maritime history and strategy. These events were primarily initiated by the Dutch naval historians and professors J.R. Bruijn, G. Teitler, G.J.A. Raven and P.C. van Royen. They possessed a solid professional network overseas, including prominent names such as E. Grove, N.A.M. Rodger, and G. Till. This led to an outreach resulting in a series of Anglo-Dutch maritime and naval history conferences as well as some binational navies and armies conferences of both nations.

Maritime and naval history, as well as maritime strategy, were often central to these academic gatherings. These sessions, often lasting several days and attended by participants from Europe but also elsewhere in the world, resulted in a series of published conference and symposium proceedings.¹ With this development the Netherlands established itself internationally as an academic thinking nation on maritime and naval history and strategy. Dutch scholars and retired and serving officers of the Royal Netherlands Navy (RNLN) sharpened their minds at these gatherings and advanced the debate on this topic, often thanks to the input of foreign experts present. During the same period, the Royal Netherlands Navy Officers Association (KVMO) also contributed to this field by organizing conferences on maritime strategy, on topics such as NATO out-of-area operations, a lack of naval interests in the Dutch 1984 Defence White paper, the new US Maritime Strategy and naval aspects of Operation Desert Storm/Phalanx in which mostly Dutch experts like professor Teitler but also some international specialists were present.² Therefore it can be concluded that during the aforementioned two decades a lively academic debate took place in the Netherlands on maritime and naval history as well as strategy.

However, after the turn of the millennium, things quieted down in this academic field in the Netherlands. Various reasons can be given for this. Dutch driving forces transitioned to other positions or retired. Also the near-absence of the threat at sea and naval confrontations between (near) peer opponents after the Cold War, together with an emphasis after 9/11 on

1 See for example: G.J.A. Raven & N.A.M. Rodger eds., *Navies and Armies. The Anglo-Dutch Relationship in War and Peace 1688-1988* (John Donald Publishers LTD, 1990); Paul C. van Royen et al eds., *Frutta di Mare. Evolution and Revolution in the Maritime World in the 19th and 20th Century*, Proceedings of the Second International Congress of Maritime History (Batavian Lion International, 1998); Jaap R. Bruijn et al eds., *Strategy and Response in the Twentieth Century Maritime World* Papers presented to the Fourth British-Dutch Maritime History Conference (1997) (Batavian Lion International, 2001).

2 The KVMO organized conferences on maritime strategy in 1982, 1984, 1986, and 1991 respectively. However, apart from two thematic issues and a separate article in the association's in-house publication *Marineblad*, no academic proceedings were published hereafter. In 2001, the naval branch of the Dutch Institute for Defence Courses organized the symposium "Maritime Strategy Revisited," which featured Dutch speakers such as G. Teitler and foreign experts like J.S. Breemer, and the British and French flag officers Vice Admiral J. Band and Contre Amiral Y. Lagane. The topic was a new (Western) maritime strategy after the Cold War. No articles, let alone a proceedings, were published after this valuable academic gathering, it seems like a mere sham at the time.

operations on or above land in landlocked countries like Afghanistan, gave the maritime domain less prominence and, according to some, even resulted in 'seablinkness'.³

This all changed after 2014. The Russian annexation of Crimea and parts of the Donbas that year marked the return of global geopolitics. More than a decade later, this shift has accelerated into a strategic power competition, even between allied countries, with the subsequent war of aggression against Ukraine, the threat of Russian seabed warfare and its use of a shadow fleet to evade Western sanctions. Furthermore the rise of China as an assertive and sometimes aggressive (maritime) military-economic global power in the South-China Sea and the Taiwan Strait, and non-peer opponents like the Yemeni Houthis threatening a strategic maritime choke point have put maritime strategy back on the agenda.

The editors of this volume therefore felt it was urgent for the Netherlands, with its historical as well as current maritime status, to organize an international maritime symposium to reestablish a tradition in maritime thinking that was lost after the turn of the century. The strategic challenges in the maritime domain, contemporary threats, and the historical context in these areas from a mostly European point of view were to converge. The initiative was supported by debate in the naval professional journal *Marineblad*, published by the KVMO, in which scholars and maritime professionals advocated the need for greater attention to and a debate on maritime strategy within the Netherlands and its naval forces.⁴

Given that it has been some 25 years since such an international maritime and naval (strategy) symposium took place in the Netherlands, and therefore recent experience in this kind of events was lacking, it was decided by the organizers to keep the first of a series of planned biennial seapower symposia limited in size. Given that the largest port in Europe is located in the Netherlands, Rotterdam was the obvious choice as the location for this event. A successful effort was made to attract a selection of nationally and internationally renowned academic speakers and panel chairs, as well as a limited group of observers, who would examine the main urgent challenges facing Europe in terms of seapower. This group primarily engaged in lengthy discussions, in order to reach more academic in-depth and relevant insights into the

3 See among others: Matthijs Ooms, Roy de Ruiter, Welmer Veenstra and Joris ten Berg, "Het hedendaagse maritiem denkvermogen. 21st Century Fleet Problems," *Marineblad* 130, no. 3 (2020): 4-9; Callum O'Connell, "From 'Seablinkness' to Ocean Literacy: Making a Positive Case for the Maritime," *USNI Proceedings* 151, no.8 (August 2025), <https://www.usni.org/magazines/proceedings/2025/august/seablinkness-ocean-literacy-making-positive-case-maritime>.

4 Ooms et al., "Het hedendaagse maritiem denkvermogen"; Roy de Ruiter, "De noodzaak van een strategische heroriëntatie van de marine," *Marineblad* 132, no. 8 (2022): 18-24; Henk Warnar, "Marineofficieren van Nederland verenigt u!," *Marineblad* 132, no. 8 (2022): 38-40; Anselm van der Peet, "Back to the future? Discussies bij defensienota's en vlootplannen 1962-1970 als inspiratiebron voor hedendaags maritiem-strategisch debat over een toekomstbestendige KM," *Marineblad* 132, no. 2 (2023): 22-29; Roy de Ruiter & Henk Warnar, "To be or not to be (in the Indo-Pacific). De rol van de Koninklijke Marine in de Oost," *Marineblad* 134, 1 (2025): 14-19; Anselm van der Peet, "Het Nederlandse Korea-uitzendbesluit 1950 in het licht van de huidige Hoofdtak 1-discussie," *Marineblad* 134, no. 4 (2025): 32-39. One of the first results of these calls in 2019-2020 was the start in the latter year of an annual Seapower Course for naval officers participating in the advanced command and staff course. In this four week course, students are taught and discuss in depth about matters relating to maritime strategy.

submitted papers and the aspects of seapower analysed therein, primarily from a European perspective on maritime strategic challenges such as security in the North Sea, the Baltic, Atlantic, and Indo-Pacific regions, and naval shipyard industry.

In the context of the above, the Netherlands Defence Academy, and more specifically its Faculty of Military Sciences (FMW) and the Netherlands Institute of Military History (NIMH), with which both editors and organizers of the symposium are affiliated, hosted the Rotterdam Seapower Symposium “European Navies and Global Challenges” on 7-8 April 2025, in Rotterdam at the Royal Netherlands Marines Van Ghent barracks.

The earlier mentioned themes were discussed in five consecutive panels, whereby Santiago José del Castillo Toquero, Tijs ter Haar, and Daniel Turk addressed the challenges above and below the North Sea. Niklas Granholm, Julian Pawlak, and Henrik Schilling analysed the extent in which the Baltic is a NATO lake. Sebastian Bruns, Randy Papadopoulos and Anne Runhaar discussed transatlantic relations in an era of populism. Johannes Peters, Roy de Ruiter and Emma Salisbury examined Europe’s issue: Indo-Pacific, So Far and Yet So Near. Last but not least, Gerrit Alblas, Anselm van der Peet and Evelien Scheffers looked from various perspectives into the problems of (naval) shipbuilding in times of looming war.⁵ The common thread of all these studies is the current irreversible strategic change, the need for European cooperation and integration, as well as the urgency of innovation.

The outcomes of the 2025 symposium, as well as subsequent similar future academic gatherings on seapower and maritime strategy organized in the Netherlands, serve as a guideline or source of inspiration but above all as an urgent wake-up call for further debate on this subject. The editors hope it will also stimulate and offer guidance for policy regarding seapower and all its implications, both military and civilian among the European maritime community and associated stakeholders in politics, journalism, academia and the business sector. Although several included papers contain valuable applied history case studies, this symposium, and therefore these proceedings, focus on (near) future policy and further debate.

Given the aforementioned interests, studying the maritime domain and seapower is more than necessary in these turbulent times. In addition to scholars, whether military or otherwise, a broad audience of journalists, enterprises, politicians, and other interested parties should also get involved. At a time when Europe is facing increasing threats and challenges from in- and outside the continent, ranging from conventional to transnational threats including hybrid threats, cyberattacks and pervasive and persistent instability and conflict in its immediate vicinity and beyond, studying seapower from historical (military) strategic, economic, political, and technical perspectives offers policy makers and flag

■
5 Johannes Peters and Gerrit Alblas in the end declined to submit a contribution to these Proceedings.

officers a broad range of in-depth insights and potential tools to address or overcome contemporary opportunities and challenges related to seapower. This proceedings therefore aims to bridge the gap between history, strategy, and current politics.

Our deepest gratitude as editors goes to everyone who contributed to the symposium and this book, especially the authors who shared their insights with dedication, professional insights, and tireless effort. The production of this desk edited volume was possible thanks to the FMW and KVMO.

Anselm van der Peet and Roy de Ruiter
The Hague/Breda
April 2026

Papers

The Commercial Seapower State

A Perspective on Small Naval Power¹

Daniël Turk

Academic discourse on small naval power lacks overarching narratives that go beyond numerical accounts of navies or measuring naval capability data. Holistic approaches that take into account the military aspects of a state's seapower as well as its wider maritime economy help to better understand the nature and character of a small naval power. For the historically intricate link between seaborne commerce and the development of seapower may no longer be as straightforward, it is nevertheless still there. Not necessarily because of the maritime economy's wartime utility, but as a strength in and of itself, as complementary to the naval capabilities a state can bring to bear.

A nation's relationship with the sea determines its navy's role and fleet composition. For the past thirty years, due to the absence of peer competitors at sea, the importance of determining this relationship and embedding it in a wider maritime narrative has receded to the background. The failure to embed such a narrative as part of a wider 'vision', or at least a discussion, about the sort of maritime nation a state is or perceives itself to be, and subsequently determine the sort of navy that best suits its interests, is part of an affliction that has taken hold of many Western states: 'seablindness'. Out of sight often means out of mind. With the infrastructure of many seaports having expanded away from the old city centres and the sea itself associated by many with a holiday destination, it is not surprising that the 'seamindedness' of the peoples living in states that are existentially connected to the sea is waning. Even after the watershed year of 2022, with images depicting the horrors of the kind of warfare we thought we had left behind in the 20th century, it is easy to forget the maritime dimension of the Russo-Ukrainian war. Nonetheless, rising defence budgets across Europe, resulting from this 'wake-up call', will have impact on the fleet composition of many European navies. Danger lurks that this sudden surge in defence budgets will result in hastily reactive decisions that alleviate (rightful) immediate concerns instead of addressing long-term strategic challenges. In what is an ever continuous cycle of more expensive and often fewer ships, just replacing, hull for hull, the current fleet composition is a daunting task by itself. Pressure to acquire or upgrade existing assets leaves little leeway to reflect on what type of maritime nation one is and how it perceives itself and its role in the world.

Especially the smaller European maritime nations have little room for manoeuvre. Wars of 'choice' and the absence of existential threats to seaborne commerce or territorial waters have for a long time precluded discussions on possible trade-offs between constabulary

■
¹ A longer version of this article previously appeared in the *Netherlands Journal of War Studies*.

versus warfighting capabilities or between ‘expeditionary’ versus retaining ‘coastal’ naval assets. In fact, contributing to maintaining the ‘good order at sea’, became the *raison d’être* for many smaller European navies. Otherwise they risked becoming seen as obsolete. Traditional coastal defence navies, like those of Denmark and Norway, (partially) transformed their fleet composition to enable participation in out-of-area maritime security operations. Those navies that already considered ‘all the free world oceans’ as their area of operations, like the Dutch navy, only became more expeditionary. The inherent distinctiveness between maritime nations lost its importance during this post-modern or ‘post-Mahanian’ phase in history. Irrespective of whether one’s Exclusive Economic Zone (EEZ) was the size of Belgium’s 3,447 kilometres or the 2,385,178 kilometres of Norway, the ‘global’ West had a stake in maintaining the good order at sea. It still does, but the 2022 watershed again accentuated some fundamental differences. Metrics such as geographic location, structure of the maritime economy, level of connectivity, and trade flows will resurface to the geopolitical foreground. Norway’s gas production within its enormous EEZ became an European security concern, while the importance of the Dutch port of Rotterdam as a premier energy hub proved its consistently high ranking on many a connectivity index when it welcomed for the first time a tanker carrying LNG from as far as Australia to help alleviate Europe’s energy crisis.

Yet the discourse mostly retains its narrow focus on the naval capabilities needed to participate in the ‘high-end’ maritime arena. As defence budgets increased following the Russian invasion of the Ukraine, old wish lists immediately resurfaced.² Wanting the best hardware is only logical and this paper does not aim to take a normative stance therein. It rather offers, building on the expanding body of literature written specifically from the perspective of small naval powers, a framework that evaluates seapower in a way that goes beyond the tendency to establish hierarchisations of naval power based on quantifiable military capabilities; one that instead has at its core the maritime state’s intrinsic relationship with the sea.

This framework, the *commercial seapower state*, builds on Andrew Lambert’s notion of the *seapower state*, which he understood as an ideal type of maritime nation that is culturally aware of the importance of acquiring strategic seapower and actively nurtures a seapower identity. Strategic seapower is still provided by the United States, but seapower identity “is shared among a group of second- and third-rank powers”.³ These “are disproportionately engaged



² Or even calls by some Dutch politicians to acquire the most visible and prestigious expression of seapower: an aircraft carrier. Cor de Horde and Joost Dobber, “Opeens zwemt Defensie in het geld – is een vliegdekschip niet iets voor ons?,” *Het Financieel Dagblad*, July 28, 2025, <https://fd.nl/politiek/1562356/opeens-zwemt-defensie-in-het-geld-is-een-vliegdekschip-niet-wat-voor-ons>. In similar vein, the strategic analyst Frederik Mertens made the case in the Dutch naval periodical *Marineblad* for the Royal Netherlands Navy to acquire SSNs. Frederik Mertens, “Driemaal is scheepsrecht. Argumenten voor het kiezen van SSNs voor Nederland,” *Marineblad* 135, no. 6 (2025): 30–35.

³ Andrew Lambert, *Seapower States: Maritime Culture, continental empires and the conflict that made the modern world* (Yale University Press, 2018), 7.

with global trade, unusually dependent on imported resources, and culturally attuned to maritime activity”, yet unable to develop the naval capabilities of that of a ‘seapower great power’ (i.e. seapower state). Central to Lambert’s argument is that ‘sea power’ has come to be understood in strategic terms and less so as intended by the ancient Greeks when they considered a thalassocracy as a state dominated by the sea, not necessarily as one with a large navy.⁴ This is the crux of this article. For it is exactly the preoccupation with the military aspects of seapower that continues to influence the thinking on small navies.

If seapower states can only truly exist when they possess the scale to achieve great power status and deliberately cultivate a seapower identity to attain naval mastery, what then of contemporary European maritime states sharing many of the same traits? While many did not consciously construct a seapower identity, or even failed to sustain existing maritime identities, the commercial seapower state remains nonetheless ‘dominated by the sea’, even if it occasionally needs reminding. While it lacks the scale to project ‘true’ military-strategic seapower, this does not mean it is without agency.

The classification of naval power

To this day, any comparisons of fleet strength or force-effectiveness begins with, as Edward Luttwak has noted, the available capability data: “gross tonnage levels, the number of ships by classes, aggregate gun and missile power, and so on”.⁵ Over time the character of such ‘capability data’ has changed markedly. We have moved on from the number of rowing files to codifying the amount of mounted guns in a rating system during the age of sail. And as the wooden walls gave way to the inclusion of plated decks in the 19th century, tonnage and gun calibre became the metrics that determined fleet strength. Today it is the amount of vertical launching system (VLS) cells or the sensor and command systems that tend to be the measurable metrics of naval power.

Naval literature also tends to understand naval power in similar fashion by providing “numerical accounts of sea power and measuring naval capabilities”.⁶ The strategic value of naval power is derived from the isolated study of ships, navies and their (perceived) capabilities. Literature is awash with examples of naval classifications. Their utility and relevance differs, but they all attempt to create some sort of order to emphasize the differences between the world’s naval forces.⁷ Making sense of the proliferation of navies as such is

4 Ibidem.

5 Edward N. Luttwak, *The Political Uses of Sea Power* (John Hopkins University Press, 1974), 39.

6 Kevin Blachford, “Ocean flows and chains: sea power and maritime empires within IR theory,” *Cambridge Review of International Affairs*, November 9, 2022.

7 Michael Lindberg and Daniel Todd, *Brown-, Green-, and Blue-water fleets: the influence of geography on naval warfare, 1861 to the present* (Praeger, 2002), 196.

no unnecessary luxury. Bear in mind that in 1914, *Jane's Fighting Ships* listed only 39 navies, whereas today there are just over 160 states possessing a navy. Few are, however, instruments of true naval power, which is reflected in the many hierarchisations and typologies of the world's navies. These tend to have a narrow focus on the level of warfighting capabilities and a navy's reach, resulting in pyramidal frameworks with at the top only the very few true ocean-going navies.

Unsurprisingly, such studies have strong echoes of the American naval strategist Alfred Mahan. George Modelski and William Thompson calculated naval strength based on a capital ship count to test their long-cycle theory of hegemonic naval power.⁸ Brian Crisher and Mark Souva created a dataset covering the period 1865–2011 to measure a state's naval power using the total tonnage of a country's primary warships – defined as platforms that can utilize ship-based weapons to destroy, land, sea, or air targets outside of their own littoral waters.⁹ An alternative approach to classify navies is one that reflects the ability of a navy to project some form of naval power beyond its own territorial waters. Ken Booth used the term 'ocean-going navy' to distinguish it from a more coastal oriented 'contiguous sea navy'. It is a distinction that reflects the difference in geographical reach, which, according to Booth, is in itself indicative of a navy's role and ambition.¹⁰ Additionally, there is an array of naval typologies that reinforces the assumptions on the role of smaller naval forces. Illustrative is the one of Clark Reynolds, who identified three types of states that have used navies. First, the *maritime* nations in which navies are the principal strategic arm for their defence needs. Second, the *continental* powers that have historically used their navy in a defensive stance and in support of their armies. And third, the *small* powers, whose limited naval capabilities can merely perform local services and are capable only of confronting similar sized states.¹¹ But by considering small powers to be a homogenous group, smaller maritime states with (limited) global aspirations are ignored. Their navies may not do so strategically, like the great naval powers, but there are small powers with vital global maritime interests that are capable, at least to a degree, in safeguarding them or contribute to their protection in a meaningful way. They do not possess as much naval 'capability data' as their larger counterparts, but the protection of their, in some cases, outsized maritime interests may still constitute the principle strategic function of their navies.

■
8 George Modelski and William Thompson, *Seapower in global politics, 1494–1993* (Palgrave Macmillan, 1988).

9 Brian Benjamin Crisher and Mark Souva, "Power at Sea: A Naval Power Dataset, 1865–2011," *International Interactions* 40 (2014): 608.

10 Ken Booth, *Navies and foreign policy* (Holmes & Meier Publishers, 1979), 120–21.

11 Clark G. Reynolds, *Command of the Sea: The History and Strategy of Maritime Empires* (William Morrow & Co, 1974), 12–6.

Small navies: a semantic discord?

It is tempting to conclude that small navies are all those that are not large. Eric Grove's oft-used hierarchisation of naval power takes into account the world's smaller navies (ranging from rank one major global force projection navies all the way down his ladder to rank nine token navies), but he still retains the narrow political-naval focus which tells us little about their intended role and context, nor is his threshold between what constitutes as a 'small' or 'large' navy exactly clear.¹² In a 2014 revision of his 'ranking', Grove characterized the ranks four to eight as belonging to the small navy category. Meaning: the medium regional force projection navies, adjacent force projection navies, offshore territorial defence navies, inshore territorial defence navies, and constabulary navies.¹³ If anything, it only highlights that "there exists no single defined state of what a small navy is", but rather that "there are varying degrees of smallness".¹⁴

Basil Germond has deconstructed the hierarchisation of naval forces as an inherently subjective exercise, whilst also showing how the 'ranking' or 'othering' of naval forces have come nevertheless to be seen as a generally accepted representation even within naval establishments.¹⁵ It is a tendency summed up as:

1. Big navies are powerful whereas small navies are less powerful;
2. It is better to be powerful;
3. So, big navies are better than small navies.

What seemed to count in such a 'naval pecking order' is the position of each navy relative to others, "rather than each navy's individual capacities judged against their state's needs and defence objectives".¹⁶ In some ways the 'small navy' discussion is a semantic discord, albeit one rooted in the premise that no navy likes to be labelled as small. The term 'small navy' has been unpopular amongst naval thinkers, and the role of smaller naval powers, as well as their specific challenges and the context in which they operate, is often overlooked. There is, as Ian Speller observed, an inclination to approach naval power from a perspective built upon an examination of the activity of larger navies, assuming that the resulting concepts and principles apply in equal measure to the small ones.¹⁷ The growing body of work on

¹² Eric Grove, *The Future of Sea Power* (Routledge, 1990), 237.

¹³ Eric Grove, "The Ranking of Smaller Navies Revisited," in *Small Navies: Strategy and Policy for Small Navies in War and Peace*, ed. Michael Mulqueen, Deborah Sanders, and Ian Speller (Routledge, 2014), 17-18.

¹⁴ *Ibidem*, 36-7.

¹⁵ Basil Germond, "Small Navies in Perspective: Deconstructing the Hierarchy of Naval Forces," in *Small Navies: Strategy and Policy for Small Navies in War and Peace*, ed. Michael Mulqueen, Deborah Sanders, and Ian Speller (Routledge, Taylor & Francis Group, 2014), 33-4.

¹⁶ Basil Germond, "Seapower and small navies: A post-modern outlook," in *Europe, small navies and maritime security: balancing traditional roles and emergent threats in the 21st century*, ed. Robert C. McCabe, Deborah Sanders, and Ian Speller (Routledge, Taylor & Francis Group, 2020), 27-28.

¹⁷ Ian Speller, "Maritime Strategy and policy for smaller navies," *International Studies Association* (2012): 1.

small navies notwithstanding, there is still no entirely satisfactory definition, other than perhaps Geoffrey Till's suggestion that a small navy is simply one with "limited means and aspirations".¹⁸

The coastal state

Arriving at a comprehensive definition of what constitutes a 'small navy' remains a challenge. The question is whether it matters, since the conceptual differences between large and small navies are, in Till's words, "more a matter of degree than of kind".¹⁹ The key difference lies in their priorities: smaller navies tend to focus on other objectives than their larger counterparts. They may choose to operate primarily in their home waters or participate in out-of-area missions as part of a coalition, but in either case, they seek to justify each operation within their strategic context. These priorities are shaped not only by available military resources but also by broader strategic circumstances – and, more generally, by the kind of maritime nation a state is, or perceives itself to be.

Writing at the close of the Cold War, James Cable observed that "few countries are sufficiently confident of the security of their own coasts or have enough important interests beyond their regional sea to afford the luxury of an ocean-going navy". Such a force, he argued, would provide European governments a larger role in global affairs than their own region permits.²⁰ However, there exists a group of smaller maritime nations whose priorities remain focused on their immediate surroundings, as their economic, political, and historical ties to the sea are largely defined by their coastal waters. This is embodied in Jacob Borresen's theory of the *coastal state*.

Borresen contests the until then prevalent notion that coastal states resort to limited force-projection navies and traditional 'strategies of the weak' solely because of limited means. Instead, complementary to Till's view that small navies "can be governed by different ideas", Borresen states that the coastal state can either lack the ability or the *will* to maintain a 'blue water' navy. For the coastal state it can be a political choice to limit its naval capabilities to the waters that make up its EEZ, which, as for instance the case of Borresen's native Norway shows, can be quite large by itself as well as constituting a major source of its generated wealth. Coastal states do not compete with the global naval powers on the high seas, nor do they wish to do so.²¹ "Coastal navies should not be modelled on the navies of the [global]

18 Geoffrey Till, "Can Small Navies Stay Afloat?," *Jane's Navy International*, no. 6 (2003).

19 Geoffrey Till, "Preface," in *Navies in Northern Waters, 1721-2000*, ed. Rolf Hobson and Tom Kristiansen (Frank Cass, 2004), vii-viii.

20 James Cable, *Navies in Violent Peace* (Macmillan, 1989), 104.

21 Jacob Borresen, "The seapower of the coastal state," *The Journal of Strategic Studies* 17, no. 1 (1994): 149-50.

naval powers”, for, as Borresen writes, their seapower has a primarily defensive purpose. The navy of the coastal state is not necessarily inferior to that of the naval powers that ‘rule the high seas’ but rather *different*.²² The fundamental precept of Borresen’s theory is that coastal states have access to and the control over their own coastal waters. You cannot be a coastal state if the integrity of one’s territorial waters depends on the goodwill of others.

Borresen’s framework provided a different path for smaller maritime nations to apply their seapower in a way in line with their political and strategic culture, their geography and geopolitical situation, as well as one that best serves their national security and economic interests.²³ His article was published, however, when the ‘post-Mahanian’ era, following the demise of the Soviet Union, was beginning. The essence of the coastal state navy, as one confined to local waters where it can exist as a credible coastal deterrent force, lost its relevance. After all, to reverse Cable’s observation: once a nation feels sufficiently secure in the defence of its own coastline, it can afford the luxury of maintaining an ocean-going navy – otherwise, it risks being viewed by politicians and taxpayers as little more than an expensive coast guard. Borresen did dismiss the possibility of *coastal states* taking part in ‘out-of-area’ operations. When they do, often to signal a willingness to contribute to collective security or burden-sharing, they remain realistic about their naval capabilities and limitations. This kind of influence beyond home waters does not necessarily depend on deploying assets metaphorically comparable to “queens” or “bishops”, but can just as effectively be achieved through “pawns”. By emphasizing the order of effect rather than the order of battle, which has long guided naval typologies – smaller navies, including those of coastal states, can move beyond the perception of ‘weakness’ or ‘inferiority’ that has traditionally dominated naval literature shaped by the perspectives of large naval powers.

The commercial seapower state

Borresen’s theory of the coastal state presented a more comprehensive and nuanced understanding of naval power. However, while the concept is relevant to many small naval powers, it does not encompass them all. If it were treated as the sole framework for understanding small navies, we would risk reverting to Reynolds’ overly simplistic typology and ignoring an important reality: some small naval powers are also maritime nations with global interests that may surpass those of states traditionally labelled as major naval powers based solely on their military strength.

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22 Ibidem, 174.

23 Jacob Borresen, “Coastal Power: The Sea Power of the Coastal State and the Management of Maritime Resources,” in *Navies in Northern Waters, 1721-2000*, ed. Rolf Hobson and Tom Kristiansen (Frank Cass, 2004), 249.

That is not to say that the maritime interests of the coastal state are confined only to its coastal waters. During the 20th century Norway ranked as an important shipping nation and Maersk-Möller, as one of the world's largest shipping companies, still resides in Denmark. When global trade flows are disrupted – as during the Suez Canal blockage or resulting from Houthi attacks on shipping – coastal states inevitably feel the repercussions. Yet the first to experience significant strain are major global trade hubs such as Rotterdam. While Oslo and Aarhus function as gateways to their respective economies, Rotterdam acts as a gateway to Europe and holds a pivotal role in the global economy. To the Netherlands this constitutes an enormous strategic asset. With container ships becoming ever bigger, the number of ports capable of handling them have become fewer. As a result, seaborne trade flows are increasingly concentrated.²⁴ Rotterdam is one of the few European ports to have survived this 'shakeout' and thrived. The dredging of the *Tweede Maasvlakte* and the port's expansion further into the North Sea have, in a sense, underscored the growing contrast between the Netherlands' maritime importance and its naval capability. Since during this same period, the number of operational naval vessels stationed at the Dutch naval base in Den Helder has continued to decline.

Going back to the original interpretation of a thalassocracy, namely as a state dominated by the sea and not necessarily one with a large navy, then today's commercial seapower state shares many of its characteristics. It may not deliberately cultivate a seapower identity which, as Lambert has argued, was a defining feature of the past seapower great powers, but it still collects and combines the trades of several areas at a single concentrated maritime hub. Not through (military) control of the sea or by denying its enemies access to them, as hegemonic sea powers have done throughout history, but by utilizing the economic advantages of the sea. The problem is the tendency to view a state's maritime economy primarily through the lens of its military utility. Seen that way, there are indeed no longer any 'seapower great powers'. But in an age of geoeconomics, a state's maritime economy should be regarded as a source of strategic leverage in and of itself. For instance, during the 2021 Suez Canal blockage, it was a Dutch company, Boskalis, that played a key role in clearing this vital artery of world trade. That too constitutes seapower.

Granted, the nature of maritime power has become very diffuse, as perhaps best exemplified by the world's largest vessel in terms of total tonnage: the *Pioneering Spirit*. Designed in-house by the Dutch (but Swiss-based) offshore company Allseas, this gargantuan construction vessel capable of installing record-weight subsea pipelines was built almost entirely on the wharf of the South Korean company Daewoo. Once completed in 2015, the *Pioneering Spirit* was registered in Malta and assumed operations as an asset of an offshore company officially headquartered in land-locked Switzerland. Final assembly did take place in Rotterdam, and



24 Daniel Coulter, "Globalization of Maritime Commerce: The Rise of Hub Ports," in *Globalization and Maritime Power*, ed. Sam J. Tangredi (NDU Press, 2002), 133.

as one of the few ports to accommodate a vessel this size, it still frequently docks at the Dutch port. But to whose ‘maritime potential’, if at all, does such a ship contribute? In the days of Mahan’s writing, when shipping and shipyards were still in the minds of national policy-makers, the answer would have been much more straightforward. Shipping companies and trading firms were still port-bound and integral to a maritime city’s identity. Today, Hapag-Lloyd in Hamburg is still an exception, but like Maersk-Möller, these multinational companies earn their revenue servicing global trade hubs like Rotterdam, not necessarily their own domestic trade nodes. Shell may have moved its headquarters to London (and lost its predicate ‘Royal Dutch’ in the process), its activities in and around Rotterdam help the port retain its position as one of the premier energy hubs. And while some of the world’s largest commodity traders have a large physical presence in Rotterdam, they are a far cry from Thomas Mann’s *Buddenbrooks*. Reports such as ‘The Leading Maritime Cities of the World’, highlight this diffuse character of maritime power.²⁵ For example, even though London’s wharves now ‘house costly apartments’, the city still ranks third in this global ranking, mainly because of its leading position in maritime finance and law.²⁶ And the rhetoric of ‘Global Britain’ notwithstanding, Britain has seen its share of global exports of goods dwindle to 2.3% in 2021, well below the 3.8% of the Netherlands and even less than Belgium’s share of 2.4% – countries that can arguably make a more rightful claim as global maritime trading nations.²⁷

If we reinterpret the idea of a commercial thalassocracy in a 21st century context, it still refers to a state capable of concentrating the goods and resources of vast geographic areas, thereby gaining economic advantages far exceeding its demographic and territorial scale. A commercial seapower state situated near major trade routes is particularly well placed to link itself to emerging markets and evolving maritime networks. While the coastal state is naturally not immune to events beyond its own waters, its role in global trade is less central than that of the commercial seapower state, whose position as a trade hub can resemble that of a maritime ‘chokepoint’. As a result, it is also disproportionally exposed when global shipping is disrupted. In 2025, for example, the Dutch state-owned energy company Gasunie cautioned the government that the Netherlands’ role as an energy hub could be threatened, as the maritime transport of LNG might be disrupted by war or trade blockades.²⁸ This warning highlighted both the shifting – and deteriorating – geopolitical landscape and indirectly the fragile foundations upon which Dutch seapower rests.

25 *The Leading Maritime Cities of the World 2022*, Menon Economics (2023), <https://www.dnv.com/maritime/publications/leading-maritime-cities-of-the-world-2022/>.

26 Rose George, *Ninety Percent of Everything* (Metropolitan Books, 2013), 5.

27 “Evolution of the world’s 25 top trading nations,” UNCTAD, <https://unctad.org/topic/trade-analysis/chart-10-may-2021>.

28 “Overzicht leveringszekerheid voor gasjaar 2026-2027,” *Rijksoverheid*, September 30, 2025, <https://www.rijksoverheid.nl/documenten/rapporten/2025/09/30/overzicht-leveringszekerheid-voor-gasjaar-2026-2027>.

This does not imply that a commercial seapower state can depend solely on the economic dimensions of its maritime strength. Yet militarily, it remains – like the coastal state – constrained by the limited naval assets at its disposal, and it is acutely aware of those constraints. Neither seeks to challenge the dominance of the naval powers that ‘rule the high sea’. However, in the coastal state model, naval presence is largely confined to national waters, either because they are extensive or because they contain resources vital to the state’s security and prosperity. The commercial seapower state, by contrast, ideally possesses a greater degree of geopolitical insularity and confidence in the security of its own coastal zone. This allows it the ‘luxury’ of maintaining a certain surplus naval capacity for out-of-area operations, including – and perhaps especially – in more traditional, ‘Mahanian’ security contexts. Its insular position means that such deployments are not necessarily contingent upon the defence of its coastal waters. This does not suggest that its nearby seas are free from risk, but rather that the commercial seapower state may, in theory, invert the priorities of the coastal state – delegating coastal monitoring primarily to institutions like the coast guard while allocating more capacity for international engagement. Such an approach aligns with the commercial seapower state’s economic, political, cultural, and historical relationship with the sea. While it cannot do so as a ‘seapower great power’, it does not mean it lacks agency or that its (global) deployments are inconsequential.

The symbolic contrast between Rotterdam’s status as a global trade hub and the modest naval capabilities stationed at Den Helder remains considerable. It is precisely due to the port’s strategic and economic importance—and its inherent vulnerability—that the commercial seapower state must reconsider how it understands and defines the nature and purpose of its seapower.

The commercial seapower state as a frontier state

In 2021, the Dutch frigate HNLMS Evertsen was part of a British-led Carrier Strike Group that deployed in the Indo-Pacific, intended, among other things, to stress the importance of freedom of navigation in the waters that are the hotbed of renewed navalism. A year later, the Dutch Minister of Defence indicated her intention for a Dutch naval deployment to the Indo-Pacific once every two years to communicate the Dutch intent to contribute to safeguarding free shipping.²⁹ In an indirect way this is the ‘flag’ following the state’s overseas economic interests. As investment and trade volumes in a region grow, it naturally gains greater foreign policy priority.³⁰ For the commercial seapower state, trade effectively acts

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29 “Mogelijk vaker marineschip naar Indo-Pacific,” *Defensie.nl*, June 13, 2022), <https://www.defensie.nl/actueel/nieuws/2022/06/13/mogelijk-vaker-marineschip-naar-indo-pacific>. So far, the goal of a biannual deployment has been met with the deployment of Zr.Ms. *Tromp* in 2024 and Zr.Ms. *De Ruyter* in 2026

30 This line of reasoning surfaced implicitly in the ‘Signalgate’ leaks, in which US Vice President J.D. Vance questioned why the United States should secure passage through the Suez Canal in connection with proposed strikes on Houthi rebels who

as a barometer of its strategic priorities, while its navy – even in a modest capacity – serves as an instrument to support those interests.³¹ This is not as outspoken as in the 1960s when, following the independence of the Dutch East Indies, there was concern in the Netherlands about slipping “unnoticed into a too narrow, local navy”.³² Yet there remains the tacit belief that its historically rooted global naval posture still offers the Netherlands influence beyond what its regional position alone would allow. In fact, it can certainly be argued that its current pivotal role as a hub in global trade provides stronger justification for greater global maritime engagement than existed in the immediate post-imperial years.

This intent to deploy on a regular basis to the Indo-Pacific will nevertheless require the utmost of Dutch naval ‘surplus’ capacity. As Dutch means may not match the stated aspirations, especially now that we have moved on from the ‘post-Mahanian’ era including (hybrid) threats to the commercial seapower state’s own coastal waters. This is not new, but unlike the Cold War period the sea has become more than merely a ‘highway’. The industrialization of coastal waters, especially in the North Sea, has given territorial seas an intrinsic value unthinkable in the days of Mahan. The development of offshore windfarms, pipeline networks, and seabed telecommunication cables converging on the Dutch coast have made the protection of the North Sea a critical national interest in itself as the North Sea region as a whole is turning into what *The Economist* described as “Europe’s new economic powerhouse”.³³

Whilst these developments reinforce the hub function of the Netherlands as a commercial seapower state and, moreover, made the economic processes at sea even more vital to its economy, it has also given the Netherlands some characteristics similar to that of the coastal state. This was reinforced when, a little over a year after the stated intention to regularly deploy naval assets to the Indo-Pacific, the Dutch Minister of Defence announced that the Dutch navy was to gain a permanent task in securing the Dutch part of the North Sea.³⁴ Russian ‘incursions’ questioned relying solely on the coast guard. A report of the Dutch think tank HCSS on the high value of the North Sea aptly described the Netherlands as a “front-line state”.³⁵

had disrupted shipping. He supports his critique by underlining that the Canal accounts for only three per cent of US trade, compared to 40 per cent of Europe’s. Jeffrey Goldberg, “The Trump Administration Accidentally Texted Me Its War Plans,” *The Atlantic*, March 24, 2025, <https://www.theatlantic.com/politics/archive/2025/03/trump-administration-accidentally-texted-me-its-war-plans/682151/>.

31 Michael P. Gerace, “State Interests, Military Power and International Commerce: Some Cross-national Evidence,” *Geopolitics* 5, no. 1 (2000): 111.

32 D.C.L. Schoonoord, *Pugno pro patria: de Koninklijke Marine tijdens de Koude Oorlog* (Van Wijnen, 2012), 133.

33 “Can the North Sea become Europe’s new economic powerhouse?,” *The Economist*, January 1, 2023, <https://www.economist.com/business/2023/01/01/can-the-north-sea-become-europes-new-economic-powerhouse>.

34 “Defensie krijgt grotere rol bij bescherming infrastructuur Noordzee,” *Rijksoverheid.nl*, July 7, 2023, <https://www.rijksoverheid.nl/actueel/nieuws/2023/07/07/defensie-krijgt-grotere-rol-bij-bescherming-infrastructuur-noordzee>.

35 Frank Bekkers et al, *The High Value of the North Sea*, The Hague Centre for Strategic Studies (The Hague, 2021), 8.

This leaves the Netherlands, as a prototypical commercial seapower state, somewhat in a paradoxical position. On one hand, its geopolitical insularity has shifted dramatically: whereas as late as 1989 the potential frontline lay on the North German plains, today it stretches to the Baltic states and, as of 2023, to the Finnish-Russian border. At the same time, the intrinsic value of its small but economically vital EEZ – almost an extension of the national territory – positions the Netherlands as a maritime frontier (coastal) state, which could, in the future, constrain Dutch naval ‘surplus’ capacity in line with the theoretical logic of a commercial seapower state. Especially when we consider that only a handful of Russian oceanographic ‘spy’ ships in the North Sea can theoretically absorb the Dutch ‘surplus’ naval means. One of the precepts of Borresen’s theory of the coastal state is that you cannot be one when the integrity of your territorial waters depends on the goodwill of others. The central question, then, is whether these ‘incursions’ amount to a sufficient breach of territorial integrity to justify trading off capabilities optimized for the commercial seapower role in favour of the characteristics associated with a coastal state navy.

Conclusion

‘Seablindness’ has become something of a buzzword, and I for one am also guilty of including it. The fact that threats to a state’s maritime ‘frontier’ or overseas maritime interests are less immediately visible than, say, the build-up of armies along the Ukrainian border or drone incursions over European airports, makes finding a remedy for this condition more challenging.³⁶ Cato famously held up a Tunisian fig in the Roman Senate to illustrate that the Carthaginian maritime threat was just a few days’ sail away. Today, there is frequent talk of the need for narratives to restore the connection between the state and the sea. While this is certainly valid, such narratives must also account for the inherent differences between various types of maritime states. Small navies share many similar challenges, but the prevailing capacity driven accounts of seapower do fail in explaining the state’s relationship with the sea and how this determines its navy’s role and (future) fleet composition. The notion of the commercial seapower state may offer one such narrative.



³⁶ See for instance for one such example: Ria Cats and Anouk Gras, “Opvallend veel Russische schepen voor Nederlandse kust: ‘Onvoldoende gevoel van urgentie’,” *Het Financieele Dagblad*, November 22, 2024, <https://fd.nl/politiek/1537729/opvallend-veel-russische-schepen-voor-nederlandse-kust-onvoldoende-gevoel-van-urgentie>.

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Rogues of the High Seas

From Private Maritime Security Companies to Maritime Security Enablers

Santiago José del Castillo Toquero

Introduction

In November 2024, a particular headline sparked curiosity among maritime security experts in the Netherlands: “[Dutch] Defence wants to hire private security guards to protect the North Sea.”¹ This initiative was based in the need to enhance the monitoring capabilities of the Royal Netherlands Navy against Russian incursions in the Dutch Exclusive Economic Zone (EEZ) of the North Sea. The decision swiftly followed the earlier 17th and 18th of November disruptions of the subsea cables BCS East-West Interlink and C-Lion1, fibre-optic cables located in the Baltic Sea.²

However, Russian incursions are not new. Since the Russian full-scale invasion of Ukraine in February 2022, European coastal states reported an increased activity by Russia in their EEZs and in the vicinity of critical infrastructure facilities.³ As of September 2024, 72 Russian vessels systematically carried out espionage on European civilian and military infrastructure in the North Sea and Baltic Sea in the course of more than 400 voyages.⁴ While the presence of Russian military assets is a common occurrence in other scenarios such as the Mediterranean Sea, in the North Sea and Baltic Sea this presence takes place in a hybrid, more challenging form.

“[Dutch] Defence responds that it will hire a ship that may only monitor and detect. And therefore, not use violence. It will be a so-called ‘state ship’. So, it is not a military task, so the personnel will not be armed. If a (possible) incident or suspicious situation occurs, the Coast Guard/Police and/or Royal Netherlands Navy must be called in,”⁵ The results of this proposal shaped into the commissioning of the DSS GALATEA under RNLN command, in June 23, 2025.⁶

1 Coen Kooijman, Peter Keizer, and Fleur Kloos, “Defensie Wil Private Beveiligers Inhuren om de Noordzee te Beschermen,” *Pointer*, November 28, 2024, <https://pointer.kro-ncrv.nl/defensie-wil-private-beveiligers-inhuren-om-de-noordzee-te-beschermen>.

2 Ibidem.

3 *NL Times*, “Armed Russian Research Vessels Regularly Spying on Infrastructure in North Sea: Report,” September 25, 2024, <https://nltimes.nl/2024/09/25/armed-russian-research-vessels-regularly-spying-infrastructure-north-sea-report>.

4 *NL Times*, “Dutch Military Could Soon Board Russian Vessels Threatening North Sea,” February 3, 2025, <https://nltimes.nl/2025/02/03/dutch-military-soon-board-russian-vessels-threatening-north-sea>.

5 NOS Nieuws, “Defensie Wil Private Bedrijven Tijdelijk de Noordzee Laten Bewaken,” November 20, 2024, <https://nos.nl/artikel/2545202-defensie-wil-private-bedrijven-tijdelijk-de-noordzee-laten-bewaken>.

6 Alan Bosworth, “Royal Netherlands Navy Acquires Temporary Patrol Ship for NATO Summit Security,” *Baird Maritime / Work Boat World*, June 23, 2025, <https://www.bairdmaritime.com/security/naval/naval-ships/royal-netherlands-navy-acquires-temporary-patrol-ship-for-nato-summit-security>.

The solution in dealing with the mentioned Russian threat, as initially envisioned when this paper was first drafted in February 2025, turned out to be a mere temporary “capability coverage”, instead of taking the opportunity to develop and strengthen the Dutch Maritime Security Framework from a more public-private point of view. This challenge is a matter of national security that will persist in a long-term scenario, and thus requires a whole-of-society-approach, advocating a strong strategy that includes all suitable national resources rather than an ad hoc patchwork solution for the next two years.

During the last 10 years, Private Maritime Security Companies (PMarSCs) have developed a relevant role in the maritime security domain and in the protection of international trade. Despite this positive task fulfilment, in comparison with other private security entities, PMarSCs are often wrongly considered to be entities related to Private Military (Security) Companies and to have a mercenary background. In the maritime domain, this misconception makes these companies appear incompatible with the established maritime security system, and therefore they are excluded from discussions that affect them directly or in which they could actively contribute, such as the above-mentioned case.

In other cases, private actors form an active part of discussions related to maritime security: shipping companies, insurers, associations, and other entities gather to delineate common elements of interest and develop policies. Nonetheless, PMarSCs are not considered - and in many cases are not welcomed, to participate in these deliberations, amid concerns of commercial profiteering and private interests. Therefore, there is a need to fill a gap in the understanding of PMarSCs and the roles and challenges these companies have from a research and operational perspective. The proper comprehension of the nature and limitations of these companies will offer the opportunity for improvement and development in terms of policy, and maritime security cooperation between actors that share common activities and interests: the protection of the life of seafarers and the endeavour towards more secure oceans and seabed.

The objectives of this paper are multiple. First, to present a better understanding regarding the nature, concept, role and limitations of Private Maritime Security Companies from a critical perspective. Second, to outline the capabilities of said companies in the maritime domain, delineating relevant conclusions regarding seapower contribution and public-private cooperation. Finally, it aims to present potential solutions to monitor and mitigate threats in the North Sea from a national perspective, in which this cooperation could benefit from synergies and coordinated action between relevant actors in the maritime domain.

A sea of challenges and opportunities

The North Sea is home not only to great biodiversity and maritime activity. It hosts a great part of European countries' communication and supply infrastructure. According to Rijkswaterstaat (Dutch national waterways authority), the Dutch section of the North Sea contains 2,500 km of pipelines and 4,000 km of cables, 3,600 km² of shipping routes, and 160 oil and gas offshore platforms.⁷

Since 2022, Russian vessels have been detected trying to map and study the Dutch critical infrastructure in the North Sea. Dutch intelligence agencies MIVD and AIVD reported in March 2023 that "Russia is secretly charting this infrastructure and is undertaking activities which indicate preparations for disruption and sabotage".⁸ In at least seven cases a Russian vessel carried out suspicious movements in the vicinity of Dutch critical infrastructure, evidence that is backed with intercepted Morse code communications and other transmissions confirming the dubious purpose of the transits.⁹ Even NATO's high-ranking officials have acknowledged that these practices are aimed to scan, identify, and, potentially, target key elements of NATO countries' strategic infrastructure in case of war.

This poses an immense challenge for the riparian authorities. Procedures to expulse suspicious vessels from national waters are not only very restrictive, they are limited to a reactive action and do not prevent espionage. However, a more proactive stance is required, which leads to the acknowledged lack of capabilities by the Royal Netherlands Navy and its intention to request additional support from the private sector. The reinforcement of monitoring capabilities of the Dutch authorities would allow them to observe in advance where these vessels are, allowing the forces in the field to interdict and effectively take considered actions before these vessels have the opportunity to operate.

What are Private Maritime Security Companies?

While preparing this paper, it was noted that the research on PMarSCs is especially challenging due to the fact this is a fairly novel research topic, with less than 20 years of development, as it matches the own industry's young progress. In addition, the topic is shrouded by confusion and multiple misconceptions and contradictions regarding terminology, which leads to the

7 Peter Keizer, Jorrit Heijkant, M. J. van Tellingen, and R. ter Weijden, "Rusland Bespioneert Systematisch Onze Wateren," *Pointer*, October 3, 2024, <https://pointer.kro-ncrv.nl/rusland-bespioneert-systematisch-onze-wateren>.

8 Anthony Deutsch and Bart Meijer, "Russia Targets Netherlands' North Sea Infrastructure, Says Dutch Intelligence Agency," *Reuters*, February 20, 2023, <https://www.reuters.com/world/europe/russia-targets-netherlands-north-sea-infrastructure-says-dutch-intelligence-2023-02-20/>.

9 Peter Keizer and M. J. van Tellingen, "Ex-bemanningslid Russisch Spionageschip: 'In Geval van Oorlog Willen We Weten Waar Jullie Onderzeese Infrastructuur Lig't,'" *Pointer*, October 4, 2024, <https://pointer.kro-ncrv.nl/ex-bemanningslid-russisch-spionageschip-in-geval-van-oorlog-willen-we-weten-waar-jullie-onderzeese>.

current dubiousness of the understanding of the research field. For this reason, and despite sacrificing some of the extension designated for this paper, it is fundamental to address these misconceptions before proceeding, as it is impossible to analyse the challenges that the Private Maritime Security Industry faces without understanding the terminology and conceptual complexity that affects it. These challenges and misconceptions are intrinsically linked to each other and contribute to the Private Maritime Security Companies' image and reputation.

Private Military and Security Companies, also known as Private Military Companies, as stated in the Montreux Document,¹⁰ share the same acronym as Private Maritime Security Companies (PMSC). However, these companies operate in a different environment and under a very specific set of regulations which distances them from one another. While institutions like the Geneva Centre for Security and Governance (GCSG) establish that “the inclusive term PMSCs (as in Private Military and Security Companies) encompasses all businesses that provide military services, security services, or both”,¹¹ Private Maritime Security Companies present numerous differences that are worth signalling.

According to the DCAF – *Geneva Centre for Security Sector Governance* (2024), a Private Military and Security Company abides by the following set of characteristics:

- These companies are only defined in soft law and non-binding frameworks;
- PMSCs are business entities;
- The employees of PMSCs could be considered mercenaries, on a case-by-case basis, if they meet the cumulative criteria laid out in Article 47 of Additional Protocol I to the 1949 Geneva Convention. However, it can be challenging to prove that they are primarily motivated by personal gain. In addition, the definition of mercenary applies only to individuals;
- Most employees of PMSCs are not engaged in combat as part of military operations, and many are nationals of one of the parties to a conflict.¹²

On the other hand, while acknowledging their commercial nature, Private Maritime Security Companies are defined in hard law; in particular, the regulations established on a national basis regarding the deployment of armed personnel to protect merchant vessels of the corresponding flag state. In addition, these companies abide by internationally established regulations such as the United Nations Convention on the Law of the Sea (UNCLOS), which

¹⁰ International Committee of the Red Cross and Swiss Confederation, *The Montreux Document: On Pertinent International Legal Obligations and Good Practices for States Related to Operations of Private Military and Security Companies during Armed Conflict* (Geneva: ICRC, 2008), <https://www.montreuxdocument.org/about/montreux-document.html>.

¹¹ DCAF, *Private Military and Security Companies (PMSCs)* (Geneva: Geneva Centre for Security Sector Governance, 2024), https://www.dcaf.ch/sites/default/files/publications/documents/DCAF_BKG_26_PrivateMilitarySecurityCompanies.pdf.

¹² Ibidem.

can lead to court procedures in the country of registration in case the personnel of these companies do not follow the corresponding regulations.

One of the main differences is that, unlike Private Military Security Companies, Private Maritime Security Companies, on a normal basis, do not deploy personnel as part of a conflict; their main and only task is the protection of merchant vessels against unlawful boarding, and they are supposed to act in a self-defence manner.

Examples of national legislation further prove the disconnection between the Private Military Companies and Private Maritime Security Companies. For example, Spain's and Italy's regulations on the deployment of armed guards to protect merchant vessels state that any security company registered in the Private Security Registry of the Ministry of the Interior can operate in the maritime domain. The only condition is to follow the corresponding specific requirements to protect vessels under the flag state in question. As such, companies that are usually seen protecting supermarkets, malls, airports, or ports, can also deploy armed personnel – with their corresponding military-grade weapons and equipment. This is the case of TRABLISA, a security company based in Spain and the only one currently holding a license to protect Spanish-flagged vessels in the former High-Risk Area.

Despite the differences portrayed above between the two types of companies, numerous authors and researchers still confuse the terminology in their academic research. This issue is further accrued as both types of security companies share the PMSC-acronym. Because the differences between the two types of companies reside in very specific elements, and the line between courses of action is almost indistinct from a general analysis perspective, it is easy to confuse both type of companies, or include them in the same category. Therefore, in this paper we refer to the Private Maritime Security Companies as PMarSCs.

Brief examples of this terminology incongruences can be seen in the work of authors such as Jan Stockbruegger, who begins his article 'US Strategy and the Rise of Private Maritime Security' by identifying PMarSCs as "Maritime Private Military Security Companies"¹³ Similarly, another recent example can be found in the article 'Mercenary armies in the Russo-Ukrainian War' written by Prof. dr. A.J.H. Bouwmeester and Thijs Cremers. In the colophon of the article, the authors apply this incongruence by classifying the Private Maritime Security Companies that serve under Dutch flag as a "specialised type of PMSC that meets the Ministry's standards to provide armed protection to merchant ships".¹⁴

13 Jan Stockbruegger, "US Strategy and the Rise of Private Maritime Security," *Security Studies* 30, no. 4 (2021): 585, <https://doi.org/10.1080/09636412.2021.1976821>.

14 Thijs Cremers and Han Bouwmeester, "Mercenary Armies in the Russo-Ukrainian War," *Militaire Spectator* 193, no. 11 (2024): 661, https://militairespectator.nl/sites/default/files/bestanden/uitgaven/inhoudsopgaven/militaire_spectator_11_2024_cremers_bouwmeester.pdf.

A “loose cannon” situation: challenges faced by PMarSCs in the maritime security domain and how to address them

The commercial nature of the PMarSC is one of the most important highlights to take into account when analysing them: money plays a big role in the nature and development of PMarSCs, which is also conditioned by the demand from ship-owners, shipping insurers and others, and leads to the growth or potential demise of these companies.

Furthermore, PMarSCs have found themselves victims of their own success, as they have been isolated by other actors in the maritime domain to the point of becoming a sort of “rogue entity” or a “necessary evil”. While the maritime industry acknowledges the role of the PMarSCs, there is very limited exchange between these companies and other maritime parties, including military operations or entities working in the same Area of Operations. The relationships in terms of security between the shipping industry and the PMarSCs is limited to the commercial exchange of the service themselves, these companies being disregarded and excluded from common forums and dialogues.

What are the reasons behind this unlikely relationship? While common interests and objectives are shared between PMarSCs, the shipping industry and military authorities, such as the protection of merchant trade or the exchange of information, there are a series of key elements that have created a barrier between the PMarSCs and the remaining actors. This section aims to analyse these elements.

Private Maritime Security Companies are ruled by the corresponding legislation of the flag state that they are allowed to provide services under. While there is a hard law regulating most of the flag states, this regulation is not standardized nor internationally applicable.¹⁵ This leads to certain flag-states having reduced oversight of the operations carried out by PMarSCs, as well as their corresponding quality.

From an internal perspective PMarSCs are regulated internationally by the application of ISO 28007-1:2015: Ships and marine technology — Guidelines for Private Maritime Security Companies (PMSC) providing privately contracted armed security personnel (PCASP) on board ships (and pro forma contract).¹⁶ This regulation, published in 2015, aimed to provide a certain level of standardization and quality to the industry and soon became the main requirement for any PMarSC. However, this ISO only addresses elements related to the management of the company, and usually from an office organization and planning perspective. This is a

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15 Gregory DeAngelo and Taylor Leland Smith, “Private Security, Maritime Piracy and the Provision of International Public Safety,” *Journal of Risk and Uncertainty* 60, no. 1 (2020): 77–97, <https://doi.org/10.1007/s11166-020-09323-8>.

16 Pieter Zhao, “Outsourcing Security at Sea—the Return of Private Maritime-Security Companies and Their Role in Twenty-First-Century Maritime Security,” *Naval War College Review* 77, no. 1 (2024), U.S. Naval War College Digital Commons, <https://digital-commons.usnwc.edu/nwc-review/vol77/iss1/7>.

recurrent issue that is also noticeable in numerous flag states' regulations and oversights: the focus of these auditing procedures is set on the development of the company "on paper", rather than the actual performance of its operatives on the field, making it insufficient to prove the quality of the companies in question.¹⁷

Finally, numerous Maritime Security Companies, in an attempt to distinguish themselves from their competitors, have grown to become maritime intelligence providers and, in very particular cases, have even established their own maritime risk and hull insurance programs to directly control all aspects that involve the deployment of maritime security teams. From risk assessments to subscription-based intelligence platforms and insurance coverages linked to their own maritime security services, PMarSCs have notably expanded their business strategies in the last years.

Nonetheless, the main issue arises when PMarSCs attempt to forcefully become "reference points" for the maritime community, justifying their actions with their popularity and volume of activity. This creates an indirect competition between these companies and relevant civilian and military authorities that are considered the recognized reference points in question – i.e. military operations, information centres or shipping associations, negatively affecting the possibility of dialogue between these actors.

For these reasons presented above, Maritime Security Companies are affected by a shroud that involves a lack of transparency and regulation, questionable operational and logistic methods, and absence of oversight. The posture of national governments is currently focused on the theoretical and bureaucratic framework and does not account the developments and challenges of these companies; ironically, these difficulties and negative attributes are what the maritime industry sees in PMarSCs, leading to the rift between actors that we observe today.

Turning the tide: leveraging the role of PMarSCs as seapower elements

The end of the Cold War marked the end of the East-West competition and the accompanying (maritime) arms race, and thus led to a re-evaluation of the capabilities and objectives of navies. In most of the cases, and particularly those of Western navies, the aftermath of the Cold War resulted in a notable reduction of military spending and the number of active units. Naval historian Sarandis Papadopoulos points out the fact that, in the late years of the 20th century and the early 21st century, these navies highlighted the necessity to operate

17 Osatohanmwun Anastasia Eruaga, "Private Maritime Security Companies within the International Legal Framework for Maritime Security," *Maritime Law in Motion* 8 (2020): 197, https://doi.org/10.1007/978-3-030-31749-2_10.

in a combined manner with allies and partners, in order to compensate for the reduction of assets.¹⁸

Furthermore, the rise of non-conventional maritime security challenges such as terrorism, piracy and smuggling, in the majority of the cases with a land-based source, forced navies to address new responsibilities. However, navies do not always have enough capabilities to tackle these challenges in a timely manner. A clear example is the issue presented by the Dutch authorities in regard of the North Sea monitoring capabilities and how to address the growing threats posed by actors such as the Russian spy vessels.

Surprisingly, and in a certain way influenced by the factors previously mentioned and their commercial nature, PMarSCs are usually seen more as a challenge rather than a potential support towards the activities of the state not only against piracy, but in many other Maritime Security challenges: from national security to the participation in the so-called Operations Other Than War (OOTW).

Maritime Security Companies are more than just the deployment of armed personnel on board of merchant vessels. The complex and international-based framework these companies work in has conditioned their procedures and services to operate in all areas of the world, while abiding to the corresponding national and international regulations.

Intelligence gathering, information sharing, advice to civilian crews, surveillance or monitoring are some examples of activities that these companies perform as part of their daily endeavours. These activities can increase the capabilities of the public authorities by acting as capability multipliers. Furthermore, most of these actions do not involve at any point the use of weapons, as they can unnecessarily escalate situations if used inappropriately. This is, in fact, one of the main concerns raised by Dutch government officials when they were asked by the press whether private armed guards could be deployed to support the monitoring efforts of the Dutch navy.

This puts entities under the disposal of the Dutch government that are already highly familiarized with maritime security on both a tactical and operational level, which offers a high level of direct integration and cooperation in tasks such as monitoring the North Sea.

There are numerous initial comments regarding a potential cooperation of these characteristics. Fred Soons, emeritus professor of international law at Utrecht University stated that “If they (the additional patrols) perform tasks there based on a contract and the instructions of the Dutch government, then the liability also lies with the state if things go

18 Sarandis Papadopoulos, “The Combined Framework: How Naval Powers Deal with Military Operations Other than War,” in *You Cannot Surge Trust* (National Defense University Press, 2013), 14.

wrong”.¹⁹ However, HCSS defence specialist Patrick Bolder affirms that “It is indeed better not to send armed private companies into the North Sea (..) The monopoly on violence should remain with the state”, he believes. “Otherwise, you get commercial parties that start to stir on the market and start bidding against each other with better weapons or better trained people. It is a sliding scale.”

Both authors’ statements are, indeed, true. However, they are both analysing the issue from a purely commercial perspective: they mention keywords such as “contract” and “bidding”, which is evidence that they are, as previously presented, considering security companies as mere commercial entities and not potential force multiplier elements in a national security framework. The Netherlands provides the ideal working grounds for this opportunity to enhance the eyes and ears of the nation in the maritime domain.

The following and final section will thus analyse the opportunities that this pathway could potentially unveil for a state like the Netherlands.

Honing the blade: towards seapower cooperation and integration in the Netherlands

PMarSCs are, in any case, under the corresponding jurisdiction of the flag-state authority they are serving. The absence of international requirements for PMarSCs is instead represented by a constellation of regulations with different standards and strictness. However, from a national perspective, it is possible to identify a progressive but cautious outsourcing of the use of violence – under very specific conditions, such as the right of self-defence, that was once monopolized by the state and now is given to companies such as PMarSCs.

In the case of the Netherlands, Maritime Security Companies fall under the direct supervision of both Inspectie Leefomgeving en Transport (ILT), a part of the Ministry of Infrastructure and Water Management, and the Ministry of Defence, which via the coast guard provides the corresponding deployment permits for armed teams on-board Dutch-flagged vessels. This makes the Netherlands a unique case study to analyse potential cooperation processes, as military authorities have an active role in the private maritime security process, thus facilitating the opportunities for this exchange.

In addition, the Ministry of Infrastructure and Waterways Management holds the responsibility for the monitoring of critical infrastructure in the North Sea. Dutch Parliament has criticized on multiple occasions the ministerial slowness and lack of reaction to face threats such as the Russian maritime incursions, as the Department is overburdened by the number of additional security tasks and the lack of assets to compensate the effort.

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19 Kooijman, Keizer, and Kloos, “Defensie Wil Private Beveiligers Inhuren”.

The Netherlands, as a maritime nation, could take advantage of its strict standards to establish trustful cooperation between PMarSCs and the corresponding authorities. This relationship, settled under pre-established protocols, should follow an initial open and honest dialogue between the authorities responsible for the monitoring of the North Sea and selected PMarSCs – in the case of the Netherlands, there is only one Dutch Maritime Security Company, which also facilitates the process. This dialogue should establish potential lines of cooperation, integration, and elemental gaps to work on together. The benefits of this relationship are mutual, as the state would receive valuable support in the maritime security domain, while the company would be able to act as a maritime security enabler for the state. As such, PMarSCs can contribute towards the monitoring needs of the Netherlands in a variety of ways. The main possibility is to actively support their monitoring effort by providing experienced personnel in maritime security in operational and tactical environments. This includes not only unarmed personnel who could crew specific monitoring vessels, but also operations personnel who can help tracking, monitoring and analysing maritime data, in order to get ahead of the suspicious vessels that spy Dutch waters.

Unlike the concerns expressed by government officials and experts alike, this approach does not involve in any case the use of force, which remains under the hands of the corresponding authorities. However, it provides the state with an experienced first layer of monitoring and an enhancement of the overall awareness in the area. In addition, it offers a seamless coordination between monitoring assets such as the Maritiem Informatie Knooppunt (MIK-NL) and the interdiction counterparts; navy and coast guard. In case of an incident, the cooperation between entities would facilitate the timely presence of the interdiction authorities to apply pressure on the suspicious vessels, while the monitoring assets continue with their tasks. If combined with the usage of unmanned aerial and maritime systems that can obtain additional layers of information, a successful monitoring strategy can be put in place.

Conclusion

The developments in the North Sea in recent years clearly demonstrate that the maritime security environment of the Netherlands is becoming more demanding and structurally complex. Hybrid activities targeting key elements of critical infrastructure, combined with the persistent shortage of national monitoring assets, show that relying exclusively on state resources is no longer sufficient. As discussed throughout this paper, PMarSCs — despite the misconceptions that still surround them — operate daily in high-risk maritime environments, possess experience in surveillance and information sharing, and are familiar with operational and tactical procedures that could considerably reinforce the Dutch maritime picture if appropriately integrated.

For this reason, the relevant question is no longer whether PMarSCs should have a role in supporting Dutch maritime security, but how such cooperation can be organized in a practical and responsible manner. Temporary solutions, such as the commissioning of vessels to cover immediate capability gaps, may serve a short-term need but do not provide continuity or resilience. A more durable approach lies in establishing a structured participation of PMarSCs in non-kinetic tasks — monitoring, reporting, advising, and contributing to information flows — activities that strengthen situational awareness without interfering in any way with the state's monopoly on the use of force.

At the same time, it is essential to recognize the juridical challenges that this cooperation entails. Any integration of private actors within the national maritime security framework must comply strictly with Dutch legislation on the use of force, the administrative mandates of the coastguard and the relevant ministries, and the international obligations derived from UNCLOS. These challenges, however, are manageable. By defining clear mandates, transparent responsibilities, and explicit operational boundaries for PMarSCs, the state can retain full authority while benefiting from the additional support. This can be achieved through ministerial guidelines, standardized reporting structures, and cooperation protocols that eliminate uncertainty for both authorities and private companies.

From a practical standpoint, this would require the development of concrete procedures outlining how PMarSCs liaise with the coast guard, the Royal Netherlands Navy, and the Ministry of Infrastructure and Water Management, particularly in relation to critical infrastructure monitoring. The Dutch regulatory framework — strict and detailed in comparison with other flag states — already provides a solid basis to establish such cooperation. By formalising communication channels and defining shared working mechanisms, the operational expertise of PMarSCs can be placed at the service of national objectives rather than operating in parallel.

This approach also aligns with broader European maritime security needs. The North Sea is not only a national space but a strategic European area where energy, shipping, and information networks converge. As hybrid threats increasingly exploit the boundaries between civilian and military responsibilities, coastal states will need the support of all actors active at sea. In this regard, PMarSCs — working under state oversight and clear limitations — can act as relevant connectors between commercial shipping, national monitoring authorities, and international information structures.

The Netherlands faces an opportunity rather than a dilemma. Viewing PMarSCs solely as commercial service providers overlooks the potential contribution they can make as maritime security enablers. Through structured cooperation, mutual trust, and coordinated procedures, the Netherlands can strengthen its monitoring capacity, reinforce its resilience,

and develop a long-term maritime security framework that is prepared to address the challenges that will continue to emerge in the North Sea. Integrating PMarSCs in this manner would allow the Dutch maritime community to operate in a more informed, coordinated, and secure environment for decades to come.

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Who Owns the Gateways?

A Geoeconomic Perspective on Diverse Ownership in Landlord Ports

Merel Jacobs, Tijs ter Haar and Sara van Hoeymissen

Introduction

In 2016, China Ocean Shipping Company (COSCO), a Chinese state-owned enterprise, purchased a majority stake in the Greek port of Piraeus. Since then, the European debate on Chinese involvement in European ports took flight and media outlets have continued to report concerns about Chinese control over geostrategic infrastructure within the EU.¹ Researchers are debating the role of port investments within China's rise to global prominence, weighing the advantages and disadvantages of these investments, and assessing how they impact the relationship between the EU and China.² Meanwhile, policymakers continue to grapple with the question of balancing economic benefit and geopolitical risk.³

The apprehension surrounding Chinese investment in European ports is understandable, given China's state-led economic system and its different outlook on global governance. As key nodes of maritime transportation, ports are gateways for global trade. They contribute to the GDP of their home state directly and indirectly support the economies of countries in the port's hinterland. Allowing a geopolitical rival like China to invest in and gain influence over such critical economic hubs can justifiably be considered an economic and political risk.

Though acknowledging the need to critically assess Chinese port investments, this paper argues that the prevalent focus on China in media, politics, and academia is too narrow, and risks overlooking other threats faced by European ports. To develop this argument, this paper provides a conceptualization of ports as arenas for geoeconomic competition, that is, interstate competition for strategic ends by economic means. Subsequently, an empirical case study of the Port of Antwerp Bruges (PoAB) provides a comprehensive mapping of company ownership in the PoAB, an example of a major European sea port. The case study

- 1 Kaki Bali, "In Greece's Largest Port of Piraeus, China Is the Boss," *Dw.Com*, October 30, 2022, <https://www.dw.com/en/greece-in-the-port-of-piraeus-china-is-the-boss/a-63581221>; Isaac Kardon and Wendy Leutert, "China's Port Power", *Foreign Affairs*, May 22, 2023, <https://www.foreignaffairs.com/united-states/chinas-port-power>; Martina Sapio, "Chinese Companies Bought up European Ports — and Now Brussels Is Starting to Worry," *POLITICO*, May 9, 2025, <https://www.politico.eu/article/chinese-companies-bought-up-european-ports-and-now-brussels-is-starting-to-worry/>.
- 2 Zenel Garcia and Alexandra Meise, "Ports, Politics, and Power: The Messy Reality of China's Overseas Port Investments," *War on the Rocks*, September 11, 2025, <https://warontherocks.com/2025/09/ports-politics-and-power-the-messy-reality-of-chinas-overseas-port-investments/>; Xiaoxue Martin et al., *Port Politics: Strategic Autonomy and European Ports* (Clingendael Institute, 2024), <https://www.clingendael.org/publication/port-politics-strategic-autonomy-and-european-ports>; Jean-Marc Blanchard, ed., *Chinese Overseas Ports in Europe and the Americas: Understanding Smooth and Turbulent Waters* (Routledge, 2023), <https://doi.org/10.4324/9781003401148>.
- 3 Peter Van Rompuy, "Schriftelijke vraag nr. 36 - Vlaamse havens, Chinese aanwezigheid," Vlaams Parlement, November 6, 2024; Karin Smit Jacobs, *Chinese Strategic Interests in European Ports*, PE 739.367 (European Parliamentary Research Service, 2023), [https://www.europarl.europa.eu/RegData/etudes/ATAG/2023/739367/EPRS_ATA\(2023\)739367_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2023/739367/EPRS_ATA(2023)739367_EN.pdf).

illustrates that vulnerability in European ports extends beyond the threat of Chinese investment, especially considering ongoing geopolitical fragmentation.

Port economics

The worldwide network of maritime transportation moves approximately 80% of global trade, serving as a highway of the global economy.⁴ Within the critically important network of maritime transportation, ports serve as nodes. On the border of land and sea, they connect global maritime routes with regional and local logistics, production, and consumers, thus playing a key role in global supply chains.⁵ Moreover, ports support national prosperity, contributing considerably to national GDP, and generating local employment.⁶ For example, the Port of Antwerp Bruges accounted for 4.5% of Belgian GDP in 2024, providing 161,533 jobs.⁷ Slightly further north, the port of Rotterdam contributes 3.2% to Dutch GDP and generates approximately 192,000 local jobs.⁸

As economic hubs, ports host a multitude of companies, each fulfilling a key role in port operations; the port authority manages the site, pilots help ships navigate the port, and terminal operators load and unload vessels. Once ashore, cargo is processed in manufacturing facilities, stored in warehouses, or transported further inland. In most European ports, these various elements of daily port operations are dispersed among multiple public and private entities, due to the prevalence of the landlord model of port governance.⁹ Following a trend towards the privatization of port operations in the 1990s and 2000s, landlord ports became prominent. In a landlord port, a public port authority retains ownership of the land, while delegating operational responsibility to commercial actors via concession agreements. These long-term lease agreements grant companies the right to build, maintain, operate, and staff port infrastructure. As such, the landlord model contributes to the efficiency and profitability of ports. However, given the globalised nature of the 21st century world economy, the openness to diverse investment, on which the landlord port model is built, also facilitates the involvement of foreign companies in port operations.¹⁰

4 Christian Bueger et al., *A Comprehensive Assessment of Global Maritime Security* (UNIDIR, 2024), 13.

5 Theo Notteboom et al., *Port Economics, Management and Policy* (Routledge, 2022), 18, <https://doi.org/10.4324/9780429318184>.

6 Jun Shan et al., "An Empirical Investigation of the Seaport's Economic Impact: Evidence from Major Ports in China," *Transportation Research Part E: Logistics and Transportation Review* 69 (September 2014): 51–52, <https://doi.org/10.1016/j.tre.2014.05.010>; Jesse M. Lane and Michael Pretes, "Maritime Dependency and Economic Prosperity: Why Access to Oceanic Trade Matters," *Marine Policy* 121 (November 2020): 6–7, <https://doi.org/10.1016/j.marpol.2020.104180>; Harry Geerlings et al., "Introduction", in *Ports and Networks* (Routledge, 2017), 1.

7 "Where Can I Find Facts, Figures and Statistics about the Port?," Port of Antwerp-Bruges, <https://www.portofantwerpbruges.com/en/faq/where-can-i-find-facts-figures-and-statistics-about-port>.

8 "Facts and Figures," Port of Rotterdam, <https://www.portofrotterdam.com/en/experience-online/facts-and-figures>.

9 Notteboom et al., *Port Economics*, 290, 294; Larissa van der Lugt, "Port Development Company: Role and Strategy," in *Ports and Networks* (Routledge, 2017), 56.

10 Notteboom et al., *Port Economics*, 486.

Geoeconomic perspective on ports

Considering the economic importance and complexity of ports, the framework of geoeconomics fittingly grasps the role ports play in interstate competition in an era of economic interdependence. Geoeconomics revolves around the instrumentalization of “economic bases of power that have a clear geographical dimension” to achieve strategic leverage over others, often by exploiting asymmetric vulnerabilities.¹¹ States that possess a geographically determined economic base of power, like energy resources, critical minerals, or deep sea ports, can exploit that advantage to achieve concessions from others who lack it. Russia’s exploitation of gas exports to shape its relationship with Europe, including after the annexation of Crimea in 2014, serves as an example of such a strategy.¹²

Furthermore, as a foreign policy strategy, geoeconomics is more covert than geopolitical strategies.¹³ Contrary to the deployment of military and diplomatic means, the use of economic means can be framed as merely commercial, downplaying potential strategic incentives. By imposing an economic risk that is too great or an economic reward that is too compelling, under the guise of regular trade and investment, geoeconomics allows a state to covertly weaken another state’s resolve to resist against the former’s strategic objectives. Analyses criticising China’s Belt and Road Initiative (BRI) as a strategy instrumentalising investment to achieve political leverage over others build on this idea.¹⁴

Finally, from a geoeconomic perspective, state-capitalist economies offer a more potent geoeconomic toolkit than their liberal counterparts, because state-owned enterprises (SOEs) and banks are considered more susceptible to instrumentalization by their governments than private companies.¹⁵ While China is a prominent example of this, state capitalist tendencies are not unique to this country. Many other countries, including Russia and Venezuela, but also the Gulf states, Singapore, and Norway employ state-capitalist mechanisms, ranging from sovereign wealth funds (SWF) to SOEs.¹⁶ Generally, in recent years state involvement in economic practice, for instance through investment mechanisms like SWF, has grown.¹⁷

11 Sören Scholvin and Mikael Wigell, “Power Politics by Economic Means: Geoeconomics as an Analytical Approach and Foreign Policy Practice,” *Comparative Strategy* 37, no. 1 (2018): 74, <https://doi.org/10.1080/01495933.2018.1419729>.

12 Antto Vihma and Mikael Wigell, “Unclear and Present Danger: Russia’s Geoeconomics and the Nord Stream II Pipeline,” *Global Affairs* 2 (November 2016): 379, 380–84, <https://doi.org/10.1080/23340460.2016.1251073>.

13 Vihma and Wigell, “Unclear and Present Danger,” 379–82.

14 Anna Gelpert et al., *How China Lends: A Rare Look into 100 Debt Contracts with Foreign Government* (Kiel Institute for the World Economy, 2021), 37–45, <https://www.kielinstitut.de/publications/how-china-lends-a-rare-look-into-100-debt-contracts-with-foreign-government-6905/>.

15 Scholvin and Wigell, “Power Politics by Economic Means,” 75–76.

16 Ian Bremmer, “The Return of State Capitalism,” *Survival* 50, no. 3 (2008): 58, 59–60, 61–62, <https://doi.org/10.1080/00396330802173198>.

17 Salman Bahoo et al., “Sovereign Wealth Funds: Past, Present and Future,” *International Review of Financial Analysis* 67 (January 2020): 2, <https://doi.org/10.1016/j.irfa.2019.101418>.

The framework of geoeconomics helps to develop a strategic perspective on ports as both tools and targets of interstate competition. They cannot be built anywhere, since accessibility to ocean-going vessels depends on the availability of sufficient space and water depth. As geographically determined points of market access, ports thus become tools that can be instrumentalised for geoeconomic purposes. Recently, the use of port fees in the US-China trade war illustrated the utility of ports as geoeconomic tools within broader interstate rivalry.¹⁸

Conversely, ports also emerge as targets of geoeconomics, given the potentially enormous economic impact of disruption in maritime supply chains. Depending on the configuration of a port's main cargo flows and associated economic activity, ports may be threatened indirectly by geoeconomic strategies that involve the restriction of trade in a certain sector. Additionally, ports governed under the landlord model depend on an ecosystem of companies for the execution of daily port operations. The privatisation inherent to this model facilitates diverse ownership of port companies, including by foreign entities. From a commercial viewpoint, this foreign involvement is often beneficial. Yet, in a globalized economy it introduces geoeconomic vulnerability, as foreign companies can serve as instruments of state influence. States rarely engage in day-to-day economic exchanges themselves, instead they rely on commercial actors as intermediaries to establish and maintain trade and investment relations.¹⁹ Hence, foreign involvement induced by the privatisation of port operations presents an opportunity for covert influence by foreign states within major economic assets. Investments may be presented as commercial, even if they fit within a strategic agenda of (partially) controlling a vital trade flow. Moreover, the associated risk grows if the foreign investor is a state-affiliated entity, given the heightened level of government involvement in that case.

Altogether, based on a geoeconomic conceptualization of ports, the landlord port model's openness to private, and by extension foreign, investment creates a structural vulnerability that warrants systematic examination. Especially in the globalised 21st century, as states increasingly recognise the use of economic means for strategic purposes, understanding the threats emanating from economic interdependence is crucial.²⁰ In the context of ports, research has focused heavily on Chinese port investments, often against the backdrop of China's rise to global prominence and the geopolitical implications of the BRI.²¹ However, in a

18 Ryan Woo et al., "China Hits Back on US Port Fees with Retaliatory Levies," *Reuters*, October 10, 2025, <https://www.reuters.com/business/autos-transportation/china-hit-us-ships-with-additional-port-fees-october-14-2025-10-10/>.

19 William J. Norris, *Chinese Economic Statecraft: Commercial Actors, Grand Strategy, and State Control* (Cornell University Press, 2016), 11, <https://doi.org/10.7591/cornell/9780801454493.001.0001>.

20 Daniel W. Drezner, "Global Economic Sanctions," *Annual Review of Political Science* 27 (2024): 10, <https://doi.org/10.1146/annurev-polisci-041322-032240>.

21 Frans-Paul Van Der Putten, *European Seaports and Chinese Strategic Influence | The Relevance of the Maritime Silk Road for the Netherlands* (Clingendael Institute, 2019), <https://www.clingendael.org/publication/european-seaports-and-chinese-strategic-influence>; Clark Banach and Jacob Gunter, "Mapping China's Global Port Network: On the Backfoot in 2024, but

fragmenting geopolitical landscape, attention cannot be directed only at China. If ownership can serve as a channel for strategic influence, then a comprehensive understanding of who owns what becomes central to assessing the resilience of critical economic hubs like ports.

Mapping diverse ownership in the PoAB

This paper uses the Port of Antwerp-Bruges (PoAB) as a case study to capture patterns of diverse ownership in landlord ports, without bias towards any country. As one of Europe's largest ports, the PoAB is instrumental to international trade, as it connects global supply chains to the European hinterland.²² Located near multiple major North Sea shipping corridors, including the Strait of Dover, it is a critical node of global maritime trade.²³ Moreover, the PoAB is a landlord port; its port authority is publicly owned by the cities of Antwerp and Bruges. Public and private entities, including foreign companies, operate key services in the PoAB under long-term concession agreements, including in sectors considered critical to port functionality, like terminal operations, logistics, energy, and digital infrastructure.²⁴ As an internationalised and commercially vital 'hub port', the PoAB thus provides fertile ground to investigate foreign ownership patterns in landlord ports, maintaining a non-country specific scope, and interpret these patterns from a geoeconomic perspective.

Data collection

This study uses a dataset of companies located within the physical boundaries of the PoAB, compiled using the latest official port maps of the Antwerp and Zeebrugge sites, published by the port authority in 2023.²⁵ The maps were supplemented with information from the port authority's official website, particularly regarding operational services like piloting,

Still Well Entrenched | Merics," November 7, 2024, <https://merics.org/en/comment/mapping-chinas-global-port-network-backfoot-2024-still-well-entrenched>; Jean-Marc F. Blanchard and Colin Flint, "The Geopolitics of China's Maritime Silk Road Initiative," *Geopolitics* 22, no. 2 (2017): 223–45, <https://doi.org/10.1080/14650045.2017.1291503>; Isaac B. Kardon and Wendy Leutert, "Pier Competitor: China's Power Position in Global Ports," *International Security* 46, no. 4 (2022): 9–47, https://doi.org/10.1162/isec_a_00433; Jonathan Holslag, *Every Ship a Warship - The Security Role of China's Maritime Sector and Its Consequences for Europe* (2022).

22 Flanders Investment & Trade, "Port of Antwerp-Bruges Emerges as Top Performer Among EU Container Ports," February 26, 2025, <https://invest.flandersinvestmentandtrade.com/en/news/port-antwerp-bruges-emerges-top-performer-among-eu-container-ports>.

23 Heinrich Böll Stiftung, "European Mobility Atlas", 2021, <https://eu.boell.org/en/European-Mobility-Atlas-2021-PDF>.

24 2025 *Facts & Figures* (Port of Antwerp Bruges, 2025), 4, https://media.portofantwerpbruges.com/m/448b3080of109846/original/BROCHURE_Cijferboekje_ENG_2025.pdf; "Industry," Port of Antwerp-Bruges, <https://www.portofantwerpbruges.com/en/business/industry>.

25 "Port Map," Port of Antwerp-Bruges, <https://www.portofantwerpbruges.com/en/our-port/port-map>. The 2023 port maps were the latest official maps at the time of writing.

towage, and traffic coordination.²⁶ Abbreviated or unclear company names were verified using corporate websites, business registries, and public records.

The scope of the dataset is deliberately limited to companies with a direct physical presence in the port area, reflecting a conceptualisation of ports as geographically anchored economic assets. Moreover, mature landlord ports like the PoAB generally offer limited opportunities for greenfield investment. Consequently, interested investors must rely on other ways to gain entry, such as the acquisition of existing assets, (partial) takeover of concession-holding companies, or partnerships with incumbent operators. In this context, the ownership of existent companies in the PoAB becomes an accurate metric for mapping foreign involvement in the port, and by extension gaining insight into potential geoeconomic vulnerabilities.

Company categorisation

All companies in the database are assigned functional categories based on their main activities. Drawing on existing port actor frameworks, the categorisation has been adapted to fit the scope of this study.²⁷ Categories like ‘shipping lines’ and ‘forwarders’ were excluded because they lack a physical presence within the port. New categories, including ‘storage and warehousing’ and ‘manufacturing’, were added to capture the port’s role as both a logistical hub and industrial site. The category ‘nautical services’ was broadened to ‘maritime and port services’ to encompass a wider range of support activities. The resulting typology includes five categories:

1. Terminal operators: loading/unloading ships and temporary cargo storage;
2. Port-related transport companies: inbound and outbound movement of cargo via rail, road, or waterways;
3. Maritime and port services: support to vessel operations and port functionality through piloting, maintenance, cleaning, repair, safety and quality control, and waste management;
4. Storage and warehousing: short-, medium-, and long-term storage and distribution of goods;
5. Manufacturing: production and sale of goods within the port.

This adapted categorisation enables a sectoral analysis of ownership, helping to identify where ownership-related vulnerabilities may be concentrated across operational domains.

²⁶ “Maritime Services,” Port of Antwerp-Bruges, <https://www.portofantwerpbruges.com/en/shipping/maritime-services>.

²⁷ Michiel Nijdam and Martijn van der Horst, “Port Definition, Concepts and the Role of Ports in Supply Chains: Setting the Scene,” in *Ports and Networks* (Routledge, 2017), 11–13.

Ownership mapping and indicators

To identify foreign involvement, this study relies on two ownership indicators: Ultimate Beneficial Ownership (UBOs) and Influential Shareholders (IS). These indicators were selected as they trace ownership throughout complex, multi-layered corporate structures. Indicator data was retrieved from the Orbis database, which provides detailed corporate profiles, between May and September 2025.²⁸ The indicators are defined as follows:

1. UBOs are the individuals or entities holding final ownership over a company, regardless of the number of intermediary layers or holding structures.²⁹ The UBO indicates who ultimately benefits from and directs a company's activities. This is relevant in cases involving complex corporate arrangements, where ownership may be obscured by offshore entities or nested subsidiaries. Foreign UBOs, especially those linked to SOEs, may raise questions about embedded influence in port operations and strategic alignment with national interests.
2. IS are those who possess substantial voting rights granting strategic leverage, even if they are not the final owners of a company. They hold 10% or more of shares, or have smaller stakes but can form a controlling coalition (i.e. over 50% of total shares) with one other shareholder. Shareholding structures reflect financial leverage and the capacity to shape corporate decisions, including investment priorities and strategic partnerships.³⁰ Foreign influential shareholders may facilitate indirect control over port infrastructure, enabling alignment with state interests without requiring full ownership.

Per company, ownership is traced recursively: when a company is (partially) owned by another entity, that entity is also analysed using the same two parameters. This process continues until the Ultimate Beneficial Owner is identified, either an individual or a corporate entity. The nationalities of all involved individuals and parent companies are recorded to establish the company's country link(s). Recursive tracing captures indirect ownership across layered corporate structures, reducing the risk of overlooking foreign influence hidden behind intermediaries. Dual nationalities are recorded where applicable, without assigning primacy. Country affiliations are categorised as "Belgian," "non-Belgian EU," and "Foreign," with further specification for foreign nationalities. This classification supports comparative analysis across geopolitical blocs and helps to identify patterns of involvement.

28 "Moody's," Orbis, 2025, <https://www.moody's.com/web/en/us/capabilities/company-reference-data/orbis.html>.

29 "UBO-register," FOD Financiën, April 25, 2018, <https://financien.belgium.be/nl/E-services/Ubo-register>.

30 "Shareholder," Munich Business School, 2024, <https://www.munich-business-school.de/en/l/business-studies-dictionary/financial-knowledge/shareholder>.

Analytical strategy

Given the scale and complexity of landlord port operations, identifying and interpreting patterns of (foreign) ownership and assessing their geoeconomic significance requires a robust analytical framework. Therefore, this paper applies a descriptive statistical approach to a structured dataset of enterprises operating within the PoAB.

Descriptive statistics are applied to examine links between companies operating in the PoAB and countries.³¹ Each company is classified according to its country associations across the two ownership indicators (UBOs and IS). The analysis maps company-to-country links to facilitate a structured assessment of foreign presence within the port. Subsequently, frequency analysis is used to measure how often specific country links occur across the dataset.³² This enables the identification of countries with substantial ownership, maps the sectoral distribution of country involvement, and unveils the relative prominence of different countries in the PoAB operational landscape. The results offer a snapshot of the extent and nature of foreign corporate involvement in a strategic European port.

To interpret the statistical data, the analysis applies a two-tiered filter system, distinguishing between the country and sector levels in assessing the strategic relevance of diverse ownership:

1. Country-level filter: a high number of ownership links associated with a single country may indicate targeted investment behaviour or strategic interest in gaining leverage over the port.
2. Sector-level filter: concentrated foreign ownership within specific functional categories may reflect targeted strategic interest. A country's presence across multiple sectors suggests breadth of involvement, while concentration in a few may indicate depth of strategic intent.

This analytical strategy enables the identification of ownership patterns that may reflect geoeconomic strategies, providing insight into how foreign actors engage with critical infrastructure. It translates ownership data into strategically interpretable signals, supporting the research objective of developing a comprehensive understanding of diverse, including foreign, ownership in landlord ports.

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31 Prabhaker Mishra et al., "Descriptive Statistics and Normality Tests for Statistical Data," *Annals of Cardiac Anaesthesia* 22, no. 1 (2019): 67, https://doi.org/10.4103/aca.ACA_157_18.

32 Mishra et al., "Descriptive Statistics and Normality Tests for Statistical Data".

Ownership patterns in the PoAB

The analysis of ownership data in the PoAB paints a nuanced picture, involving a strong domestic (Belgian/European) footprint in the port alongside global economic entanglements, including with explicitly state-linked entities.

Country-level filter

By design, the landlord port model invites investment by commercial actors, facilitating diverse ownership of port companies, including by foreign and state-linked actors. Therefore, a highly internationalized ownership landscape is anticipated. From a geoeconomic perspective the model creates vulnerability, allowing covert insertion of state interests into port operations. Yet, country-level analysis (Figure 1) shows a strong domestic and European footprint in the PoAB: Belgium accounts for 33.49% of ownership links, and non-Belgian EU actors add another 26.46%. This dominance (59.95%) suggests that, despite structural openness, regional actors retain significant control over daily operations. Geographic proximity and historical integration within the EU market likely reinforce domestic and European participation. Regulatory frameworks and concession practices may also favour established regional players, limiting foreign penetration. Nevertheless, foreign ownership is not marginal. The UK (8.43% of ownership links) and USA (7.49%) lead among non-EU actors, followed by Switzerland (5.85%) and Japan (3.04%). Meanwhile, several non-EU actors, including Singapore (1.64%), the United Arab Emirates (UAE) (1.87%), and China (0.94%), occupy critical sectoral positions like deep-sea container terminals and logistics services, despite a relatively smaller overall involvement.

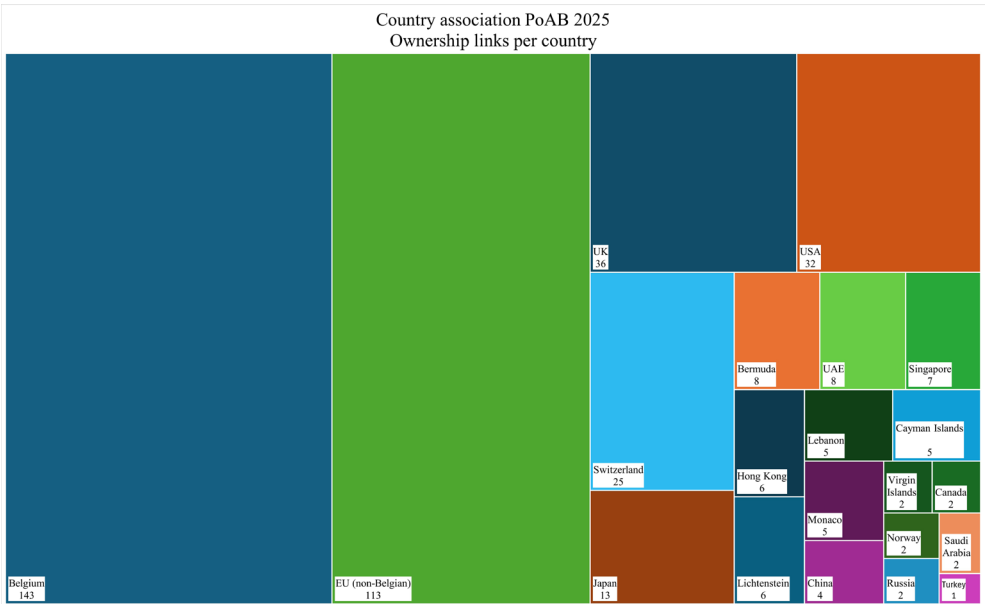


Figure 3.1: Country association PoAB (ownership links per country)

A specific vulnerability is uncovered by the country-level filter: state-linked ownership of port companies is concentrated among non-EU actors (Figure 2). The involvement of the UAE and China in the PoAB consists solely of companies linked to their national governments. Regarding Singapore, government-linked enterprises also play a major role in the country’s overall involvement. By contrast, for Belgium and the EU, government involvement in PoAB companies is minimal. This pattern matters because, as discussed, SOEs are highly suitable for geoeconomic instrumentalization. Their presence in the PoAB, particularly in deep sea terminal operations, constitutes a geoeconomic vulnerability, as ownership of such infrastructure can be leveraged for influence.

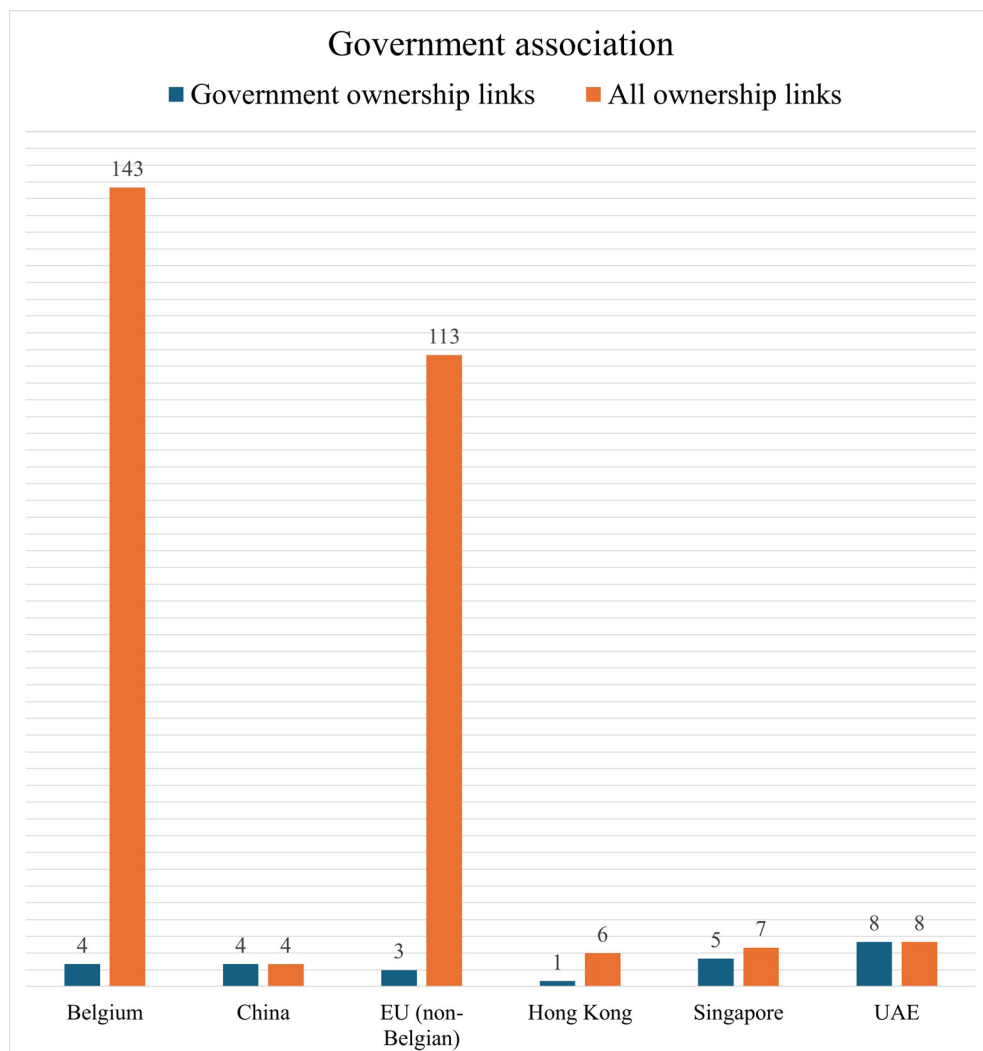


Figure 3.2: Government association

The general distribution of company ownership in the PoAB illustrates a dual reality; European control prevails, providing a degree of strategic resilience to port operations. Simultaneously, foreign ownership is embedded in the port's operational fabric, creating potential geoeconomic leverage. The presence of state-linked entities, including to non-EU countries, underscores that threat. From a geoeconomic perspective, the coexistence

of regional anchoring and international integration is significant. It suggests that landlord ports can attract global capital and expertise, supporting competitiveness, without fully relinquishing operational control. However, it also underscores the need for vigilance where foreign stakes intersect with high-leverage assets or state-linked entities.

Sector-level filter

The sectoral distribution of ownership in the Port of Antwerp-Bruges reveals that foreign involvement is not uniform. Some countries are involved across the whole port, while the presence of others is concentrated in strategically relevant sectors (Figure 3). Terminal operators are predominantly Belgian and EU-owned, yet actors explicitly linked to foreign states, like Singapore and the UAE, hold stakes in deep-sea terminals specifically (Figure 2, 4). Critical assets like deep-sea terminals handle a substantial share of the PoAB's throughput, translating limited foreign presence into significant operational leverage. Meanwhile, storage and warehousing, essential for supply chain resilience, is largely European controlled but includes links to Bermuda and Hong Kong, signalling foreign exposure in logistics and inventory management. Similarly, manufacturing activity within the port shows European dominance, yet foreign participation by Switzerland, the USA and Japan ties industrial operations to external supply chains. Furthermore, maritime and port services, responsible for vessel manoeuvring and operational support, features foreign stakes from the UK and USA, indicating potential influence over critical service functions. These patterns underscore that strategic vulnerability is not merely a function of aggregate foreign presence but of positional ownership in high-leverage sectors, where control over a small number of assets can yield disproportionate influence. The involvement of state-linked enterprises, particularly from the UAE, Singapore, and China, amplifies this risk by introducing direct links with foreign government interests. Finally, the port-related transport sector stands out, showing a robust regional ownership pattern: Belgian ownership exceeds 50%, complemented by EU ownership, leaving only a limited share (22.59%) of the sector to foreign investors.

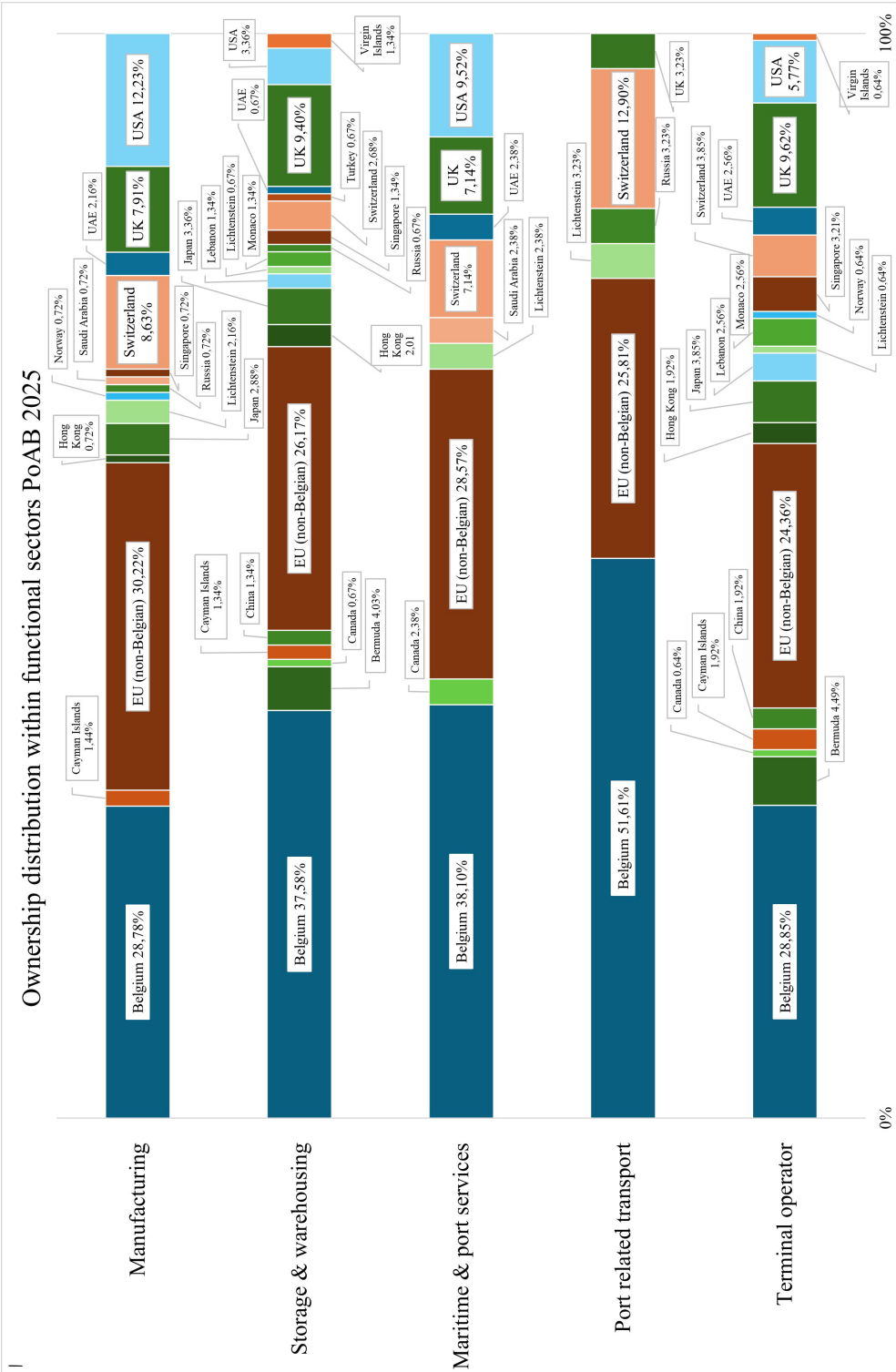


Figure 3.3: Ownership distribution within functional sectors PoAB 2025

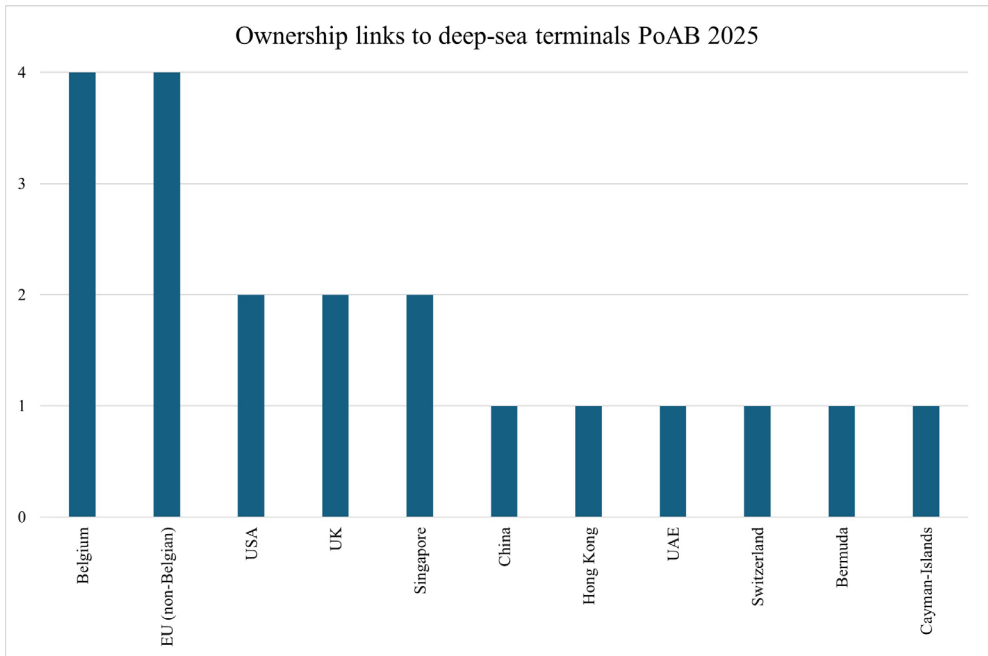


Figure 3.4: Ownership links to deep-sea terminals PoAB 2025

Conclusion

Considering ongoing geopolitical fragmentation, the rise of geoeconomics as foreign policy strategy is highly relevant in the context of ports. Employing a geoeconomic perspective, this paper discussed the role of ports as potential tools and targets in geoeconomic competition. Specifically, it argued that the landlord model of port governance, prevalent among European ports, contains a structural geoeconomic vulnerability, as foreign ownership of port companies may be instrumentalised by states to support strategic objectives.

Following this geoeconomic conceptualisation of ports, this paper conducted a case study of the Port of Antwerp Bruges to map diverse ownership of companies located within the port, utilising an approach that surpasses a narrow focus on a single country, specifically looking beyond the existent bias towards China in studies on foreign involvement in ports. The case study revealed diverse ownership of companies in the PoAB: while Belgian and EU actors maintain a dominant presence, foreign ownership is deeply embedded in the port's operational fabric. Moreover, the analysis unveiled the involvement of state-linked entities from various countries. The links to SOEs, notably from the UAE, China, and Singapore,

introduce a direct connection between port operations and foreign governments. This aligns with geoeconomic theory, emphasising that SOEs are highly suitable as geoeconomic tools; ownership is not always merely commercial, but can embed strategic intent into port operations. Third, the empirical analysis found sectoral concentration of foreign influence. The PoAB's geoeconomic vulnerabilities are not evenly distributed across port activities but concentrated in high-leverage sectors. Terminal operators are largely Belgian and EU-controlled, yet foreign actors like Singapore and the UAE hold stakes specifically in deep-sea container terminals. Similarly, foreign involvement in storage and warehousing, port-related transport, and maritime services embeds external influence in logistics and operational continuity. These sectoral patterns demonstrate that positional ownership matters: control over a few critical assets can yield strategic leverage.

Altogether, this paper demonstrates that foreign ownership is embedded in the operational fabric of the PoAB, reveals the involvement of SOEs, and shows concentration in high-leverage sectors; findings that align with a geoeconomic conceptualisation of foreign involvement in ports as a strategic threat. Importantly, this threat does not emanate from China alone, but involves multiple countries. Furthermore, the paper found that despite the landlord port model's openness, local and regional control is ensured by the dominance of Belgian and EU actors across port operations. This resilience demonstrates that openness can coexist with strategic autonomy in landlord ports.

In combination, these findings suggest that the challenge is not to eliminate foreign involvement altogether, as doing so would harm competitiveness, but to manage it strategically, mitigating risks while leveraging opportunities for innovation and growth. How to address this challenge should follow from further research. In addition, it would be useful to apply the theoretical framework and methodology employed in this paper to study potential geoeconomic vulnerabilities in other major European ports, like the port of Rotterdam. Doing so would allow comparative analysis, and by extension an assessment of the resilience of the European port system more broadly.

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Hybrid Operations in the Baltic Sea Region

Some Observations and Implications for the Maritime Domain¹

Niklas Granholm

Introduction

This article focuses on the ongoing hybrid operations in the Baltic Sea region. The developing nature of the operational and strategic situation makes some aspects of the sourcing difficult. Though the subject has many and wide-ranging implications, three main questions are addressed:

1. How has the hybrid warfare operations and countermeasures in the Baltic Sea region developed?
2. What might lie ahead on the operational level?
3. What are the implications for longer-term maritime strategy in the Baltic Sea region in a turbulent situation?

The Baltic Sea region under change – an ongoing hybrid operation

From an environmentally challenged but largely peaceful region for the past decades and an extensive dependence on seaborne trade, the Baltic Sea region is now in the midst of an undeclared war in the maritime domain.² A hybrid war – by no means limited to the maritime domain or the Baltic Sea region – is ongoing.³ The Baltic Sea region is confined, congested and now also contested.

The hybrid war in the maritime domain in the Baltic Sea region can be said to have begun with the sabotage of the Nordstream gas pipelines in September 2022. Though some incidents had occurred before then, the Nordstream sabotage substantially shifted perception and galvanized nations around the Baltic Sea into action. Since then, a number of telecommunication and power cables as well as pipelines have been cut or damaged.

¹ The article is based on a presentation at The Rotterdam Sea Power Symposium held on 7–8 April 2025. It is drawn from recent studies and analyses undertaken at the Swedish Defence Research Agency (FOI) and other openly available unclassified information. The article is written in a personal capacity.

² Niklas Granholm, "Havens roll i det nya säkerhetsläget," *Kvartal*, January 24, 2024.

³ Definitions of the incidents on land, in the air and at sea in the past few years vary. Even though by some analysts it is seen as contentious, this author has chosen to use "hybrid warfare." Hybrid warfare in the context of this article is when attacks on civilian and military infrastructure as well as attacks on key individuals are used to influence an adversary, preferably without any clearly identifiable sender. Supporting cyber, information and influence operations are aimed at a society from an outside aggressor to obfuscate, confuse and sow doubt in order to attempt delaying relevant responses and psychologically weaken the opponent over the long term. Hybrid warfare is seen as support preceding an open conflict.

Safe and secure seaborne trade, energy imports and exports, telecommunications and the maritime environment are now clearly under threat.

This development takes place against the backdrop of momentous shifts in transatlantic security relations. At the time of writing, it is not clear to what extent the United States will continue to contribute to the defence of Europe. The U.S. National Security Strategy, released in early December of 2025, points out American strategic priorities: a focus on the increasing challenge that China poses in the Pacific region and an unclear priority of aiming for “strategic balance” with Russia, which is no longer described as a threat.⁴ More disturbingly, Europe is regarded as a problem to be actively countered by the US. The contours of a new version of the 19th-century Monroe Doctrine are clearly expressed. However, it remains unclear to what extent the goals stated in the strategy will be implemented, or how. In turn, it raises the question of what role NATO will play in the future. The alliance is clearly at a crossroads, should the US no longer be interested in standing shoulder to shoulder with European democracies against authoritarian and totalitarian regimes.

What the coming increases in defence expenditures among the European NATO allies will be spent on is ongoing in what will prove to be a fast-moving and complicated process with an outcome difficult to predict.

These momentous changes in the strategic environment will have impact on the hybrid situation in the Baltic Sea region, how it is managed and what priorities it will be given.

Modus operandi

The main *modus operandi* for the hybrid operation in the Baltic Sea region has until now been to inflict damage to seabed infrastructure by dragging a ships’ anchor, purportedly dropped by accident or due to faulty equipment, while underway. Sometimes the anchor is dragged along the seabed for hundreds of nautical miles, without being detected by the ship’s crew.

While accidents like these occasionally do happen, events in the past few years have occurred too frequently and are too geographically focused to the shallower parts of the Baltic Sea – from the Gulf of Finland, through the Baltic Sea east of Gotland down to the Belt and Öresund straits – where much of the seabed infrastructure is located. Telecommunication cables, power cables and pipelines have been damaged. The number of incidents rose from almost none before 2022, to about a dozen anchor dropping incidents until the spring of 2025. These

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⁴ National Security Strategy of the United States of America, The White House, November 2025, 2025-National-Security-Strategy.pdf.

anchor dropping incidents happen too often and too frequently in a limited geographical area to credibly blame them on adverse weather, poor seamanship or faulty equipment.

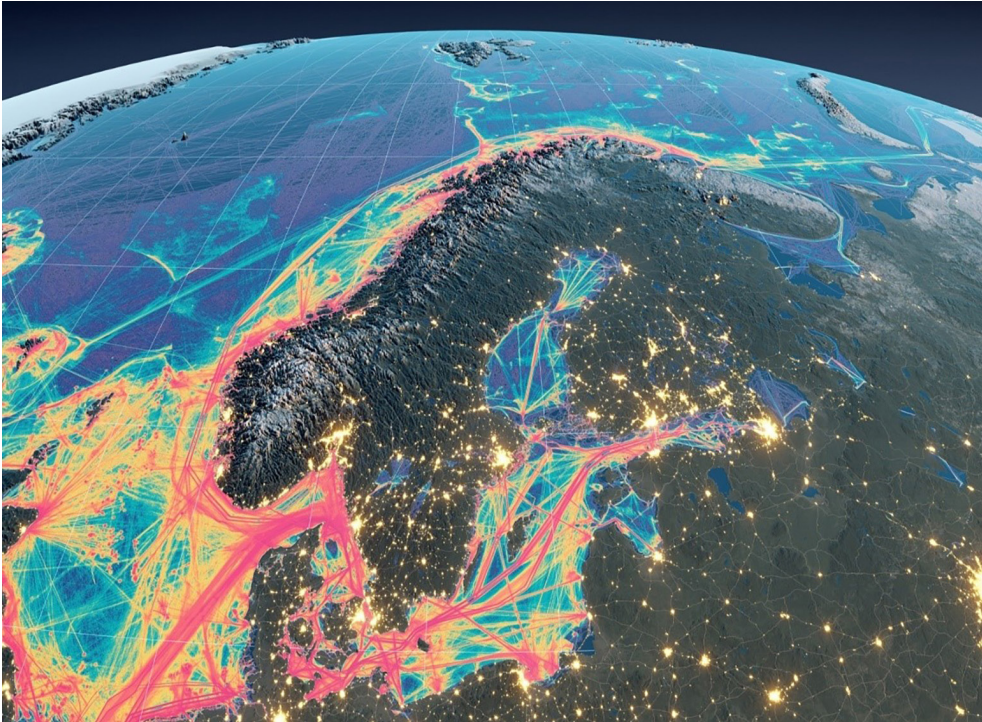


Figure 4.1: Overview of the Nordic region. Image by Swedish Armed Forces

The maritime components of the hybrid operation are also accompanied by a coordinated flood of falsehoods and half-truths. The purpose of the perpetrator is an attempt to shift focus and insert an element of uncertainty in order to delay a more coordinated response from the attacked party or entice Europe to react in the wrong way. Efforts by the aggressor in the information domain constitutes an integrated component of the overall hybrid operation. Thus, the explanations given by involved ships masters, shipowners and crew, simply do not bear the hallmark of credibility.

The advantage to the attacker is that these operations are relatively low-cost, since commercial shipping is used and can be maintained for a long time, and that the attempt to explain it as accidents, or blame faulty equipment, provides an element of deniability.

The bigger picture

Sabotage and other incidents in the maritime domain of the Baltic Sea region coincide in time with Russia's full-scale attack on Ukraine that started in late February 2022. The extensive European political, military, economic and humanitarian support for Ukraine forms part of Russia's motives for the hybrid operations across Europe. Russia already regards itself as being at war with Europe beyond Ukraine, but it is – at least for now – not prepared to cross the line to an open conflict. Hybrid warfare is a cost-effective method for Moscow, seen as a part of a continuum in warfare and support for the strategic goals: dividing and exhausting Europe and furthering the return of the former Soviet empire in one form or another.⁵

The methods used by Russia are not limited to the maritime domain or to the Baltic Sea region. A number of them are used in parallel: jamming and spoofing of navigational systems, information and influence operations, cyberattacks, attempts at fire bombings of airfreight, arson, murder of political opponents and attempted murders of industrial leaders. Together, they form part of the overall hybrid operation. The whole of Europe is affected and the realization that Russia considers itself to be at war with Europe has been slow in coming to European leaders.

In the Baltic Sea region the Russian shadow fleet, designed and organized in order to circumvent Western sanctions on oil exports that fuel the Russian war economy, is a cause for concern also in other ways. The ships involved are often aging, with questionable technical status, under- or uninsured and often bearing a flag of convenience from nations with little or no maritime know-how. Sometimes the vessels have no flag state at all. The ships of the Russian shadow fleet thus constitute an added risk to maritime and environmental safety. A maritime accident with an oil-carrier in the shallow and sensitive Baltic Sea would be a massive environmental disaster. Discussions, mainly between the Baltic Sea states, are ongoing on how to better enforce existing rules on flag-states, insurance and valid port-state inspections to enter the Baltic Sea in order to decrease the risk of catastrophic accidents in the maritime domain and thus defend the rules-based order at sea.

Countermeasures – partially successful, what might be next?

The countermeasures undertaken by the European allies in and around the Baltic Sea have gradually become more effective. Coordination between Baltic Sea nations has improved, as well as intra-national coordination between sea-going government agencies, navies and owners and operators of seabed infrastructure.



⁵ Gudrun Persson, *Russian Military Thought* (Georgetown University Press, 2025), 149–150.

As a result, response times to incidents are now significantly shorter – what initially took days is now counted in hours or minutes. When an anomaly on a seabed infrastructure is detected, information is immediately passed on to data fusion centres and fed into the recognized maritime picture. Decisions on what action to undertake can then be made in short order. This enhanced tactical concept has substantially increased the chances of apprehending suspected culprits and will in turn contribute to deterrence on the operational level.

On two occasions in late 2024 and early 2025, merchant ships dragging their anchors were apprehended and brought into Finnish and Swedish waters, respectively, where they were boarded and searched. The masters and crews were interrogated and court proceedings ensued.⁶ The courts were not able to prove sabotage conclusively, and furthermore they did not attempt to charge the culprits for the lesser charge of gross negligence at sea. As a result, the ships were free to sail after the conclusion of court proceedings. It seems likely that the shipowners saw that fines and expropriation of their cargo was a distinct possibility, the vessels being prevented from earning any income while detained and investigated. The threat of the cargo being apprehended and sold to pay the fines and repairs to damaged infrastructure, was also a contributing factor. Loss of income is likely to act as a deterring factor for the shipowners that engage in this type of hybrid activity.

NATO's summit meeting of Baltic Sea Allies held in Helsinki on the 14th of January 2025, in which the EU-Commission also took part, launched a new maritime security operation for the Baltic Sea region.⁷ Operation Baltic Sentry was tasked with protecting the seabed infrastructure and enhance awareness in the maritime domain.

A planned development of NATO's regional command and control relationships coincided with the hybrid incidents. Combined Task Force Baltic (CTF Baltic) in Rostock, inaugurated in the autumn of 2024, is a German national naval HQ with a multinational staff. When activated, it forms part of the NATO chain of command structure under MARCOM in Northwood. The area of responsibility for CTF Baltic covers the whole of the Baltic Sea region: the Gulf of Bothnia, The Gulf of Finland, the Baltic Sea, the Danish and Swedish Straits, Skagerrak and Kattegat.⁸

In the spring of 2025, Baltic Sentry was augmented with an autonomous and unmanned component: Task Force X. Not much open information on its capabilities and numbers is

6 Finnish authorities apprehended, boarded and seized the MV Eagle S on Christmas Day 2024, and Swedish authorities apprehended, boarded and seized the MV Vezhen on January 26, 2025. In "both cases, damages to seabed infrastructure had been detected."

7 Niklas Granholm, "Så här kan vi inte ha det i Östersjön," *Smedjan*, February 5, 2025.

8 NATO, "Commander Task Force Baltic established," October 22, 2024, www.Mc.nato.int.

available. We can assume that Task Force X aims to contribute to a further enhancement of an augmented and comprehensive maritime situational picture in the Baltic Sea region.⁹

In addition, the Joint Expeditionary Force, JEF, consisting of men-of-war and marines of several Northwestern European countries and led by the United Kingdom, set up a parallel operation, Nordic Warden.¹⁰ This operation uses AI-supported analysis to locate ships of interest and ships of special interest. Nordic Warden's Area of responsibility includes the whole of the Baltic Sea region, the North Sea and the English Channel. Nordic Warden is continuously coordinated with NATO through exchange of information and analyses.

From the spring of 2025, no further damages to seabed telecom, power cables or pipelines have occurred. The combined efforts of the Baltic Sea nations, NATO and JEF have most likely contributed to this result. Still, the question of causation versus correlation presents itself. The developing strategic situation, the ongoing hybrid warfare campaign in Europe and the combined countermeasures taken together, points to causal effects rather than mere correlation. This author is of the opinion that it is reasonable to draw the conclusion that the countermeasures undertaken so far have had the desired deterrent effect.

However, the inherent flexibility of the hybrid operational concept also means that an aggressor can choose to attack in a different manner and with other methods. During the autumn of 2025, at least three new methods by the perpetrators have been observed. First, drones have been used to fly over civilian and military airports and industrial infrastructure, resulting in disruption and even closing of airports. In some cases, these drones seem to have been launched from ships passing in exclusive economic zones of coastal nations.¹¹ Merchant vessels acting as drone carriers are something of a novelty. A second development is the observation of armed guards aboard ships of the shadow fleet, ostensibly to complicate boarding from government agencies of the nations in Northern Europe. A third recent development is a change in patrol patterns of Russian naval vessels and the use of Russian air force assets, ostensibly to support Russian flagged commercial vessels in the Baltic Sea region.¹²

The main hybrid methods of anchor dropping seem to have stopped since the spring of 2025. While new methods have emerged, the old can return if the aggressor sees an opportunity or

9 NATO, "NATO TASK FORCE X: Deterring Today and Protecting Tomorrow," January 31, 2025, www.act.nato.int.

10 Joint Expeditionary Force, "NORDIC WARDEN enhances protection of critical undersea infrastructure," June 10, 2024, www.jefnations.org.

11 The Economist, "The Baltic Deep Trouble," January 3, 2026.

12 Joseph Ataman, "Russian fighter jet protects 'shadow fleet' vessel in first such move by Moscow, officials say," CNN, May 21, 2025, <https://edition.cnn.com/2025/05/20/europe/russian-fighter-jet-shadow-fleet-intl-cmd>.

endeavours to test European resolve and readiness.¹³ Continuous vigilance and tactical and operational imagination are clearly needed to anticipate what might come next.

Implications for long-term maritime strategy

The long-term pattern for the Baltic Sea region has been that the smaller coastal nations, in order to safeguard their security and ensure stability in the region, have balanced their security policy against Russia by bringing in powers from beyond the region. In the eighteenth and nineteenth centuries, for Sweden's maritime domain, the British Royal Navy, and later the French and Imperial German navies, provided the sought after balance of power against imperial Russia in the Baltic Sea and the High North.¹⁴ During the Cold war, Sweden enacted a policy of non-alignment in peacetime with the aim of neutrality in war. This declaratory policy was complemented with hidden and highly secret security guarantees from individual western powers, but not from NATO, in case of war with the Soviet Union. With Sweden and Finland both now part of the North Atlantic alliance, the previous arrangements have come to an end due to Russia's brutal and aggressive imperialistic attempts to subjugate Ukraine. The military-strategic setup in Northern Europe is fundamentally changing. The impact on the maritime domain is substantial.

The developments in the past few years in the Nordic-Baltic region, with an undeclared hybrid war and threats to the maritime environment, takes place against the backdrop of profound and fast-moving events on the strategic level.

The current arrangement for Europe is collective deterrence within the NATO alliance. In the maritime domain, this calls for a combination of active naval and maritime resources to ensure safe and free access for all to the sea and protection of maritime infrastructure.

For Russia, the Baltic Sea constitutes a vital and, for most of the year, ice-free Sea Line of Communication, which sees around 50 per cent of all its sea-borne trade. With the Kaliningrad exclave and the innermost part of the Gulf of Finland providing the only access to the Baltic Sea lanes, the Baltic Sea takes on an existential aspect for Russia. Combined with an aggressive imperialistic and threatening policy including the use of force towards its western neighbours, the Baltic Sea region plays a central role for alliance deterrence.

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13 An attempt to test resolve and readiness may have occurred on December 31, 2025. Finnish authorities boarded and seized the MV Fitburg in the Gulf of Finland, operating with its anchor down that caused damage to telecom cables between Estonia and Finland. The incident has a clear likeness to the seizure of MV Eagle S and MV Vezhen a year earlier. See "Finland and Estonia Cooperate on Investigation into Damaged Telecom Cables", *Maritime Executive*, January 2, 2026, <https://maritime-executive.com/article/finland-and-estonia-cooperate-on-investigation-into-damaged-telecom-cables>.

14 Ove Bring, *Sveriges allianser genom 200 år* (Ekerlids, 2025). Between 1814 and 1905, the Kingdoms of Sweden and Norway were in union. Security guarantees were provided by France and the United Kingdom in the Baltic Sea region and the High North in case of Russian aggression. This arrangement lasted from 1855 to 1907.

A credible naval and military capability for sea control of the Baltic Sea region is now a clear priority. With all the Baltic Sea nations, bar Russia, now in the NATO alliance, the ultimate aim is to prevent all attempts to use the sea for offensive operations against Europe. The sea lanes in the Baltic Sea region are to be kept safe and open to the greatest extent possible. In an open conflict, deployment of reinforcements and resupply across the Baltic Sea to support operations in Finland, the Baltic states and Poland becomes paramount. A complicated force generation process is ongoing, both nationally and within NATO. It seems likely that enablers such as space, intelligence capabilities, strategic airpower, the information domain, the cyber domain, deep-strike capabilities as well as air- and land power, will be included.

Such a multi-domain operational perspective on possible open conflict in the Nordic-Baltic region stands out starkly due to the narrow Baltic Sea in relation to the range and precision of modern weapon systems. Recent technological advances of unmanned and autonomous weapons and the role they play in the Russo-Ukrainian war on land, in the air and not least at sea, speak for itself.¹⁵

The realisation that the worsening threat requires additional funding, has led to substantial increases in defence spending that will have effect in the next five to ten years. Funding itself will be less of a problem rather than the time available is short to translate allocated funds into actual operational capabilities in order to achieve a sufficient level of deterrence. It is hard to make up for lost time.

The impact on the maritime domain is substantial, especially for Sweden. The Cold war structure and stance of the Royal Swedish Navy was one of naval sea-denial and coastal anti-invasion defence. The Soviet naval and amphibious forces of the Baltic fleet were to be prevented from controlling the Baltic Sea and attempts at an amphibious landing were to be prevented and defeated with an offensive operational and tactical stance. The sea lanes on Sweden's west coast were to be kept open to provide for imports and materiel support from Western nations. Post-Cold war, strategic optimism led to substantial retrenchments of the Swedish armed forces. Upwards of 90 per cent of the Swedish armed forces war-time mobilizable units were disbanded. Civil defence was even entirely disbanded.

As a result of the strategic developments in the past ten years, a very different concept for naval and maritime force structure and stance is emerging.¹⁶ As a member of NATO, Sweden is supporting the allies on the east coast of the Baltic Sea: Finland, Estonia, Latvia, Lithuania and Poland. The main maritime task has shifted from a focus on defence in a Cold War setting to establishing and maintaining sea control in the Baltic Sea region within an alliance context.

15 Niklas Granholm, "Russia's War Against Ukraine in the Black Sea," *Tidskrift i Sjöväsendet*, no. 4 (2025).

16 Niklas Granholm, *En blå tråd. Förändrade förutsättningar för svensk sjömakrt i ett långsiktigt försämrat säkerhetspolitiskt omvärldsläge*, Swedish Defence Research Agency, FOI Memo 8903, June 6 2025.

In addition, the operational area has expanded and now includes Skagerrak, Kattegat, the North Sea and the North Atlantic. There is also a possibility of an “away-game”, a maritime security operation within a coalition of the willing further away from traditional waters, for example in the Indo-Pacific region. All of this has implications for structure, numbers, capabilities and decision-making of the Swedish armed forces.¹⁷

In addition, there has been a recent change in NATO’s command and control relationships: Sweden and Finland, initially part of the Joint Forces Command Centre in Brunssum (JFC-C) shifted in early December 2025 to Joint Forces Command Norfolk, Virginia (JFC-N).¹⁸ Iceland, Norway, Denmark, Sweden and Finland are now all part of the same strategic command. JFC-N has its main operational focus on the Nordic region, the North Atlantic, the High North and the Arctic. It remains to be seen to what extent and in what ways this will impact on NATO’s management, plans and resource allocation for the maritime domain, which arguably is less of a priority for JFC Centre.

Conclusion

The ongoing and profound changes to the strategic and operational environment have led to a Baltic Sea region that is no longer the quiet backwater it was in the decades after the end of the Cold war. Further, it remains an open question what American naval and military support can be expected for deterrence in the Nordic-Baltic region. Added to that, the U.S. Navy is undergoing a structural crisis and it has pressing operational tasks elsewhere. Assets that Washington might provide to the European, Nordic-Baltic and Arctic regions, in an even worse situation than today, should be seen as a welcome bonus, but Europe should not automatically count on them. This development has of course clear implications for future efforts and capability development for safety and security in the maritime domain.

In addition, the ongoing hybrid campaign continues to impact the maritime domain in the Baltic Sea region as well as elsewhere in Europe. While managing the ongoing tactical and operational challenges, a new maritime structure is being built where the task of sea control in an alliance context is the main change. This will in turn have far-reaching impacts on numbers, structure, technology, command and control relationships, optimization of an operational stance, and cooperation. A new railway is being laid, so to speak, while the train is rolling down the track.

17 The Royal Swedish Naval Society, “Marinen i ett allierat Sverige – Nya utmaningar och uppgifter i en osäker tid,” *Tidskrift i Sjöväsendet*, no. 5 (2025).

18 Joint Forces Command Norfolk, “NATO JFC Norfolk welcomes Finland, Sweden and Denmark to its Area of Responsibility,” December 5, 2025, <https://jfcnorfolk.nato.int/activity/joint-force-command-norfolk-welcomes-nordic-allies-to-its-area-of-responsibility>.

All assets that NATO members in the Baltic Sea region as well as other member states can provide to support deterrence in the Baltic Sea region will be vital to maritime safety and security. In what ways we choose to develop cooperation to uphold deterrence, points to the need for a qualitatively different discussion on defence and security among allied nations in and around the Nordic-Baltic region. Clearly, it will not be plain sailing, and time is of the essence.

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“Russian fighter jet protects ‘shadow fleet’ vessel in first such move by Moscow, officials say.” *CNN*, May 21, 2025, <https://edition.cnn.com/2025/05/20/europe/russian-fighter-jet-shadow-fleet-intl-cmd>.

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Theatre of Tension

Balancing Deterrence against Conventional and Grey-zone Threats in the Baltic

Julian Pawlak

Introduction

European nations need to respond to numerous military and strategic challenges related to Russia. Not only in the maritime domain, the Nordic-Baltic region remains a linchpin. Next to the issue of fostering collective defence in consideration of a potentially conventional armed conflict, the increasing grey-zone challenge below the threshold of armed conflict is omnipresent: espionage and drone flights over critical infrastructure, cyberattacks, disinformation, sabotage, weaponized migration, GPS jamming and spoofing, and even assassinations are being linked to Russian origin. Incidents in the maritime domain, however, particularly against critical underwater infrastructure (CUI), are unique in several ways. Those actions complicate the attribution process, hindering traditional deterrence strategies. Next to the frequent (and sometimes plausible) deniability, self-deterring fears considering an overly aggressive response may prompt Russia to frame such as a form of bullying, suggesting a need to react with military means. Inaction, on the contrary, risks signalling acquiescence and potentially encouraging further attacks.¹ For example, the Christmas day *Eagle S* incident² is most likely no coincidence. NATO and Europe must acknowledge it as part of a multilayered campaign to stress vulnerabilities, test reactions, surge distrust – and eventually level the field for a potential conflict. Russian hybrid methods are successfully expanding its influence, destabilizing and disrupting the West, and evading containment.³

Lacking a decisive defeat, the Russian military potential is expected to rise in the upcoming years, both in terms of capabilities and capacities, and encouraged by its efforts against Ukraine. Despite countless warnings and analyses since the beginning of the Russian Federation's aggressive behaviour against its neighbours, today the European challenge more than ever is about deterrence in light of a potential deterrence vacuum.⁴ Whilst acknowledging the personal and material capacities as the ultimate foundation to even think about deterrence effectively, this article focuses on the conceptual and policy approach

1 Gabriella Gricius, "Hybrid Attacks Rise on Undersea Cables in Baltic and Arctic Regions," *Eurasia Daily Monitor* 22, no. 14 (2025), <https://jamestown.org/program/hybrid-attacks-rise-on-undersea-cables-in-baltic-and-arctic-regions/>.

2 Alexander Lott, "Christmas Day Cable Cuts in the Baltic Sea," *EJIL:Talk!*, December 31, 2024, <https://www.ejiltalk.org/christmas-day-cable-cuts-in-the-baltic-sea/>.

3 Jack Watling, Oleksandr V. Danylyuk, and Nick Reynolds, "The Threat from Russia's Unconventional Warfare Beyond Ukraine," *RUSI Special Report*, 2022-24, 3.

4 Anders Puck Nielsen, "Donald Trump and the risk of a NATO-Russia war," *Logic of War*, February 5, 2025, <https://www.logicofwar.com/donald-trump-and-the-risk-of-a-nato-russia-war/>.

to deal with the multilayered competition Russia is waging against the West. In such, conventional deterrence and collective defence cannot be separated from hybrid activities in the grey-zone below the threshold of armed conflict. European allies must not only deter a conventional war, but also sub-threshold actions. Focusing on the maritime domain and the Baltic Sea region, it highlights the need to adapt deterrence by denial, punishment, and detection to prepare European societies for the challenges that are only increasing in the future.

Maritime threat landscape

Europe and NATO are facing a revisionist Russian Federation on a strategic scale unprecedented in post-Cold War Europe. By developing through a period “from Cold War to Hybrid Wars”⁵ and being encouraged⁶ by its invasion efforts against Ukraine, the Russian perception acknowledges itself already in an ongoing war against the West – not only within Ukraine, but also beyond. Especially since the full-scale invasion of 2022, the continuation of its war against Ukraine since 2014, those efforts spread widely around Europe. In fact, those actions are not necessarily represented by classical, conventional war efforts. They are undergone in the grey-zone, a sphere deliberately held below the threshold of being labelled an armed conflict. Whilst European nations are still dragging behind in terms of defence investments and capabilities, this development creates an even harder threat landscape. In addition to the already acknowledged and steadily enhanced threat perception of Russia as the foremost conventional challenge since 2014, an ongoing and seemingly increasing flood of actions in the grey-zone, also called hybrid threats, is challenging the West. It represents a twofold approach of destabilization efforts against Western populations, and by doing so a way of levelling the field for the former: a potential armed escalation.

In terms of relevance, the Baltic, for NATO and Europe alike, constitutes a vital basin of communication and connectivity. It serves as a key conduit for trade, energy transfer, and data transmission, with critical infrastructure spanning both the surface and seabed. At the same time, the Baltic region represents a potentially contested maritime domain, particularly as it would serve as a primary route for sustaining the three Baltic states, Estonia, Latvia, and Lithuania, in the event of armed conflict. Also for Russia, the Baltic Sea functions as a strategic lifeline, not only ensuring maritime access for trade but also providing a crucial logistical corridor to its Kaliningrad exclave. In 2024, approximately 40% of Russia’s seaborne oil exports transited the Baltic – an amount corresponding to nearly

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5 Jeremy Stöhs, *European Naval Power. From Cold War to Hybrid Wars* (Palgrave Macmillan, 2024).

6 Volodymyr Ohryzko, Roman Sohn, and Ariana Gic, “The West Must Stop Protecting Russia from the Consequences of its Actions,” *RUSI Commentary*, November 4, 2024, <https://www.rusi.org/explore-our-research/publications/commentary/west-must-stop-protecting-russia-consequences-its-actions>.

one-third of the country's annual defence budget.⁷ These dynamics underscore the region's dual significance as both a critical vulnerability and an opportunity for strategic deterrence within NATO's northern and eastern flank.

The conventional challenge

As its inherent promise of collective defence, the NATO allies' main challenge is defending each member states' sovereignty and territorial integrity against any potential attacker. In the Northern-Baltic Region, this challenge is the Russian Federation with its imperialistic and revisionist approach against the West in general and Central and Eastern European nations in particular.

In the maritime domain, the related conventional threat follows certain specifics. One should not expect large, open sea battles, not least due to the limited means in the theatre. Quite the contrary, survivability in a shallow and confined water like the Baltic is expected to be low and limited, particularly for larger vessels as the ones needed to reinforce the three Baltic states by sea. Instead, different warfighting elements could be expected in an evolving kinetic conflict, including sea mining and mine countermeasure campaigns, extensive anti-surface and anti-air activities, and limited amphibious operations.⁸ Every position in the Baltic Sea can be targeted from territory on or the airspace above the littorals, increasing the possibility of a theatre of at least temporarily mutual denial. With Russia however being limited in its local coastline and approaches, the question remains how the Russian forces and strategic leadership will adapt to this naval situation in terms of when a conflict is heating up. In fact, the dilemma is twofold. On the one hand, NATO and its members try to deter and prevent any kind of escalation in the region. Hence, Russia would have the initiative for incentivising a conflict of any kind. On the other hand, Russia is aware of the current strategic situation in the region: its limited coastline and capabilities in the maritime dimension compared to NATO forces. Russian naval vessels are not expected to withstand naval warfighting in the Baltic in the long run. In consideration of that, Russian adaptation is of huge interest. Asymmetric ways and means could be used against NATO whilst taking advantage of the given momentum. Infamous denial capabilities, both for the air and sea domain, represent means of choice and are relevant to contest NATO operations and thus logistics in the Baltic Sea, as they represent a "major challenge to military logistics in the event of war in the Baltic theatre."⁹

7 Victor Jack and Gabriel Gavin, "Baltic Sea nations eye new powers to seize Russia's shadow fleet," *Politico*, February 7, 2025, <https://www.politico.eu/article/baltic-sea-russia-shadow-fleet-undersea-infrastructure-damage/>.

8 Julian Pawlak, "Re-Thinking War in the Baltic Sea," *GIDS statement* no. 1, January 2025, https://gids-hamburg.de/wp-content/uploads/2025/01/GIDSstatement2025_01_Pawlak_20250114.pdf.

9 Matthew Thomas, "Maritime Security Issues in the Baltic Sea Region," *FPRI Baltic Bulletin*, July 22, 2020, <https://www.fpri.org/article/2020/07/maritime-security-issues-in-the-baltic-sea-region/>.

The grey-zone challenge

“Gray-zone [sic] interactions exist across the continuum of conflict, from apparent peace to all-out war. According to United States Special Operations Command (USSOCOM), these interactions are characterized by ambiguity about the nature of the conflict, opacity of the parties involved, and/or uncertainty about relevant policy and legal frameworks to address these actions.”¹⁰

Grey-zone approaches challenge the status quo through vague, non-attributional actions below the threshold of armed conflict.¹¹ Next to the incidents and activities presented above, this dynamic is particularly pronounced when it comes to CUI. The time required to investigate damage such as deliberate or accidental submarine cable damage makes it difficult to attribute the damage to a specific actor. The ambiguity surrounding the attacks in the Nordic-Baltic region thus allows Russia to employ plausible deniability, enabling it to disrupt critical infrastructure without triggering a formal state of war.

In addition to strategic disruption of connections, these activities below the threshold of armed conflict and military escalation assess the vulnerability of European states. The methods allow Russia to gauge the resilience of its adversaries to unconventional threats. From a cost-benefit perspective, such actions are relatively inexpensive compared to traditional kinetic attacks. The difficulty of monitoring maritime activities and of full-scale maritime domain awareness, combined with the use of civilian marked vessels and actors, makes such attacks difficult to prevent and to detect. As a result, attacks in the grey-zone are emerging as a viable and low-risk strategy for Russia to advance its objectives while testing the resolve and preparedness of its Western counterparts.¹²

In fact, the recent attacks on CUI, prevalent in the Baltic Sea region, are not only linked to Russian interests, but they are also consistent with Russia’s articulated broader strategic objectives. As its ongoing war is aimed against the West and not limited to Ukraine, the Russian Federation is aware of its own Baltic dependencies as well as the strategic circumstances in the Baltic Sea region. Hence, officials’ statements are already declaring the defence of Russia’s interests in the region, including untenable claims of NATO ship harassments as part of NATO’s operation Baltic Sentry, and to “liberate the Baltic Sea”.¹³



10 David J. Stuckenberg, “Re-orienting NATO Deterrence: The Reality of Strategic Gray Zone Threats,” STO-MP-SAS-141, 2019; Joseph L. Votel, “The Gray Zone,” White Paper, United States Special Operations Command, 2019.

11 Stuckenberg, “Re-orienting NATO Deterrence 2019”.

12 Gricius, “Hybrid Attacks Rise”.

13 Ntv, “Abstruse Vorwürfe an die NATO. Kreml will seine ‘Interessen im gesamten Ostseeraum’ schützen,” January 24, 2025, <https://www.n-tv.de/politik/Kreml-will-seine-Interessen-im-gesamten-Ostseeraum-schuetzen-article25513445.html>; Maya Mehrara, “Russia Issues Warning Over NATO Flotilla ‘Abuses’ in Baltic Sea,” *Newsweek*, January 24, 2025, <https://www.newsweek.com/russia-issues-warning-over-nato-flotilla-abuses-baltic-sea-2020188>; Russia Media Monitor, “Alexander Kazakov explains why Russia is cutting undersea cables,” *YouTube*, January 6, 2025, <https://www.youtube.com/watch?v=HQATDINMI-M>.

Baltic Sentry increases NATO's maritime domain awareness successfully, and, at the time of writing, no similar incidents have been registered since its implementation – but this activity cannot be continued in its current ways endlessly, as allied vessels are needed around European shores and beyond. Therefore this war against the West “will continue until Putin tastes defeat”.¹⁴ This is leading back to the issue that “the inability to deter strategic attacks within the grey-zone is a failing of deterrence within the contemporary defense context.”¹⁵ Since the beginning of Russia's incursion into Ukraine 2014, and especially 2022, grey-zone activities and hybrid incidents with and without immediate involvement of Russia's armed forces have increased drastically and have not yet been deterred.

It means to punish the West for its support of Ukraine, increasing costs and surface vulnerabilities without risking immediate response. But there is more: the continuation of hybrid actions in the grey-zone has the potential of becoming a way of *levelling the field* for a conventional, (limited) armed conflict in form of a military escalation when most suitable for Russia. Simultaneously, CUI themselves become targets for grey-zone and conventional attacks in case of conflict. In such anticipation, the link between the conventional and grey-zone challenge becomes apparent. Actions in the latter would be not limited to CUI incidents, but a culmination of sabotage, territorial incursions, and shipping problems creating a flood of “accidents” in the region. NATO acted calmly in reaction to the mass of drone sightings as in Poland and Denmark. Yet, provocations could lead to escalation, and a Russian legitimization to “respond” on the Baltic's east coast, towards the Baltic states and to threaten the Suwałki Gap, eventually.¹⁶ Keeping in mind the given initiative to deliberately start a conflict, such hybrid overload, combined with disinformation and destabilization efforts to question allied civilian and military capabilities and thus coherence, would be most welcome by Russia.

Dealing with the threat

Russia uses both conventional and unconventional ways and means as instruments of power and in an integrated manner. The conventional threat of escalation serves as a deterrent against retaliation for unconventional activities, expanding the range of actions that Russia can take without facing significant consequences. Conversely, the unconventional operations conducted by Russia and its services are *also* designed to create favourable conditions for the effective use of military force.¹⁷ The issue of this assessment is represented

14 Andriy Zagorodnyuk, “Russia's war against the West will continue until Putin tastes defeat,” *Atlantic Council UkraineAlert*, February 4, 2025, <https://www.atlanticcouncil.org/blogs/ukrainealert/russias-war-against-the-west-will-continue-until-putin-tastes-defeat/>.

15 Stuckenberg, “Re-orienting NATO Deterrence 2019,” 2.

16 Russia Media Monitor, “Alexander Kazakov explains”.

17 Watling, Danylyuk, and Reynolds, “The Threat from Russia's Unconventional Warfare Beyond Ukraine,” 1.

by the combined approach of Russia, trying to undermine Western security, defence, and cohesion in an integrated manner – whilst the West’s responses to this integrated challenge remain fragmented, often discordant, and too slow. One can argue that the Western fear of escalation results in weak responses to hybrid operations which in turn encourage Russia to continue its efforts against the West.

However, the alliance has been actively establishing mechanisms to counter hybrid threats within the grey-zone. Today, it is becoming evident that these adaptations must be institutionalized as a core component of the alliance’s strategic framework. Efforts to overcome political and logistical barriers to information sharing are critical. Also, exercises are vital in ensuring the alliance’s preparedness to respond effectively to threats that encompass both conventional and unconventional threats.¹⁸ NATO’s newly established Maritime Centre for Security of Critical Undersea Infrastructure has been an important step to tackle the issue of situational awareness. As acknowledged by professor James Bergeron, MARCOM’s long-term political advisor, the challenges of protecting CUI are significant. He highlights the strategic approach to prevent deniability: “If a malefactor is going to try to harass, undermine or clandestinely attack offshore infrastructure, undersea infrastructure, the main thing we seek to achieve is that they cannot get away with it. Instead, they will be spotted, the cameras will be snapping, the underwater sensors will be monitoring and there will be a signals trail of liability, so that they’re not going to be able to deny their actions and will ultimately be held liable.”¹⁹

In that light, Baltic littorals are exploring new approaches to deter hybrid attacks. The European Union intends to safeguard undersea cables through the deployment of advanced detection technologies.²⁰ It recommends the individual, national approach to react and therewith deter malign behaviour, as the Finnish Border Guard did in December 2024.²¹ NATO’s Baltic Sentry intends “to deter any future attempts by a state or non-state actor to damage critical undersea infrastructure.”²² Yet, those actions are rather addressing symptoms. The long-term integration is to include surveillance efforts of public and private sectors with military and law enforcements actors to create sufficient and productive

18 James H. Bergeron, “The Complex Function of Exercises in a Maritime Strategy of Deterrence,” in *From the North Atlantic to the South China Sea. Allied Maritime Strategy in the 21st Century*, ed. Julian Pawlak and Johannes Peters (Nomos, 2021), 337–348; Marc Ozawa, “Adapting NATO to grey zone challenges from Russia,” in *NATO 2030: new technologies, new conflicts, new partnerships*, ed. Thierry Tardy (NATO Defense College, 2021), 19–32, 78.

19 NATO Maritime Command, “NATO officially launches new Maritime Centre for Security of Critical Undersea Infrastructure,” May 28, 2024, <https://mc.nato.int/media-centre/news/2024/nato-officially-launches-new-nmcsui>.

20 European Union External Action Service, “Joint Statement by the European Commission and the High Representative on the Investigation into Damaged Electricity and Data Cables in the Baltic Sea,” December 26, 2024, https://www.eeas.europa.eu/eeas/joint-statement-european-commission-and-high-representative-investigation-damaged-electricity-and_en.

21 Ibidem.

22 NATO Supreme Headquarters Allied Powers Europe, “Baltic Sentry To Enhance NATO’s Presence In The Baltic Sea,” January 14, 2025, <https://shape.nato.int/news-releases/baltic-sentry-to-enhance-natos-presence-in-the-baltic-sea>.

cooperation which enhances security of those maritime installations in times absent of war by increasing its deterrent in the grey-zone. It also contributes to a maritime surveillance and awareness picture that supports the allies' armed forces in their potentially needed acts of collective defence. In such terms, for scholars and practitioners it has been clear for years that the most pressing European challenge remains that Europe must urgently prepare to deter Russia without large-scale US support.²³

Conceptual framework

The deterrence concept to respond to the multilayered challenge is manifold. It must include traditional elements as deterrence by denial and by punishment, the explicit deterrence tailored to address threats in the grey-zone, and should eventually seize elements and ideas of integrating deterrence.

Traditional deterrence, grey-zone deterrence

Traditional deterrence consists of two parts. Deterrence by denial, which aims to convince potential adversaries that their objectives are unachievable, or at least too costly to pursue. This approach focuses e.g. on increasing NATO's ability to withstand attacks by fostering its defence capabilities. It makes aggression unlikely to succeed and *denies* attaining the respective objectives of military force.

Deterrence by punishment involves threatening to inflict unacceptable costs on an adversary through retaliation after an attack. This approach relies on the threat of severe consequences to discourage aggression whilst also aiming at altering the aggressor's cost-benefit calculation. Yet, the punishment is not limited to the geographical location of the aggression and can follow anywhere else, as for the defender's advantage. Punishment can also involve the potential use of nuclear weapons, as underlined by the concept of mutual assured destruction.²⁴

Deterring hybrid maritime threats in the grey-zone requires a conceptual shift in the understanding of deterrence. This approach requires going beyond the traditional notions of military power projection and embracing an additional, more nuanced, multi-dimensional strategy. This concept integrates elements of denial and punishment, but also incorporates

23 Justin Bronk, "Europe Must Urgently Prepare to Deter Russia Without Large-Scale US Support," *RUSI*, December 7, 2023, <https://rusi.org/explore-our-research/publications/commentary/europe-must-urgently-prepare-deter-russia-without-large-scale-us-support>.

24 Michael J. Mazarr, "Understanding Deterrence," in *NL ARMS Netherlands Annual Review of Military Studies 2020*, ed. Frans Osinga and Tim Sweijts (T.M.C. Asser Press, 2021), 13–28.

the idea of deterrence by detection, where enhanced situational awareness and attribution capabilities themselves serve as deterrents. Deterring grey-zone threats also emphasizes resilience as a form of deterrence, where the ability to quickly recover from and adapt to attacks ideally reduces their strategic value to adversaries. By conceptualizing deterrence in this holistic way, the complex, often ambiguous nature of maritime grey-zone activities can be addressed more effectively.

Old wine in new bottles?

Such an approach itself is not new, as well as disguising (military) acts are not modern warfare, remembering Sun Tzu's Art of War and the idea to "subdue the enemy without fighting is the acme of skill".²⁵ More recently though, at least since the *hybrid hype* following Frank Hoffmann's definition in 2007, the infamous prescription of an alleged shift in Russian strategic thinking prescribed to the Russian Chief of General Staff in 2013, as well as the Russian incursions of little green men against Ukraine in 2014, hybrid threats in the grey-zone and approaches to handle them were discussed.²⁶ In a NATO context, its Flexible Response strategy from 1967 aimed to deter Soviet aggression by maintaining a range of conventional and nuclear military options to respond proportionately to various levels of threats. Furthermore, the attribution problem due to maritime particularities and the hardly visible seabed reminds of the complexity in the cybersphere. Both environments present difficulties in definitively identifying perpetrators due to the potential for anonymous or disguised actions, as well as the complex nature of the domains which can obscure the origins and methods of attacks if not adequately secured or watched. Hence, responses to the maritime grey-zone challenge follow traditional approaches of denial and punishment. Whilst the former focuses on resilience and redundancies, the latter relies on clearly articulated responses to certain actions but necessitates attribution, which is a difficult task in the maritime domain.

Balancing deterrence in the maritime domain

Today the need is apparent to respond to both conventional and hybrid threats in the grey-zone. The combination of public and private sector, of military and non-governmental actors, leads to balancing and integrating deterrence as a potential approach.

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25 Sun Tzu, quoted in *Oxford Essential Quotations*, ed. Susan Ratcliffe (Oxford University Press), <https://www.oxfordreference.com/view/10.1093/acref/9780191843730.001.0001/q-oro-ed5-00010536>.

26 Frank Hoffmann, *Conflict in the 21st Century: The Rise of Hybrid Wars* (Potomac Institute for Policy Studies, 2007); Mark Galeotti, "The mythical 'Gerasimov Doctrine' and the language of threat," *Critical Studies on Security* 7, no. 2 (2019): 157-161, <https://www.tandfonline.com/doi/pdf/10.1080/21624887.2018.1441623>.

As Mazarr and Ke explain, integrated deterrence refers to the concept that, amidst an increasing revisionist agenda by adversaries and in an era where the success of military operations increasingly relies on networks of information, command, and control, deterrence can be most effectively enhanced by optimizing the alignment of its diverse instruments of power and fostering closer integration with allies and partners. The goal is to create synergies that amplify the deterrent effect and, ultimately, the effectiveness of warfighting strategies.²⁷ It represents a comprehensive approach that combines traditional and modern deterrence strategies to incorporate elements of denial and punishment, while addressing hybrid threats and grey-zone activities. In the maritime domain, integrated deterrence leverages multi-domain capabilities, allied cooperation, and emerging technologies to create a more robust and flexible deterrent posture, which in fact offers some similarities to NATO's above-mentioned Flexible Response strategy.²⁸ Integrated deterrence includes "(1) the integration of military and non-military instruments across governments; (2) making critical infrastructures more resilient in the face of disruptive attacks – attacks meant to slow coming to the aid of US allies; (3) deny the enemy the ability to realize short, fait accompli type scenario attacks on key allies."²⁹

Flexibility could be manifested by using maritime infrastructure for sensors to collect data. This approach aims to synchronize military and non-military tools across domains to counter both state and non-state actors in an increasingly complex security environment. As in Ukraine, Mazarr and Ke write, "integrated deterrence could be conceptualized at two somewhat different levels: a narrower tactical and operational focus on synergies between effects, and a broader geostrategic emphasis on whole-of-government approaches to deterrence and conflict."^{30 31}

Translated to the maritime domain, at the tactical and operational level, it focuses on creating synergies between naval capabilities and effects, such as deploying a mix of surface vessels, submarines, maritime patrol aircraft, and uncrewed systems to increase maritime domain awareness. At the broader geostrategic level, it emphasizes coordinating military and non-military tools across domains and agencies. This could involve establishing multi-

27 Michael J. Mazarr, Ivana Ke, "Integrated Deterrence as a Defense Planning Concept," *RAND Perspective*, 2024, 3, <https://www.rand.org/pubs/perspectives/PEA2263-1.html>.

28 James A. Russell, "Flexible Response and Integrated Deterrence at Sea in the 21st Century: Implications for the U.S. Navy," *Military Strategy Magazine* 8, no. 1 (2022): 20-26.

29 Jim Garamone "Concept of Integrated Deterrence Will Be Key to National Defense Strategy, DOD Official Says," *DOD News*, December 8, 2021, <https://www.defense.gov/News/News-Stories/Article/article/2866963/concept-of-integrated-deterrence-will-be-key-to-national-defense-strategy-dod-o/>; Russell "Flexible Response and Integrated Deterrence".

30 Mazarr and Ke, "Integrated Deterrence as a Defense Planning Concept," 15.

31 As the presented element of the concept concentrates on certain aspects in the maritime domain, underlying the connectivity of national (energy) security, Mazarr and Ke describe that "The broader way of thinking about integrated deterrence would be in geostrategic terms about military, economic, political, and informational tools and how they can threaten and, if necessary, punish aggressors in more comprehensive and synergistic ways, such as in the response to Russia's aggression in Ukraine," see: Mazarr and Ke, "Integrated Deterrence as a Defense Planning Concept," 15.

agency coordination cells, strengthening legal frameworks for law enforcement, and integrating economic measures with naval presence to deter grey-zone activities, as in *Baltic Sentry*. Such an approach demonstrates how protecting critical infrastructure serves both as a deterrent against hybrid threats in the grey-zone and as a foundation for collective defence and warfighting capabilities, creating a more resilient and effective deterrent posture in the maritime domain.

Conceptual and policy recommendations for a coherent deterrent

A more coherent deterrent by and in Europe and its maritime domain is needed. As the latest Western reactions predominantly dealt with symptoms, hybrid attacks in the grey-zone will likely continue in one way or another. Completely deterring aggressive behaviour by Russia and others remains difficult. Allies need to be clear not only what to deter, but also what to defend. Deterrence literature, following Mazarr, points out that to be successful, three factors are crucial:

1. Addressing the aggressor's motivation, including the perceptive cost-benefit ratio of a potential attack;
2. Clearly articulating what is to be deterred and what happens if a challenge arises;
3. Presenting the conglomerate of capacities, capabilities, and political resolve to act, if necessary, to underline a credible deterrent.

But “[i]f an aggressor believes that the defender will not, or cannot, respond adequately to aggression, it will be tempted to attack.”³² Hence, NATO's shift from deterrence by punishment to deterrence by denial is not enough.³³ As presented, Russia applies conventional and unconventional means in combined efforts. Accordingly, the Western deterrence approach needs to integrate those fields, leading to the practical combination of three layers: firstly, conventional military deterrence together with collective defence. Secondly, securing and deterring against the grey-zone challenge and related sub-threshold efforts of destabilization, punctual damage, and raising uncertainty and distrust. Thirdly, the integrated layer, through which grey-zone activities are following the eventual end of military escalation by immediate contribution to Russia's initiative and levelling the field. Conceptually, this does not intend to replicate the US idea of integrated deterrence but leads to a comprehensive understanding of the threat environment which is not clearly distinguishable between high-end and low-end threats. It is the political and societal acknowledgement of an external full spectrum effort to destabilize and destroy the Western security architecture. This conceptual adaptation needs to integrate coordinated hybrid

³² Mazarr, “Understanding Deterrence,” 7.

³³ Marta Kepe, “From Forward Presence to Forward Defense: NATO's Defense of the Baltics,” *RAND Commentary*, February 14, 2024, <https://www.rand.org/pubs/commentary/2024/02/from-forward-presence-to-forward-defense-natos-defense.html>.

threat responses into collective defence planning both on the national and international level. Integrated deterrence and hybrid warfare literature already point in that direction. More basically, this represents an extension of traditional deterrence by denial, by increasing and including aspects of the integrated deterrence approach. It should also aim at the blurred lines between war and peace: considering necessities of re-thinking concepts of war in adaptation of a “world of permanent, sublimated conflict”,³⁴ in which deterrence needs to adapt frequently. Above all, deterrence by punishment remains the ultimate necessity, manifested through the nuclear domain.

Eventually, this comprehensive framework integrates traditional deterrence theories with innovative approaches to counter conventional escalation as well as threats in the grey-zone. By combining principles of deterrence by denial and punishment with new paradigms addressing hybrid threats, it provides a holistic approach that is both flexible and robust. This balanced deterrence conceptualization offers a blueprint for policymakers and strategists to safeguard European interests and maintain stability.

Practically, challenges remain in the details of whom to deter, ranging from deterring the Russian political leadership, its military and intelligence, their threat assessment, down to deterring shadow fleet crews and hired criminals. Hence, on the upper level, NATO and Europe must make Moscow believe that even without unlimited US support the European nations have the capacity to endure a prolonged and devastating conflict wherein they can sustain significant casualties and continue to fight. Besides denying Russian vessels the Baltic region in case of conflict, this includes the successful defence of the eastern border from Finland to the Black Sea. Sea denial or blockades, however, do not work on commercial shipping in times absent of war, making each vessel related to the Russian (shadow) fleet a potential espionage or sabotage actor. Further, the policy level requires an implementation of Baltic Sentry's effective measurements which are not relying on temporarily assigned allied multidomain capabilities. To enhance maritime situational awareness, deter incidents and conflicts, Baltic littorals need to install and integrate public and private measures permanently – analogous to the need of being able to defend the region conventionally. This goes hand in hand with a comprehensive Baltic defence strategy leveraging geographic advantages, not limited to collective conventional defence, but including CUI protection against threats in the grey-zone. NATO allies must also enhance their hybrid threat analysis capabilities, increasing joint intelligence efforts in this sphere. By creating a common understanding with the private sector and industry respectively, joint ventures can help to invest in, develop, and install technological solutions for rapid detection capabilities in the underwater domain. Industry itself must focus on resilience, redundancies, and repair capabilities as an EU Cable Security

34 Mark Galeotti, *The Weaponisation of Everything: A Field Guide to the New Way of War* (Yale University Press, 2022), 209.

Fleet³⁵, being aware that industrial safety becomes aligned with national security. The NATO Secretary General's approach of sharing red data and shifting to a wartime mindset is the required response to an opponent who sees itself already at war with NATO and the West.

Conclusion

This article examines the multi-layered deterrence dilemma NATO allies are facing, emphasizing the growing risks associated with the Russian combined approach of conventional hard power, threats, and intimidation together with continuous sub-threshold initiatives in the grey-zone. A main issue is overcoming the self-detering constraint of Russia's conventional escalation potential, eventually deterring effective action against activities in the grey-zone. The given structure integrates conceptual analysis with policy-relevant recommendations, addressing the complex interplay between collective defence, and the challenges posed by hybrid warfare for NATO and the Baltic Sea region as a multidimensional theatre with a maritime centre. There, naval operations differ from blue water actions and rely highly on their joint nature. Besides deterring a conventional war and sub-threshold actions, allies are obliged to freedom of navigation and innocent passage for vessels of all flags in times absent of war. The article's findings suggest that while advancements and increasing dependencies on critical (underwater) infrastructure create vulnerabilities, they also present new opportunities for deterrence. The suggested approach picks up elements of integrated deterrence to offer ways forward by highlighting conceptual and policy actions for a potential deterrence conglomerate as the (re-)creation of a sufficient deterrent in the region. However, as the limitations of this analysis indicate, further empirical experience and research is needed to explore the long-term impact and prospects of ways like deterrence by detection and denying deniability, respectively. Another task remains in expanding deterrence beyond the maritime domain to tackle the variety of grey-zone attempts against Western societies in all domains.

Here, deterrence means that actions will be followed by a response. To do so, not only military capabilities and a whole-of-society approach are needed, but particularly the political decisiveness to (re-)act – and the respective signalling of such decisiveness. While the grey-zone remains an area for constant threats, it is crucial not to show signs of being susceptible to pressure, and instead demonstrate resolve. By maintaining confidence, coherence and vigilance, allies can effectively counter and mitigate the impact of Russia's disruptive grey-zone warfare. Yet, strategy and international politics do not follow mathematical rules.

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35 As the author recommended in as early as 2023, and what the European Commission intends to materialize now. See Julian Pawlak, "Der Schutz maritimer kritischer Infrastrukturen und das Konzept der Abschreckung," *Sirius-Zeitschrift für Strategische Analysen* 7, no. 2 (2023): 160-166; "EU to spend nearly a billion euros to protect undersea cables," *Reuters*, February 21, 2025, <https://www.reuters.com/world/europe/eu-will-propose-establishing-fleet-vessels-emergency-undersea-cable-repairs-2025-02-21/>.

Despite all efforts of deterrence, an aggressor may ignore substantial risks and costs if it perceives that there are no viable alternatives to engaging in an attack or when it sees other factors as more relevant than the given cost-benefit ratio.³⁶ In the end, the most pressing European challenge remains to prepare the mentioned deterrence and therewith defence efforts in such ways that, if necessary, Europe is able to deter and defend Russia on its own.

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36 Mazarr, "Understanding Deterrence," 7; Christopher Blattman, *Why We Fight. The Roots of War and the Paths to Peace* (Penguin Books, 2022).

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The Role of European Critical Maritime Infrastructure in a Hybrid War Scenario

Henrik Schilling

Critical Maritime Infrastructure in hybrid warfare

Critical Maritime Infrastructure (CMI) has not only become more and more important over the last decade, it has also immensely shifted into public attention since the disruption of the Nord Stream Pipelines. The recent surge in sabotage activities against infrastructure in the Baltic Sea and North Sea has prompted a significant expansion of protective measures, highlighting the impact of the *Zeitenwende*¹ on security policy and its gradual translation into concrete implementation. The increasing frequency of these attacks against CMI indicates that they are not merely isolated incidents, but rather part of a broader scenario of hybrid actions against Europe. For many years, such attacks were – and still are – primarily conducted in the cyber domain.² The escalation of these attacks against CMI on a physical level prompts the question of what role CMI plays in a scenario of hybrid attacks and why it is such a lucrative target for the actors behind these attacks.

To what extent is CMI a particularly worthwhile target for hybrid attacks?

Past attacks on CMI have exposed significant challenges for the affected countries in responding to such incidents. Defending effectively within the framework of international law often proves difficult, while for the attackers, these operations typically require minimal effort yet produce wide-ranging consequences. The impacts span political, social, and economic dimensions, and perpetrators are often hard to identify. Physical attacks, in particular, have revealed the vulnerability of CMI, due to factors such as lengthy repair times,³ the lack of robust protective measures, and the potential for actors to utilize civilian assets to ‘incidentally’ destroy infrastructure – as evidenced by the destruction of cables by dragging anchors.

1 The term was used by then Chancellor Olaf Scholz to describe the security policy changes to Germany and Europe due to the Russian attack on Ukraine.

2 This includes cyberattacks but also the manipulation of societal discourse through social media, espionage or the manipulation of IT-infrastructure. See: Wolff Heintschel von Heinegg, “Hybride Bedrohungen im und durch den Cyberraum,” in *Informationen zur politischen Bildung* no. 353 (2022).

3 The repair time for undersea cables depends on many factors such as the availability of repair ships or the depth of the cable. In 2025, the average repair time was 32 days. This is a significant improvement compared to 2022 with 78 days. See: Submarine Telecoms Forum: “Industry Report 2025 & 2026,” 2025, 100.

One of the central challenges in hybrid attacks is the difficulty of attributing responsibility to a specific actor. Attackers deliberately exploit civilian means to obscure their actions, complicating detection and legal response. A case in point are the Baltic Sea incidents since 2023, where several cargo ships damaged cable infrastructure by dragging anchors across the seabed. Although Russia and China were the main suspects behind the actions, the vessels were owned by companies from different countries, crews were predominantly international, and the flag states were non-Russian. At least one vessel was linked to the Russian shadow fleet which is used to bypass the sanctions imposed by the EU.⁴

Attribution remains particularly challenging due to the constraints imposed by the International Convention on the Law of the Sea (UNCLOS). Detaining or boarding vessels in the Exclusive Economic Zone (EEZ) or international waters requires substantial evidence – and in the case of the EEZ the approval of the respective flag-state⁵ – and preventive measures are limited when ships follow normal shipping routes and exercise their right of innocent passage. This is especially true for vessels without prior suspicious activity, making it difficult for the affected state to establish a comprehensive pre-emptive mechanism.

By leveraging these legal and operational limitations, the attacker gains a strategic advantage. The use of civilian methods not only impedes attribution but also reduces the need for military resources. Additionally, it allows the deflection of blame, and enables the hybrid actor to create a continuous threat scenario without having to fear direct retaliation. Consequently, such actions highlight both the vulnerabilities of critical maritime infrastructure and the challenges for states seeking to implement effective preventive and defensive measures.

Another reason for targeting CMI is the low risk of escalation between aggressor and victim, as long as the effects of the attacks remain limited and isolated. The threshold at which an attack would justify a countermeasure is not clearly defined and, importantly, would require broader societal and political debate. This can be observed in ongoing discussions regarding the threshold for the invocation of NATO Article 5 in the context of Russian attacks⁶ and the activation of NATO Article 4.⁷

A hybrid actor can thus carry out continuous, isolated attacks that cause economic damage and societal concern while making it nearly impossible for the affected state to justify a stronger retaliation. Europe may be particularly affected by this dynamic due to existing

4 See: Patricia Schneider, "Schutz maritimer Kritischer Infrastruktur in der Ostsee: Braucht es den Schuss vor den Bug?," in *Arbeitspapiere Sicherheitspolitik der Bundesakademie für Sicherheitspolitik*, April 2024.

5 Art. 110 UNCLOS in combination with Art. 58 UNCLOS.

6 Jörg Lau, "Mythos Artikel 5," *Die Zeit*, November 28, 2024, <https://www.zeit.de/politik/ausland/2024-11/nato-buendnisfall-bnd-russland-wladimir-putin-ukraine>.

7 Tagesschau, "Estland beantragt Artikel-4-Beratungen der NATO," September 20, 2025, <https://www.tagesschau.de/ausland/europa/estland-luftraumverletzung-nato-100.html>.

redundancies, which allow the continent to bypass most disruptions caused by isolated attacks on CMI. While these redundancies are essential for ensuring a secure energy supply, they also enable hybrid actors to target CMI without provoking a significant response, as the impacts typically remain below the threshold that would trigger retaliation.

Retaliation itself presents another challenge, as the victim state has a limited range of possible countermeasures acting within international law. If attribution to a specific state actor is not possible, the only direct action available to the victim is against the perpetrators. Additionally, offensive reactions may trigger retaliation measures by the attacker.

A recent example is Finland's response to the sabotage of subsea cables in late 2024. Finnish authorities stopped a vessel suspected of involvement in the attack. They boarded the ship in Finnish territorial waters, detaining and questioning part of the crew while holding others as witnesses.⁸ This case illustrates that UNCLOS can provide an effective framework for responding to attacks on CMI. However, UNCLOS also limits states' ability to preventively act against maritime hybrid threats, particularly beyond their national waters.⁹ Under the Convention, the crew of a vessel exercising the right of innocent passage cannot be held accountable for offenses under the jurisdiction of the coastal state.¹⁰ The only exception – which was the case in the above mentioned incident off Finland's coast – is if the crew directly commits an illegal act against the state in question.¹¹

Attribution of an incident to a specific state actor creates an imperative for the victim to respond, in order to deter future actions or signal that such conduct will not be tolerated. However, due to the asymmetric nature of hybrid warfare – where the aggressor does not adhere to international law – the victim often lacks the ability to employ direct countermeasures. Economic sanctions therefore frequently become the primary tool, as demonstrated by the EU's response to Russian activities.¹² Within the EU, however, this presents a challenge due to the political process required to achieve consensus among member states on imposing sanctions.¹³ Hybrid actors can exploit these delays and disagreements to align actions accordingly.

8 "Suspected Russian 'shadow fleet' tanker leaves Finnish waters," *Helsinki Times*, March 3, 2025, <https://www.helsinki-times.fi/finland/finland-news/domestic/26222-suspected-russian-shadow-fleet-tanker-leaves-finnish-waters.html>.

9 Art. 58 UNCLOS and Art. 87 UNCLOS.

10 Art. 27 I UNCLOS.

11 Art. 27 I a,b UNCLOS.

12 European Council: "Timeline – EU Sanctions against Russia," 2025, <https://www.consilium.europa.eu/en/policies/sanctions-against-russia/timeline-sanctions-against-russia/>.

13 Gabriel Gavin, "Hungary, Slovakia stall Russian sanctions over gas ban proposal," *Politico*, June 23, 2025, <https://www.politico.eu/article/hungary-slovakia-block-new-russia-energy-sanctions-ukraine-war-invasion-eu-viktor-orban/>.

Another factor rendering attacks on CMI attractive is the large number of potential targets combined with the de facto anonymity provided by the wide operational expanse of the Baltic Sea and North Sea.

The growing importance of CMI and the continuous expansion of infrastructure – particularly in the context of the transition to renewable energy – further increase vulnerabilities.¹⁴ The rapid development of offshore wind energy offers significant opportunities to reduce dependencies but simultaneously introduces new risks for CMI security. Subsea connection cables are particularly exposed due to their accessibility and the difficulty of implementing effective redundancies, making them a more attractive target than the wind turbines themselves.

Although some states have paused offshore wind projects for military reasons¹⁵ and the industry continues to struggle with high construction costs,¹⁶ the coming years are likely to see a substantial increase in new wind farms¹⁷ and, consequently, the associated security risks. Moreover, maritime traffic has risen markedly in recent decades, resulting in increased congestion – especially in the Baltic Sea and North Sea. This creates even more opportunities for incidents similar to those observed in recent years.

What is the goal of the attacker?

Effective responses to hybrid attacks require a comprehensive analysis of the perpetrators' motives. Understanding those motives is crucial for designing appropriate countermeasures and preparing for future incidents. This section explores some of the possible objectives an aggressor might pursue.

One of the key aspects of dealing with a hybrid attack is a rapid and coherent response. This comprises diplomatic and/or legal measures as well as organizational reactions. Diplomatic and legal measures primarily aim to send a political signal and deter the actor from future attacks, while organizational responses are intended to limit damage, restore infrastructure, or activate fall-back options. Attackers will most likely analyse responses at both levels and exploit them for subsequent operations. Absent or weak political reactions validate the attacker's behaviour, since the expected political costs (e.g. sanctions) will be lower

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14 At the same time, the increase of infrastructure in the Baltic and North Sea also creates more redundancies.

15 Mia Jankowicz, "A NATO country rejected offshore wind farms it said could slow its response to a Russian missile attack," *Business Insider*, November 4, 2024, <https://www.businessinsider.com/sweden-rejects-wind-farms-slow-response-missile-attacks-russia-war-2024-11>.

16 Jens Gjerrild et al, "Offshore Wind Industry Update," BCG, August 21, 2025, <https://www.bcg.com/publications/2025/offshore-wind-industry-update>.

17 Deutsche Windguard: "Status des Offshore-Windenergieausbaus in Deutschland".

than the benefit the aggressor anticipates. Organizational responses – law enforcement investigations, defensive measures, repair capacities and fall-back arrangements – can be used by the attacker to build a coherent situational picture. In the Baltic Sea and North Sea, Russia could not only damage infrastructure but also identify which assets are hardest to replace, how effective existing protection is, and to what extent failures can be mitigated. In the context of preparing for a large-scale conflict or even armed confrontation, these aspects provide valuable information for the aggressor. A strategic assessment of these aspects is therefore essential for the affected state.

Critical infrastructure is generally defined as infrastructure that would affect key societal functions if it fails.¹⁸ Isolated acts of sabotage – particularly targeting cables in the Baltic Sea and North Sea – have not yet caused large-scale disruptions such as widespread power or internet outages. Instead, the attacks function as ‘pinpricks’ generating a persistent sense of threat and insecurity among the population and potentially leading to price increases or lower internet speeds.¹⁹ In this context, the actor’s objective is to create a continuously present threat scenario, even if the direct effects on the population are limited. A complete blackout is not necessary; the destruction of a single cable is sufficient to instil a perception of vulnerability. At the same time, this approach provides the perpetrator with greater operational security, as a large-scale outage might provoke harsher countermeasures than a seemingly minor and comparatively contained incident.

An aggressor thus aims both at the immediate disruption of important societal structures, such as the transport, energy, financial or health sectors, as well as psychological impacts by unsettling society through the creation of an ever-present threat scenario.

As noted above, hybrid attacks and their preparatory activities can also serve to build an attackers’ situational picture. Russia is suspected of using drone overflights of German military facilities and critical civilian infrastructure²⁰ not only to record video of security-relevant sites, but also to attempt the collection of mobile phone data from Ukrainian soldiers trained in Germany.²¹ In both the Baltic Sea and the North Sea, alleged Russian research vessels have increasingly been observed operating in EEZs near critical infrastructure, likely

18 See for example Directive 2008/114/EC, Articles 2 and 3.

19 A contrary scenario unfolded in Ghana in 2024, where several damaged undersea cables led to a nationwide internet outage. See: “Internet Outage Cripples Ghana: Nationwide Crisis Hits Hard,” *The Ghana Sentinel* March 17, 2024, <https://ghanasentinel.com/2024/03/17/internet-outage-cripples-ghana-nationwide-crisis-hits-hard/>.

20 Recent months have shown an increased number of drone incidents in several European countries, such as Poland, Belgium and the Netherlands, also affecting military operations. See: Aleks Phillips, “Drones sightings halt air traffic near Dutch city of Eindhoven,” *BBC*, November 22, 2025, <https://www.bbc.com/news/articles/cewjlrvo2ro>.

21 “Fast 450 Drohnen über Bundeswehrstandorten gesichtet,” *Tagesschau* February 21, 2024, <https://www.tagesschau.de/investigativ/ndr-wdr/zunahme-drohnen-sichtungen-100.html>.

in order to gain a comprehensive operational picture.²² Definitive proof is often difficult to obtain, but it must be assumed that Russia is compiling a detailed situational overview of European critical maritime infrastructure.

This intelligence can be further enriched by analysing the immediate responses to hybrid attacks by private companies, public authorities and the government. Such reactions provide insights into protection levels and specific defensive measures and capabilities, across both civilian and military sectors.

It has been well documented for several years that actors such as Russia and China attempt to manipulate elections in Europe and the United States.²³ These efforts often involve spreading disinformation or influencing public opinion through social media, allowing external actors to influence domestic political debates.

A similar dynamic applies to attacks on critical infrastructure. The destruction of submarine cables and pipelines affects public debates as much as the subsequent response measures. For instance, some political groups in Germany have called for a renewed reliance on allegedly cheaper Russian gas, LNG terminals have faced partial opposition and the energy transition – including the expansion of offshore wind energy – has been questioned.²⁴

The destruction of Nord Stream, for example, triggered a debate over whether gas storage levels were sufficient to endure the winter, despite no actual shortage occurring.²⁵ Particularly ahead of important elections or policy decisions, such hybrid attacks can influence public discourse, depending on their scale and perception.²⁶ This effect can be further amplified by coordinated disinformation campaigns, especially on social media.

Hybrid attacks can also be employed reactively, in response to political or policy decisions by states or other institutions. Examples of this have increased since 2022. Some sabotage actions in the Baltic Sea occurred shortly after new EU sanctions or US policy decisions. For

22 “Russische Spionageschiffe in der Ostsee: Teil der hybriden Angriffe,” *NDR Info*, September 24, 2024, <https://www.ndr.de/nachrichten/info/Russische-Spionageschiffe-in-der-Ostsee-Teil-der-hybriden-Angriffe,spionageschiffe102.html>.

23 Tamás Matura, “Sino-Russian Convergence in Foreign Information Manipulation and Interference: A Global Threat to the US and Its Allies,” CEPA, June 30, 2025, <https://cepa.org/comprehensive-reports/sino-russian-convergence-in-foreign-information-manipulation-and-interference/>.

24 See for example: Liudmila Kotlyarova, “Abstieg der Wirtschaft: Ostdeutsche Industrie fordert Rückkehr zu russischem Gas,” *Berliner Zeitung*, February 28, 2025, <https://www.berliner-zeitung.de/wirtschaft-verantwortung/wir-brauchen-frieden-chemiepark-leuna-hofft-auf-russisches-gas-li.2303184>.

25 Several news articles were published at the beginning of each winter since the attacks on Nord Stream in Germany, questioning the current gas reserves. As an example, see: *Süddeutsche Zeitung*: “Wird das Gas im Winter knapp?,” November 19, 2025, <https://www.sueddeutsche.de/wirtschaft/winter-gasversorgung-deutschland-heizen-engpaessen-li.3340486?reduced=true>.

26 Matura, “Sino-Russian Convergence”.

example, the destruction of cables in the Baltic Sea took place shortly after the United States allowed Ukraine to use American missiles against targets on Russian territory.²⁷

Following the decision by the three Baltic states – Lithuania, Latvia and Estonia – to disconnect from the Russian power grid, “campaigns emerged on social media falsely warning of supply failures and soaring prices if the countries were to leave the joint power grid.”²⁸ Russia may have been the actor behind these incidents, sending a clear signal to the Baltic states by provoking political debate and generating economic consequences.

Hybrid warfare actors may use reactive operations as leverage to pressure the victim state into reconsidering its decisions and to discourage similar decisions in the future.

In addition to the primarily security and socio-political impacts of hybrid attacks, the economic component can also play a significant role. Beyond the direct economic damage caused by such attacks, these effects are closely linked to the phenomena discussed in previous subchapters. For example, rising energy costs can generate economic pressure on the population and the economic sector, thereby catalysing social debates and affecting political decision-making processes.

Given the importance and interconnectivity of critical infrastructure, its disruption always entails both direct and indirect economic consequences. These costs occur at multiple levels:

- Directly to operators, through infrastructure failure, repair and replacement costs, and, depending on contractual obligations, the need to procure promised energy supplies from alternative markets – particularly relevant in cases of energy production disruptions.
- Indirectly to the economy, via rising energy, transport or commodity prices (depending on the type of infrastructure affected), as well as long-term expenses for repair, protection and hardening of assets and systems.

In the case of sustained hybrid attacks on CMI, cumulative economic damage can pose substantial challenges to the national economy, resulting in both direct effects – such as rising costs – and indirect effects – such as influencing political and societal sentiment.

27 Robin S. Quinville et.al, “Risky Game: Hybrid Attack on Baltic Undersea Cables,” *Wilson Center Insight & Analysis*, November 25, 2024, <https://www.wilsoncenter.org/article/risky-game-hybrid-attack-baltic-undersea-cables>.

28 Tom Bennet, “Baltic states begin historic switch away from Russian power grid,” *BBC*, February 8, 2025, <https://www.bbc.com/news/articles/c627d55v07go>.

The situation in Europe

In a scenario of hybrid warfare, as currently observed in Europe, the aggressor exploits the asymmetry between its own violations of international law and the victim's legally constrained scope for action. The objective is to inflict maximum damage without crossing the threshold into open warfare. To that end, the aggressor continually tests and expands the limits of permissible action, using a series of 'pinprick' attacks on infrastructure to cause social, political, and economic harm.

Hybrid attacks against Europe are not a new phenomenon. At least since Russia's annexation of Crimea, they have become a regular occurrence. The restrained response to the 2014 takeover of the Ukrainian peninsula underscores both the difficulty of formulating an appropriate reaction and the importance of a coordinated response to hybrid actions, in order to prevent further escalation, such as Russia's full-scale invasion of Ukraine. Prior to 2022, most of Russia's hybrid activities were concentrated in the cyber domain. Cyberattacks became routine since 2014,²⁹ and physical sabotage of critical infrastructure has gained prominence since 2022.

Infrastructure in the Baltic Sea

The Baltic Sea has been a focal point for sabotage since the beginning of the 2022 Russian war against Ukraine, with subsea data and power cables repeatedly damaged or destroyed. Many of these attacks involved the use of civilian vessels dragging anchors across the seabed for dozens of kilometres to sever cables and pipelines. Given the Baltic Sea's shallow waters, its proximity to Russia, and the dependence of Nordic and Baltic states on its maritime infrastructure, CMI in the region is particularly significant and vulnerable. The next section will assess which CMI exists and how important it is for the Baltic Sea countries.

The EU Directive on the Resilience of Critical Entities (CER) "aims to strengthen the resilience of critical entities against a range of threats, including natural hazards, terrorist attacks, insider threats, or sabotage, as well as public health emergencies."³⁰ The EU defines eleven sectors to which this directive applies. For the purposes of this paper, these sectors serve as the reference framework for defining critical infrastructure within the Union. They include energy, transport, banking, financial market infrastructure, health, drinking water, wastewater, digital infrastructure, public administration, space, and the production,

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29 Jakub Przetacnik and Simona Tarpova, "Russia's War on Ukraine: Timeline of cyber-attacks," *European Parliament Briefings*, 2022, 1.

30 European Commission, "Critical infrastructure resilience at EU-level," September 11, 2025, https://home-affairs.ec.europa.eu/policies/internal-security/counter-terrorism-and-radicalisation/protection/critical-infrastructure-resilience-eu-level_en.

processing and distribution of food.³¹ Although most of these sectors are interconnected, the most relevant aspects in the maritime domain are energy, transport, digital infrastructure (data cables) as well as the production and distribution of food.

The energy sector in the Baltic Sea mostly consists of offshore wind power and the associated transmission of electricity to the mainland. As of 2023, a total of 34.2 GW of offshore wind capacity was installed in European waters, 3.1 GW of which in the Baltic Sea. The largest installation – the Danish Kriegers Flak wind farm – comprises 72 turbines with a total capacity of more than 600 MW. The current installed capacity can supply electricity to over three million households in the Baltic region. Although these figures remain relatively modest compared to the total wind-powered energy production in Europe of well over 200 GW, offshore wind energy represents a critical and rapidly expanding resource in the Baltic Sea. Installed capacity is expected to increase from 3.1 GW in 2023 to 19.6 GW by 2030, with a potential long-term capacity of 93 GW.³² This expansion will necessitate the construction of numerous additional submarine cables connecting offshore installations to the onshore grid, significantly increasing both the density of underwater infrastructure and the need for enhanced protection measures.

The transport sector is one of the most critical in the Baltic Sea region due to its geographic characteristics, as many of the Baltic states have only limited overland connections to partner countries. This applies particularly to Latvia, Lithuania, and Estonia, as well as to Sweden and Finland. In a potential conflict scenario involving Russia, these geographic constraints would significantly increase the complexity of transporting goods and personnel by both land and sea.

The Baltic Sea has two³³ primary maritime access points: the Kiel Canal in Germany and the Skagerrak Strait between Denmark and Sweden. These corridors are traversed daily by cargo vessels, while ferries maintain connections between the numerous ports along the Baltic coast. The largest port is Ust-Luga (Russia), handling 112.5 million tons of cargo in 2023, followed by Gdańsk (Poland) with 81 million tons, Primorsk and St. Petersburg (both Russia) with a combined 112.7 million tons³⁴, and Gothenburg (Sweden) with 36.3 million tons.³⁵

31 European Commission, "Critical infrastructure resilience at EU-level".

32 Dàmir Belltheus Avdic et al., "Offshore wind and power-to-hydrogen in the Baltic Sea Region. BOWE2H Strategic Roadmap," 2024, 9f.

33 The Baltic-White Sea Canal represents a further access point; however, its shallowness renders it of limited economic importance. Nevertheless, in theory at least, the canal could be used to transport Russian naval assets.

34 The Baltic Sea is particularly viable for Russia as an ice-free connection to the global seas.

35 IHK Schleswig-Holstein, "Daten der 20 größten Ostseehäfen," 2023, <https://www.ihk.de/schleswig-holstein/standortpolitik/wirtschaftspolitik/wirtschaftspolitische-positionen/maritime-wirtschaft/verkehrsmarkt-ostsee/daten-der-20-groessten-ostseehaefen-6073036>.

The CER Directive does not explicitly mention undersea data cables; however, for the purposes of this paper, they are included under the digital infrastructure sector. More than 35 undersea data cables currently connect the Baltic states, playing a crucial role in enabling communication services. Since 2022, over ten cables have been damaged in incidents involving anchor-dragging by commercial vessels. Although no further incidents have been reported in 2025 following the start of NATO's Baltic Sentry in January 2025, these events highlight the vulnerability of European communication networks.³⁶

Finally, the production and transportation of food plays a relatively minor role in the Baltic Sea compared to other European waters. Commercial fishing is limited by declining fish stocks, regulatory quotas, and environmental constraints, which pose significant challenges for the industry. While economically and socially relevant for the region, food production and fishing do not constitute critical maritime infrastructure to the same extent as energy, transport, or digital networks.

Infrastructure in the North Sea

Although the Baltic Sea has been the primary focus of hybrid attacks on CMI in recent years, North Sea infrastructure is similarly at risk. Despite its greater depth, numerous high-value infrastructures are located off the coasts of Western Europe, such as transatlantic data cables. In addition, the extensive energy production facilities in the North Sea render it a particularly attractive target, and ongoing expansion projects will create further points of vulnerability in the coming years. Recent hybrid activities, such as drone overflights of critical infrastructure, indicate growing security concerns.

The North Sea and the European part of the Atlantic host CMI from the same sectors outlined in the previous chapter. While infrastructure in the Baltic Sea is particularly vulnerable in the context of a military conflict or hybrid scenario involving Russia, the North Sea accommodates a substantially larger concentration of assets across nearly all sectors.

Compared to the Baltic Sea, the North Sea offers considerably more space for the construction of offshore wind farms. In addition, it contains the largest oil and gas reserves in Europe, particularly off the coasts of Norway and the United Kingdom.³⁷ States such as Norway and Denmark have been, or still are, able to rely largely on their own oil and gas extraction for

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36 For more information on the data cables, the data capacity and the resilience of cables, see Schilling and Witte, *Vulnerable Lifelines: Threats, Dependencies, and Protection of Submarine Cables in the Baltic Sea*.

37 Offshore Technology, "Top ten crude oil-producing fields in Europe," 2024, <https://www.offshore-technology.com/data-insights/top-ten-crude-oil-producing-fields-in-europe/>.

domestic energy production.³⁸ However, in light of climate objectives, the focus of national energy strategies is shifting towards offshore wind and other low-carbon technologies. As of 2022, the total offshore wind capacity installed in the EU amounted to 16.3 GW, with an intended increase to 60 GW by 2030,³⁹ which is more than four times the currently installed capacity in the North Sea by EU countries. To achieve these targets, the eight North Sea states adopted the Ostend Declaration in April 2023, outlining ambitious offshore wind expansion projects. According to the declaration, Germany aims to increase its capacity by 26.4 GW and the United Kingdom by as much as 50 GW by 2030.⁴⁰

These numbers indicate a substantial increase in wind farms and associated infrastructure, such as energy and data cables. While this development represents a major step towards achieving energy transition goals, it simultaneously introduces additional vulnerabilities and potential targets for hybrid attacks. Moreover, the already limited space in the North Sea is becoming increasingly congested and contested among shipping routes, energy production, fishing activities, military operations, and nature reserves.

The ports along the North Sea coast play a vital role for the European economy. The three largest container ports with a combined container throughput of more than 35,1 Million TEU in 2024 are Rotterdam, Antwerpen-Bruges and Hamburg – all located on the North Sea coast. By comparison, the largest EU port in the Baltic Sea is Gdansk with a container throughput of 2,24 million TEU in the same year.⁴¹ The western coast of Europe represents the primary gateway for international cargo facilitating the bulk of maritime trade entering and leaving the continent. In addition to its economic significance, this region also holds strategic military importance, ensuring logistical connectivity for potential US support in the event of a major conflict.

A similar pattern can be observed in the field of digital infrastructure, particularly with regard to undersea data cables. Most transatlantic internet cables connecting Europe and North America make landfall along the coasts of the North Sea, the majority in the United Kingdom. Currently, “Western Europe is the most connected region by submarine cables; 35% of all submarine cables land in the region and an additional 30 cables are expected before

38 Michal Wozniak, “Skandinavien will langfristig zum Energieexporteur werden,” August 4, 2023, <https://www.gtai.de/de/trade/skandinavien/branchen/skandinavien-will-langfristig-zum-energieexporteur-werden-1011286>.

39 Niels L. Lange and Janina Pochhammer, “Offshore Wind in Deutschland und Europa – Status quo und Ausblick,” August 21, 2024, <https://www.taylorwessing.com/de/insights-and-events/insights/2024/08/offshore-wind-in-deutschland-und-europa>.

40 Ostend Declaration Of Energy Ministers On The North Seas As Europe’s Green Power Plant.

41 Port Economics and Management, “Top 15 container ports in the European Union in 2023,” 2023, <https://porteconomicsmanagement.org/pemp/contents/part9/inter-port-competition/top-15-container-ports-in-the-european-union-in-2021/>.

2027.⁴² These cables form the backbone of essential services, such as cloud computing, the international banking system and digital communication networks, which are critical to Europe's stability and prosperity.

In addition to the major ports along the North Sea and their role in international trade and food supply, the region is also of considerable importance for the fishing industry. Similar to the Baltic Sea, many of the fish stocks are overfished and subject to strict quotas by the EU. Nevertheless, most of the countries with the largest fishing fleet by gross tonnage are located in the area (with the exception of Spain), led by Norway, whose fleet reached approximately 400,000 gross tons in 2018. In contrast, all Baltic states remain well below 100,000 tons.⁴³

Past and future incidents

Since 2022, several incidents involving CMI have occurred in the Baltic and North Seas. Due to space constraints in this volume and the rapidly evolving nature of the situation, this paper does not provide a comprehensive overview of all incidents. Nevertheless, three major observations can be made. First, the attacks over the past years should not be understood as isolated actions, but rather as a method of hybrid warfare aimed at undermining European states by a third actor. Second, and closely related to the first point, these incidents have not yet resulted in significant immediate economic losses for the affected states – partly due to the large number of CMI in the European theatre and their inherent resilience. The underlying objective of these attacks appears to be the targeting of societies by constructing and maintaining a persistent threat scenario to weaken social and political stability. Third, deterrence appears to be effective: since the inauguration of NATO's Baltic Sentry and at the time of writing, no further physical attacks on CMI have been reported in the Baltic Sea.

Attacks on CMI and other critical infrastructure are likely to continue in the future. The evolving geopolitical context will shape the nature and scope of these threats. Given the shallow waters and proximity of the Baltic Sea to Russia, this region is expected to remain a primary focus for future operations, providing an accessible operational environment.

Such attacks may further test the limits of what can be done without provoking escalation. It is therefore essential for Europe to maintain these boundaries and respond decisively through robust sanctions and other measures.

42 Stephen Burton, "Western Europe leads submarine cable launches, with 152 operational cables and 30 more expected by 2027," October 3, 2024, <https://www.analysismason.com/research/content/articles/submarine-cable-we-rdfio/>.

43 European Commission "Fishing fleet by gross tonnage," *European Atlas of the Seas*, 2018, https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/mindmap_en.html#Fisheries.

Conclusion: deterrence, redundancies or both?

Understanding the role of CMI in a hybrid conflict scenario is essential for developing effective protection and response strategies. Defensive measures that are effective against conventional security threats – such as enhanced access controls at critical infrastructure sites – do not necessarily protect against state-backed attacks like drone overflights or sabotage of undersea cables. While improvements in physical security are crucial, a broader security policy approach is required to enhance the overall resilience of CMI.

NATO's Baltic Sentry operation, alongside EU-NATO initiatives for protecting critical undersea infrastructure, represent important operational responses. Additionally, the latest EU Action Plan for CMI protection serves as a vital political statement. Since full protection of CMI is never entirely feasible, efforts must focus on enhancing deterrence, improving response capabilities, ensuring continuous surveillance, and increasing system redundancy.

In recent years, multiple actors have attempted to implement coherent protection measures for critical infrastructure. While these efforts represent a welcome step toward enhanced security, an overabundance of individual measures risks undermining a comprehensive approach due to unclear responsibilities, differing security standards, and unresolved questions regarding ultimate accountability.

To my opinion, the answer to this dilemma is at least two-fold. In Germany, for example, operators of critical infrastructure are often considered responsible for protection, while operators themselves argue that the state must assume certain responsibilities – an argument that is particularly understandable in the context of hybrid attacks, which target the integrity of the state itself. However, I would argue that the discussion about 'protection' frequently mixes the aspects 'monitoring' and 'protecting'. The monitoring of CMI should remain the responsibility of the operators for their respective systems. At the same time, relevant information should be shared with regional, national, or international authorities to enable a coherent situational overview. The protection itself in the event of an (imminent) attack should then be carried out by the designated authority – be it the police, coast guard or navy. The protection of infrastructure can, however, also be preventive, as is the case with actions of deterrence. NATO's Baltic Sentry illustrates the importance of presence, increasing awareness and reducing the response time in safeguarding CMI. Since the implementation of the mission and at the time of writing, there have been no further attacks on CMI in the Baltic Sea.

Attacks on critical maritime infrastructure should not be solely interpreted as individual incidents but as a means of hybrid warfare with the ulterior motive to destabilize societies by fostering a continuous threat perception and influencing political debates. A reaction to

these attacks is often difficult and needs to address the motive of the attacker to be effective as explained before. Baltic Sentry serves as an example of a successful response, both by hindering potential aggressors through increased presence and by sending a clear signal by Western societies of their capability to defend critical assets.

Ultimately, effective protection of critical maritime infrastructure requires more than technical hardening or deterrence. It depends on a clear understanding of the attacker's motives, objectives, and methods in order to anticipate actions and develop proportionate, targeted responses

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Weathering the Coming Storm

German-American Naval Relations from the Cold War to Zeitenwende and Beyond

Sebastian Bruns

On 13 October 2025, the U.S. Navy celebrated its 250th anniversary. The proud service's celebrations were somewhat hampered by a cascade of events at the Pentagon affecting the Navy and its sister service, the U.S. Marine Corps, since the beginning of the second Donald Trump administration in January that year. At the time of the birthday celebrations, the mood was muted by issues that ranged from the then-ongoing government shutdown (which e.g. sent home civilian analysts, academy professors, and contractors without pay), to mass firings at the Department of Defense leadership, to President Trump's novel and controversial use of the military on American soil (such as deploying U.S. Marine Corps units to Los Angeles, California). Secretary of Defense Pete Hegseth's crusade for what is deemed 'warrior mentality' included renaming ships and bases, ordering all military flag officers from around the world to fly to Quantico, Virginia, for a gathering, and upending diversity, equality, and inclusion (DEI) hires as well as terminating affirmative action admission to military academies.

Such developments can easily overshadow the important role that the US naval services play as steel-grey stabilizers in many corners around the world, buttressing American political influence, interest, and if need be use of force. The U.S. Navy and the U.S. Marine Corps are military and policy instruments, and they are also providing prime means for cooperation with allies such as those from the North Atlantic Treaty Organization (NATO).

This chapter assesses the naval relations to Germany, one of America's larger and important European allies. It will do so by giving a comprehensive description and analysis of naval relations from the end of World War II to today. It will also survey a scenario that suggests – based on recent observations of the US and Europeans drifting apart in their idea of what it takes to maintain Atlantic unity – a decrease of American commitment and a subtraction of naval power that Europeans might have to compensate.

Whereas during the Cold War, West-Germany's navy had a very limited set of roles and missions as opposed to the globally engaged U.S. Navy, the *Bonner Republik* received substantial technological support from the U.S. Navy. After the end of the Cold War, with Germany reunited and the seat of government now in Berlin, Germany's navy saw new operating areas, in part filling gaps left by a consolidating and shrinking American navy. Both countries chose to embrace new ship-building programs while seeking a peace dividend, but at different quantitative and qualitative levels, the two partners drifted apart. Against the backdrop of

the ‘new wars’, often land-locked in sandy places such as Afghanistan (2002-2021) and Iraq (2003-2011) where navies needed to increase their efforts to make their case in contributions, Germany and the US are facing new, more traditional challenges in Russian and Chinese ambitions, both at sea and beyond. It remains crucial that both countries, along with other allies, will attempt to weather the coming storm.

Germany, in turn, will celebrate the founding of its freshly-resourced *Bundeswehr* in November 2025, though at 70 years it is considerably younger than its American counterpart. It should come as no surprise that bilateral naval and indeed, maritime relations reach back much further. Likewise, the naval relations and interdependencies are part of a wider, deeper, and more thorough multi-policy, cultural, economic, and military relationship between the two countries.

US-German naval relations, a broad view

Throughout their history, the United States of America and Germany have long been connected in a myriad of ways. Among other things, these strong bonds have included trade, migration, deep cultural exchanges, policy coordination and harmonization, and the deepest of military cooperation. Transatlantic popular cultural influence, certainly after 1945, must also be mentioned. The U.S. Navy even had a part in founding the first German navy in and around 1848.¹ Given their opposite sides in World War I and World War II, it still remains noteworthy that amicable transatlantic relations have been a staple of post-World War II (West-)German and American strategic culture. Clear-eyed American support of a democratic Federal Republic after 1949 as a bulwark against Soviet influence in Europe served US national interests and wider allied objectives. This backing included substantial economic aid to West-Germany, a quick rebuilding of military forces within NATO, and a strong US presence in central Europe. After the Iron Curtain descended across Europe, American troops found themselves permanently stationed along the central European front in Germany. It served as both a military and political tool to thwart any Warsaw-Pact-led attacks and to discourage any notion of German military adventurism.

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1 Caspar F. Goodrich, “America’s Part in Founding the German Navy,” *USNI Proceedings* 50, no. 2 (1924): 252.

From confrontation to collaboration

The US support included naval cooperation with the newly formed *Bundesmarine*.² Admiral Arleigh Burke, the U.S. Navy's Chief of Naval Operations 1955-1961, remarked that "[...] If we [the United States] were to support the development of a West-German navy at all, we should do it wholeheartedly."³ Throughout the Cold War, cooperation included material support – the three *Charles-F.-Adams*-type guided missile destroyers built in Bath, Maine, and commissioned in the West-German navy 1969-2003 as FGS *Lütjens* (D 185), FGS *Mölders* (D 186), and FGS *Rommel* (D 187), come to mind – as well as a wide range of training and exercise opportunities ranging from missile firing sites in the Caribbean to naval flight schooling in Pensacola, FL, to the annual "Baltic Operations" first conducted in 1971. In the air, Lockheed Martin F-104 "Starfighter" and Mk-41 "Sea King" helicopters – built in America – reigned.

For the German navy, which was re-founded in 1956 on the notion of being fully integrated into NATO command structures and subsequently fashioning itself as an "alliance navy", the cooperation with the U.S. Navy provided significant political leverage, not least over West-European and domestic powers who would have enjoyed a more curtailed German navy. *Bundesmarine* excellence in mine countermeasures, conventional submarine operations in shallow waters, and fast patrol boat activity (in cooperation with capable naval aviation assets) definitely helped! Notably, this was more of a technological cooperation buttressed on the firm political transatlantic bond – and not so much in terms of command arrangements. In fact, whereas the U.S. Navy operated under Supreme Allied Commander Atlantic (SACLANT), the Germans were organized under Supreme Allied Commander Europe (SACEUR) and Allied Forces (AF) North. During the 1970s and 1980s, *Bundesmarine* units increasingly came into focus for deployment in SACLANT operational areas and multinational units, such as the Standing Naval Force Atlantic (STANAVFORLANT). This can be interpreted as a result of a two-fold interest: the German navy, equipped with state of the art ships and aircraft, sought to be seen and used as a professional force that was not solely limited to being the guardian of the Baltic Sea and its approaches. For the United States, while its ageing navy reeled from the effects of the failed Vietnam War strategy, incorporating the Germans meant an extra set of ships in the Atlantic theatre. Navy-to-Navy relations were characterized by a significant degree of mutual trust that must have been strong enough to overcome any Western European allied reservations towards a more navalist and Atlantic German maritime approach.

2 The East-German People's Navy (*Volksmarine*) is not subject of our discussion due to its sole function as the navy of the Socialist Party in what by all accounts could be described as a Soviet vassal state.

3 Burke's remark comes from his essay in a Festschrift for Vice Admiral (ret.) Friedrich Ruge, the first post-war Chief of the German navy, thereby underscoring the early and strong allied bonds that naval leaders exhibited. Cited in Sebastian Bruns, *The Role of the United States Navy in the Formation and Development of the Federal German Navy, 1945-1970* (Naval History and Heritage Command, 2005).

From collaboration to cooperation

In the 1980s, the American “Maritime Strategy” – a forward, offensive and global approach to unbalance the Soviet navy – brought back a distinct maritime focus to the Cold War. The new US-led approach included the Baltic Sea, the North Sea, and the Norwegian Sea. In parallel, NATO member states in Europe had devised and later fine-tuned a Concept of Maritime Operations (CONMAROPS), a classified document that codified how and where NATO navies were to engage the Soviet and Warsaw Pact forces at sea. Whereas the “Maritime Strategy” had wide-ranging international operational as well as tactical aspects to it, it was also very much focused strategically on American politics at home and abroad, not least through building what then-Secretary of the Navy John Lehman, strongly supporting US President Ronald Reagan’s general foreign and security policy, carried forward as the 600-ship navy.

The American naval renaissance could build on European allies who modernized their fleets significantly. In the 1980s, the German navy welcomed capable anti-submarine warfare frigates of the *Bremen*-class into their fleet. *Gepard*-class fast patrol boats, the navalized version of the Tornado jet, Sea Lynx helicopter, and more assets contributed to the forward defence leaning CONMAROPS, a trilateral Concept of Maritime Operations devised for the Northern NATO flank in harmony with the “big brother” from overseas. In 1981, German territorial limits of operations were axed. Tonnage limitations had been thrown out some 20 years earlier.⁴

Germany: from security importer to security exporter

With the fall of the Berlin Wall and the end of the Cold War, the soon-reunited Germany turned from an importer of maritime and naval security to an exporter of it, now frequently joining US and allied forces in operations ranging from the Persian Gulf (1990/91) to the Adriatic Sea (1993–1995, 1999).⁵ Without a sea control challenger, Western navies focused on the littorals and the effects their actions across the spectrum of conflict could have on land.⁶ Embargo control against warring parties such as Yugoslavia, deterrence, and naval

4 Werner Rahn, *Deutsche Marinen im Wandel: Vom Symbol nationaler Einheit zum Instrument internationaler Sicherheit* (Oldenbourg, 2005), 578–586.

5 Some have characterized this evolution as one from a force that guarded sea-lines of communication in support of national defence in the Cold War to one that would project power to foreign shores internationally. See, e.g. Wolfgang Nolting and Henning Bartels, “Die Deutsche Marine: von der ‘Escort Navy’ zur ‘Expeditionary Navy’,” *Europäische Sicherheit* 58, no. 9 (2009): 24–33. This quintessential North Sea view overlooks the fundamentally different role of Baltic Sea forces, though the paradigm shift was real. See Sebastian Bruns, “Moving East and South: U.S. Navy and German Navy Strategy in the Eurasian Theater 1991–2014, A View from Germany,” *Fletcher Security Review* 3 (2016): 33–41.

6 See for instance the U.S. naval strategies “From the Sea” (1992) and “Forward... From the Sea” (1994). For a discussion, see Sebastian Bruns, *US Naval Strategy and National Security: The Evolution of American Maritime Power* (Routledge, 2018), 111–168 and Pete Haynes, *Toward a New Maritime Strategy: American Naval Thinking in the Post–Cold War Era* (USNI Press, 2015). For Germany, see Moritz Brake, *The Contemporary German Navy as an Instrument of Foreign Policy: The Federal Republic and Its Naval Deployments after the Cold War* (Springer, 2024), 101–144.

diplomacy were more important than high intensity combat. In what Geoffrey Till has so masterfully characterized as the evolution of modern navies to post-modern navies – with the latter defined as those that defend the system of globalization, the global commons, and the world’s way of living rather than a port, one’s own merchant marine, or fight battles at sea – the protection of Sea Lines of Communication (SLOCs) became an increasingly significant, major task. These were no longer guarded akin to the destroyer and light aircraft carrier screens around allied convoys like in World War II, but rather understood as a value in itself. Through presence operations and maritime security approaches (from naval deployments to diplomatic engagements ashore), the SLOCs could be guarded from interference, in particular around the choke points of global trade, such as the Suez Canal, the Horn of Africa, and the Strait of Malacca. After all, with the demise of the Soviet Union and its venerable navy, the West had no peer competitor to fear, neither at sea, under the surface, or in the skies. Land-based anti-ship threats such as a coastal defence, the destabilizing effects of maritime crime, and small boat attacks in the littorals began to be the centre of attention.

After the terrorist attacks of September 11, 2001, NATO allies invoked Article V of the Washington Treaty and dispatched naval vessels to the Mediterranean and the Western Indian Ocean in support of the US-led “Global War on Terrorism”. Shortly after the attacks, in the English Channel, the German destroyer *Lütjens* conducted a passing exercise with the American warships *USS Winston S. Churchill* (DDG 81) and *USS Gonzales* (DDG 66). In a demonstration of solidarity and mutual friendship, the German sailors manned the rails in dress whites and unveiled a banner with “We Stand By You” written on it. Just under a year before, the US Navy’s guided missile destroyer *USS Cole* (DDG 67) had been attacked at the Yemini port of Aden by a sea-borne suicide bomber, resulting in the death of 19 sailors in what could be understood as ‘the Navy’s 9/11’.⁷

Naval cooperation in the era of small wars

Even if US, German and allied militaries soon found themselves in ultimately futile land wars in Afghanistan (since 2002) and Iraq (since 2003, but without German participation), the naval relationship between Germany and the US remained important: cooperation and training continued, and the BALTOPS exercise brought US forces to the Baltic Sea regularly. At the same time, facing the changing threat landscape and – on part of the German navy – the decommissioning of its guided-missile destroyers – regular trips to the US as part of *Auslandsausbildungsreisen* (AAR) to hone missile firing skills and to engage in a wider diplomatic effort, were scrapped. A normal evolution? In any case, the military establishments in Washington, D.C. and in Berlin were now increasingly consumed by the Army, Air Force, and

7 See for example Daniel Kirch, “Ein Bettlaken, das Seeleute zu Tränen rührte,” *Saarbrücker Zeitung*, March 20, 2019, B3.

Special Forces focus of these campaigns: procurement, political capital, public and media focus, manning, equipping, etc. disadvantaged the navies somewhat.⁸

To demonstrate continuing relevance, navies supported the anti-terrorism efforts on the flanks in Operation Enduring Freedom (OEF) and Operation Active Endeavour (OAE). In the Western Indian Ocean, the rise of modern piracy brought a welcome opportunity to showcase naval might against a non-state actor. This did not result in more funding; it simply allowed to demonstrate that cut-backs should not be as severe as possibly planned. While the German navy operated under European Union mandate, the Americans did so nationally. Cooperation in the far seas included information sharing and tactical collaboration, not just between the two navies, but also very generously with others.⁹ The Mediterranean and Indian Ocean activities highlight the different vectors that both navies began to take. Whereas the Americans remained engaged in two larger military conflicts in Central Asia that framed their thinking and operational realities (and remained vigilant after 9/11), Germany chose to use its navy in maritime security operations that had the politically suitable side-effect of buttressing the EU's aspirations as a foreign and security policy actor. The common denominator for both navies was that no peer competitor was in sight, and that in the face of economic crisis and political mandates ship-building needed to be consolidated, streamlined, and made to address the anticipated threats on the low-end of the intensity spectrum rather than those across the board.

Closer to Europe, the 2010s saw increasing US naval activity in the Mediterranean (allied combat operations against Libya in 2011). The American Sixth Fleet had long since shrunk from a mighty forward based force of the Cold War to a command ship and rotational arrangements for American warships passing through. Likewise, US naval presence in Northern Europe was by and large limited to American leadership of the annual Baltic Operations exercise and a couple of ships deployed. Much like their American bigger brother, the German navy had downsized its fleet. Modernization, consolidation, reorganization, the shifting global strategic focus to the small, long wars, and the "peace dividend" meant fewer ships and aircraft.¹⁰ The respective low-points were the US Littoral Combat Ship program and the German F125 "Stabilization Frigates". These were products of their own time, but undergunned, too large, too expensive, built without economics of scale, and thus entirely unfit for the return of great-power conflict.

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8 A pertinent case in point is the transformation of the U.S. Marine Corps into a "second land army" for combat roles in Iraq and Afghanistan, a development that the service has sought to turn around. "Force Design 2030" envisions potential future maritime and amphibious operations in the Indo-Pacific and across-domain warfare.

9 For some time, the information-sharing mechanisms at the Horn of Africa included Chinese and Russian navies. See Sebastian Bruns, "Multipolarity under the Magnifying-Glass: Establishing Maritime Security Off the Horn of Africa," *Sicherheit und Frieden (S+F) / Security and Peace* 27, no. 3 (2009): 174–179.

10 See Jeremy Stöhs, *European Naval Power from Cold War to Hybrid Wars* (Palgrave Macmillan, 2024). and Bruns, *US Naval Strategy*, 169–220.

That conflict appeared on the horizon at the time when the administration of US President Barack Obama (2009-2017) postulated a “Pivot to Asia” to manage and contain an aggressively rising China. That autocratic powerhouse built a powerful navy and employed tactics of intimidation, economic coercion, and lawfare. America’s shift to the Pacific roused European allies, whose neighbourhood was shaken by multiple crises in the Middle East, where an “Arab Spring” turned into bloody civil and proxy wars. Mass migration to Europe added new naval and maritime tasks – though entirely constabulary – on the continent’s Southern flank.

Seapower and “Zeitenwende”

Meanwhile, war returned to Europe in the form of Russia’s annexation of the Crimean Peninsula and Eastern Ukraine in 2014, a move designed to prop up Moscow’s greater vision of restoring parts of the Soviet empire. This included reestablishing a naval base and military footholds in Syria, giving the Russian navy a permanent forward base that it did not have since the late Cold War.¹¹ Russia’s investments in undersea capabilities and sea-launched Kalibr missiles caught Germany – still eyeing energy deals with Mr. Putin’s regime – by surprise. From what we know, the idea of a resurgent Russia was entirely discredited in senior political circles in favour of clinging to amicable bilateral relations buttressed by economic interdependence. It also appears that Germany, through its own making, undertook a long road that was designed to position itself as a European power situated in equidistance to Moscow and Washington, in no small part because of Chancellor Angela Merkel’s (2005-2021) understanding and practice of strategy. Since the 1990s, the German navy had just transformed to deal with all the low-intensity missions around the world and to serve in a naval diplomacy function in the Indo-Pacific. However, now the Baltic Sea turned from a flooded meadow to a new confrontational maritime hotspot – again.¹²

An overworked, exhausted and small German navy was but one result of successive governments in Berlin who had fallen behind NATO’s 2014 Wales Summit pledge to spend two percent of the national GDP on defence. It was not until Russia’s fully escalating and brutal war against Ukraine in February 2022 that honest changes were finally afoot. Germany’s chancellor Olaf Scholz (2021-2025) proclaimed a *Zeitenwende* (watershed) and a 100bn Euro slush fund for defence. Some of the funds of that watershed moment were earmarked to buy American sensors and platforms for naval warfare. For instance, two more P-8A “Poseidon” long-range maritime patrol aircraft were added to the existing order of four planes to replace

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11 Russia lost its influence and the important naval basing rights when the regime of Bashar al-Assad was toppled by Syrian insurgents in December 2024. Russia’s search for a permanent naval facility in the wider North African littoral has begun.

12 Sebastian Bruns, “From ‘Flooded Meadow’ to Maritime Hotspot: Keeping the Baltic Sea Free, Open, and Interconnected. NATO must remember that unilateral actions it takes in the Baltic Sea toward Russia could have global implications,” *Carnegie Endowment*, Washington, D.C., December 20, 2023.

Germany's ageing maritime fixed-wing air arm.¹³ The planned F127 AAW frigate (at more than 10,000 tons a venerable destroyer or cruiser) is likely to include the US-built AEGIS air defence system, proven since the 1980s. Germany also looks at buying American weapon systems.¹⁴ With "Marine 2035+", the German navy has for the first time in its history produced a stand-alone document that outlines force structure and operating areas.

A maritime world with less American commitment

It was not until the government of Friedrich Merz (Christian Democrats) assumed office in the spring of 2025 that more velocity was infused. In a catalyst decision, defence spending was exempt from the spending cap. More money is being funnelled into defence, including the navy which in turn is still suffering from outdated procurement and planning processes, and subject to inconsequential decisions of the past. At the time of writing, the future F126 *Niedersachsen*-class anti-submarine warfare frigates are in limbo because Dutch shipbuilder Damen, which won the contract for six warships, ran into substantial ship-building trouble. Germany's 2025 naval capstone document, "Marine 2025" – a program that provides a significantly upgraded view on the dynamics for the navy in the tension between 'fight tonight' and 'fight tomorrow', as well as a future fleet architecture – can only go so far if shipyards do not deliver what is needed.

NATO meanwhile had already ramped up command arrangements, e.g. reviving the Cold War's SACLANT as Joint Forces Command (JFC) Norfolk. The US reinstated the 2nd Fleet. American warships more routinely pulled into the Baltic Sea for BALTOPS and beyond to assure allies and deter Russian adventurism.¹⁵ For ballistic missile defence, the U.S. Navy began to forward-base *Arleigh-Burke*-class guided missile destroyers in Rota, Spain.

The first presidency of Donald Trump (2017-2021) appeared to thwart transatlantic relations. His aggressive, often ridiculed "America First" policy did away with traditional allies – or going to such lengths as scolding Germany and others for what he considered free-riding on US defence expenditure. Germans for one were by and large relieved when Joe Biden assumed the US presidency (2021-2025), only to receive the wake-up call with the second coming of Trump in 2025.

13 Combat over water shifted from the *Marinefliegergeschwader* to the *Luftwaffe* in 2005. The latter has shown little to no interest in taking over that role aggressively.

14 Sebastian Bruns, "'Zeitenwende' at Sea?: The German Navy's Purchase of SeaRAMs and Bolstering Security in the Baltic Sea," *Center for Maritime Strategy*, October 31, 2023.

15 The exercise "Trident Juncture" in 2018 brought the largest concentration of US and allied warships to the Norwegian Sea since the end of the Cold War. Likewise, BALTOPS has increased the number of warships by as much so it overwhelms the available space in allied naval bases.

A few weeks into the 47th president's administration, in the wake of policy decisions taken at the White House and articulated at the Munich Security Conference 2025 by Vice President JD Vance, German-American relations, in particular in the defence and security realm, appeared to be unravelling at flank speed.

For Germany, thinking about a day (or more) without US naval power¹⁶

Given that seapower has military and political roles (both operational and strategic), such a pivot away from Germany could have significant consequences for the old continent's economic powerhouse and largest country. A lack of strategic investment in NATO is the main threat, not necessarily a dramatically reduced U.S. Navy fleet – though the assumption must be considered that the ever-shrinking U.S. Navy, despite its top-level goals of varied ambition in the past years, will not be growing at or to a rate anywhere near Ronald Reagan's Cold War '600 ship navy'. A relative decline, instead of absolute, can be assumed. It should also be considered that the U.S. Navy as a forward-operating seapower is, by and large, a post-1945 anomaly for America. Throughout its history, there have been various deployment patterns and fleet structures, oftentimes prioritizing homeland defence.¹⁷ "America First" could capitalize on such historic patterns – and leave Europe to Europeans to defend.

A "Hobbesian nightmare"?¹⁸ Or a realistic, interest-driven evolution? This thought experiment is designed to highlight the established value of amicable German-American relations buttressed by NATO and the common value system. If the very baseline of that relationship is questioned, there will be severe implications for an autonomous, independent German defence stance. If it holds true that "High concentrations of naval power (and in the economic correlates of naval power) tend to generate alliances with the leading power rather than against it"¹⁹, Germany might still very much ally with an America in seclusion. It might also build up EU capabilities.

History alone does not validate unquestioned continuation of business as usual, and American concerns over a lacklustre European support for the common defence outdate the Trump presidencies by a long time.²⁰

16 I am indebted to Bryan McGrath and Mackenzie Eaglen, whose 2011 "Thinking about a Day Without Sea Power: Implications for U.S. Defense Policy," *Heritage Foundation Backgrounder*, no. 2555 (May 16, 2011), continues to inspire.

17 Peter Swartz, "Sea Changes: Transforming U.S. Navy Deployment Strategy, 1775–2002," *Center for Naval Analysis*, 2002/2021.

18 McGrath and Eaglen, "A Day Without Seapower," 9.

19 Jack Levy and William Thompson, "Balancing on Land and at Sea," *International Security* 35, no. 1 (Summer 2010): 7–43.

20 See for instance President John F. Kennedy's remarks at a meeting of the National Security Council, 22 January 1963.

Policy recommendations for ‘good enough’ US-German naval relations

German-American naval relations are not the wherewithal of transatlantic relations, or American and German national security. However, they are politically important, strategically significant, and operational useful in the wider, complex and chaotic transatlantic relationship. Given the highly dynamic nature of the issue the following set of recommendations can only go so far. The future trajectory of German and American foreign policy depends on the seriousness with which both governments act.

If the US moves away from its role as leader of the free world role is honest, and that appears to be so, then this is the real *Zeitenwende* moment. For both navies, the hope is that cooperation will continue for some time and never fully cease. There is reason to believe that, not least because of the on-going German-American defence contracts that are not limited to the navy (for instance, the *Luftwaffe* is slated to receive F-35 Joint Strike Fighters and is poised for CH-47 heavy transport helicopters), cooperation at sea will continue relatively unabated. It should be hoped that there is no full rift and a departure of the US from NATO – though that, too, is in the realm of the possible. Hopefully, BALTOPS and American naval presence around the European peninsula will continue. Germany in turn has already earmarked forces for the next Indo-Pacific Deployment, which shall coincide with the massive US-led naval exercise Rim of the Pacific (RIMPAC) 2026. It must be stated in the strongest emphasis, though: hope is not a strategy.

To calmly recognize the American inputs for European defence while clearly demonstrating in earnest that Germany “got the memo” will be the continuing narrative to spin for audiences on both sides of the Atlantic. Given the mercantilist nature of the US administration, it should be considered how European knowledge, use of bases, shipyards and repair facilities can provide America with opportunities to build and repair ships overseas. This could help mitigate the shipbuilding crisis in the US, though the path to true and deeper cooperation in those fields is likely rocky and slow. This is not something that the US will have the patience for.

A medium-term impulse is the need for continued personnel exchanges in the military and in the wider defence-intellectual complex. Those staff positions, be they uniformed or civilian, could easily find themselves on the chopping block as targets of opportunity. However, here as much as at sea, as the American “Cooperative Strategy for 21st Century Seapower” stated so visionary in 2007, “Trust cannot be surged.” With China and Russia as well as Iran and North Korea seeking to revamp the global order, mutual trust is the most important factor.

It remains to be seen how the US and Germany (and Europe) will be able to create a new transatlantic narrative that moves beyond the current, deeply felt irritations of the day. In any case, it cannot be stressed enough how crucial German re-armament is, both nationally but also in cooperation with nuclear and conventional allies. Germany, its European partners, and the transatlantic community will be in for some tough conversations. There is also room to invest, both in programs that tie the US to Europe as well as to make Europe more reliable standing on its own naval feet. It should also be clear that academic, but policy-relevant research into navies and recent naval strategy remains highly desirable, on both sides of the Atlantic.

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Getting Beyond “The Iron Triangle of Painful (Naval) Trade-Offs”

Sarandis Papadopoulos¹

All militaries protecting the rules-based international order confront the “Iron Triangle of Painful Trade-offs.” Coined by Dr. Kathleen Hicks in 2017, it labels the conundrum defence planners face.² At democratically acceptable spending, armed services have difficulty reconciling current readiness, with fully trained crews needed to manage the global system and its crises, while simultaneously investing in capabilities required for tomorrow, to master military change, while also delivering large enough forces over time. This paper will examine an American idea’s implications for European navies, and how to reconcile force development and employment, given the services of both confront a multiplicity of challenges worldwide.

Sea services must to do it all

Free-world navies must shift to capabilities for sea control, that is to use an oceanic space in the face of military opposition (even temporarily), or for sea denial, to block an adversary from using a maritime space for their ends. Rules-based services cannot assume at-sea immunity from threats, allowing power projection. To gain those maritime solutions, they must change how they create and use naval power.³ Alongside allies in North America, Japan, South Korea, the Philippines, Australia, and New Zealand, and partners, Europe’s navies must now meet threats on a global scale, from states possessing impressive military resources. These challengers mean to rearrange the world’s successful and equitable maritime order, compelling rules-based protectors to defend it over the long term.⁴

More precisely, the U.S. Chief of Naval Operations’ *Navigation Plan 2024* sets goals of “readiness for the possibility of war with the People’s Republic of China by 2027 and enhancing the Navy’s

1 OPNAV N72S. All opinions expressed here are those of the author, and do not represent the policies of the U.S. Navy, the Department of the Navy, or the Department of Defense.

2 Kathleen H. Hicks, “Defense Strategy and the Iron Triangle of Painful Trade-offs,” CSIS, Washington, D.C., June 22, 2017, https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/170622_Hicks_DefenseStrategy_Web.pdf.

3 An answer comes from the French *jeune école*. See Theodore Ropp and Stephen S. Roberts, *The Development of a Modern Navy. French Naval Policy 1871-1904* (Naval Institute, 1987), chapters XII and XV.

4 Elisabeth Braw, “From Russia’s Shadow Fleet to China’s Maritime Claims: The Freedom of the Seas is Under Threat,” *Atlantic Council*, January 23, 2025, <https://www.atlanticcouncil.org/in-depth-research-reports/report/from-russias-shadow-fleet-to-chinas-maritime-claims-the-freedom-of-the-seas-is-under-threat/#:~:text=So%20does%20the%20shadow%20fleet%2C%20whose%20size%20has,of%20civilian%20vessels%2C%20and%20disturbance%20of%20navigational%20tools,citing%20China's%20artificial%20islands,Russian%20AIS%20abuse,maritime%20boundary%20encroachment,undersea%20infrastructure%20sabotage%20and%20illegal%20fishing.>

long-term advantage.”⁵ The U.S. Navy cannot avoid global commitments which run down its readiness, nor forego modernization, which is needed to meet future threats. Admiral Lisa Franchetti’s words make a broader point: all naval services abiding by the rules-based order face such contradictory challenges. Reversing a post-Cold War bias to contend with small or non-existent adversary navies, sea services now face extended periods of competition, intense crises, and even long-term warfare in the maritime domain.⁶ These mean sea services must to do it all: confronting adversaries using sophisticated and numerous sensors and weapons, they must deter opponents, meet continuous opposition in low-end operations, and improve capability for long-term sea control warfare.⁷

History focuses this point. Alongside global Depression, a rearming National Socialist Germany, and East Asian tensions with Imperial Japan, Great Britain’s Mediterranean Fleet of the 1930s confronted a half-decade of crises. Starting with Fascist Italy’s attack on Ethiopia, followed by Spain’s Civil War and Benito Mussolini’s Albanian invasion, the period before Europe’s Second World War stressed the resources of the world’s then-largest fleet, and its friends.⁸ Likewise, the peacetime U.S. Navy faced off against both Japan and Germany before the December 1941 attack on Pearl Harbor, taxing its readiness.⁹ The ensuing escalation to all-out war of survival became more dangerous with rapidly changing technology. This paper does not predict a new global war, but emphasizes how readiness for long-term naval action will enhance *deterrence*. It argues protectors of the rules-based order, successors to 1930s’ navies, must deter aggression by recreating themselves, suited for lasting competition, crises and conflict.

The shift to offensive weapons

The Russia-Ukraine war from 2022 to the present, alongside the 2023-2025 Middle East conflict, show what such stressors mean. NATO navies must track Russian units, most notably submarines, as well as a so-called semi-commercial “ghost fleet.” The latter defy oceanic norms, operate anonymously, unsafely ship oil, or wreck undersea cables. These challenges have arisen continuously, across immense oceanic space, throughout a conflict in its fourth

5 Chief of Naval Operations Navigation Plan 2024 (Washington, D.C., September 2024), III, <https://www.navy.mil/Portals/1/CNO/NAVPLAN2024/Files/CNO-NAVPLAN-2024-low-bandwidth.pdf>.

6 Iskandar Rehmen, *Planning for Protraction. A Historically Informed Approach to Great-power War and Sino-US Competition* (Routledge, 2023). For post-1989 development of power projection, see Gary Weir and Sandra Doyle, *You Cannot Surge Trust: Combined Naval Operations of the Royal Australian Navy, Canadian Navy, Royal Navy, and United States Navy, 1991–2003* (Naval History and Heritage Command, 2013), 2–3.

7 Nicholas Tracy, *Sea Power and the Control of Trade* (Ashgate, 2005), 416–418.

8 Paul G. Halpern, ed., *The Mediterranean Fleet, 1930–1939* (Ashgate/Naval Records Society, 2016) *passim*; H.P. Willmott, *The Last Century of Sea Power. Vol. 2: From Washington to Tokyo, 1922–1945* (Bloomington, Indiana, 2010) chapters 3 and 4.

9 Thomas C. Hone and Curtis A. Utz, *History of the Office of the Chief of Naval Operations 1915–2015* (Naval History and Heritage Command, 2023), 120–125; Klaus H. Schmider, *Hitler’s Fatal Miscalculation: Why Germany Declared War on the United States* (Cambridge UP, 2021), chapter 8.

year at the time of this writing.¹⁰ They already tax European sea service readiness.¹¹ Just as during the 1930s, current-day Russian aggression, sometimes paralleled by the People’s Republic of China, challenges the rules-based order, which the Putin government aspires to replace with an imperial concept inside and beyond the maritime domain.¹²

Conversely Russia’s Black Sea ambitions, where it sought to exert sea control for military purposes and prevent Ukraine’s grain exports, have been stymied by the latter’s using many types of sensors and weapons. This scenario indicates the future challenge rules-based navies will confront. In fact, Ukraine “achieved something which should be impossible—without a navy, they have not only achieved sea denial, but also limited sea control” against the Russian Navy in the western Black Sea.¹³ The example has future portents, as the same techniques can be turned against Western navies, which will probably contend with the same mix of sea denial approaches and systems directed against them, as they have already been doing elsewhere.

The October 2023 Hamas attack on Israel widened to include the Red Sea, with Yemen’s Houthi military organization, equipped by the Islamic Republic of Iran, obstructing civil and military shipping. Reports note over 140 merchant ship attacks, and 170 more against U.S. Navy ships, by January 2025.¹⁴ Here a small-scale challenger broadened and extended a conflict, with Houthi blockage of the sea and Suez Canal lasting 15 months, stressing the endurance of naval units to maintain access and passage.¹⁵ Crucially, the Houthi challenge had to be mostly met with air defence systems, not needing many anti-surface or anti-submarine systems, threats a peer competitor could field.¹⁶ Essentially, in the Red Sea the

10 “Russia’s troops are tied down in Ukraine, but some of its best subs are still holding the US ‘at risk,’ top US commanders say,” *Business Insider Nederland*, January 18, 2023, <https://www.businessinsider.nl/russias-troops-are-tied-down-in-ukraine-but-some-of-its-best-subs-are-still-holding-the-us-at-risk-top-us-commanders-say/>; “Royal Navy shadows Russian attack submarines from the Arctic into the North Sea,” *Navy Lookout*, July 22, 2022, <https://www.navylookout.com/royal-navy-shadows-russian-attack-submarines-from-the-arctic-into-the-north-sea/>; Benjamin Jensen, “How to Exorcise Russia’s Ghost Fleet,” Center for Strategic and International Studies, January 7, 2025.

11 Max Colchester and Bojan Pancevski, “The Deep-Sea Battle Over the World’s Data Cables is Heating Up,” *Wall Street Journal*, January 25, 2025.

12 Beatrice Heuser, “Return to a Bleak Past? The Russian Invasion of Ukraine and the International System,” in *NATO and the Russian War in Ukraine: Strategic Integration and Military Interoperability*, ed. Jaane Haaland Matlary and Rob Johnson (Hurst, 2024), 99–116; Dmitry (Dima) Adamsky, *The Russian Way of Deterrence: Strategic Culture, Coercion, and War* (Stanford UP, 2023).

13 Duncan Redford, “Maritime Lessons from the Ukraine-Russia Conflict: USVs and the Applicability to the Baltic and High North,” (Hamburg: GIDS, October 2024), 9.

14 Heather Mongiilo, “Crew of USS Stockdale Shot Down Houthi Drones with 5-inch Gun, Says Admiral,” *USNI News*, January 30, 2025.

15 Hal Brands, “An Alliance of America’s Foes is Getting Tighter,” *Bloomberg Opinion*, November 8, 2024, <https://www.bloomberg.com/opinion/articles/2024-11-08/an-alliance-of-america-s-greatest-foes-is-getting-tighter>; Greg Myre, “From Gaza to Ukraine, why do so many modern wars last so long?,” *National Public Radio*, September 23, 2024, <https://www.npr.org/2024/09/23/nx-51-5039157/from-gaza-to-ukraine-why-do-so-many-modern-wars-last-so-long>; Greg Myre, “With Gaza ceasefire, Yemen’s Houthi rebels halt attacks on ships in the Red Sea,” *NPR*, January 29, 2025, <https://www.npr.org/2025/01/29/nx-51-5270518/with-gaza-ceasefire-yemens-houthi-rebels-halt-attacks-on-ships-in-the-red-sea>.

16 “DoD’s Warfighting Concept with the Vice Chairman of the Joint Chiefs of Staff,” interview at CSIS, Washington, D.C., May 1, 2024.

rules-based order's defenders had a relatively straightforward challenge, yet strained to do so. Worse, the Houthis' sea denial campaign could restart.¹⁷

What these wars show is a fundamental shift favouring offensive weapons, both cruise and ballistic missiles, as well as robotic and autonomous systems commonly called drones, either sold or shared by states seeking to destabilize global security.¹⁸ The ability of ships' defensive systems to counter larger barrages is questionable given the sophistication and sheer numbers potentially available. It is all well and good for a U.S. Navy destroyer to shoot down numerous inbound missiles and drones, as several did during 2023 and 2024.¹⁹ They delivered much better results than did the Russian cruiser *Moskva* in 2022.²⁰ Yet the question remains: what would happen if any nation's sophisticated warship were targeted by two or three waves of guided weapons, each fired in large volume? Just the cost-exchange ratio of interceptors needed to destroy cheaper incoming weapons is extortionate.²¹ Worse, the Red Sea action, the longest sustained naval combat since 1945, does not have the expanse of the Western Pacific.²²

What makes mastering such challenges expensive? In post-1945 democracies, deterrence is problematic: money for defence is politically difficult to justify, even amidst today's European promises to add €800 billion more for defence.²³ After 1960 governments systematized armed service spending, but at the cost of long-term capacity. The United States led with procurement reform, notably limiting government shipyards to repairs, not construction, and rationalizing programs across services.²⁴ Canada made similar changes, unifying its armed services, a step later reversed, but durably rationalizing procurement. The United Kingdom, Germany and the Netherlands likewise centralized administration, buying equipment from a shrinking number of private firms, with the Cold War's end speeding

17 Benoit Faucon, Costas Paris, and Saleh al-Batati, "Shippers Wary of Red Sea Routes Despite Houthi Pledge to end Targeting," *Wall Street Journal*, January 27, 2025.

18 Jeff Vandenengel, *Questioning the Carrier: Opportunities in Fleet Design for the United States Navy* (Naval Institute, 2023) chapter 1.

19 Heather Mongilio, "Sea Scroll #39," *USNI News*, October 17, 2024.

20 Sebastian Bruns, "The Wet Flank of the Russia-Ukraine War—Lessons for Modern Naval Warfare?," (Hamburg: GIDS, November 2024) 3.

21 CDR Salamander, "Running out SM-3 at Sea?," October 14, 2024, <https://cdrsalamander.substack.com/p/running-out-of-sm-3-at-sea>; Chris Panella and Jake Epstein, "The Navy's Top Ballistic Missile Interceptor Comes with a Heavy Price Tag, But the US Can't Afford to Go to War Without It," *Business Insider*, November 2, 2024.

22 Bill Gertz, "Admiral: U.S. Military In Pacific Rapidly Gearing Up For War With Cina by 2027," *Washington Times*, January 9, 2025.

23 Tim Martin, "European Council Vows to 'Deliver at Pace' Defense Readiness Roadmap 2030," *Breaking Defense*, October 23, 2025, <https://breakingdefense.com/2025/10/european-council-vows-to-deliver-at-pace-defense-readiness-roadmap-2030/>.

24 Until 1970, built both at public and private shipyards. Thomas Heinrich, *Warship Builders: An Industrial History of U.S. Naval Shipbuilding, 1922-1945* (Naval Institute, 2020). The U.S. Air Force-Navy TFX, or F-111, is illustrative: Lawrence S. Kaplan, *History of the Office of the Secretary of Defense v. 5: The McNamara Ascendancy 1961-1965* (OSD History Office, 2006), 466-474. See also Alain C. Enthoven and K.V. Smith, *How Much Is Enough? Shaping the Defense Program, 1961-1969* (Harper & Row, 1971), https://www.rand.org/pubs/commercial_books/CB403.html.

consolidation within and across national boundaries.²⁵ Efficiency changes created tension between market profits, maximized over the short-term or by steady state orders for firms, but limiting surge production for crises.

Crucial elements of readiness

The fundamental question is how to build navies able to campaign continuously against numerous and sophisticated foes. In the American case, the maritime crises stretch its existing fleet, forcing longer warship service lives, up to 50 years for US aircraft carriers, to maintain force levels.²⁶ Replacing or adding to the existing U.S. Navy fleet confronts a fixed industry, without a significant merchant shipbuilding capacity from which to draw, meaning the overall sector cannot accelerate deliveries.²⁷ The American warship industry is better funded than was the case in the recent past, but even those resources cannot make up for three decades of slow production, with aircraft carrier building times doubling, and the fast attack submarine building pace dropping by more than two-thirds.²⁸ Skilled worker shortages acutely slow repairs, while utterly rigid supply chains for parts prevent any speeding of warship building.²⁹ Shipbuilding has been recognized as a problem for over half a decade, but seems unresolvable without a national consensus.³⁰ Despite recently announced fleet growth in Germany, the Netherlands and Denmark, in the wake of the Russia-Ukraine war, European navies will confront similar or worse problems.³¹

25 Desmond Morton, *Canada and War* (Butterworths, 1981), 182-190. I am indebted to Stephen Prince, Eric Perinovic and Anselm van der Peet for British, German and Dutch examples. For the post-Cold War world, see Jeremy Stöhs, *The Decline of European Naval Forces, Challenges to Sea Power in an Age of Fiscal Austerity and Political Uncertainty* (Naval Institute, 2019).

26 Justin Katz, “US Navy to extend service lives of 12 destroyers,” *Breaking Defense*, October 31, 2024; CDR Salamander, “A Larger Navy is Not in the Cards ... not with the mindset aspic everyone is set in,” October 22, 2024, <https://cdrsalamander.substack.com/p/a-larger-navy-is-not-in-the-cards>; Tom Sharpe, “The U.S. Navy is about to learn the same bitter lesson as the Royal Navy: Extending ships beyond design life is not a sign that things are going well,” *The Telegraph*, November 3, 2024, https://www.telegraph.co.uk/news/2024/11/03/us-navy-royal-navy-life-extension-old-ships-arleigh-burke/?msoc_kid=1eda509f4bc67c539cf6f5bb6680.

27 John Frittelli, “U.S. Commercial Shipbuilding in Global Context,” *Congressional Research Service*, November 15, 2023, notes China, South Korea and Japan build 90% of global merchant tonnage, the United States 0.2%; Europe builds most of the rest.

28 VADM (ret.) Thomas J. Moore, “A Path to the Force Structure the Nation Needs,” *Proceedings*, February 2025, 24.

29 Congressional Research Service, “Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress,” October 30, 2024, <https://crsreports.congress.gov/product/pdf/RL/RL32665>.

30 CAPT Bernard D. Cole (ret.), “A Maritime Strategy for the United States When Next?,” *USNI Naval History*, October 2024; Brent D. Sadler, “Navigation Plans need Leadership and Resources to get the Navy truly underway,” October 29, 2024, <https://cimsec.org/navigation-plans-need-leadership-and-resources-to-get-the-navy-truly-underway/>; Jerry Hendrix, “Achieving a 355-Ship Navy ‘Before This Decade Is Out’,” *National Review*, February 16, 2018, https://www.nationalreview.com/2018/02/navy-expansion-plan-355-ships-not-enough/?utm_source=substack&utm_medium=email.

31 For German, Rainer Krug, “Zukünftige Fähigkeiten für die Deutsche Marine,” October 24, 2024, <https://defence-network.com/zukuenftige-faehigkeiten-fuer-deutsche-marine/>; Xavier Vasseur, “Netherlands Orders 2 additional Frigates, 6 more helicopters to ‘prepare for the worst’,” *Naval News*, September 5, 2024, <https://www.navalnews.com/naval-news/2024/09/netherlands-orders-2-additional-frigates-6-more-helicopters-to-prepare-for-the-worst/>; Richard Scott, “RNLI looks at low-manned platform to augment frigate fire power,” *Naval News*, June 2, 2023, <https://www.navalnews.com/event-news/cne-2023/2023/06/rnli-trific-low-manned-platform-to-augment-frigate/>; Denmark, see Tim Martin, “Denmark to Pass 3 Percent GDP on Defense Over Fear of Russian Rearmament,” *Breaking Defense*, February 20, 2025.

The American problem is not limited to ships, but to crews, systems, and weapons. Fleets cannot function properly without them all. Given their technical sophistication naval units especially need nearly a full complement of trained people, with almost all systems functioning, and loaded magazines, to set sail.³² These are the crucial elements of readiness, a complex responsibility, as Table 8.1 illustrates.³³

Variable	Description
Training time	Meeting accepted training standards
Crew certifications	Existing crew training already completed
Skill proficiency	Individuals’ accomplishment of each standard
Maintenance identified	Need for maintenance diagnosed beforehand
Duty time	Proportion of crew available for work
Error reports	Identifying whether crew error led to maintenance demand, driving more need for further training
Equipment usage	Hours underway, as an input to maintenance expected
Predicted maintenance time	Anticipated maintenance work needed
Unpredicted maintenance time	Needed work only identified during maintenance
Shipyard capacity	Current productivity + surge
Ship availability	Aggregate of personnel and equipment readiness
Forward presence	Proportion of fleet in current global use
Combat credibility	Whether enough of the fleet’s combat power is deployed

Table 8.1: Training and maintenance as components of producing warship readiness for combat

European fleets share this problem, in particular for the resources needed for long-duration and high-intensity missions.³⁴

American readiness problems are exacerbated by shipyard shortfalls, with repairs and new equipment installations slowing the release of ships for duty with the fleet.³⁵ Meaningful crew training can only occur once the ship has left the shipyard, while rapid technical innovation

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32 Justin Katz, “Navy’s SWO Boss Says Big Changes are Needed to Meet CNO’s Readiness Goals,” *Breaking Defense*, January 14, 2025.

33 Adapted from Bradley Martin et al, *Measuring Strategic Readiness: Identifying Metrics for Core Dimensions* (RAND, 2024), 33-34, https://www.rand.org/pubs/research_reports/RR453-1.html.

34 Matthew Savill, “The Royal Navy’s Carrier Strike Group is a Hollow Force,” *The Telegraph*, February 17, 2025.

35 On-time USN repair deliveries amounted to 36% (2022), 41% (2023) and 67% (2024). See Caitlyn Burchett, “Navy to Revamp Ship Maintenance, Training Schedules to Ready the Fleet for Potential China Conflict,” *Stars and Stripes*, January 21, 2025; James Stavridis, “The Navy is in Trouble. Trump’s Secretary Needs to Rescue It,” *Bloomberg*, January 17, 2025.

only makes the problem harder.³⁶ For these reasons, the *Navigation Plan* highlighted readiness, stating that “By 2027, we will achieve and sustain an 80 percent combat surge ready posture for ships, submarines, and aircraft.”³⁷ The document is arguing for the most straightforward way to having enough of the fleet to use during competition, crisis or conflict.

Here is where the current crises come home for Europe. A generation of post-1991 fleet reductions meant that the period’s limited naval investments became oriented to power projection or expeditionary capabilities. Europe’s navies conducted missions with fewer, larger ships in relatively permissive oceanic theatres.³⁸ The overriding goal became influencing events ashore, seen in 2011 during Operation Unified Protector/Odyssey Dawn in Libya, not on sea control or sea denial. This does not suggest that the allied services lack expertise in ship design or naval professionalism. Still, the current threat environment suggests European services are not fully equipped to fight for sea control, or conduct more limited sea denial missions against peer competitors, especially over a long period of time.³⁹ How Europe could support a fight against a maritime peer competitor in multiple theatres, such as the Atlantic Ocean and the Norwegian, Baltic or Mediterranean Seas, even with modest American support, is difficult to imagine.

A contemporary ‘jeune école’

This gloomy assessment demands a response resting in allied strengths, specifically open societies, diverse partnerships, shared naval production, technological skill and, crucially, talented sailors. The adaptations offered below neither invalidate naval investments, nor diminish the skills European sailors offer. Instead, they suggest changing how fleets and supporting military arms operate, which will reinforce existing naval power, relieving or strengthening them for some roles, while providing crews and their parent services with the durable resources to meet peer competitors over the long term. At its roots, resourceful allied

36 Katz, “Navy’s SWO Boss”; Peter Roberts, “Human Capital in Future Naval Warfare,” in *Maritime Strategy and Naval Innovation: Technology, Bureaucracy, and the Problem of Change in the Age of Competition*, ed. Alessio Patalano and James A. Russell (Naval Institute, 2021), 205–206.

37 *Navigation Plan* 2024, 12 and 20.

38 Stöhs, *The Decline of European Naval Forces*. For pre-2014 power projection, see pages 55 (Britain), 84, (Italy), 99 (Spain), 137 (Germany), 152 (Denmark), and 157–158 (the Netherlands). France (57), Greece and Turkey (108) avoided this impulse; Moritz Brake, *The Contemporary German Navy as an Instrument of Foreign Policy: The Federal Republic and its Naval Deployments after the Cold War* (Springer VS, 2024), 89–90.

39 Sarandis Papadopoulos, “Introduction. The Combined Framework: How Naval Powers Deal with Military Operations Other Than War,” in Weir and Doyle, *You Cannot Surge Trust*, 2–3. The author admits to reversing his thinking here, although the 1990s’ NATO-led Operation Sharp Guard needed Adriatic air and missile defense; see accounts in *ibidem*, Stephen Prince and Kate Brett, 56, and Sarandis Papadopoulos, 90.

naval personnel must reorient toward operational thinking, working to support campaigns and wars at sea rather than battles.⁴⁰

To begin enhancing deterrence we can return to the Russia-Ukraine war for an example. As the noted scholar Joseph Nye argues, it shows “old and new weapons complement each other.” Much of his argument points toward land warfare, but the author also noted that robotic and autonomous system use had unexpectedly driven “the Russian navy from the western half of the Black Sea.”⁴¹ To return to history, rather than prepare for a Battle of Leyte Gulf, rules-based navies should ready to wage the Second World War’s Mediterranean or Solomon Islands campaigns, or even the Battle of the Atlantic. The first pair saw *both* allied and axis forces attempt to exert sea control and sea denial, simultaneously in the same space. The last of those three, despite its name, was a 68-month long campaign, against the lengthy Axis sea-denial effort to prevent allied merchant passage. For the allies, success in the Battle of the Atlantic was essential to their victory.⁴²

These parallel capabilities offer a contemporary version of what the late 19th-century French Navy termed the ‘jeune école.’ France in the 1890s confronted fiscal, technical and industrial limits, so the *Marine Nationale* sought a way around competing against Great Britain, by using mines and new self-propelled torpedoes, instead of more large warships.⁴³ Today’s analogous robotic and autonomous systems lend parallel advantages. For force development, they are more easily built outside existing defence industry capacity, speeding delivery at lower cost. Operationally and tactically adding them to an existing navy, creating tailored forces, will complicate an adversary ability to find, fix or track alliance naval units, making it tougher to target weapons. The latter shift will rebalance the fight at sea to bolster deterrence.⁴⁴ The idea is to distribute maritime searching and lethality, beyond current fleets of warships and aircraft, to enable the conditions for sea control while creating more operating units for sea denial.

The Hudson Institute suggests these systems be labelled a “hedge force,” designed for “high-consequence” scouting and sea denial missions, leaving general-purpose naval units both

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40 David C. Evans and Mark R. Peattie, *Kaigun: Strategy, Tactics and Technology in the Imperial Japanese Navy 1887-1941* (Naval Institute, 1997), 472-476; Milan Vego, *Operational Warfare at Sea: Theory and Practice 2nd edition* (Routledge, 2017), the foremost English-language work, elides longer-term naval campaigns, save the “unique” 1939-1945 Battle of the Atlantic; see 196-197.

41 Joseph S. Nye, “Old and new lessons from the Ukraine War,” *ASPI The Strategist*, June 7, 2024, <https://www.aspistrategist.org.au/old-and-new-lessons-from-the-ukraine-war/>.

42 W.A.B. Douglas, Roger Sarty and Michael Whitby, *A Blue Water Navy: The Official Operational History of the Royal Canadian Navy in the Second World War, 1943-1945, Vol. II part 2* (Vanwell, 2007), 452.

43 Ropp, 233-235, 275-276 and 305. I acknowledge Professor Jean-Marie Kowalski, for focusing me on this analogy.

44 *Navigation Plan 2024*, 9. See also Michael Horowitz, “Battles of Precise Mass. Technology is Remaking War—and America Must Adapt,” *Foreign Affairs*, October 22, 2024.

freer from threats and available for other roles.⁴⁵ Designed to meet a specific scenario, during a seaborne People’s Republic of China invasion of Taiwan, these units will institutionalize rapid change in a part of the armed services and reinforce its combat power credibility. To lower costs and speed delivery, the Hudson Institute authors explicitly advocate building different sensors and weapons.⁴⁶ Specialization for either sensing or striking helps lower the chances of delayed delivery of these systems, and cuts costs. If given political permission, these solutions can make a meaningful difference in the medium term.⁴⁷

Specialization of robotic and autonomous sensors and weapons covers a spectrum of situations. In peacetime, they allow rules-based nations to monitor coasts, both their own and those of allies and partners, looking for illegal and improper activities. In Europe, this could mean tracking Russia’s ghost fleet, witnessing encroachment on national waters, or working to prevent illegal fishing, smuggling, or human trafficking.⁴⁸ These “forward presence” activities drain navy and coast guard readiness, especially over long periods of time, taxing resources needed for urgent or dangerous missions. In a peer competitor crisis, those same naval and coast guard units will surge to a regional sea or a choke point, where autonomous sensors will reveal events, letting an adversary know they are under surveillance.⁴⁹ And finally, in wartime these sensors and weapons will complicate an adversary’s task, forcing them to withdraw, operate surreptitiously, or devote weapons to destroy the robotic and autonomous units. That will spare friendly ships and aircraft from attack. In the words of one recent essay, such units “enable quick transformation from a maritime security system to a local reconnaissance strike network capable of sea denial operations.”⁵⁰

What about more conventional naval units? The short answer is they still must be built, but the American challenge, one analyst notes, is “the U.S. can’t build a warship on time and on budget.”⁵¹ The past generation, however, shows the universal need to construct warships continuously and predictably, to preserve worker skills and subcontractor viability. At best, inconsistent construction yields faulty designs, slower work, and higher prices. The

45 Bryan Clark and Dan Patt, “Hedging Bets: Rethinking Force Design for a Post Dominance Era,” *Hudson Institute*, February 2024, 17. Vandenengel, *Questioning the Carrier*, presents a broader argument.

46 Clark and Patt, “Hedging,” 25.

47 Bryan Clark and Dan Patt, “The Pentagon Must Build Weapons Differently to Mobilize for the Information Age,” *Breaking Defense*, December 11, 2024.

48 Jeffrey E. Kline, “Revamping Fleet Design and Maritime Strategy: An Integrated Naval Campaign for Advantage,” *CIMSEC*, September 18, 2023, <https://cimsec.org/revamping-fleet-design-and-maritime-strategy-an-integrated-naval-campaign-for-advantage/>.

49 See the Maritime Operations Center (MOC), as used in the recent *Navigation Plan*, 15.

50 Kline, “Revamping Fleet Design.”

51 Steven Wills, “Trump Administration must reform how U.S. Navy designs, builds warships,” *Defense Daily*, November 11, 2024, <https://www.defensedaily.com/commentary/trump-administration-must-reform-how-u-s-navy-designs-builds-warships/>. For LCS requirements and delays, see Robert O. Work, “The Littoral Combat Ship: How We Got Here, and Why,” *Undersecretary of the Navy*, 2014, 12–29, <https://www.govinfo.gov/content/pkg/GOVPUB-D201-PURL-gpo115904/pdf/GOVPUB-D201-PURL-gpo115904.pdf>.

same rule applies in Europe, as when the Netherlands ceased both minesweeper and more complex submarine production and refitting in 2004, and losing key “systems integration” skills.⁵² Pausing building meant domestic building of submarines and minesweepers could never affordably restart.

In contrast consistent ship delivery ensures better work and forestalls needing to train new employees, preserving the defence-industrial base. Comparing the late Cold War and post-1989 British and French submarine experiences is telling. Britain restarted diesel submarine construction with its 1980s’ *Upholder*-class after a two-decade break in building the type. Despite workers lent from a parent company, the lack of labour expertise spread delays across three of the four boats in the class.⁵³ In contrast, the French navy used just DCNS (now Naval Group) to build submarines, with repairs done either by it or in government docks. France also levelled submarine construction “peaks and troughs” by overhauling ballistic missile boats to keep staff and suppliers at work.⁵⁴ Assuming no massive infusion of resources for warship construction, the French pattern seems the most promising way forward in rules-based countries’ navies.

Data fusion

There are crucial decisions and investments needed to make these changes occur. Specifically, the 2024 *Navigation Plan* identifies the need for “a clear vision of how we fight to win and exploit sea control in a high-end, information-centric global battle space.”⁵⁵ Marrying the traditional naval mission of sea control with broadly shared information is not new. During the 1990s’ Operation Sharp Guard peacekeeping mission in former Yugoslavia, NATO and Western European Union navies established a “Recognized Air and Surface Picture.”⁵⁶ While initially imperfect, this approach resolved how to distinguish and share the identities of neutral vessels and aircraft, as well as unknown threats and genuine targets, beyond those identified by single ship or airplane’s systems. Given the complex nature of peer competitors,

52 Haico te Kulve and Wim A. Smit, “Building Systems Integration Capabilities: The Role of the Royal Netherlands Navy in Constructing and Innovating Warships, 1945-2024,” *The Northern Mariner/le marin du nord* 34, no. 1 (Spring 2024): 69-70, https://www.cnrs-scrn.org/northern_mariner/vol34/tnm_34_1_41-80.pdf.

53 John Birkler et al, *The U.S. Submarine Production Base: An Analysis of Cost, Schedule, and Risk for Selected Force Structures* (RAND, 1994), Appendix D, 159-160. *Upholder* boats became Canadian Navy *Victorias*; Peter Hennesey and James Jinks, *The Silent Deep: The Royal Navy Submarine Service Since 1945* (Allen Lane, 2015), chapter 10.

54 Birkler et al, Appendix E, 166-169. While constructing four nuclear classes France built four conventional *Agosta*-class submarines, plus two sold to Pakistan. The U.S. Navy gap in delivering ballistic missile submarines will be 33 years old when *USS Columbia* commissions in 2030; see Moore, 24. See also VADM (ret.) Phil Balisle, “Warship Construction is a Critical and Urgent Challenge,” *Proceedings*, February 2025, 27.

55 *Navigation Plan* 2024, 13.

56 Stephen Prince and Kate Brett, “Royal Navy Operations off the Former Yugoslavia,” in Weir and Doyle, *You Cannot Surge Trust*, 57-58.

with many diverse sensing and strike systems, in some cases capable of working beyond the horizon, more such shared data and support will be needed.

The *Navigation Plan* indicates how such data fusion must take place, both within the American Joint Force, as well as with allies and partners, stressing “how we fight in this distributed manner is the Maritime Operations Center (MOC), the Navy’s approach to fleet level command and control.”⁵⁷ These processes operate alongside the numbered US Fleets, Fleet Forces Command, Pacific Fleet and Naval Forces Europe. In parallel, NATO has established its Maritime Component Commands to offer this same role in Naples, Italy, at Northwood, in the United Kingdom, and at a combined Baltic activity.⁵⁸ One wonders, however, whether the anticipated demand placed on these activities by adversaries, using their sophisticated sensors and weapons, is only going to rise. Specifically, can every rules-based navy use them to incorporate the cyber and space-dependent effects, or manage the logistics which naval units need? Also, given that rules-based nations’ sea control needs may be challenged around the world, can the NATO component commands potentially support these functions far from Europe?

A further complexity is that contemporary sea control must be delivered by more than navies. The American example, fighting as a Joint Force, suggests MOC processes must connect to multi-service activities, run by Joint Operations Centers (JOCs), at the regional U.S. Combatant Commands.⁵⁹ In future, sea control or sea denial missions must integrate actions across boundaries and, in NATO or EU terms, beyond one nation’s services, all conducted over long periods of time. Instead of arbitrarily drawn and land-centric areas of responsibility, the ease of maritime movement suggests navies particularly need support measures from a headquarters. Management of oceanic fights could assume global scope, if two or more opponents work in tandem. We therefore can anticipate the need for MOC-to-MOC arrangements to influence and assume precedence in MOC-to-JOC work, seams between organizations that must be closed.⁶⁰ NATO has experience delivering this effect: its control of shipping publications have integrated similar multinational planning for over 70 years. But again, the need for maritime command and control, in a multi-dimensional, joint and combined context, at scale while able to work over lengthy periods of time, will be high.

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57 *Navigation Plan* 2024, 15.

58 James Rothwell, “Germany Takes the Fight to Russia in Undersea Cable War,” *The Telegraph*, February 21, 2025. See the brief NATO MARCOM history <https://mc.nato.int/about-marcom/history> and Maritime Information Exchange (MARIE) <https://mc.nato.int/missions/maritime-information-exchange-marie>.

59 Lauren A. Courchaine, Alexis G. Grynkeiwich and Brian D. Courchaine, “Structuring for Competition: Rethinking the Area of Responsibility Concept for Great Power Competition,” *Joint Forces Quarterly* 98, no. III (2020): 5-6; Mark Mozad et al, *Rethinking Jointness? The Strategic Value of Jointness in Major Power Competition and Conflict* (RAND, September 5, 2023).

60 My colleague Steve Harris offered this terminology. See *ibidem* and Papadopoulos, “Introduction” in Weir and Doyle, *You Cannot Surge Trust*, 19, footnote 63.

Multinational advantages of rules-based navies

Making these solutions will be a heavy lift, indicating navies must improve ways to recruit and train their people to add robotic and autonomous systems while managing command and control more effectively. Notably, most rules-based navies are run by volunteers, expensive as they are to recruit and keep, but understanding the value of mission command.⁶¹ We can therefore assume rules-based navies' people will continue to be the world's most competent, sailors who will be at the core of successful organizations in future.⁶² The current challenge is that they must renew skills needed for sea control and sea denial operations, as they incorporate new technology and practices. For that reason, in 2024 the U.S. Navy created a new enlisted career path, or rating, for "robotics warfare specialist."⁶³ These sailors will specialize in managing and mastering the skill of employing these new systems, probably the leading edge of such a technical change in other services as well.

Beyond technical competence, the human component of long-term operations must also enter the picture. Trained individuals and teams must become resilient or "antifragile," which means accepting the disorder war imposes, so that navies can assume the offensive in a sea control battle.⁶⁴ The Second World War example of Royal Navy Captain Frederic John Walker, a successful Escort and Support Group commander for North Atlantic convoys, shows what such long-term effort could mean. He welded talented crews, and combinations of ships, into potent organizations for sea control. Albeit at high cost to his health, for he died due to the wear and tear of his experience at sea, "Johnny" Walker successfully changed allied antisubmarine tactics, by incorporating new ships, sensors and weapons, and over a 30-month period led his groups to sink 20 U-boats.⁶⁵

Which brings us to the multinational advantages rules-based navies possess. Shared operations and support lighten the load placed upon any single country, and allow more military work which enhances deterrence. This has been an allied naval advantage for over 80 years, literally since the time of Johnny Walker, one further evolved during the Cold War and afterward.⁶⁶ That constant experience and reinforcement by working together, including by NATO's Standing Maritime Groups and multinational exercises such as 2018's

61 Kori Schake, "The Threat Posed by Russia and China after the Ukraine War," in *NATO and the Russian War*, ed. Matlary and Johnson, 144.

62 Peter Roberts, "Human Capital in Future Naval Warfare. Innovative or Antifragile?," in *Maritime Strategy and Naval Innovation*, ed. Patalano and Russell, 210-212.

63 Jon Harper, "Navy pulls trigger on new robotics warfare specialist rating," *Defense Scoop*, February 22, 2024, <https://defensescoop.com/2024/02/22/navy-robotics-warfare-specialist-rating-unmanned-systems/>.

64 Ibidem and Allyson Park, "Navy Needs 'Offensive' Mindset—And Lots of Robots, Expert Says," *National Defense Magazine*, September 26, 2024, <https://www.nationaldefensemagazine.org/articles/2024/9/26/navy-should-establish-hybrid-sea-denial-sea-control-fleet-expert-says>.

65 Marc Milner, *The U-Boat Hunters: The Royal Canadian Navy and the Offensive Against Germany's Submarines* (Naval Institute, 1994), 108-111.

66 Papadopoulos, "Introduction" in Weir and Doyle, *You Cannot Surge Trust*, 6-9.

“Trident Juncture,” joined by 31 nations, extends individual and collective capacity, while offering operational flexibility.⁶⁷ In the words of Rear Admiral Philip Sobeck, USN, the 2025 head of Military Sealift Command, logistical sharing “allows us to swiftly adapt to changing circumstances, and redirect forces without the constraints of limited fuel supplies.”⁶⁸ Shared burdens also spread the fiscal expense of each nation, whether during peacetime, or in crisis or war.⁶⁹

Likewise, sharing industries can lower unit costs. The example of AUKUS, the combined Australian, British and US agreement, shows a foreign government financially supporting the American defence industrial base to build nuclear submarines.⁷⁰ Buying submarines is just one part of AUKUS, but shows the collaborative effort can apply to the most sophisticated capabilities—reinforcing supply chains and a trained workforce—while lowering the cost to build a forces for sea control or sea denial.⁷¹ The same applies in Europe. France and Italy’s multipurpose frigate project (Frégate Européenne Multi-Mission, FREMM), alongside submarine work between Germany and its separate partners in Italy and Norway, show how such economic rules can apply in shipbuilding.⁷² These steps offer hints of the types of cooperation we can seek and build upon in future.

These solutions are *a* way to defend the rules-based international order at sea; they do not exclude better ideas. As noted above, the nations that build these sea services can mobilize the finest ships, the best support systems, potent weapons and cutting-edge technology to keep the world’s oceans protected from crime, unlawful pressure or conflict. It is no coincidence the world’s oceanic trade has flourished with such protection. Best of all, these services, both trans-Atlantic and trans-Pacific, are operated and maintained by the best sailors the world has ever seen, people accustomed to working together in peacetime and crises. For reliable future deterrence, however, these fleets must add resources to stay at the forefront of managing the sea. If granted that support, there is no doubt in the author’s mind that the world’s rules-based navies will continue to support a system that has benefitted their nations and the entire world.

67 Jeremy Stöhs, *European Naval Power: From Cold War to Hybrid Wars* (Palgrave-MacMillan, 2024), 425; Steiner Torset and Amund Lundesgaard, “Maritime-Strategic Integration and Interoperability in NATO: The Case of Standing NATO Maritime Group 1 (SNMG 1),” in *NATO and the Russian War*, ed. Matlary and Johnson, chapter 4.

68 Martin Manaranche, “France’s new tanker conducts first replenishment at sea with U.S. commercial oiler,” *Naval News*, January 9, 2025.

69 Papadopoulos, “Conclusion,” in Weir and Doyle, *You Cannot Surge Trust*, 300.

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The Northern Flank and the Role for the Netherlands

Anne Runhaar

Introduction

In recent years, the Arctic has gained increasing strategic importance for NATO and its member states. This increased attention is driven most notably by the growing accessibility of the Arctic. The Northern Sea Route (NSR), for instance, has the potential to offer reduced global shipping times and will potentially be already open by 2030. Resources, which are believed to be within the Arctic seabed, would help to bolster any economy. In strategic terms, the decline in sea ice and the resulting decrease in natural barriers, increase military manoeuvrability for example with submarine operations while creating the parallel challenge of greater visibility.

Reflecting this shift, Russia has since 2005 systematically reopened and modernized former Soviet-era military bases along its 37,653¹ km coastline, which represents the longest overall Arctic coastline, bolstering its presence with new radar systems, airfields and advanced weaponry.² Rising tensions reached a critical point with the beginning of the Russian-Ukrainian war in 2022. Subsequently, most transnational corporations, councils and organisations such as the Arctic Council have encountered restrictions in their operations, either by omitting Russia or by being brought to a standstill entirely.

Since the start of the war, NATO has increased the scale and frequency of exercises within the Arctic. This shift is evident when comparing the NATO Strategic Concept of 2022³, which acknowledges Russia's capabilities to disrupt the freedom of navigation and the capabilities of the alliance in the High North, to the new Alliance Maritime Strategy 2025, which highlights the Arctic several times.⁴ Alongside this, Sweden and Finland joined NATO in 2023 and 2024 respectively. This means that seven of the eight Arctic states⁵ are now NATO members, which makes the Arctic a frontline in NATO-Russia confrontation. In parallel, several NATO member states have developed their own Arctic strategies, ranging from military ones, like

1 "Russia," *The Arctic Institute - Center for Circumpolar Studies*.

2 H.A. Conley et al., "The Ice Curtain: Russia's Arctic Military Presence," *Center for Strategic and International Studies (CSIS)*, March 26, 2020.

3 NATO, "NATO 2022 Strategic Concept," <https://www.nato.int/en/about-us/official-texts-and-resources/strategic-concepts/nato-2022-strategic-concept>.

4 NATO, "Alliance Maritime Strategy," October 29, 2025, <https://www.nato.int/en/about-us/official-texts-and-resources/official-texts/2025/10/29/alliance-maritime-strategy>.

5 United States of America, Canada, Finland, Iceland, Norway, Sweden, Denmark (Greenland).

the US with its latest concept in 2024,⁶ to a more general approach, which includes various factors such as economic variables, like the Netherlands with its 2021-2025 polar strategy, which will soon be updated.⁷

Parallel to that, Russia has also adjusted its position and scaled up exercises, as seen by the Ocean 2024 exercise, with the support of China, which considers itself as a near-Arctic state.⁸ The Russian-Chinese partnership was reinforced by a memorandum of understanding between the Russian and Chinese coast guards, which was put into practice by a joint sea patrol in the Arctic in early October 2024.⁹ The operation also highlighted the Chinese Coast Guard's growing ability to operate in blue-water environments, including those with ice conditions. Notably, these naval developments coincide with joint operations of Russian and Chinese bombers within the Alaska Air Defence Identification Zone.¹⁰

As a consequence, NATO must update its risk assessment of the region and consider how all states can contribute to the Northern Flank. Against this backdrop, the potential contributions of non-Arctic states such as the Netherlands become particularly relevant, as NATO's deterrence and defence posture in the Arctic increasingly depends on alliance-wide capabilities rather than solely on the resources of Arctic member states. This paper's research question is therefore as follows: How is NATO reshaping its strategic posture in the Arctic, and what role can the Netherlands, as a non-Arctic state, play in strengthening deterrence and defence in this evolving security environment?

To address this question, the analysis is conducted in several stages. First, NATO's Cold War strategy in the Arctic is examined to establish a historical context for understanding the alliance's current position. Next, NATO's Arctic infrastructure is assessed, paying particular attention to vulnerabilities arising from climate change. This is followed by an evaluation of NATO's current capabilities and the challenges they face in the region. Based on these findings, the article then explores how the Netherlands, as a non-Arctic member state, can contribute politically, economically and militarily to strengthening NATO's presence and deterrence capabilities in the High North. Finally, insights from each stage are integrated to answer the central research question, demonstrating concrete ways in which the Netherlands can support NATO's strategic objectives in the Arctic.

6 Department of Defense, "2024 Department of Defense Arctic Strategy," June 2024.

7 Ministerie van Buitenlandse Zaken, "The Netherlands' Polar Strategy 2021-2025: Prepared for Change," Ministerie van Algemene Zaken, March 1, 2021, <https://www.government.nl/documents/publications/2021/03/01/polar-strategy>.

8 Tomasz Grotnik, "Ocean-2024 – Russian Navy Flexes Its Muscles, China Assists," *Naval News*, September 13, 2024, <https://www.navalnews.com/naval-news/2024/09/ocean-2024-russian-navy-flexes-its-muscles-china-assists/>.

9 Astri Edvardsen and Birgitte Annie Hansen, "China's Coast Guard on First Patrol in the Arctic With Russia," *High North News*, October 4, 2024, <https://www.highnorthnews.com/en/chinas-coast-guard-first-patrol-arctic-russia>.

10 Andreas Østhagen and Erdem Lamazhapov, "Alaska, Not Greenland, Should Worry the United States in the Arctic," *The Arctic Institute - Center for Circumpolar Security Studies*, October 28, 2025, <https://www.thearcticinstitute.org/alaska-greenland-should-worry-the-united-states-arctic/>.

The Arctic-Atlantic link: from past to present

In the late 1940s and early 1950s, the High North became a strategically important region due to its unique geography, which connects the Arctic and the North Atlantic to the Norwegian and Barents Seas. As the Soviet Union established the Northern Flotilla in 1933 and then started expanding it in the 1950s, the region became crucial for protecting Moscow's growing fleet based on the Kola Peninsula and for ensuring access to the North Atlantic. The concentration of assets, maritime chokepoints, and reinforcement routes established the High North as a persistent theatre of East-West rivalry.

In response to the broader Soviet threat, NATO began developing its maritime command structures in the early 1950s. The following key commands worked primarily in the Arctic: the Eastern Atlantic Command (EASTLANT) and the Western Atlantic Command (WESTLANT) under the Allied Command Atlantic (ACLANT) and Allied Forces Northern Europe (AFNORTH) under Allied Command Europe (ACE).

WESTLANT controlled and operated naval assets mainly from the USA and Canada within the Atlantic under ACLANT. Meanwhile, the other subordinate command, EASTLANT, was responsible for coordinating all movements in the eastern and northeastern Atlantic. Until roughly the 1970s, NATO's primary concern was securing the Western Approaches, an area southwest of the UK and Ireland. This was because the Soviet Northern fleet, which was stationed on the Kola Peninsula, used this route to access the North Atlantic and was expected to threaten allied Sea Lines of Communication (SLOCs) there. However, due to NATO's shortage of escort forces such as hunter-killer carrier groups, and the difficulty of covering such a broad area, ACLANT shifted its focus towards the more manageable Greenland-Iceland-United Kingdom (GIUK) gap. The control of the GIUK gap and the Western Approaches protected the SLOCs across the Atlantic, as well as the critical supply chains to Europe and the important harbours within the UK. On the other side of the Atlantic, ACE was structured to coordinate all military movements within Europe. Under ACE, AFNORTH was responsible for air and land operations, particularly in Northern Europe and Norway. The commands conducted multiple joint exercises like Northern Wedding and Ocean Safari in the Norwegian Sea and on the Northern Flank, focusing primarily on defending NATO's positions.¹¹

By the 1980s, the strategic balance in the North Atlantic had shifted. The U.S. Navy had grown significantly, and the Soviet Union had developed new strategic ballistic missile submarines (SSBNs), such as the *Delta*-class, which was launched in 1971 and could carry SS-N-8 strategic

¹¹ Diego Ruiz-Palmer, in *Guardians of the North Atlantic*, 1, ed. Sebastian Bruns and Christian Jentzsch, vol. 7, Kiel Seapower Series (NOMOS, 2025).

ballistic missiles with an increased range.¹² To adjust to all these factors, NATO developed the concept of maritime operations (CONMAROPS), accorded in 1982. Rather than defending its position, NATO moved to actively operate closer to Soviet waters. This forward presence served two purposes. First, it acted as a deterrent by signalling NATO's ability to threaten the Soviet Northern Fleet and its SSBN bastions before they could reach the Atlantic. Second, it pushed Soviet naval operations away from the Western Approaches and the GIUK gap, forcing the Northern Fleet to defend its own flanks and supply lanes rather than projecting power into the Atlantic.¹³ In the Arctic, this meant combining the AFNORTH and ACLANT forces, for example, for amphibious and multi-domain operations, following the complete air-land-sea approach. While the exercises continued, they adopted a more offensive approach. This is illustrated by the shift in positioning of US and UK carrier groups deep in the Norwegian Sea during *Ocean Safari*, instead of near the GIUK gap. Following the end of the Cold War, NATO steadily decreased the number of such exercises and restructured its commands, including those relating to the Arctic. While ACE continued, ACLANT was abolished in 2003.

In order to move to a more regional focus, NATO established its Joint Forces Commands (JFCs) in Naples, Italy and Brunssum, in the Netherlands. JFC Brunssum is responsible for Northern Europe and thus the Arctic, particularly with regard to land and air operations. In addition, NATO established several regional Allied Maritime Component Command headquarters in Northwood, UK; Naples, Italy and Lisbon, Portugal, responsible for coordinating maritime operations in their respective regions. In 2012, these were consolidated under the Allied Maritime Command (MARCOM) in Northwood, UK, which has since been responsible for the conduct of all NATO maritime operations.

In response to the Russian annexation of Crimea in 2014, NATO established additional commands: JFC Norfolk, US, which is responsible for maritime strategy primarily in the North Atlantic, and the NATO Joint Support and Enabling Command. Hence, the Arctic is now the shared responsibility of NATO MARCOM, JFC Norfolk and JFC Brunssum. NATO MARCOM is responsible for carrying out all maritime operations also within the Arctic, JFC Brunssum focuses on managing mainly air and ground forces, and JFC Norfolk plans and mainly oversees maritime forces within the region. All this leads to a geographical overlap between the three commands. This was previously further complicated by the fact that NATO Arctic states were divided between the JFCs at Norfolk and Brunssum. As of December 5, 2025, all NATO Arctic states operate under JFC Norfolk.¹⁴ Prior to the transfer of Finland, Sweden and Denmark in 2025, NATO's JFC structure resembled the Cold War configuration of AFNORTH and EASTLANT. The command adjustment improves NATO's operational posture

12 Berk Vindevogel, in *Guardians of the North Atlantic*, 1., ed. Sebastian Bruns and Christian Jentzsch, vol. 7, Kiel Seapower Series (NOMOS, 2025).

13 Diego Ruiz-Palmer, in *Guardians of the North Atlantic*, 1., ed. Sebastian Bruns and Christian Jentzsch, vol. 7, Kiel Seapower Series (NOMOS, 2025).

14 The Finnish Defence Forces, "Finland, Sweden and Denmark to Be Transferred to Joint Force Command Norfolk," *Puolustusvoimat*, December 5, 2025, <https://puolustusvoimat.fi/en/-/finland-sweden-and-denmark-to-be-transferred-to-joint-force-command-norfolk>.

in the region, enabling coordinated reinforcement and maritime operations, and enhancing the alliance's ability to deter and respond to the evolving threat from Russia in the Arctic.

Despite these structural improvements, NATO still lacks a comprehensive strategic guideline like CONMAROPS. Although the alliance adopted the Alliance Maritime Strategy (AMS) in 2025, the document only superficially addresses the Arctic and does not translate emerging challenges into concrete operational guidance. However, NATO did reveal the Regional Plan North West, which is one of three defence plans and includes the European Arctic. These plans apparently entail operational guidelines for JFC Norfolk in the form of scenarios, responsibilities and capacities. Like CONMAROPS during the Cold War, this plan remains classified. All in all, while NATO has now structurally strengthened the European-Arctic posture, it has no clear command or strategic framework for the wider Arctic, including the American-Canadian region and the central Arctic Ocean. A more holistic approach to the Arctic could conversely improve interoperability between different states, enhance climate change resilience and offer the opportunity to react better to regional dynamics, challenges which have been mentioned by the AMS 2025. Furthermore, this approach could ease tensions within the alliance regarding the current US government's claims on Greenland and encourage a more consistent alignment of national interests between Arctic and non-Arctic members.¹⁵

In conclusion, NATO's current approach to the Arctic differs significantly from its approach during the Cold War. CONMAROPS provided a coherent naval framework that enabled forward operations in the High North. In contrast, the Alliance Maritime Strategy 2025 only superficially addresses the Arctic, raising doubts as to whether it can serve as a meaningful strategic foundation for guiding military operations under JFC Norfolk and NATO MARCOM. The impact of the Regional Plan Northwest remains to be seen. Nevertheless, NATO has undergone a substantial transformation. While Arctic responsibilities were divided among multiple commands until 2025, transferring the three Arctic countries to JFC Norfolk has consolidated command arrangements, strengthened a joint, multi-domain approach, while keeping the Northern Flank under a single command. However, it remains unclear how cooperation between NATO MARCOM and JFC Norfolk will evolve in practice with regard to Arctic operations.

¹⁵ The latest U.S. National Defense Strategy 2025 underscores this need for greater coherence by no longer mentioning the Arctic or High North at all, signalling a reduced American focus on the region, even though the tensions are increasing.

The status quo of infrastructure at the Northern Flank

Although NATO's operational structure has now been determined, it is the region's physical infrastructure that dictates how and where these operations can be carried out. With the accessions, the Arctic infrastructure of NATO has been strengthened, improving supply and deployment routes, particularly through Finland's rail network. However, national differences, such as incompatible rail systems, continue to pose logistical challenges. In addition, NATO only began investing significantly in Arctic infrastructure, including logistical hubs and bases, in the late 2010s and early 2020s.¹⁶ Yet, they only needed to build upon existing key Arctic and sub-Arctic infrastructure maintained by the northern states throughout the Cold War. Norway, for example, has operated key air and naval bases in the High North as part of NATO's Northern Flank already during the Cold War. Denmark has maintained military installations in Greenland, including Thule Air Base (later Pituffik Space Base), since 1951.¹⁷

Russia, meanwhile, started reopening Arctic bases as early as 2005. Russia's efforts are centred on reestablishing its military presence from the Cold War era, rather than pursuing entirely new advances.¹⁸ Among the build-up were bases such as Nagurskoye, Rogachevo, Temp and facilities across the Murmansk region, many of which had fallen into disuse after 1991.¹⁹ This goes hand in hand with the relatively stable and sometimes even decreasing Russian military activity within the Arctic, both before and after the 24th of February 2022.²⁰ All in all, while NATO began investing in Arctic infrastructure later than Russia, the exact extent of the resulting gap remains unclear.

■
16 As NATO is an alliance, its actions depend mainly on national decisions to invest in their Arctic military infrastructure. Examples include the response of the US to the Crimean crisis and Canada's updated Arctic strategy in 2024.

17 Alina Bykova, "NATO Has Always Been an Arctic Alliance (Part I)," *The Arctic Institute - Center for Circumpolar Security Studies*, May 28, 2024, <https://www.thearcticinstitute.org/nato-arctic-alliance-part-i/>.

18 Mathieu Boulègue, "Russia's Military Posture in the Arctic | 5. Russia's Arctic Military Intentions," Chatham House, October 15, 2024.

19 Michael Paul and Göran Swistek, "Russia in the Arctic: Development Plans, Military Potential, and Conflict Prevention," in *SWP Research Paper 3* (2022), version 1 (Stiftung Wissenschaft und Politik, German Institute for International and Security Affairs, 2022), <https://doi.org/10.18449/2022RP03>.

20 Karsten Friis, "Arctic Spillover? Military Signalling in the European Arctic Before and After the Full-Scale Invasion of Ukraine," *Scandinavian Journal of Military Studies* 8, no. 1 (2025): 248, <https://doi.org/10.31374/sjms.375>.



Figure 9.1: Bases in the Arctic Circle. Image by U.S. Department of Defense, Arctic Strategy 2024

Other technical limitations of infrastructure affect both sides. For example, one of the main limitations for navigation and communication lies within the limited satellite coverage. The reason for this is the inclination angle of the orbit and therefore the coverage of the satellites. GPS and Galileo satellites have orbital inclinations between 55 and 56 degrees,²¹ however the Arctic lies above 66.5 degrees latitude. The US GPS and European Galileo navigation satellites provide coverage in the Arctic, but their orbital inclination results in fewer visible satellites and lower elevation angles at these high latitudes, leading to weaker signals and reduced performance compared to lower latitudes.²² The Russians and Chinese face a similar problem, even though Russia benefits from higher orbital inclinations, while China gains an advantage through the higher altitude. The launch of so-called Polar Satellites, which have a 90-degree inclination angle and high altitude, will be crucial for improving positioning and operability, as they will directly cross the poles. However, NATO has already launched an initiative called NORTHLINK to improve satellite communication, in which also non-Arctic states like the Netherlands are involved.

Yet, it is not just the quantity of infrastructure alone that counts, but also the resilience of these structures in the face of climate change. The long-term effectiveness of Arctic infrastructure increasingly depends on its resilience to intensifying effects of climate change, including broken ice, high winds, strong tidal currents and consequently larger waves, beyond questions of availability and scale.²³ The thaw of permafrost will not only affect the foundations of critical infrastructure, but also all civilian and military installations. The US military alone spent more than \$1 billion between 2016 and 2021 to retrofit and repair three bases in Alaska.²⁴ Although there are no comprehensive estimates for NATO as a whole, studies suggest that the overall costs in the Arctic associated with permafrost thawing could amount to 276.5 billion US-Dollars in the event of extreme warming, with the most severely affected regions being those with continuous permafrost, most notably in Russia.²⁵

Consequently, while NATO is expanding its infrastructure and building upon the existing infrastructure of the Nordic countries, Russia began reviving its old infrastructure as early as 2005. This has two effects. First, due to its extensive coastline, Russia has more options for arming the Northern Frontier. Second, however, this is more costly for Russia, because of climate change. In contrast, NATO relies on national investments in infrastructure by its

21 Carolina Gabarró et al., "Improving Satellite-Based Monitoring of the Polar Regions: Identification of Research and Capacity Gaps," *Frontiers in Remote Sensing* 4 (February 2023), <https://doi.org/10.3389/frsen.2023.952091>.

22 Ibidem.

23 NATO, *NATO Climate Change and Security Impact Assessment 2024*, Third Assessment (2024, n.d.), 17, <https://securesustain.org/wp-content/uploads/2024/07/NATO-Climate-Change-and-Security-Impact-Assessment-2024.pdf>.

24 Kate Guy et al., *Temperatures & Tensions Rise*, June 2021, 7.

25 Dmitry A Streletskiy et al., "The Costs of Arctic Infrastructure Damages Due to Permafrost Degradation," *Environmental Research Letters* 18, no. 1 (2023): 015006, <https://doi.org/10.1088/1748-9326/acab18>.

member states. Given the extreme effects of climate change and the aforementioned costs, it is likely that the country with the most resilient infrastructure will gain the upper hand.

NATO assets and capabilities

Building on these infrastructural conditions, NATO's deterrence and defence posture in the Arctic is also shaped by the limited pool of assets and capabilities that can operate effectively in the region's extreme environment. In recent years, NATO has increased its presence through multiple Arctic exercises, in which the Netherlands also participated. One of the biggest exercises was Cold Response in 2022 with over 30,000 troops from 27 countries exercising in the region.²⁶ The recent accessions to NATO have significantly improved the alliance's position further, bringing valuable experience and specialised Arctic capabilities.

However, this need for special expertise becomes apparent when one examines the specific requirements for assets and units operating in the Arctic. Naval assets, for example, are required to have a certain degree of ice-class certification to safely operate, for instance by having a reinforced steel hull. While Norwegian *Fridtjof Nansen*-class frigates function within the polar region, the German *Sachsen*-class does not. Replacing assets with unmanned systems is also unlikely to be a sustainable solution, due to their short battery life in the hazardous weather conditions and vulnerability to GPS jamming and cyberattacks. This means that every system has to be specifically designed for the Arctic environment. The Arctic, unlike other regions, is therefore not an operational area for all current NATO assets. The possible available forces are further reduced, given that not all member states allocate their existing assets to NATO operations. Consequently, only a small number of them are available in the Arctic at any given time, despite the presence of rotating units such as the Standing NATO Maritime Group 1 (SNMG1). While non-Arctic states are also building up their Arctic assets, this is always accompanied by debate about the costs and benefits, so it will take time for NATO to increase its capabilities.

In contrast to NATO, reliable data on Russian and Chinese assets remains limited.²⁷ However, the significant use of submarines by the Russians is well-established as most of their second-strike capabilities are concentrated in this area. These activities are accompanied by shared Russian-Chinese research on hydroacoustic and underwater surveillance.²⁸ An example of

26 NATO, "Exercise Cold Response 2022 – NATO and Partner Forces Face the Freeze in Norway," NATO, March 7, 2022, https://www.nato.int/cps/en/natohq/news_192351.htm.

27 Direct data comparison between NATO, Russian and Chinese assets would not be plausible, as NATO is an alliance, whose assets depend on national contributions, whereas China and Russia are singular state actors.

28 Frank Jüris, "Sino-Russian Scientific Cooperation in the Arctic: From Deep Sea to Deep Space," in *Russia-China Relations: Emerging Alliance or Eternal Rivals?*, ed. Sarah Kirchberger et al. (Springer International Publishing, 2022), https://doi.org/10.1007/978-3-030-97012-3_10.

this surveillance can be found in the build-up of the Russian Sound Surveillance System (SOSUS) *Harmony* in the Barents Sea, which is used to monitor submarine activity within the area.²⁹ However, the system has a critical weakness, as it is built with Western components, raising questions about how Russia will maintain these in the future.³⁰ A further extension of the Russia-Chinese partnership could solve this problem.³¹ Russia's presence is further paired with the practice of electronic and cyber warfare. Both have reached unprecedented levels in the European Arctic, particularly in Finland and Norway, since the start of the war in Ukraine. The impact on aviation has become even so severe, that in 2024, Finnair suspended its flights for a month on its route between Helsinki and Estonian Tartu, due to GPS interference affecting landings.³² NATO has responded by enhancing its cyber defence capabilities, improving intelligence sharing, and conducting integrated exercises and training.³³

In conclusion, while Russia has most of its military assets still intact, even though slightly reduced due to the Ukraine War, NATO depends on its member states to provide the assets. The unique weather conditions of the Arctic make NATO assets sparse and limit the contributing nations to the Arctic states themselves, even though other countries like the Netherlands are coming forward in the region. Further contributions like new vessels are already planned by several nations. However, China and Russia have a longstanding partnership in Arctic research and Moscow has its expanding second-strike capabilities stationed there. NATO and therefore also the Netherlands need to consider how and if they want to counter Russia's further expansion in the region. This becomes increasingly important as China is also pushing into the region.

Dutch Arctic policy

Having examined NATO's operational structure, assets and infrastructure in the High North, it is important to consider how non-Arctic members such as the Netherlands currently contribute and could strengthen NATO's presence in the Arctic.

29 Frederik Van Lokeren, "Russia's Harmony Network - Operational Strength but Strategic Weakness," *Naval News*, October 28, 2025, <https://www.navalnews.com/naval-news/2025/10/russias-harmony-network-operational-strength-but-strategic-weakness/>.

30 Ibidem.

31 Ibidem.

32 Aleksi Teivainen, "Finnair Suspends Tartu Flights for a Month, Citing GPS Jamming," *Helsinki Times*, April 30, 2024, <https://www.helsinkitimes.fi/finland/finland-news/domestic/25169-finnair-suspends-tartu-flights-for-a-month-citing-gps-jamming.html>.

33 Jonas Vidhammer Berge and Max Bergmann, *Addressing Arctic Vulnerabilities*, CSIS Briefs, December 17, 2024, <https://www.csis.org/analysis/addressing-arctic-vulnerabilities>.

The Netherlands has developed a heightened interest in the Arctic, with the Polar Strategy from the Foreign Office from 2021-2025 and the Defence White Paper 2024. The strategy especially outlines the economic and environmental interests of the Dutch in the Arctic. The economic interest can be split between resource exploitation to usage of new SLOCs like the Northern Sea Route. The latter is of high importance, given that Rotterdam is the biggest container port in Europe and handled 10.4 million TEUs in the first three quarters of 2024.³⁴ Increased accessibility could make Arctic Sea routes more viable for Dutch exports than existing trade routes. This depends on the destination, which would include northern Japan and ports of the People's Republic of China. China's pursuit of the Northern Sea Route as an alternative trade corridor could substantially increase maritime traffic in the Arctic and could also influence the Netherlands, as China remains Europe's biggest trading partner. Security and stability in the Arctic are therefore key concerns within the Polar Strategy. The threat posed by increased Russian activity has already been highlighted, and a stronger security presence within NATO is welcomed. It is therefore expected that the next Polar Strategy will emphasise security and an enhanced NATO presence more, given that the previous one was formulated in a different political context.

The White Paper on Defence of September 2024, meanwhile, recognises the Russian threat in the Arctic not only given Russia's increased military presence but also its activities through influence operations.³⁵ The document therefore emphasizes the strategic rivalry in the region with NATO's objective of deterrence and defence.³⁶ It further details that in order to improve ASW capabilities, the number of capable frigates that can operate in Arctic waters needs to be increased,³⁷ which further highlights the Dutch commitment to the region.

In addition to its strategic commitments, the Netherlands was already actively involved in operations on NATO's Northern Flank. The Dutch commitment can be seen in multiple domains. The navy, for example, contributed with its *Walrus*-class submarine HNLMS *Zeeleeuw* to the exercise Arctic Dolphin 2025 near Norway.³⁸ The air force provided F-35s to the Arctic

34 "Rotterdam Container Throughput up Thanks to Increased Consumer Spending," <https://mykn.kuehne-nagel.com/news/article/rotterdam-container-throughput-up-thanks-to-i-04-Nov-2024>.

35 Ministerie van Defensie, *Defensienota 2024*, September 5, 2024, 130, <https://www.defensie.nl/downloads/beleidsnota-5/2024/09/05/defensienota-2024>.

36 Ibidem.

37 Ibidem.

38 "Arctic Dolphin Exercise Provides Valuable ASW Training," *Navy Leaders*, February 19, 2025, <https://www.navyleaders.com/news/arctic-dolphin-exercise-provides-valuable-asw-training>.

Challenge 2023 exercise.³⁹ In addition, the Netherlands is also involved in NORTHLINK.⁴⁰ However, the exact contributions are not specified. The level of involvement in the Northern Flank will increase in the future, as evidenced by the planned procurement of additional assets, such as F-35s, additional NH90 ASW helicopters and Boxer APCs, which could potentially be used in the Arctic environment.⁴¹ The naval contributions remain to be seen, as the operational ability of the new Dutch frigates within the region will depend on the ice class standards. However, according to the mentioned White Paper, they are supposed to be operable within the Arctic waters.⁴²

Looking ahead, the Netherlands is well-placed to play an increasingly proactive role in shaping awareness of the Arctic region, which is particularly important given its economic interests, strategic ambitions and NATO commitments.

First, the Netherlands could adopt a comprehensive approach to the region as the Arctic changes in the next few decades. This approach would protect its economic and strategic interests and position the country as a leading non-Arctic NATO member, using its experience in joint command and control through JFC Brunssum. Second, the Netherlands should play an active role in developing Arctic satellite communication networks besides NORTHLINK. The Defence White Paper already emphasises the growing importance of space-based assets, and increased involvement would improve NATO's situational awareness and secure SLOCs. Third, the Netherlands could strengthen its coordination with European Union partners. While some key Arctic allies, including the UK and Norway, are not EU members, collaborating within the EU framework could supplement NATO's efforts overall, avoid double responsibilities for different states and provide a framework to circumvent current internal NATO challenges.

Conclusion

In this paper, the inherent research question was “How is NATO reshaping its strategic posture in the Arctic, and what role can the Netherlands as a non-Arctic state play in strengthening deterrence and defence in this evolving security environment?”

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39 Airman 1st Class Olivia Gibson, “Arctic Challenge 2023: Nordic Defense Requires the F-35's Advanced Capabilities,” *Royal Air Force Lakenheath*, June 13, 2023, <https://www.lakenheath.af.mil/News/Article-Display/Article/3425751/arctic-challenge-2023-nordic-defense-requires-the-f-35s-advanced-capabilities/https%3A%2F%2Fwww.lakenheath.af.mil%2FNews%2FArticle-Display%2FArticle%2F3425751%2Farctic-challenge-2023-nordic-defense-requires-the-f-35s-advanced-capabilities%2F>.

40 NATO, “NATO Launches Five New Multinational Cooperation Initiatives That Enhance Deterrence and Defence,” October 17, 2024, https://www.nato.int/cps/en/natohq/news_229664.htm.

41 Ministerie van Defensie, *Defensienota 2024*.

42 Ibidem.

Overall, NATO is reshaping its strategic posture in the Arctic, partly rediscovering the region in contrast to the immediate post-Cold War era. However, the strategy still leaves some questions unanswered. While the AMS can serve as a general strategic guideline, the disclosure of the Regional Plan would be necessary to determine whether NATO has achieved similar strategic clarity for its operations as it did with CONMAROPS. The growing Russian presence and especially Chinese-Russian cooperation pose risks to NATO member states. To combat this risk, the overall NATO presence will need to be increased. Furthermore, the restructuring of NATO's strategic posture in the Arctic is increasingly influenced by improved accessibility and the wider impact of climate change. NATO's readiness is highly contingent on domestic political priorities due to its reliance on national long-term investments to maintain climate-resilient infrastructure. However, focusing predominantly on the European Arctic underestimates how quickly other parts of the Arctic are opening up, which creates a strategic risk. For example, the decrease in natural barriers will facilitate more submarine operations in the Arctic Ocean, closer to the North American Arctic shore. In this context, NATO's strategic posture should be considered with reference to the AMS, which was revised over a period of 14 years. While this may be sufficient for other regions, the rapidly evolving Arctic requires far more timely and agile strategic guidance. However, this challenge cannot be evaluated further as the Regional Plan remains undisclosed.

NATO has taken significant steps since the Cold War to restructure and refocus on the Arctic, but this should be only the beginning of its existing trajectory. In the future, it may also be advisable to adopt an official Arctic strategy, or it could also consider formulating a specific warfighting doctrine for the Arctic to provide guidance.⁴³ This would not only streamline training and processes but also signal to other countries that NATO is prepared for any eventuality.

For non-Arctic states like the Netherlands, all of this means an increase in their presence. However, this will pose a significant risk to states with small to medium-sized armed forces, as they will need to allocate their limited funds to investing in expensive assets and capabilities specifically designed for the region, which are not necessarily as easily adapted for use in other regions. As outlined above, there are already intentions to do that. Furthermore, the Netherlands can support NATO by providing specialised technical capabilities, such as contributing to initiatives like NORTHLINK, thereby enhancing domain awareness. In doing so, it now also has the chance to lead among NATO's non-Arctic states, while protecting its own interests.

43 Ryan R. Duffy et al., "More NATO in the Arctic Could Free the United States Up to Focus on China," *War on the Rocks*, November 21, 2024, <https://warontherocks.com/2024/11/more-nato-in-the-arctic-could-free-the-united-states-up-to-focus-on-china/>.

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To Be or not to Be in the Indo-Pacific

Dealing with the Strategic Challenges for the Royal Netherlands Navy in the Indo-Pacific

Roy de Ruiter¹

Introduction

“The Pacific may literally be on the other side of the world from NATO Headquarters in Brussels. But that doesn’t mean we are not affected by what happens here. (...) We also have close partners in the region whose security matters to us. And with whom we share strategic interests. Japan, the Republic of Korea, Australia, and New Zealand. Our security is bound up with your security.”

Jens Stoltenberg, NATO Secretary General, 2017²

In 2024, HNLMS *Tromp* made a tour around an already unstable world. The ship defended merchant shipping in the Red Sea, strengthened ties with upcoming powers and allies in the Indo-Pacific, upheld the freedom of navigation in the South-China Sea and the Taiwan Strait and contributed to the United Nations’ efforts to contain the threat of North-Korea. For the Netherlands, the deployment was part of its policy to have a military presence in the Indo-Pacific, preferably in a European setting, once every two years.³ The first time the Dutch put this policy into practice was in 2021, when HNLMS Evertsen participated in the British Carrier Strike Group 21 (CSG21) deployment. The nature of seapower, with its endurance, its access to international waters and its flexibility, make naval forces well suited for this task.⁴

There is little doubt about the relevance of the Indo-Pacific for the security and prosperity of the world. The region is home to 60% of the world’s population. They earn more than half of global GDP, increasingly by producing advanced products like semiconductors. Interruption of trade in this region will have disastrous consequences for both European and Indo-Pacific states. Around 60% of the global total value of maritime trade between non-neighbouring

1 All opinions expressed here are those of the author, and do not represent the policies of the Royal Netherlands Navy, or Ministry of Defence.

2 Jens Stoltenberg, “The geography of danger has shifted,” October 31, 2017), https://www.nato.int/cps/en/natohq/opinions_148125.htm.

3 Said the then Minister of Defence Kasja Ollongren at the Shangri-La Dialogue in 2022. This policy is not an exclusive effort of the Royal Netherlands Navy. The Royal Netherlands Army and Air Force are also increasing their presence in the region. This year the Air Force’s F-35s will visit the region and Army units will participate in exercises. For the Rotterdam Symposium about European Navies and Global Challenges, this paper will focus on the Navy, but the underlying debate is equally valid for the other domains.

4 Jeremy Stöhs, *European naval power: from Cold War to hybrid wars* (Palgrave Macmillan, 2024), 66.

countries passes through this region every year.⁵ Unfortunately, the Far East is also one of the hotspots for growing international contestation, especially territorial and normative.⁶ This is not without risk, considering that most of the world's largest navies, armies, and air forces reside in this area, including five nuclear-armed nations.

With the Royal Netherlands Navy increasingly active in the Indo-Pacific, it faces three fundamental strategic challenges. The first challenge is the limited capacity of the navy. Especially at a time when security threats faced by the Netherlands and its NATO-allies in Europe already exceed available resources. Considering the geographical distance to Europe makes a division of the fleet between the European and Asian theatres inevitable. Would it therefore not be better to focus on the European theatre and leave the Indo-Pacific to the regional allies, most importantly the United States?⁷ Additionally this would relieve the United States of its burden in Europe.

The second challenge is how engagement in the Indo-Pacific relates to the purpose and responsibilities of the Netherlands armed forces given its constitutional tasks. According to Article 97 of the Constitution, the duty of the Netherlands armed forces is to defend and protect the interests of the Kingdom of the Netherlands, and (since an amendment in 2000) to maintain and develop international rule of law.

Since the Netherlands joined NATO in 1949, the first task – often referred to as '*Hoofdttaak 1*' – has extended to the defence of allied territory in accordance with Article 5 of the North Atlantic Treaty. With rising tensions in Europe after the Russian invasion of Ukraine in 2022, *Hoofdttaak 1* has become the priority for the Netherlands armed forces.⁸ With the uncertainty of US commitments to NATO under the Trump administration, the focus on the defence of Europe has become even more pressing. Especially if one realizes that the European Union Treaty has even more binding requirements for mutual military assistance in case of an armed attack against one of the EU member states.⁹ Following this line of reasoning, a Dutch

5 Girardi Benedetta, *What the Indo-Pacific means to Europe: Trade Value, Chokepoints, and Security Risks* (The Hague Centre for Strategic Studies, 2023), 5-6, <https://hcass.nl/report/what-indo-pacific-means-to-europe-trade-value-chokepoints-security-risks/>.

6 Alice Ekman et al., *Contestation: the new dynamic driving global politics* (European Union Institute for Security Studies (EUISS), 2024), 2-3, <https://doi.org/10.2815/13410>.

7 Paul van Hooft, Benedetta Girardi, and Tim Sweijts, *Guarding the maritime commons: what role for Europe in the Indo-Pacific* (The Hague Centre for Strategic Studies, 2022), 1 online resource (XIV, 72 pages), <https://hcass.nl/report/guarding-the-maritime-commons-europe-in-indo-pacific/>; Sam-man Chung et al., *Analysis of and recommendations for European naval presence in the Indo-Pacific region* (The Hague Centre for Strategic Studies (HCSS), 2023), 1 online resource (9 pages), <https://hcass.nl/report/analysis-of-and-recommendations-for-european-naval-presence-in-the-indo-pacific-region/>; Ministry of Defence, *Defence White Paper 2024* (September 5, 2024), <https://english.defensie.nl/binaries/defence/documenten/publications/2024/09/05/defence-white-paper-2024/NLD+Defence+white+paper.pdf>.

8 Article 6 of the North Atlantic Treaty states that an armed attack on one or more of the Parties applies only to member states' territories and on the forces, vessels, or aircraft of any of the Parties, when in or over Europe, North America, Turkey, and on the Islands under the jurisdiction of any of the Parties in the North Atlantic area north of the Tropic of Cancer.

9 Article 42.7 of Treaty on European Union states that if a Member State is the victim of armed aggression on its territory, the other Member States shall have towards it an obligation of aid and assistance by all the means in their power. This assistance shall be consistent with commitments under the North Atlantic Treaty Organisation.

role in the Indo-Pacific seems less relevant now. Especially considering that the Indo-Pacific is not part of NATO's area of responsibility.

The third challenge is related to the role of Europe in the Indo-Pacific. European states have in recent years increased their military presence in the region. However, most deployments were national operations. Synchronization with other European states proved to be difficult. The result is inefficient management of limited resources of the European states. For example, in 2024 when the Dutch frigate *Tromp* went on an eastbound tour around the world, almost simultaneously a German Task Force departed from Germany on a westbound course for a similar visit to the Indo-Pacific. Furthermore, the national deployments send mixed signals to countries in the Indo-Pacific, as all European states have their own policies and interests.¹⁰ Some scholars therefore warn that uncoordinated European presence is in fact counterproductive and makes the region less secure.¹¹

This chapter will address these three strategic challenges. It will propose that only by coordinating and integrating efforts European states can credibly and effectively safeguard their interests in the Indo-Pacific region, balance their efforts between the Euro-Atlantic and the Indo-Pacific theatres, and demonstrate to the United States that Europe is still relevant and worth fighting for.

Policy versus strategy

In principle, the three mentioned challenges are a matter of strategy: finding a balance between political ends, military ways and means. It is strategic because it concerns the security strategy of the Netherlands. After the Second World War made it painfully clear that the Dutch pre-war strategy of neutrality no longer worked, NATO became the pillar of Dutch security strategy. Together you are stronger, especially if this includes the most powerful nuclear power in the world. Being a loyal ally to the United States became the ultimate driver of Dutch security strategy.¹² This strategy explains, for example, the support of the Netherlands for the American invasion in Iraq in 2003 and the relatively large Dutch contribution to military operations in Afghanistan after the attacks of 9/11.

10 Niels van Willigen and Nicolas Blarel, "Why, how and to whom is the European Union signalling in the Indo-Pacific? Understanding the European Union's strategy in the Indo-Pacific in the epicentre of multipolar competition," *The British Journal of Politics and International Relations* 27, no. 1 (2025): 15-19, <https://dx.doi.org/10.1177/13691481241230857>.

11 "Why NATO Should Stay Out of Asia," *Foreign Affairs*, 2024, <https://www.foreignaffairs.com/world/why-nato-should-stay-out-asia>.

12 A. van Staden, *Een trouwe bondgenoot: Nederland en het Atlantisch Bondgenootschap (1960-1971)* (Anthos, 1974).

The challenges are of course also political, because in the end it is a question of allocating limited means to meet political ends.¹³ In this regard, the Indo-Pacific region is more than just a security problem. The region is of vital importance to the Dutch economy and prosperity. Furthermore, Chinese claims in the South China Sea undermine the international rule of law. For a small country like the Netherlands, this is a very unfavourable development. It is up to politicians to weigh all these interests and to decide how and with what the Netherlands Armed Forces can best serve and safeguard Dutch and other European economic and political interests in the region.¹⁴

The Dutch Defence White Paper of 2024 states that the Netherlands will strengthen its forces by increasing the number of frigates. This will in time make it possible to take greater responsibility in the region to promote international rule of law. However, the White Paper also makes a clear distinction between the Indo-Pacific and the European region. The role of the Netherlands Armed Forces in the European region is ‘to defend and deter’, while in the Indo-Pacific the role of the armed forces is ‘to influence’.¹⁵ Because of their mobility and flexibility naval vessels are well suited to this task and make the associated risks manageable.¹⁶

The importance of deterrence in the Indo-Pacific

A war in the Indo-Pacific would come with grave consequences for the world economy. The question, therefore, is how the Netherlands can ‘influence’ an (imminent) escalation. The answer to this question is deterrence. For deterrence it is essential that Beijing concludes that it cannot win a war over Taiwan or claim full control of the South-China Sea. To influence Chinese leadership a key part is to provide a credible military counterforce with likeminded countries. For example, by participating in exercises, such as the major international maritime exercise Rim of the Pacific (RIMPAC), send strong diplomatic signals of solidarity, interoperability, and readiness. It also complicates Beijing’s strategic calculation by raising the costs of escalatory actions.

Deterrence requires credibility, however. If the Netherlands wishes to influence the security balance in the Indo-Pacific to substantialize its political strategic objectives, it will have to show its flag in the region. Presence provides access to diplomatic, military, and economic channels, for example during a port visit. Consequently, only by being present the



13 C.S. Gray, *Strategy and Defence Planning: Meeting the Challenge of Uncertainty* (Oxford University Press, 2014), 18

14 Ministry of Foreign Affairs, *Indo-Pacific: Guidelines for strengthening Dutch and EU cooperation with partners in Asia* (November 13, 2020), <https://www.government.nl/binaries/government/documenten/publications/2020/11/13/indo-pacific-guidelines/Indo-Pacific+Guidelines+EN.pdf>.

15 Ministry of Defence, *Defence White Paper 2024*, 14 and 21

16 Henk Warnar, “Risk in Naval Diplomacy, a Small Power’s Perspective,” in *Maritime Security for Resilient Global Supply Chains in the Wider Indo-Pacific*, ed. Benedetta Girardi and Young-ook Jang (The Hague Centre for Strategic Studies, 2024), 68–71.

Netherlands will have influence in the region. However, this requires a structural and long-term commitment. Because building relationships and trust takes time, as does building understanding with the regional dynamics and peculiarities.¹⁷

On the other hand, due to the small size of the Dutch fleet, military presence in the Indo-Pacific can only be relatively small and temporary. This challenge in fact applies to all European states. Only France, with its territories in the Indo-Pacific, is resident in the region.¹⁸

Another aspect to consider is that in the Indo-Pacific, there are no integrated alliances similar to NATO or the EU with obligations for mutual assistance. Many countries in the region therefore feel vulnerable, especially with an unpredictable Trump administration. The political impact of presence by European naval units may therefore be greater than its military value. It shows countries in the region that they are not alone and signals to China that other, non-Asian countries monitor and disapprove its behaviour in the South China Sea. This also implies that small contributions can still be relevant, especially in peacetime. The recent deployment of HNLMS *Tromp* is a good example. Being in the area for an extended time, participating in exercises and operations, and upholding freedom of navigation demonstrates that the Netherlands with its six-ship frigate fleet takes this role seriously. This has not gone unnoticed in Washington.¹⁹

Burden sharing and the risk of decoupling

One of the arguments that Europe should focus on its own continent is that it allows Washington to better position itself for a possible conflict with Beijing. China is an opponent that in terms of quantity – and in some aspects also in quality – already is superior to the United States, even with the help of regional allies such as Australia, Japan, South-Korea, and the Philippines.

This argument is not without risk. A Sino-American conflict will inevitably come at the expense of the American military presence in Europe. In that situation, the reduced

17 For a good analysis of the importance of building trust, see: Gary E. Weir et al., *You cannot surge trust: combined naval operations of the Royal Australian Navy, Canadian Navy, Royal Navy, and United States Navy, 1991-2003* (Department of the Navy, 2013), 279; Henk Warnar, "The Sea Makes us One," *Atlantisch Perspectief*, <https://www.atlcom.nl/artikel-atlantisch-perspectief/the-sea-makes-us-one/>.

18 These areas (Mayotte, Réunion, the Scattered Islands, French Southern and Antarctic Lands in the Indian Ocean, New Caledonia, Wallis and Futuna, French Polynesia, and Clipperton Island) are however still at a great distance from the South-Chinese Sea region and the forward presence of French armed forces is relatively small. Ministry for Europe and Foreign Affairs, *The Indo-Pacific: A Priority for France* (Paris, 2022), <https://www.diplomatie.gouv.fr/en/country-files/regional-strategies/indo-pacific/the-indo-pacific-a-priority-for-france/>.

19 Dr. Jonathan Caverley, AUKUS, *Naval Procurement & Grand Strategy with Dr. Jonathan Caverley*, podcast audio, Sea Control, 13:25-13:50, <https://cimsec.org/sea-control-474-ukus-naval-procurement-and-grand-strategy-with-dr-jonathan-caverley/>.

remaining US presence on the continent becomes even more crucial to Europe's defence. Mostly on a tactical level, because these American units provide indispensable tactical and operational capabilities that European armed forces cannot fulfil at this moment. On the political-strategic level these units represent transatlantic solidarity. If this connection dissolves, the security of Europe and the US is seriously decoupled as burdens are no longer shared.

Fear of a decoupling is not something new. During the Cold War, it was one of the great strategic uncertainties. Would the United States sacrifice New York for Berlin, London, or Amsterdam? For France, this doubt was the main reason to develop its own independent nuclear deterrence. Today, the behaviour of the second Trump administration raises serious doubts about the commitment of the United States to European security. The strength of an alliance lies in the willingness of states to fight together and suffer together. Decoupling therefore closely links to the concept of burden sharing, especially for a president who has a more transactional approach to world politics. If Europe focuses entirely on the security of its own continent and the US on the Indo-Pacific it can seriously threaten solidarity within NATO. Certainly if a war between US and China results in many American casualties. Will the US accept European allies to remain passive and safely observe the conflict from the sidelines, focusing on the defence of the European continent?

An alliance is only effective when members support each other throughout, by fighting and dying together. Given China's quantitative superiority, the United States already needs the support of its allies to maintain a credible deterrent.²⁰ Or, as admiral Charles Richard, commander of U.S. Strategic Command, said: "As I assess our level of deterrence against China, the ship is slowly sinking. It is sinking slowly, but it is sinking, as fundamentally they are putting capability in the field faster than we are. As those curves keep going, it isn't going to matter how good our [operating plan] is or how good our commanders are, or how good our forces are, we're not going to have enough of them. And that is a very near-term problem (...) Undersea capabilities is still the one (...) maybe the only true asymmetric advantage we still have against our opponents. But unless we pick up the pace, in terms of getting our maintenance problems fixed, getting new construction going (...) if we can't figure that out (...) we are not going to put ourselves in a good position to maintain strategic deterrence and national defense."²¹

20 According to the commander of U.S. Indo-Pacific Command, Admiral John Aquilino, the United States and all allies, partners, and friends are needed to sustain free and open access to the global commons in the Indo-Pacific. Admiral John C. Aquilino, "Importance of Allies and Partners in the Indo-Pacific", news release, November 20, 2021, <https://www.pacom.mil/Media/Speeches-Testimony/Article/2851117/importance-of-allies-and-partners-in-the-indo-pacific/>.

21 Cited in: Ronald O'Rourke, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*, Congressional Research Service (August 16, 2024), 55, <https://www.congress.gov/crs-product/RL33153>.

If Europe, preoccupied with deterring Russia, fails to support the US, it will eventually undermine the foundations of the NATO alliance. The reaction by the then senator Marco Rubio speaks for itself. He concluded, after a statement by the French president Emmanuel Macron that Europe should not get dragged in a war about Taiwan, that Europe in that case should handle the security of Europe and Ukraine themselves.²²

A counter-argument, as noted before, is that the Indo-Pacific, and even Hawaii, do not fall under NATO's responsibility. A conflict between the US and China in the Pacific is therefore not a matter for the treaty organization. The Korean War (1950-53) and Mine Counter Measure (MCM) operations during the Tanker War in the Persian Gulf (1987-88) demonstrate that it is difficult to withstand a request from the main ally. In both cases, the Netherlands and many other European states initially did not want to send troops, but they did after American political pressure.²³

Ultimately, the answer to these challenges is whether the old continent decides to remain aloof in view of the vast economic and security interests in the region and considering the direct link with European security. The US will probably not be able to deter, let alone fight, China by itself. So, it is likely that Washington will call on Europe for military support. The NATO treaty area does not include the Far East as a responsibility of the alliance. However, an American request will be difficult to ignore without undermining solidarity within NATO, especially with an already NATO-sceptic Trump-administration. Above all, both regions are closely intertwined, as illustrated by the recent deployment of North-Korean troops in Ukraine. A successful deterrence of China is of direct interest to Europe. It hopefully prevents a devastating war in the Indo-Pacific and can help keeping the Americans involved in European security.

The role of the Royal Netherlands Navy in the Indo-Pacific

The debate on whether the European armed forces, and in this case the Royal Netherlands Navy, have a role in the Indo-Pacific, is justified. The global security situation is highly uncertain and unstable. For the first time since the end of the Cold War NATO and the EU face a serious threat from the Russian Federation. Due to years of cutbacks the resources of European armed forces are scarce. Any attention for the Indo-Pacific will only make this challenge more complex.

22 Leila Abboud et al., "Emmanuel Macron's Taiwan remarks spark international backlash," *Financial Times*, April 10, 2023.

23 A.J. van der Peet, *Out-of-area: de Koninklijke Marine en multinationale vlootoperaties 1945-2001* (Uitgeverij Van Wijnen, 2017).

Some scholars propose to ‘think bigger’ and formalise the European-US interdependence in the Indo-Pacific, by developing a ‘cross-theatre deterrence ecosystem’.²⁴ The pressing question, of course, remains how to distribute scarce military capabilities between the two regions. This will become even more challenging if the stakes in Europe increase. A solution could be more European cooperation. So far, European navies have failed to coordinate their efforts in the region. This is a missed opportunity. The periodic deployment of European naval vessels is too small and too infrequent to really show commitment to the region. It takes time to build trust and confidence, to get familiar with the region, and to contribute to a credible deterrence and burden sharing. This requires a more persistent presence with a more credible force. Europe can make much better use of the instruments available.

Unfortunately, there is no European equivalent to a US 7th fleet, but forming European carrier strike groups or task forces could be a viable way to strengthen both European diplomatic signalling and naval power projection in the region.²⁵ A carrier as a capital ship carries symbolic meaning. It also allows European countries to engage with regional partners on a one or two-star level. If you want to have any influence on the decision-making process and be able to secure your own interests, you have to sit at the table at flag officers level. Historically, this was one of the most important lessons for the Dutch navy of the Second World War.²⁶

Seapower provides the means for European cooperation and involvement in the Indo-Pacific. Apart from its mobility and flexibility, it is relatively easy for ships to integrate in international naval task forces. Especially with the use of NATO procedures and Command and Control (C2) systems. Furthermore, structures are in place to facilitate a more integrated European approach, such as the EU Coordinated Maritime Presence (CMP) initiative. Probably even better, because it includes non-EU members, would be the (Combined) Joint Expeditionary Force (JEF).²⁷ The real challenge will be political. National deployments in the Indo-Pacific also serve national interests, for example by promoting national industry during port visits. Are countries willing to expand their horizons and promote European

24 Luis Simon, “NATO Should Think Big About the Indo-Pacific,” *War on the Rocks*, July 1, 2024, <https://warontherocks.com/2024/07/nato-should-think-big-about-the-indo-pacific/>.

25 Eva Pejsova and Paul van Hooft, *The EU’s naval presence in the Indo-Pacific: What is it worth?* (The Hague Centre for Strategic Studies (HCSS), 2023), 1 online resource (11 pages), <https://hcss.nl/report/the-eus-naval-presence-in-the-indo-pacific-what-is-it-worth/>; Emma Salisbury, “Carrier strike groups: The European commitment to the Indo-Pacific,” *The Council of Gestrategy*, February 10, 2025, <https://www.britainworld.org.uk/p/the-memorandum-04-2025>.

26 D.C.L. Schoonoord, *Pugno pro patria. De Koninklijke Marine tijdens de Koude Oorlog* (Uitgeverij Van Wijnen, 2012), 31.

27 Sidharth Kaushal, “China’s PLAN and Alliance Maritime Strategy,” in *From the North Atlantic to the South China Sea Allied Maritime Strategy in the 21st century*, ed. Julian Pawlak and Johannes Peters, ISPK seapower series (Nomos, 2021), 236; Christian Bueger and Timothy Edmunds, *Understanding maritime security* (Oxford University Press, 2024), 162; Marianne Peron-Doise, *Debating EU Enhanced Naval Presence in the Indo-Pacific: From Maritime Domain Awareness* (The Hague Centre for Strategic Studies, 2024), 10, <https://www.jstor.org/stable/resrep59430>, 1 online resource.

interests instead? With vast interests at stake and limited means available, European states have no viable alternative.²⁸

Conclusion

As international tensions continue to escalate in Europe and in the Indo-Pacific, the Royal Netherlands Navy has to keep balancing the both theatres. How this will unfold in the future is, of course, difficult to predict. It is likely that Dutch capabilities that are internationally scarce, such as submarines, Anti-Submarine Warfare (ASW) capabilities, mine hunters, 5th-gen jet fighters, Integrated Air and Missile Defence (IAMD) systems, and amphibious and special forces will be in high demand for tasks in the Indo-Pacific if tensions rise, for example to protect shipping and control choke points.²⁹

To deal with the limited assets the Netherlands should encourage other European countries to step out of their comfort zone and form European Carrier Strike Groups or Task Forces waving an EU-flag, instead of national ones or – to include the UK and Norway – a ‘European flag’. It allows more effective use of the limited means available, while at the same time sending a more credible and permanent signal of commitment and deterrence to the region. In this increasingly divided world, Europe has to safeguard its own interests in the region. At the same time it must demonstrate to the United States that its contribution is relevant and still worth fighting for in Europe.

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²⁸ See also, Ekman et al., *Contestation: the new dynamic driving global politics*, 72

²⁹ Zack Cooper and Luis Simón, “Rethinking Tradeoffs Between Europe and the Indo-Pacific,” *War on the Rocks*, May 9, 2023, <https://warontherocks.com/2023/05/rethinking-tradeoffs-between-europe-and-the-indo-pacific/>.

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Balancing Theatres: the Royal Navy, the Euro-Atlantic, and the Indo-Pacific

Emma Salisbury

The Royal Navy faces a pivotal challenge over the coming decades: balancing its commitments to the Euro-Atlantic and Indo-Pacific theatres. As global power dynamics continue to shift in unpredictable ways, the strategic imperatives in these regions will demand the careful allocation of limited naval resources to ensure stability, influence, and flexibility.

In the Euro-Atlantic theatre, the resurgence of Russian maritime activity, grey-zone activities in the Baltic, and heightened tensions in the Arctic underscore the need for robust NATO collaboration. Key considerations include submarine warfare, maritime domain awareness, and securing critical undersea infrastructure, all of which the Royal Navy should be well-placed to contribute to. This region remains central to the UK's collective defence obligations under NATO as well as to the British continuous at-sea deterrent.

Simultaneously, the Indo-Pacific theatre presents challenges driven by China's naval modernisation and expansion, territorial disputes in the South China Sea, and the need to uphold a rules-based international order. The Royal Navy's engagement through carrier strike group deployments, offshore patrol vessel basing, and the tripartite AUKUS deal with the United States and Australia reflects a growing commitment to this region in recent years, known as the "tilt" to the Indo-Pacific.

The election of a new government in Westminster in 2024 has presented an opportunity for a comprehensive reassessment of the challenges confronting the United Kingdom. Informed by the policies of preceding administrations, the government of Prime Minister Keir Starmer is looking to refine national security strategies to meet the current moment. Starmer's emphasis on mission-driven government underscores the necessity of advancing economic growth while defending the nation and reducing strategic dependencies within an increasingly volatile global landscape. Given the historical and contemporary significance of maritime strength to the UK, seapower remains central to the realisation of these objectives. The UK's reliance on maritime capabilities for security, energy, trade, and broader economic prosperity underscores the Royal Navy's critical role in ensuring the protection of national interests. As the senior branch of the British Armed Forces, the Royal Navy operates in coordination with other national defence services to secure the homeland and safeguard Britain's strategic presence from the Euro-Atlantic to the Indo-Pacific.

The Royal Navy is increasingly stretched as it confronts mounting geopolitical and strategic demands. The challenge posed by revisionist states such as the People's Republic of China (PRC), Russia, Iran, and North Korea, coupled with threats from non-state actors such as the Houthis, has necessitated an expanded operational remit. As global geopolitical uncertainty intensifies, the risks to critical economic and strategic maritime infrastructure continue to grow. These include vulnerabilities in maritime communication lines, subsea cables, energy pipelines, and offshore wind farms, which are integral to sustaining the UK's economy and energy security. Ensuring the resilience of these critical assets necessitates a reassessment of British maritime strategy and an enhancement of naval capabilities to maintain strategic deterrence and security.

The Strategic Defence Review 2025 committed the UK to a NATO first approach with a strong focus on Euro-Atlantic security.¹ However, the review stresses that NATO first does not mean NATO only, recognising the importance of connections with other allies and partners across the world for the security of the UK. This underscores the point that the Euro-Atlantic and Indo-Pacific theatres are not as separate as many imagine, and the UK's interests in the Indo-Pacific cannot be easily divorced from those in closer waters. A comprehensive strategy that balances both theatres, allowing both a strong commitment under NATO in the Euro-Atlantic and the leveraging of deployments and relationships in the Indo-Pacific, is firmly in the best interests of British security.

Defence reviews and the Royal Navy

Over the past decade, successive British defence reviews have underscored the paramount importance of seapower in addressing contemporary security challenges and sustaining the UK's global influence.² These strategic documents reflect a recalibration of national defence policy in response to shifting geopolitical dynamics, emerging threats, and the necessity of preserving maritime superiority. The 2015 Strategic Defence and Security Review marked a critical juncture in this evolution, emphasising the necessity of a robust and adaptable Royal Navy capable of responding to an increasingly complex security environment.³ The review advocated for the maintenance of a balanced maritime force, reinforcing the UK's ability to project power on a global scale.



1 Ministry of Defence, "The Strategic Defence Review 2025 - Making Britain Safer: secure at home, strong abroad," June 2, 2025, <https://www.gov.uk/government/publications/the-strategic-defence-review-2025-making-britain-safer-secure-at-home-strong-abroad>.

2 See also Emma Salisbury and James Rogers, "The Strategic Defence Review, Britain and sea power," *Council on Geostrategy*, November 5, 2024, <https://www.geostrategy.org.uk/research/the-strategic-defence-review-britain-and-sea-power/>.

3 UK Government, "National Security Strategy and Strategic Defence and Security Review 2015," November 23, 2015, <https://www.gov.uk/government/publications/national-security-strategy-and-strategic-defence-and-security-review-2015>.

The 2021 Integrated Review further reinforced maritime strategy as a cornerstone of the UK's defence posture.⁴ This document articulated a vision for "Global Britain", underscoring the Royal Navy's pivotal role in enhancing national security and international engagement. While reaffirming the centrality of the Euro-Atlantic region to British strategic interests, the review also highlighted the necessity of an expanded presence in the Indo-Pacific. This policy shift, commonly referred to as the "Indo-Pacific tilt", demonstrated a strategic acknowledgment of emerging maritime challenges, particularly the escalating tensions in the South China Sea and the imperative of securing critical trade routes. The deployment of the Carrier Strike Group (CSG21) later that year served as a tangible manifestation of the UK's strategic intent, showcasing its ability to project cutting-edge military power in support of NATO and international maritime security. This deployment encompassed a range of strategic objectives, including challenging illegitimate Russian territorial claims in the Black Sea, conducting precision strikes against ISIS in Syria, and reinforcing freedom of navigation in contested maritime zones such as the South China Sea and the Taiwan Strait.

The accompanying Defence Command Paper provided further clarity regarding the UK's commitments to augmenting naval capabilities.⁵ Specific measures included plans to increase the number of active vessels, modernise existing fleets, and invest in advanced naval technologies. This commitment extended to enhancing both surface and subsurface capabilities, with particular emphasis on the role of submarines in sustaining strategic deterrence. The recognition of undersea warfare and emerging cross-domain technologies as integral components of contemporary maritime strategy underscores the multifaceted nature of seapower, extending beyond conventional naval operations.

The 2023 Integrated Review Refresh further acknowledged the increasing volatility of the global security environment and reaffirmed the UK's commitment to fostering a resilient and strategically agile defence posture.⁶ The document emphasised the necessity of a Britain capable of "deterring, defending, and competing" across all domains of conflict. Furthermore, the advent of the AUKUS security partnership in September 2021 signalled a paradigm shift in British maritime strategy, moving towards the dissolution of a binary distinction between the Euro-Atlantic and Indo-Pacific theatres. Instead, policymakers have increasingly viewed these regions as components of an integrated strategic continuum.

4 UK Government, "The Integrated Review 2021," March 16, 2021, <https://www.gov.uk/government/collections/the-integrated-review-2021>.

5 Ministry of Defence, "Defence in a Competitive Age," March 22, 2021, <https://www.gov.uk/government/publications/defence-in-a-competitive-age>.

6 UK Government, "Integrated Review Refresh 2023: Responding to a more contested and volatile world," March 13, 2023, <https://www.gov.uk/government/publications/integrated-review-refresh-2023-responding-to-a-more-contested-and-volatile-world>.

The Carrier Strike Group 2025 mission, named Operation HIGHMAST, provided an opportunity for the UK to conduct a major global deployment and to exercise complex operations alongside partners and allies.⁷ It represented not only the culmination of years of investment in the Royal Navy's carrier strike capability, but also a symbolic strategic statement, sending a message of deterrence against adversaries and of solidarity with allies in the Indo-Pacific region.

The UK's recent defence reviews have also highlighted the significance of international partnerships in reinforcing maritime security. The increasing complexity of maritime threats necessitates multinational collaboration, particularly in the realms of naval exercises, intelligence-sharing, and strategic deterrence. British participation in multinational naval operations serves as a testament to this commitment, such as Dynamic Mongoose (NATO's annual anti-submarine warfare exercise) and Rim of the Pacific (RIMPAC). These cooperative efforts underscore the recognition that seapower is not solely predicated on national assets but also on the ability to build and sustain coalitions to address shared security challenges.

The Royal Navy's engagement in joint exercises with NATO allies and regional partners in the Indo-Pacific has demonstrated the UK's commitment to fostering global maritime stability. Initiatives such as the Quadrilateral Security Dialogue (Quad) naval exercises and operations under the Five Eyes intelligence-sharing framework illustrate the UK's strategic alignment with likeminded nations in ensuring maritime security and freedom of navigation.

The 2025 review recognises that the Royal Navy plays a key role in deterring and defending in the Euro-Atlantic region, particularly through its contributions to NATO, but also tasks the service with shaping the broader global security environment.⁸ Under the review's recommendations, the Royal Navy will be undergoing a major transformation to build a fleet which is not only more capable, but also more cost-effective and easier to operate. Central to this is a "high-low" mix of advanced and simpler systems, combining cutting-edge technologies with autonomous platforms and digitally integrated weapons. The review balances the Royal Navy's regional and global commitments by highlighting that its capabilities will be used where they can have the greatest strategic impact, such as in defence partnerships, military exports and training missions, bolstered by both a permanent naval presence in key regions and regular deployments beyond Europe.

7 See also Emma Salisbury, "Operation HIGHMAST," *The Broadside*, April 22, 2025, <https://www.thebroadside.org.uk/p/oq-2025-operation-highmast>.

8 See also Emma Salisbury, "A New Hybrid Navy: What the Strategic Defence Review means for the maritime," *The Broadside*, June 5, 2025, <https://www.thebroadside.org.uk/p/o6-2025-a-new-hybrid-navy>.

British priorities in the Euro-Atlantic

The strategic orientation of the UK's defence policy has remained consistently aligned with NATO, reflecting its longstanding commitment to collective security. While the previous Conservative government articulated an ambition for Britain to be the leading European ally within NATO, the newly elected Labour government has reinforced this commitment through a declared "NATO-first approach" to British security.⁹ Given the persistent threat posed by Russia, this prioritisation of NATO is essential for maintaining the credibility of collective deterrence. The Royal Navy, as a key pillar of the UK's defence strategy and the custodian of its continuous at-sea nuclear deterrent, plays an indispensable role in upholding NATO's operational effectiveness and strategic posture.

The urgency of countering Russian threats in the Atlantic has intensified within the evolving security environment. Beyond its ongoing war in Ukraine, Russia has adopted an increasingly assertive stance in other theatres, particularly in the Baltic and Arctic regions. These developments necessitate a robust maritime response from the UK. While Russia's ground and air forces have sustained significant attrition in Ukraine, its naval capabilities remain largely intact, with the notable exception of the Black Sea Fleet, which has faced not only attrition from Ukrainian forces but also operational constraints due to the closure of the Black Sea to transit by warships. This situation leaves a considerable portion of the Russian Navy, including a significant part of its submarine fleet, available to challenge NATO's interests in other maritime domains. Consequently, the UK's ability to project naval power and conduct anti-access and area denial (A2/AD) operations is critical in mitigating Russian naval threats. Effective monitoring and deterrence of Russian submarine activity are particularly vital, as such incursions may pose significant risks to transatlantic trade and European security. Investment in advanced maritime capabilities, including next-generation submarines and maritime patrol aircraft, is crucial for enhancing the Royal Navy's capacity to deter hostile actions and respond effectively to potential provocations.

NATO's strategic orientation is fundamentally maritime, a reality that is often overlooked in discussions on alliance security. The centrality of the ocean to NATO's operational framework underscores the importance of Britain's geographical position at the core of transatlantic security. The UK serves as a critical nexus for NATO's maritime operations, with additional strategic reach into the Mediterranean through Gibraltar and the Sovereign Base Areas on Cyprus. The alliance's ability to project power across the North Atlantic and reinforce Eastern Europe in times of crisis is contingent upon the capacity of allied navies to maintain sea control and ensure the rapid deployment of troops and military equipment. In any potential

⁹ David Lammy and John Healey, "This government will have a 'NATO first' defence strategy: article by the Foreign Secretary and Defence Secretary," July 9, 2024, <https://www.gov.uk/government/news/this-labour-government-will-have-a-nato-first-defence-strategy-article-by-the-foreign-secretary-and-defence-secretary>.

conflict, the Royal Navy would be expected to play a leading role in facilitating these operations, further highlighting its importance within NATO's collective defence strategy.

The growing geopolitical tensions in the Baltic and Arctic regions, coupled with the increase in Russian naval activity in the North Atlantic, underscore the necessity of a strong UK maritime presence to uphold deterrence and regional stability in the Euro-Atlantic theatre. The adaptability of the Royal Navy enables the UK to engage in a broad spectrum of security challenges, reinforcing its position as a key NATO contributor. As NATO adapts to emerging security threats, including cyber warfare and hybrid conflict strategies, the importance of maintaining a resilient and technologically advanced naval force is paramount. The integration of emerging technologies, such as cyber capabilities and autonomous maritime systems, will be critical in ensuring operational readiness and strategic agility. Within this evolving security landscape, prioritising seapower is not merely advantageous but imperative for the successful implementation of a NATO-first security strategy. The Royal Navy's ability to uphold deterrence, facilitate power projection, and operate effectively in contested maritime environments remains central to both British national security and the broader objectives of the NATO alliance.

British priorities in the Indo-Pacific

The UK's maritime capabilities are increasingly critical in addressing the systemic challenges posed by the PRC as Beijing continues to assert its influence across the Indo-Pacific region and beyond. The rapid expansion of the People's Liberation Army Navy (PLAN), alongside the Chinese Coast Guard (CCG) and the Maritime Militia (CMM), presents significant security challenges, particularly in relation to freedom of navigation and the broader stability of global maritime trade.¹⁰ Given the scale and trajectory of China's naval buildup, it is projected that the PRC may possess the most dominant naval force in the Indo-Pacific by the 2030s. The strategic implications of this shift necessitate a robust response from the UK, in coordination with its allies, to uphold international norms and maritime security.

The PRC's growing military assertiveness is particularly evident in the South China Sea, where Beijing has sought to consolidate its territorial claims through the deployment of its naval, coast guard, and paramilitary forces. This expansionist posture has led to heightened tensions with regional actors such as the Philippines and Vietnam, who seek to safeguard their maritime sovereignty. Meanwhile, states such as the United States, the UK, Japan, and Australia have taken an active role in defending the principle of freedom of navigation, emphasising the importance of maintaining an open and rules-based international

¹⁰ See Emma Salisbury, "China's PLAN: Maritime dominion beyond the South China Sea," Council on Geostrategy, May 20, 2024, <https://www.geostrategy.org.uk/research/chinas-plan-maritime-dominion-beyond-the-south-china-sea/>.

maritime order. Although the South China Sea and wider Indo-Pacific region may appear geographically distant from the UK, Beijing's strategic ambitions reflect a broader revisionist approach to international relations that could have profound implications for global security.

The modernisation of the PLAN has significantly enhanced its operational capabilities in key domains, including anti-surface, anti-submarine, and anti-air warfare. Moreover, there are indications that China is seeking to develop a more sophisticated land-attack capability, which would further expand its capacity for power projection.¹¹ The PLAN's recent procurement of modern multi-mission vessels, including advanced surface combatants and submarines, suggests an ambition to extend its operational reach beyond the First Island Chain and into the broader Indo-Pacific. This growing maritime strength, when combined with the activities of the CCG and CMM, allows China to engage in coercive maritime operations while maintaining plausible deniability in grey-zone conflicts. As a result, China is now better positioned to deter external intervention in its regional waters, including in the vicinity of contested features in the South China Sea and the Taiwan Strait.

A key area of concern is the expansion of the PLAN's amphibious and expeditionary capabilities, which appear to be closely linked to Beijing's long-term strategy regarding Taiwan. The increasing number of landing platform docks and landing helicopter assault vessels within the PRC's naval inventory suggests an intent to develop the capability for large-scale amphibious operations. However, the apparent absence of a corresponding increase in other types of landing craft raises questions about the PRC's short-term readiness for an invasion of Taiwan. It is possible that Beijing seeks to augment its amphibious capabilities through the requisitioning of civilian vessels or, alternatively, that the Chinese shipbuilding industry is capable of rapidly producing the necessary assets should a conflict scenario arise. In either case, the implications of such developments are significant for regional security and warrant close scrutiny by the UK and its allies.

In response to these challenges, the UK's ability to project seapower in coordination with its international partners remains an essential component of its broader defence and foreign policy objectives. Participation in joint naval exercises and security initiatives, such as AUKUS, strengthens Britain's ability to contribute to regional stability while reinforcing strategic partnerships with key allies in the region and beyond, including the United States, Japan, South Korea, France, Canada, and Australia. Moreover, these collaborations serve to deter aggressive actions by China and reinforce the principles of freedom of navigation and international maritime law.

¹¹ For a comprehensive look at Chinese assets, see U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China*, December 2024, <https://media.defense.gov/2024/Dec/18/2003615520/-1/-1/o/MILITARY-AND-SECURITY-DEVELOPMENTS-INVOLVING-THE-PEOPLES-REPUBLIC-OF-CHINA-2024.PDF>.

Ultimately, the strategic environment in the Indo-Pacific is evolving in ways that necessitate an enhanced commitment to maritime security by the UK and its allies. The emergence of a Chinese navy with expeditionary capabilities carries profound implications for the Royal Navy and the broader Euro-Atlantic security architecture. As the PRC continues to expand its maritime capabilities, it is reshaping the strategic environment in ways that necessitate a response from established maritime powers, including the UK and its Euro-Atlantic allies. The expansion of the PLAN is driven by multiple factors, including China's economic interests, maritime and territorial disputes, and its broader geopolitical ambitions. The development of a modern blue-water navy enables Beijing to safeguard its maritime trade routes, enforce its territorial claims, and project power beyond its immediate region.¹² As China continues to expand its naval capabilities and assert its influence, Britain must remain proactive in ensuring the preservation of a rules-based international order, particularly in the maritime domain. By strengthening its naval presence, deepening security partnerships, and maintaining a commitment to upholding international norms, the UK can contribute meaningfully to the stability of the Indo-Pacific region and beyond.

For the Royal Navy, the expansion of the PLAN underscores the necessity of maintaining a robust naval presence to safeguard British interests in the Indo-Pacific. This includes upholding the principles of a rules-based international order, particularly the freedom of navigation, while reassuring key regional allies of the UK's commitment to their security. The Royal Navy's historical role as a global maritime power, combined with its operational expertise, positions it to contribute to multinational efforts to ensure maritime security. Such efforts are especially pertinent in the Indo-Pacific, where open sea lanes are critical for global trade and stability, and where the PRC's increasing assertiveness has raised concerns regarding the erosion of international norms.

Not either or, but both

Beyond the Indo-Pacific, Chinese naval expansion has broader strategic ramifications for the Euro-Atlantic security landscape. While NATO has traditionally focused on defending its member states against conventional military threats, its strategic outlook is increasingly influenced by security developments in other regions, including the Indo-Pacific. The PLAN's growing presence in the Atlantic, facilitated through expanded naval deployments¹³ and investments in port infrastructure, raises questions regarding the role of the Royal Navy and allied European naval forces in addressing non-traditional security challenges

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12 See, for example: National Development and Reform Commission of the People's Republic of China, "The theoretical context and practical path of developing the marine economy and promoting the construction of a maritime power," March 7, 2024, <https://www.ndrc.gov.cn/>.

13 For a comprehensive list of the PLAN's global deployments from 2000 to 2020, see Michael A. McDevitt, *China as a Twenty First Century Naval Power* (Naval Institute Press, 2020), chapter 2.

in more distant theatres. These developments suggest that the PRC's naval ambitions are not confined to its immediate periphery but may increasingly intersect with Euro-Atlantic security concerns in the coming years.

The rise of the PRC does not necessarily pose an immediate threat to the UK's core national interests. However, this assumption is contingent upon the maintenance of a regional balance of military power within the Indo-Pacific. As long as such a balance is preserved, Beijing is unlikely to attempt actions that could significantly disrupt global trade and economic stability. Since regional dominance within its immediate periphery is a prerequisite for broader geopolitical ambitions, preventing the PRC from achieving such dominance aligns with the UK's strategic objectives, without necessarily requiring direct confrontation.

In seeking to constrain the PRC's strategic reach without direct confrontation, the UK aligns itself with several regional powers that share concerns regarding Beijing's growing assertiveness. This alignment necessitates a nuanced approach: the UK must determine how to limit China's influence in the Indo-Pacific while maintaining a measured military presence, given the constraints of its naval resources. A key element of this strategy involves strengthening partnerships with states that uphold a stable and open international order, while balancing competition with the PRC.

The UK government must therefore adapt to the evolving strategic landscape by reinforcing maritime cooperation with like-minded partners in the Indo-Pacific. This includes strengthening relations with Australia, Japan, South Korea, Vietnam, the Philippines, Indonesia, and Malaysia. Enhanced interoperability and intelligence-sharing among naval forces, facilitated through joint exercises and operational deployments, will contribute to deterrence efforts against Chinese aggression and bolster regional capacity to respond to crises. Additionally, the AUKUS partnership provides a valuable mechanism for expanding defence capabilities in the Indo-Pacific while simultaneously enhancing Britain's naval strength within the Euro-Atlantic framework. Pillar I in particular will bring enhanced maritime capabilities to both Australia and the UK through the development of the SSN-AUKUS submarines and increased links between their two navies, which will contribute to available capacity in both the Euro-Atlantic and Indo-Pacific theatres.

Building resilience is fundamental to mitigating the vulnerabilities that could expose the UK to crises and external threats. As a major trading nation, the UK is heavily reliant on maritime routes in the Indo-Pacific for the transportation of goods, energy resources, and raw materials. Any significant disruption to these routes, whether due to military conflict or increased geopolitical instability, could lead to higher shipping costs, supply chain disruptions, and shortages of essential commodities. Such disruptions could, in turn, generate inflationary pressures, diminish consumer confidence, and slow economic growth.

Moreover, escalating tensions in the Indo-Pacific could have spillover effects on global financial markets, leading to increased volatility and economic uncertainty. A downturn in the region's economic stability would likely have cascading effects on the global economy, with adverse consequences for British exports, foreign direct investment, and financial markets. Preserving the security of maritime communication lines in the Indo-Pacific is therefore directly linked to the resilience of the British economy, given the interconnected nature of global trade and the potential repercussions of a conflict in the South China Sea or broader Indo-Pacific region.

Ultimately, the impact of the PRC's naval expansion on the Royal Navy and the Euro-Atlantic security order will depend on how effectively the UK collaborates with its allies and partners to navigate the complexities of maritime competition. By investing in naval modernisation, strengthening multilateral alliances, and promoting regional cooperation, the UK government can work towards safeguarding national interests and upholding an open international order that prioritises stability, security, and the free movement of trade across global maritime domains.

The “tilt”

The UK's strategic tilt towards the Indo-Pacific has elicited a range of responses. Some critics dismissed it as a tokenistic gesture, while others argued that it risked distorting the UK's armed forces at a time when core interests in Europe are under increasing threat.¹⁴ The military dimension of the tilt, in particular, has been perceived by some as a largely symbolic effort that diverts scarce resources away from more immediate security concerns within the Euro-Atlantic region. This critique extends beyond the UK, with similar questions raised regarding the Indo-Pacific engagement of other European states, such as the Netherlands and Germany. Given the limited military resources available, critics argue that strategic focus should remain on the Euro-Atlantic, where tangible security outcomes are more achievable.

Despite these critiques, it is important to recognise that limited naval deployments can still yield strategic benefits, provided that their objectives are well-defined, expectations are managed, and operations are effectively integrated with those of allied and partner navies. A consistent theme in British defence strategy, particularly in peacetime, has been the pursuit of strategic influence at minimal cost. The Indo-Pacific tilt exemplifies this approach, demonstrating how a modest yet well-structured military presence can contribute to regional stability without imposing excessive strain on the UK's broader defence commitments.

¹⁴ See William D. James, “Tailored, tokenistic, or too much? Assessing the Royal Navy's presence in the Indo-Pacific,” The Hague Centre for Strategic Studies, February 2023, <https://hcass.nl/report/tailored-tokenistic-or-too-much-assessing-the-royal-navys-presence-in-the-indo-pacific/>.

The early success of the two OPVs currently stationed in the Indo-Pacific illustrates the practical advantages of this approach. These vessels are well-suited to addressing everyday security challenges in the region, including fisheries management, maritime law enforcement, sub-threshold coercion, disaster relief, countering illicit activities at sea, and humanitarian assistance, all of which contribute to security and benefit allies and partners. Crucially, these objectives have been met with minimal financial and operational burden on the Royal Navy. Moreover, their deployment has not detracted from the Royal Navy's primary responsibilities in the Euro-Atlantic, ensuring that the UK's core defence obligations remain unaffected.

In addition to their operational utility, the presence of OPVs reinforces the UK's strategic narrative as a responsible stakeholder in Indo-Pacific security. While concerns exist regarding their limited defensive capabilities, particularly given the increasingly contested security environment in the region, their light armament is also an advantage. The absence of heavy weaponry reduces the likelihood of these vessels being perceived as provocative by potential adversaries, enabling them to carry out constabulary duties with minimal interference. Furthermore, their small size and environmentally friendly design facilitate access to a greater number of regional ports, particularly those with stringent environmental regulations, thereby broadening opportunities for naval diplomacy. This highlights how a seemingly "tokenistic" deployment can, in practice, have a disproportionately positive impact on advancing the UK's foreign and defence policy objectives.

Balancing theatres

The Royal Navy faces a critical strategic challenge in the coming decades: effectively balancing its commitments between the Euro-Atlantic and Indo-Pacific regions. As global power dynamics continue to evolve in unpredictable ways, the strategic imperatives of these theatres will necessitate the careful allocation of finite naval resources to maintain stability, project influence, and ensure operational flexibility. While other theatres will also require British commitments, including the South Atlantic and Caribbean, the Euro-Atlantic and Indo-Pacific remain the two most prominent.

In the Euro-Atlantic region, the resurgence of Russian maritime activity, grey-zone operations in the Baltic, and escalating tensions in the Arctic highlight the necessity of enhanced collaboration within NATO. Key strategic considerations include anti-submarine warfare, maritime domain awareness, and the protection of critical undersea infrastructure, areas in which the Royal Navy is well-positioned to contribute. Given the UK's collective defence commitments under NATO, as well as its reliance on the continuous at-sea deterrent, this theatre remains a central pillar of British security policy.

Concurrently, the Indo-Pacific region presents a distinct set of challenges, driven primarily by China's naval modernisation, territorial disputes in the South China Sea, and the broader imperative of upholding a rules-based international order. In response, the Royal Navy has expanded its engagement in this theatre, as evidenced by Carrier Strike Group deployments, the forward-basing of Offshore Patrol Vessels, and participation in the AUKUS security partnership. These efforts reflect the UK's recent strategic "tilt" towards the Indo-Pacific, signalling a growing commitment to regional security.

By leveraging relatively low-cost deployments, the Royal Navy can operate within its means and meet commitments in the Euro-Atlantic while also collaborating with regional partners to maintain stability in the Indo-Pacific. Crucially, such engagement enhances the capabilities of regional states, allowing them to strengthen their own security and governance frameworks. The UK's approach, therefore, can provide regional actors with an alternative to either alignment with Beijing or becoming entangled in a broader American-Chinese geopolitical competition. This strategic positioning allows Britain to contribute meaningfully to regional security, reinforcing a balanced approach to Indo-Pacific engagement that aligns with broader international security objectives while also maintaining a central position within NATO. It is not a matter of either or, but rather of both.

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Navigating Complexity

Marine Engineering Insights into Europe's Energy Infrastructure for Shipbuilding Resilience¹

Evelien Scheffers

Introduction

The large-scale power blackout on the Iberian Peninsula in April 2025 has unequivocally shown the vulnerability and need for better understanding of the European power grid.² Using network theory-based system analysis could increase this understanding.³ The theory of complex networks has been used to analyse various systems over nearly all scientific disciplines, ranging from biological networks to transport networks and social networks.⁴ Each network consists of a set of nodes and a set of edges E , together representing relations between components in a system. A specific subgroup of these networks are the multilayer networks, which exist of a nonhomogeneous set of nodes and/or edges, represented by different layers.⁵ In previous work, this author has demonstrated that the multilayer network structure of land-based power grids and distribution systems onboard ships has comparable qualities.⁶ Both heterogeneous-flow networks distribute various flows (in domains such as electricity, cooling water, oil, and data) over a spatially distributed system. In contrast to public transport systems, where a bus line serves as a backup service for a metro line, the power grid and onboard system flows cannot be interchanged. Moreover, both systems show clearly defined supplier nodes, distribution or hub nodes and user nodes, which naturally suggest a dominant treelike structure over a line graph. These structural similarities suggest that both applications could be approached from a comparable perspective.

- 1 This work was performed within the RODIN project (Robust Onboard Distribution Networks), which has received funding from the Delft University of Technology, Department of Maritime and Transport Technology.
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- 3 Lucas Quadra et al, "A Critical Review of Robustness in Power Grids Using Complex Networks Concepts," *Energies* 8, no. 9 (August 2015): 9211–65, <https://doi.org/10.3390/en8099211>.
- 4 Béla Bollobás, *Modern Graph Theory*, vol. 184, Graduate Texts in Mathematics (Springer New York, 1998). <https://doi.org/10.1007/978-1-4612-0619-4>; Danail G. Bonchev and Dennis H. Rouvray, eds., *Complexity in Chemistry, Biology, and Ecology* (Springer New York, 2005) Mathematical and Computational Chemistry; M.E.J. Newman, *Networks: An Introduction* (Oxford University Press, 2010).
- 5 Mikko Kivelä et al., "Multilayer Networks," *Journal of Complex Networks* 2, no. 3 (September 2014): 203–71, <https://doi.org/10.1093/comnet/cnu016>.
- 6 E.L. Scheffers and P. de Vos, "Exploring the Insights from Transportation Networks: A Multilayer Network Approach to Distribution Systems Onboard Ships," *Transportation Research Procedia* (Dublin), 2024.

Within the field of marine engineering, most research applications involving network theory are aimed at improving the robustness or reliability of platform systems onboard naval vessels.⁷ This focus on robustness follows from the less straightforward definition (in contrast to efficiency), the typical operational profiles of naval vessels and the previous application of complex networks to assess system robustness.⁸ Due to the changing character of the geopolitical climate, this focus on robustness is easily translated towards land-based power grids. Power grids and their robustness have been studied extensively over the past decades.⁹

This study aims to add to this body of work by assuming ship-like properties for the European power grid infrastructure. The infrastructure is retrieved from the European Network of Transmission System Operators for Electricity (ENTSO-E),¹⁰ which provides the supplier nodes (electricity generators), the hub nodes (buses) and the network edges (lines and links). The network representation of the ENTSO-E grid is developed by Hörsch.¹¹ Meanwhile, the user nodes are defined as a selection of vital naval shipyards in Europe, as shown in Table 12.1. The selection has been performed at the author's discretion based on recent significant naval newbuild projects and is not comprehensive. The network, including the shipyards as vital users, is shown in Figure 12.1. The goal of this study is to analyse the European power-grid in support of a more resilient European naval shipbuilding infrastructure.

- 7 Luke C. Brownlow et al, "A Multilayer Network Approach to Vulnerability Assessment for Early-Stage Naval Ship Design Programs," *Ocean Engineering* 225 (April 2021): 108731, <https://doi.org/10.1016/j.oceaneng.2021.108731>; A.C. Habben Jansen, A.A. Kana, and J.J. Hopman, "A Markov-Based Vulnerability Assessment for the Design of on-Board Distributed Systems in the Concept Phase," *Ocean Engineering* 190 (October 2019): 106448, <https://doi.org/10.1016/j.oceaneng.2019.106448>; Micheal G. Parsons et al, "Intelligent Ship Arrangements," *Naval Engineers Journal* 120, no. 3 (2008): 51–65, <https://doi.org/10.1111/j.1559-3584.2008.00153.x>; E.L. Scheffers, "Supplementing Experience-Based Platform System Reliability Requirements to Network Theory," *iSCSS (Liverpool)*, 2024; E.L. Scheffers and P. de Vos, "Supplementing Industry-Specific Dynamic Positioning Requirements to Network Theory," *International Marine Design Conference*, May 2024, <https://doi.org/10.59490/imdc.2024.820>; P. de Vos and D. Stapersma, "Automatic Topology Generation for Early Design of On-Board Energy Distribution Systems," *Ocean Engineering* 170 (December 2018): 55–73, <https://doi.org/10.1016/j.oceaneng.2018.09.023>.
- 8 W. Ellens and R.E. Kooij, "Graph Measures and Network Robustness," arXiv:1311.5064, Preprint, arXiv, November 7, 2013, <https://doi.org/10.48550/arXiv.1311.5064>; Sydney et al, "Elasticity: Topological Characterization of Robustness in Complex Networks," *Proceedings of the Third International Conference on Bio-Inspired Models of Network Information and Computing Systems (Bionetics 2008)* (Hyogo, Japan), ICST, 2008, <https://doi.org/10.4108/ICST.BIONETICS2008.4713>; P. van Mieghem et al, *A Framework for Computing Topological Network Robustness*, 2010.
- 9 Çetinay et al, "Topology-Driven Performance Analysis of Power Grids," *Intelligent Integrated Energy Systems*, ed. Peter Palensky, Miloš Cvetković, and Tamás Keviczky (Springer International Publishing, 2019), 37–54, https://doi.org/10.1007/978-3-030-00057-8_2; Cuadra et al, "A Critical Review of Robustness in Power"; Koç et al, "The Impact of the Topology on Cascading Failures in a Power Grid Model," *Physica A: Statistical Mechanics and Its Applications* 402 (May 2014): 169–79, <https://doi.org/10.1016/j.physa.2014.01.056>; G.A. Pagani and M. Aiello, "The Power Grid as a Complex Network," *Physica A: Statistical Mechanics and Its Applications* 392, no. 11 (June 2013): 2688–700, <https://doi.org/10.1016/j.physa.2013.01.023>.
- 10 ENTSO, "European Network of Transmission System Operators for Electricity ENTSO-E", <http://entsoe.eu>.
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Shipyard	Country	City
ThyssenKrupp Marine Systems - Kiel	Germany	Kiel
Meyer Werft Naval - Papenburg	Germany	Papenburg
Navantia - Ferrol	Spain	Ferrol
Navantia - Cartagena	Spain	Cartagena
Naval Group - Cherbourg	France	Cherbourg
Naval Group - Lorient	France	Lorient
BAE Systems - Barrow-in-Furness	United Kingdom	Barrow-in-Furness
BAE Systems - Glasgow (Govan & Scotstoun)	United Kingdom	Glasgow
Harland & Wolff Consortium	United Kingdom	Belfast
Fincantieri - Riva Trigoso	Italy	Riva Trigoso
Fincantieri - Muggiano	Italy	Muggiano
Damen Shipyards - Vlissingen	Netherlands	Vlissingen
Damen Shipyards - Galati	Romania	Galati
Constanta Shipyard	Romania	Constanta
Saab Kockums - Karlskrona	Sweden	Karlskrona

Table 12.1: Selection of vital naval shipyards, ordered by country

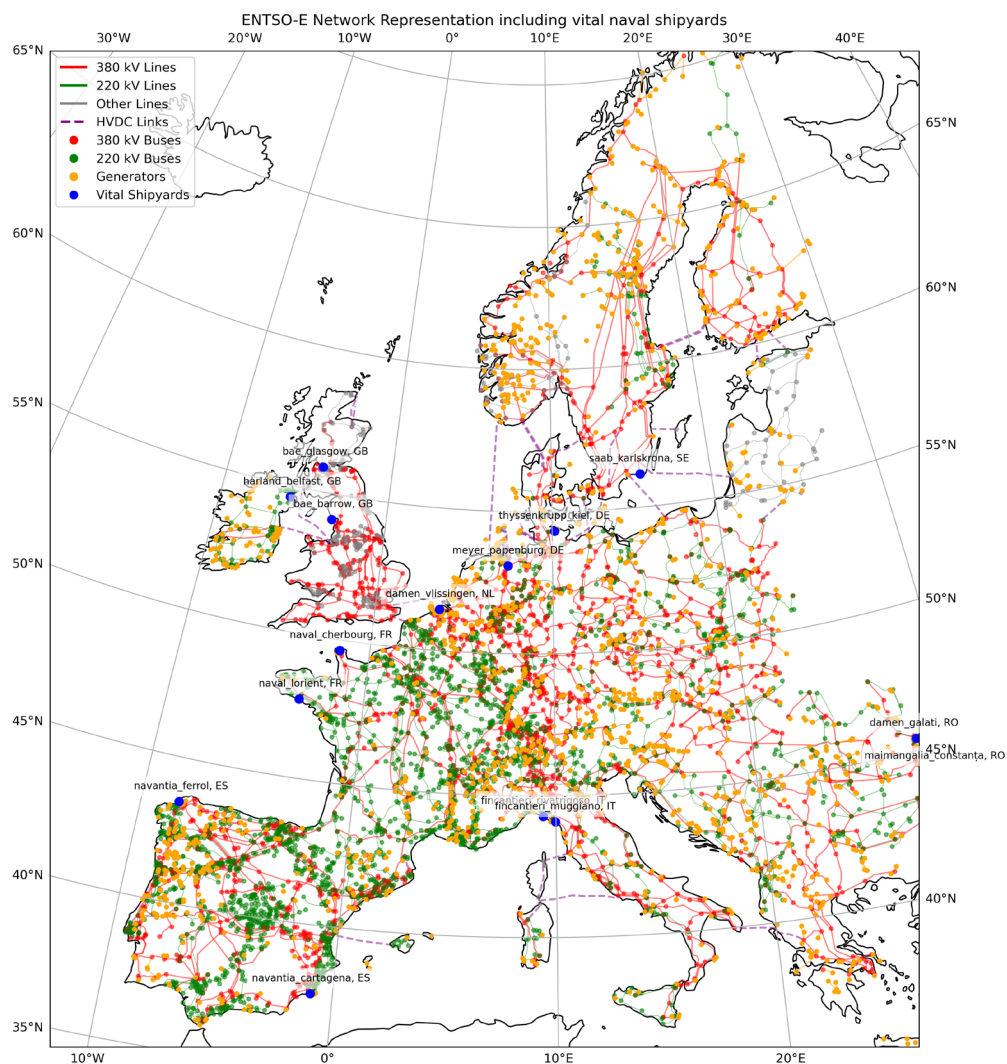


Figure 12.1: European Network of Transmission System Operators for Electricity (ENTSO-E) including electricity generators (supplier nodes), buses (hub or distribution nodes) and various electrical lines and links. The vital shipyards (user nodes) have been selected by the author and connected to the grid by adding an edge to the three nearest nodes (both generators and buses).

Method

For this analysis, two network representations and two types of robustness metrics have been studied. First, the network is studied, both including and excluding non-EU countries, to understand the influence and dependencies of network components outside the European Union. Second, a differentiation is made between global and local robustness metrics.

Global robustness metrics

The global metrics applied are node and edge betweenness, indicating the number of shortest paths that pass through the node or edge. Both metrics are directly adopted from Newman.¹²

First, node betweenness centrality $C_B(v)$ for a node v is defined as:

$$C_B(v) = \sum_{s \neq v \neq t} \frac{\sigma_{st}(v)}{\sigma_{st}},$$

where σ_{st} is the total number of shortest paths from node s to node t , and $\sigma_{st}(v)$ is the number of those paths that pass through node v .

Similarly, edge betweenness centrality $C_B(e)$ for an edge e is given by:

$$C_B(e) = \sum_{s \neq t} \frac{\sigma_{st}(e)}{\sigma_{st}},$$

where $\sigma_{st}(e)$ is the number of shortest paths from node s to node t that pass through edge e .

The shortest paths, the shortest route between two nodes, are considered between all generators and all vital shipyards. In reality, a generator would not likely supply electricity to a shipyard across Europe. However, the average number of shortest paths passing a node or edge indicates relevance in electrical power distribution through the network.

Placing redundant components in separate compartments onboard the ship is an integral part of improving resilience. This spatial aspect is, within this study, only considered when it is explicitly present in the number of nodes or edges between two points. This differentiation

¹² Newman, *Networks*.

between spatial system design and logical system design aligns with Brefort¹³ and his division between functional, logical, and physical architecture in the analysis of onboard systems. However, this means that the length of an edge is currently not considered in this study.

Local robustness metric

Table 12.2 shows an overview of the applied local robustness metrics. The metrics are selected based on how well they indicate the influence of a possible attack or failure on the system. Apart from the ‘paths to users’ metric, the metrics do not take the location of the shipyards into account, whereas the global robustness metric ‘betweenness’ is highly dependent on source and sink node identification. The local metrics help identify weak points or critical nodes based on their local connectivity and role in the network.

Metric	Description	More Critical if
Node degree	Number of direct connections to the node	↓ Lower (fewer alternatives / more isolated)
Clustering coefficient	How interconnected the node’s neighbours are	↓ Lower (less redundancy in neighbourhood)
Neighbour connectivity	Average degree of neighbours	↓ Lower (surrounded by weak nodes)
Local assortativity	Correlation between node’s degree and its neighbours’ degrees	↓ More negative (bridging high/low degree zones)
Ego size	Size of the k-hop ego network (local reachability)	↓ Smaller (less locally influential/ redundant)
Paths to users	Number of shortest paths from/to shipyard users going through it	↑ Higher (key conduit to users, potential bottleneck)

Table 12.2: Robustness metrics and their critical conditions

Node degree measures how many direct connections a node v has:

$$k_v = \deg(v),$$

where k_v is the degree (number of edges) connected to node v . A lower degree means the node has fewer alternative routes and may be more vulnerable if it fails.

Clustering coefficient shows how well a node’s neighbours are connected to each other. In real-world networks, two properties are often found: a high clustering coefficient and

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13 Dorian Brefort et al, “An Architectural Framework for Distributed Naval Ship Systems,” *Ocean Engineering* 147 (January 2018): 375–85, <https://doi.org/10.1016/j.oceaneng.2017.10.028>.

robustness to random node failures. This clustering refers to the idea that ‘my friends are likely to be friends’; an expression for the triangle’s density within the network. Triangles facilitate two ways of reaching a certain point within the network which we consider as distribution redundancy. Thus, the local clustering coefficient of node v is defined as the number of edges among neighbours of v divided by the possible number of edges among its neighbours.¹⁴

$$C_v = \frac{2T_v}{k_v(k_v - 1)},$$

where T_v is the number of triangles (fully connected triplets) that include node v , and k_v is its degree. A lower C_v means the node’s neighbourhood has less internal redundancy.

Neighbour connectivity looks at how connected a node’s neighbours are, on average:

$$k_{nn,v} = \frac{1}{k_v} \sum_{u \in \mathcal{N}(v)} k_u,$$

Where $\mathcal{N}(v)$ is the set of neighbours of node v , and k_u is the degree of neighbour u . A lower value means the node is surrounded by less connected (and potentially weaker) neighbours.

Local assortativity measures whether a node links parts of the network with different levels of connectivity:

$$r_v = \frac{1}{k_v \sigma_k^2} \sum_{u \in \mathcal{N}(v)} (k_u - \mu_k)(k_v - \mu_k),$$

Where μ_k and σ_k^2 are the mean and variance of all node degrees in the network. A more negative r_v suggests that node v connects high-degree and low-degree regions acting as a structural bridge.

Ego size captures how many nodes are reachable within a small number of steps (typically two hops) from node v :

$$\text{EgoSize}_v^{(k)} = |\{u \in V \setminus \{v\} \mid d(v, u) \leq k\}|,$$

where $d(v, u)$ is the shortest path length between v and u , and k is the maximum number of hops considered. A smaller ego size indicates that node v has limited local reach or influence.

14 Ellens and Kooij, “Graph Measures and Network Robustness”.

Paths to users measures how often a node lies on shortest paths between power generators and shipyard users:

$$P_v = \sum_{s \in G, t \in U} \frac{\sigma_{st}(v)}{\sigma_{st}},$$

Where G is the set of generators, U the set of users, σ_{st} the number of shortest paths from node s to node t , and $\sigma_{st}(v)$ the number of those paths passing through node v . A higher P_v value means the node plays a key role in connecting producers and users, making it more critical.

These local metrics complement global measures by highlighting nodes that may not appear central overall but are structurally important within their immediate surroundings.

Results

Global robustness

Figure 12.2 and Figure 12.3 show the first global results, highlighting the most betweenness-critical network components for the complete European network and for the European Union network. Especially, Figure 2 (left) shows clear axis on which the critical nodes can be found, together showing a cyclic structure with some connecting paths. Interestingly, the most critical nodes are not part of the central cyclic structure but can be found more peripheral in the United Kingdom and Norway (see Figure 3 left). It is assumed that the high number of shipyards in the United Kingdom and the high number of electricity generators in Norway cause this shift. Based on the complete network, it is suggested to focus attention with regards to robustness and redundancy on the British electricity distribution grid. Excluding the United Kingdom, as shown in Figure 3 (right), would shift the focus on a main axis from Northern France to Northern Spain and, additionally, a major robustness-critical area towards Romania.

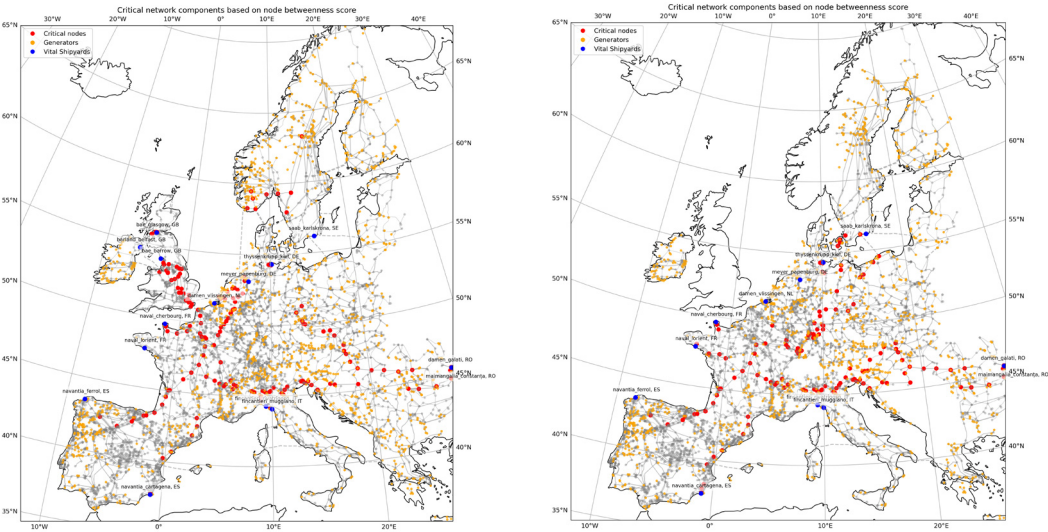


Figure 12.2: The 5% most critical network components based on node betweenness score, where generators are sources and vital shipyards are sinks. On the right, the 5% most critical nodes excluding non-EU countries.

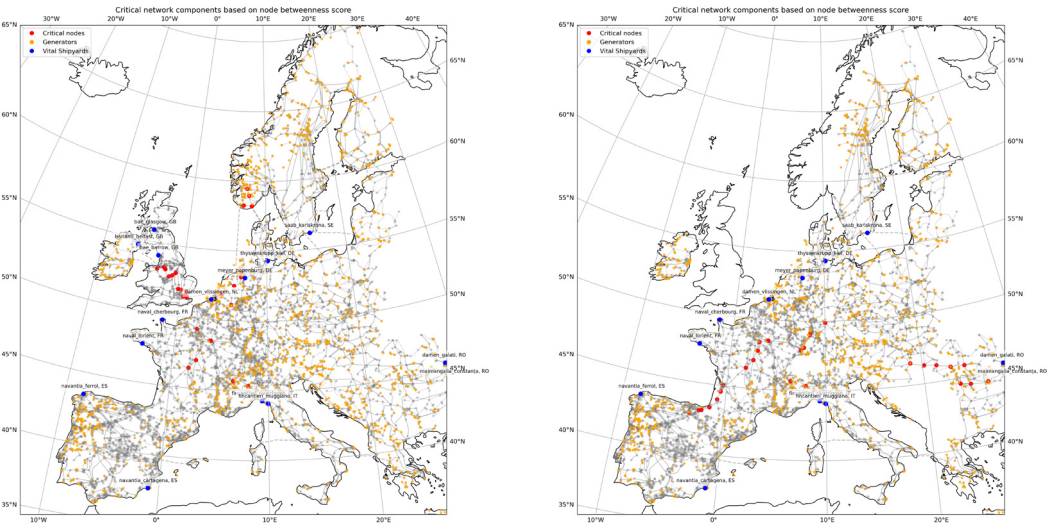


Figure 12.3: The 1% most critical network components based on node betweenness score, where generators are sources and vital shipyards are sinks. On the right, the 1% most critical nodes excluding non-EU countries.

Local robustness

On a local level, the first analysis is performed on the embedding of the vital shipyard nodes in the larger European power network. Figure 12.4 shows the clustering coefficient for the shipyard nodes and the clustering coefficient of neighbouring nodes. Note that the shipyard nodes are connected to the power network by generated edges to the three nearest bus or generator nodes. The first notable outcome of this bar plot is the lack of data for Damen Naval in Vlissingen (Flushing) in The Netherlands. The three nodes closest to the Damen Vlissingen shipyard are three generator nodes: twice the Sloe power station and the Borssele nuclear reactor, as shown Figure 12.5. These generator nodes, however, are not connected to the primary electricity grid or to each other. This leads to a tree-like graph with the shipyard connecting the three generators, but no triangles are formed. Future research could indicate whether the generators have been connected or at which data-cleaning step the edges have been removed. Apart from Damen Vlissingen, the vital shipyards are not extremely strong connected but do contain at least one triangle. Therefore, the functional loss of a single bus or generator node in the direct vicinity of the vital shipyard could cause the shipyard to be unconnected from the power grid.

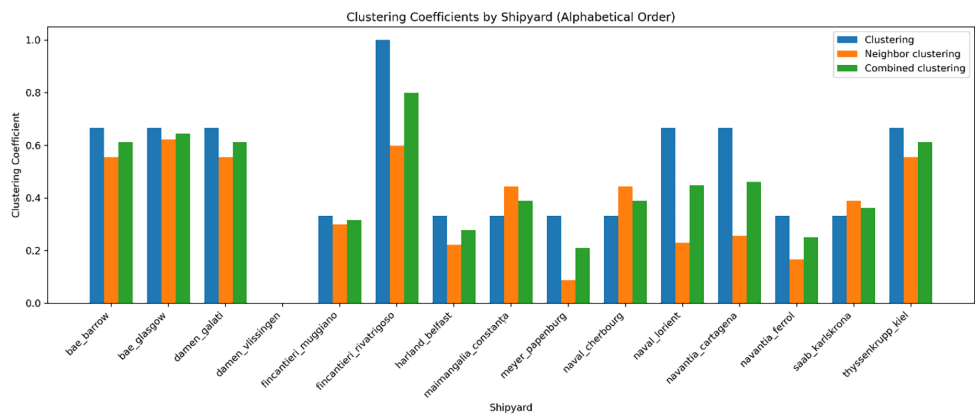


Figure 12.4: Local clustering coefficient for vital shipyard nodes



Figure 12.5: Map of Vlissingen showing the vital shipyard Damen Naval Vlissingen and the three generator nodes within a radius of 10km from the shipyard: nuclear reactor EPZ in Borssele and the gas-fired power station Sloe (two generator nodes).

The ego size or k-hop count of a node does not directly indicate a low or high robustness. However, an area with a higher density of nodes with a low ego size does indicate a vulnerable area. As Figure 12.6 shows, many areas can be considered critical according to this definition. The colour scale appears to be skewed due to extremely well-connected nodes, with the highest ego size belonging to a French bus node just south-east of Geneva. Based on a visual inspection, the areas surrounding vital shipyards appear to have higher values for ego size than the minimum values. This could potentially indicate that shipyards have been strategically embedded in less vulnerable areas of the grid. This image is strengthened by Figure 12.7, which shows a broadly comparable trend in terms of critical node areas.

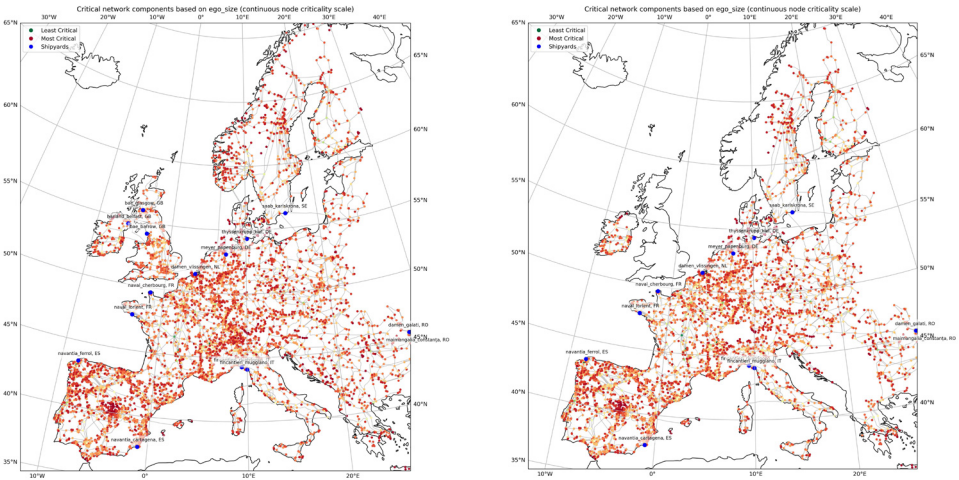


Figure 12.6: The most critical network components based on k-hop count; the number of nodes that k steps can reach through the network. On the right, excluding non-EU countries.

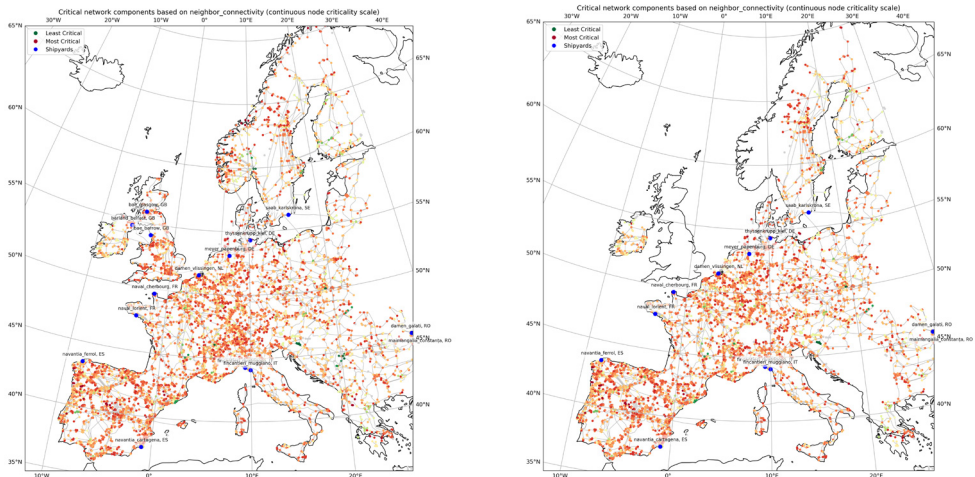


Figure 12.7: The most critical network components based on neighbour connectivity; the average degree of the direct neighbours of the node. On the right, excluding non-EU countries.

Conclusion and discussion

This research started with the idea that robustness metrics applied to distribution systems onboard ships could possibly also be interesting for land-based power grids. However, the strong assumption was that no other users were connected to the grid and that the vital shipyards would be the only users. The exact energy demand of the shipyards is unknown to this author, but this demand is undoubtedly lower than the total electricity supplied within Europe. This assumption makes using the global metric betweenness, based on the shortest paths between suppliers and users, less realistic. On the other hand, the high number of generator nodes (>5,000) leads to a reasonable distribution from the supplier side, which means that the user side may prove to be more relevant than first thought. The node betweenness and the edge betweenness show interesting main throughput axes in the power grid, which, in the case of a stronger integrated and more autonomous European power grid, should be the focus.

The local robustness shows less conclusive results in a more general sense. Still, the local effects around the European (naval) shipyards are interesting to mention briefly, and the prevailing trend is that these are located in robust places in the network. Follow-up research would include improving the network model, where the node and edge capacity are more firmly integrated. In addition, the addition or removal of the edges during the extraction of the data and generation of the network should be examined.

All in all, the metrics, as previously applied to onboard distribution systems, can give an indication of the energy supply of vital naval shipyards and its resilience. Europe and the European Union are not a ship, but a concrete and comprehensive robustness strategy can undoubtedly contribute to autonomous and successful European naval construction.

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A Whole-of-Government Approach regarding Dutch Naval Shipbuilding: Back to the 1970s-1980s?

Anselm van der Peet

Towards a new Dutch fleet for the 2030s

On February 22nd 2025, for the first time in almost 11 years, a champagne bottle finally broke against the bow of a new Dutch naval ship. The Den Helder, a vessel built by Damen Naval, is according to Gijs Tuinman, at that time State Secretary of Defence, “the vanguard of a huge transformation of the Royal Netherlands Navy (RNLN)”.¹ The Combat Support Ship heralds the replacement of almost the entire naval fleet in the coming 10-15 years. Hereafter it should be able to have a more deterring effect against opponents. A proud but also realistic Roland Briene, director of Damen Naval, therefore rightly stated on that rainy Saturday:

*“In the coming years, Flushing (Vlissingen, ed.) will be covered with grey naval vessels. (...) These times do not only require a different approach. These times demand a different approach. As a Dutch naval builder, we are called upon to free up capacity to provide our Navy with ultramodern ships”.*²

Given the return of international power politics, war in Europe, as well as the naval arms race between China and the US, developments in maritime warfare are moving at breakneck speed, including the introduction of revolutionary weapon systems. Existing warships are quickly becoming obsolete and are increasingly less able to cope with these new threats.

The RNLN is indeed in transformation, due to the search for answers to the new threats and challenges of our time, as well as the fact that the government in The Hague recognizes the necessity of change and defence investments, and the Netherlands in 2025 met the then NATO standard of spending 2% of gross domestic product (GDP) annually on defence. Moreover, in June 2025, it agreed, together with other NATO governments, to gradually establish a new NATO standard of spending annually 3.5% of GDP on defence as well as 1.5% of GDP annually on broader investments in relevant expenditures such as societal resilience and infrastructure. To this end, the defence budget will be some €38 billion in 2030, resulting in a total investment of €178 billion over the years 2026-2030, with a build-up spanning a decade

■
1 Djenna Perreijn, “Eerste stap in vlootvernieuwing: CSS Den Helder gedoopt,” *Alle Hens*, no. 2, March 13, 2025, https://magazines.defensie.nl/allehens/2025/02/02_doop-css.

2 Perreijn, “Eerste stap in vlootvernieuwing”. See also: “Prinses Amalia doopt nieuw bevoorradingsschip ‘Den Helder’,” February 22, 2025, <https://www.defensie.nl/actueel/nieuws/2025/02/22/prinses-amalia-doopt-nieuw-bevoorradingsschip-den-helder>.

and focused on scaling up production and equipment.³ Thanks to a budget of €31 billion set aside for this purpose, the Netherlands will have a new fleet built by 2040, which is ready for its tasks and missions and innovatively equipped. To this end, it will largely rely on advanced national shipbuilding industry, other technological companies and academic institutes.⁴

This paper examines current efforts to modernize and prepare the Dutch shipbuilding and adjacent industries for the near future, looks across the Atlantic how the US is handling the issue of a more coordinated and strengthened shipbuilding industry, but above all it analyses the historical case of Dutch *whole-of-government* policy in the 1970s-1980s on trying to save the national shipyard industry. All this is brought together to see whether lessons can be learned from this and recommendations made for the present and the very near future, with regard to handle the renewal of a Dutch fleet that is even better suited for its task. Especially in a time frame in which strengthening Western resilience affects many policy areas, and a real *whole-of-government* approach is sorely needed.

Preservation and deepening of the naval knowledge-industrial ecosystem

After the Cold War, in an era of enthusiastic cashing in the peace dividend and shrinking naval orders, the Netherlands managed to retain a large part of this unique knowledge in-house, including the construction of large and extremely complex vessels such as LPDs and LCFs in the late 1990s and early 2000s. Due to several initiatives set up around 2000, such as the Dutch Naval Construction Cluster, industry and knowledge institutes joined forces to preserve this knowledge base. A trend that continued, stimulated by former CNO Lieutenant General (ret.) RNLMC Rob Verkerk, as (former) chairman of Nederland Maritiem Land (Netherlands Maritime Land). His motto was “If you want to go fast, go alone. If you want to go further, go together”. Bringing together knowledge, expertise and quality was paramount to this.⁵

Against the background of an increasing international threat, on the eve of the Russian invasion of Ukraine in 2022, the pressing question became how the replacement of the worn-out Dutch fleet - the average age of the ships was already more than 22 years - could be technically realized in any case. Collaboration in the naval construction cluster was given

3 “Nieuwe NAVO-norm biedt kansen voor maakbedrijven. ‘41 miljard euro defensie-investeringen voor de Nederlandse maakindustrie,’” website Pricewaterhouse Coopers Nederland, October 21, 2025, <https://www.pwc.nl/nl/actueel-en-publicaties/diensten-en-sectoren/publieke-sector/nieuwe-navo-norm-biedt-kansen-voor-maakbedrijven.html>; “Nederland steunt NAVO-norm van 5%,” website Rijksoverheid, June 13, 2025, <https://www.rijksoverheid.nl/actueel/nieuws/2025/06/13/nederland-steunt-navo-norm-van-5>.

4 René Tas, “‘International Commander’s Response’, The Netherlands,” *USNI Proceedings*, 151, no. 5, (May 2025), <https://www.usni.org/magazines/proceedings/2025/may/international-commanders-respond>.

5 “Rob Verkerk neemt afscheid van NML, draagt stokje over aan Bas Buchner”, news section *Nederland Maritiem Land* 2024, <https://maritiemland.nl/nieuws/rob-verkerk-neemt-afschied-van-nml-draag-stokje-over-aan-bas-buchner/>.

more impetus with the so-called Dutch Naval Design approach, with structural investment in knowledge building and knowledge use within the ‘golden triangle’ of navy, science and industry. Key points were and are: Mission & model based systems engineering, Autonomic systems, Survivability, Reduced manning technologies, Energy & mobility, Digital twin and Smart maintenance.⁶

Furthermore, in recent years, the Dutch Ministry of Defence has been looking at how industry and knowledge institutes can connect to the European Defence Fund (EDF), a European Commission (EC) program to stimulate cooperation within the European defence industry and knowledge institutes. The Department, as it stated somewhat bombastically in the latest Defence White Paper (2024), “invests in civil-military cooperation and a robust partnership with society”, including for production security with focus on the “strong Dutch maritime knowledge and industry base”. It also wants to offer innovative start-ups and SMEs a better chance on the defence market, thanks to the establishment of a Security Fund together with regional development companies and the Ministry of Economic Affairs.⁷

A whole-of-government approach?

Given the latter collaboration with the Department of Economic Affairs, the Dutch Ministry of Defence touches on something that is more in the spirit of a *whole-of-government* approach in the context of, for example, the now urgently needed new naval shipbuilding. Something that also applies to some extent to provincial governments who act under the responsibility of the Ministry of the Interior. In this case, referring to strategic autonomy advocated in the Dutch Defence White Paper of 2022, the province of North Holland recently secured the retention of a dug commercial Amsterdam dock for the repair and major maintenance of larger seagoing (naval) vessels.⁸

The Dutch government understands the aforementioned strategic autonomy to mean: “people and resources that are necessary to maintain military capabilities and to carry out operations [...]”. The cabinet emphasizes self-reliance, both nationally and in Europe. It rightly noted that the defence industry on the continent was insufficiently equipped to meet the current peak in (European) defence needs. This led to delays in deliveries and hindered the development

6 Michel Janssen, “Dutch Naval Design,” in *Glossy Partnership. Van Tideman naar Dutch Naval Design* (2025), ed. Joke Korteweg, 60–68, 61; J. Karreman, “Marine heeft oudste vloot in 200 jaar en grootste aandeel vrouwen ooit,” website marineschepen.nl, 8 juli 2021, <https://marineschepen.nl/nieuws/Marine-van-nu-oudste-vloot-in-200-jaar-en-meer-vrouwen-dan-ooit-080721.html>.

7 Ministerie van Defensie, *Defensienota 2024. Sterk, Slim en Samen* (Den Haag, 2024), 28–30, <https://www.defensie.nl/onderwerpen/defensienota/downloads/beleidsnota-s/2024/09/05/defensienota-2024>.

8 Stella Vrijmoed, “Damen Shiprepair voorlopig gered: ‘Scheepsbouw en Amsterdam horen bij elkaar, al 750 jaar’,” RTV NH, September 20, 2024, <https://www.nhnieuws.nl/nieuws/340827/damen-shiprepair-voorlopig-gered-scheepsbouw-en-amsterdam-horen-bij-elkaar-al-750-jaar>.

of defence capabilities. The Netherlands and Europe had to accelerate industrial production with new production lines, as the government in The Hague stated in November 2022. Until the Russian invasion earlier that year, the government admitted in a joint letter to Parliament from the Ministries of Defence and Economic Affairs and Climate that efforts to ensure the resilience of the supply chains had been insufficient. In the eyes of the ministers involved, these shortcomings in Europe in terms of military-industrial production and sustainability underlined the need for more nationally coordinated cooperation for the Netherlands.⁹

All of the above seems to indicate a *whole-of-government* approach, including a proactive approach to a Dutch naval fleet. Seems. Because after further analysis, it appears that zero-emission and climate-neutral shipping, as well as a larger Dutch market share and high-quality employment (increased labour productivity) are still central to the latest policy. With this it looks to be more in line with the situation before the Russian-Ukraine war from 2022, and not so much aimed at, for example, a faster construction of ships or ditto supply of weapon systems with all means and involvement of as many ministries involved as possible, not just those of Defence and Economic Affairs.¹⁰ And certainly with US President Donald Trump back at the helm in the White House, and the realization that the defence industrial base has become too narrow, it is important to quickly increase and broaden this production and supply, as the well-known Belgian defence specialist Sven Biscop recently noted.¹¹

US *whole-of-government* approach

Looking across the Atlantic, already under US President Joe Biden a so-called strategy of *National Maritime Statecraft* was launched in fall 2023. Secretary of the Navy Carlos del Toro, who took office in 2021, soon noted that the US was recovering from a multi-decade period of underinvestment in the foundations of its own seapower. For this downfall he especially blamed a shortsighted government decision in the 1980s that cut off government support to US maritime industry, by which its merchant marine and commercial shipbuilding sectors dwindled. Post-Cold War defence consolidation eliminated much of the competition that is necessary to have a healthy domestic shipbuilding marketplace, and a healthy national broader seapower ecosystem. Del Toro stated in 2023 that his *National Maritime Statecraft* encompassed not only naval diplomacy and maritime competition, but a *whole-of-government* effort to

9 Dutch Parliamentary Proceedings 2022–2023, nr. 31 125, Defensie Industrie Strategie, Nr. 123, Letter of the ministers of Defense and Economic Affairs and Climate and the Secretary of Defense, 2-11-2022, p. 2, 4, <http://officielebekendmakingen.nl/kst-31125-123.html>.

10 “NIDV Marinebouw Cluster Jaarbijeenkomst bij CZSK te Den Helder” website NIDV, 2021, <https://www.nidv.eu/nieuws/jaarbijeenkomst-nidv-marinebouw-cluster-nmc/>; Ministerie van Defensie, *Defensienota 2022 – sterker Nederland, veiliger Europa. Investeren in een krachtige NAVO en EU* (Den Haag, 2022), <https://www.rijksoverheid.nl/documenten/beleidsnotas/2022/06/01/defensienota-2022-sterker-nederland-veiliger-europa-investeren-in-een-krachtige-navo-en-eu>.

11 René van Rijckevorsel, “Europa heeft snel een besluitvaardig oorlogskabinet nodig,” EW 81, 11, March 15 2025, 36–39, 38.

build comprehensive US and allied maritime power, both commercial and naval. He set up a Government Shipbuilder's Council, with, besides the Navy, diverse maritime parties like the Coastguard and Oceanography, and "even the Army", to tackle common challenges in ship construction and maintenance. Moreover multiple White House-led interagency processes on both naval and commercial shipbuilding were initiated, bringing together the National Security Council, National Economic Council, and many other departments involved.¹² In light of recent NAVPLANs from USN CNOs and especially the target (NAVPLAN 33, September 2024) to have an 85% (earlier down to over 40%) operational fleet by 2027, thanks to a far-reaching acceleration of increased yard deployment and associated maintenance capacity, this development comes as no surprise.¹³ And this seems to point to a more progressive and much broader/interdepartmental approach than in Europe/the Netherlands.

Del Toro's reference to the 1980s, as well as the current involvement of a broad front of US departments and inter-service involvement, in a broader inter-ministerial approach to a broader industrial base of shipyard capacity, rings a familiar bell. In Europe, Western Europe in this case, in the early 1980s as well as the preceding decade, the *Bundesrepublik*, the UK, Sweden and the Netherlands made far-reaching but futile attempts to save the (naval) shipyard industry threatened by East Asian competition. This was done by a broad coalition of ministries involved.¹⁴ It would go too far to analyse all these maritime nations here, but in this 'Rotterdam Paper', in a port city that used to have several large shipbuilding yards, the author of this article would like to examine the Dutch example of a few decades ago. Especially because at that time, thanks to government policy, various (large) series of new naval vessels (frigates, MCMVs, submarines), whether or not in a multinational framework, were put to sea within the period of 10-15 years, of which some are still in service with the RNLN. At that time, issues such as an alarmingly increasing (Soviet-Russian) global threat at sea with new advanced weapons and vessels, national problems of a broad shipyard industrial base and high and low skill employment, increasing cooperation between multiple ministries and armed forces, and the merging of the navy, shipbuilding and scientific institutes were also at play. Elements of economic, strategic and knowledge drain where then also at stake, mixed with fear of national and (Western) European loss of influence.

Hereafter, the above mentioned Dutch government policy in the 1970s-1980s on the national shipyard industry is analysed, to serve as an example for the present and the very near future,

12 "Secretary of the Navy Carlos del Toro Farewell Address, January 2025," Official website of the United States government, America's Navy, <https://www.navy.mil/Press-Office/Speeches/display-speeches/Article/4033695/secnav-nwc-farewell-address/>.

13 Anselm van der Peet, "America's Warfighting Navy. Chief of Naval Operations Navigation Plan 2024," *Marineblad* 134, no. 7 (2024): 12-16.

14 Cees de Voogd, "Dutch government policy and the decline of shipbuilding in the Netherlands," in *Strategy and Response in the Twentieth Century Maritime World. Papers presented to the Fourth British-Dutch Maritime History Conference*, ed., Jaap R. Bruijn et al, (Batavian Lion International, 2001), 100-109, 118-119.

with regard to a *whole-of-government* approach to handle the renewal of a Dutch fleet that is even more suited to its task.

1970s: a changing (maritime) security situation and necessary fleet renewal

The years around 1970 were a turbulent period within the Cold War, which evokes various echoes with the present. The West, and more specifically the NATO alliance, was under pressure. In addition to Moscow achieving nuclear parity with Washington, the alliance experienced internal setbacks. France under President Charles de Gaulle pursued an increasingly independent course and withdrew from the military structure of the alliance in 1966. Great Britain experienced economic decline and in 1967 withdrew from military-strategic obligations East of Suez. The US had become entangled in the Vietnam War, after which, in view of the financial-military efforts in Southeast Asia, it more emphatically insisted on burden sharing regarding military investments in Europe by the allies. A call that became all the more urgent after the introduction of NATO's Flexible Response strategy in 1967, under which the alliance met any form of aggression short of a full-scale nuclear strike with a direct defence of comparable scale and conventional means.

On the navy side there was no stability either. In the late 1960s, the Red Fleet made a quantitative and qualitative worldwide advance. Its modern and large warships were increasingly equipped with (ballistic) missiles, nuclear-powered - especially the worryingly fast-growing submarine fleet - and the Soviet fleet had increasingly long-range maritime patrol aircraft equipped with anti-ship missiles (ASM). In the eyes of the Supreme Allied Commander Atlantic (SACLANT), the American NATO maritime commander in chief, this indicated that Moscow intended to cut off the Western Sea Lines of Communication (SLOCs) across the Atlantic. In his view, an urgent modernization of the NATO navies dating from the early to mid-1950s was required. For the Netherlands, the program included the replacement of a dozen old destroyers from the mid-1950s, some submarines and the two old cruisers. To this end, the Dutch Fleet Plan 1975-1990 was published in December 1970.¹⁵ Modernization of the RNLN, however, affected the state of the national shipyard industry and knowledge in the entire shipping sector.

¹⁵ Anselm van der Peet, "'Back to the future'. Discussies bij defensienota's en vlootplannen 1962-1970 als inspiratiebron voor hedendaags maritiem-strategisch debat over een toekomstbestendige KM," *Marineblad* 133, no. 2 (2023): 22-29, 26, 28-29.

Dutch shipping sector in dire straits

The Dutch civilian shipping sector was in dire straits around 1970. Due to foreign competition, especially from outside Europe and in Soviet Russia, the merchant navy was dwindling. According to the Ministry of Transport and Public Works in 1975, the loss of this maritime industry would be a “great loss for Dutch society”. The conclusion of the State Secretary involved was that, for political-military-strategic reasons, the government was prepared to subsidize hundreds of millions of guilders in favour of its own ship-owners to maintain Dutch maritime shipping. This policy also played a role in the position of the Dutch shipyards, which were in danger of “facing a bad future” and could therefore expect the necessary government support to prevent the decline of shipbuilding. The seaport position (shipbuilding, including banking and insurance focused on maritime affairs) was also one of the most important pillars of the economy for subsequent governments. Politicians hoped to maintain this position with substantial support measures for, among other things, the national shipyards.¹⁶

The Dutch governments between 1970 and the early 1980s therefore wrestled with the future of the ship building industry. They all recognized a downward trend and tried to develop long-term policies. However, short-term considerations prevailed. This occurred first in 1967. The government saw a restructuring of the industry as inevitable and concluded that a merger of all large shipyards was necessary. It intended to use an interest subsidy to force that merger. But delays caused so much uncertainty that ship owners postponed signing net contracts. When in 1967 a new government learned that all yards urgently needed net orders, it hurriedly introduced the subsidy, with no strings attached. A similar turnabout happened a year later. A bankruptcy of the wharf *Nederlandsche Dok- en Scheepsbouwmaatschappij* (NDSM) in Amsterdam seemed imminent and for political reasons the government decided to rescue that company. Furthermore, in the 1970s a merger was forced by the government of the three major shipyards: Verolme, Rijn (both in Rotterdam) and Schelde in Flushing (Rijn Schelde Verolme (RSV)). This was seen by the authorities as the best solution to restructure the industry. They also strived to reduce it only gradually and save the most of this branch as a strategic asset. The government offered subsidies and credits to make that possible; this support marked a sharp shift of responsibilities to the state.¹⁷



¹⁶ Anselm van der Peet, *Out-of-Area. De Koninklijke Marine en multinationale vlootoperaties 1945-2001* (Van Wijnen, 2016) 94-95.

¹⁷ De Voogd, “Dutch government policy,” 118-119.

Challenges for fleet reconstruction, an ambitious naval leadership and continuing ad hoc government decisions

The RNLN itself unfolded in 1970 a plan of fleet renewal. Such a plan was necessary and in fact could be traced back to the gradual aging of equipment, the trend in the Netherlands to invest in a relatively young fleet (after 1945 the vessels were on average only 8 years old), but above all threatening developments of the Soviet Russian adversary like a rapid growing and deeper-diving submarine fleet that was equipped with missiles and often operated with nuclear propulsion. The Dutch navy faced a series of challenges in this regard. After the mid-1960s the American Mutual Defense Assistance Program (MDAP) towards allies came to an end, operating costs rose rapidly, society and politics became increasingly critical of defence in general and the associated budget in particular. On top of that, in the early 1970s the Netherlands was severely hit economically by the international oil crisis.

Moreover, with the earlier mentioned NATO strategy of Flexible Response in 1967, which placed more emphasis on conventional military forces, the increased threat from the expanding Soviet fleet meant that NATO member states needed to have more ready and flexible conventional maritime forces to secure the SLOCs.¹⁸ In the meantime, despite the loss of the last Dutch colony in Asia, West New Guinea in late 1962, the RNLN leadership continued to focus on its own naval presence on all the world's seas and did not want to limit itself to NATO ASW and MCM tasks in the North Atlantic area. Especially given the Dutch interests in trade and the then and now strategic important tanker route from the Middle East. The aim of the ambitious Dutch remained, to possess an harmoniously composed fleet with, among others, large and complex multipurpose frigates that were also able to operate in tropical circumstances, with all the consequences that entails for the associated costs.¹⁹

Mid-1970s: standard frigates

In 1972 the naval command approved the staff requirements designs of the so-called standard frigate (S-frigate).²⁰ The design and construction of these vessels were entirely led by the RNLN, although shipbuilder Royal De Schelde (current Damen Naval) in Flushing was involved early on in this project. The admiralty, meanwhile, had strongly urged the political leadership to tender a first series of these S-frigates. Arguments used here were the (exaggerated) announcement that it was irresponsible to keep the old destroyers of the 1950s

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18 D.C.L. Schoonoord, *Pugno Pro Patria. De Koninklijke Marine tijdens de Koude Oorlog* (Van Wijnen, 2012) 193-198; P.B.R. de Geus, *Staatsbelang en krijgsmacht. De Nederlandse defensie tijdens de Koude Oorlog* (SDU, 1998), 107-112; A.W.G. van Oosterhout, *De Precaire Autonomie van de Nederlandse Marinescheepsbouw* (Universiteit van Twente, 2001) 119-120; H.R. Boswijk, "Signaal en de Koninklijke marine: partnerschap in ontwikkeling," *Marineblad* 110, no. 9 (2000): 306-309.

19 Van der Peet, *Out-of-area*, 59, 123-129, 132.

20 A. de Jongh, "Het Standaardfregat; de voorgeschiedenis....," *Alle Hens* 28, no. 11, (June 1975): 6-9.

much longer in service, as well as the fact that the newly designed frigate had internationally been given the designation *standard NATO frigate* (Greece would order two of these Dutch designed frigates and the *Bundesmarine* would graft its F122 frigate onto the S-frigate). The naval leadership also responded to the standardization of ships as desired by the influential Labour Party. In the meantime, the RNLN did not fail to point out the precarious situation of the shipyards (and their personnel), serial construction desired by an earlier government in shipbuilding, and the fact that a relatively attractive yard offer was in danger of being lost. The then Social Democratic political leadership of the Department was persuaded and signed the contract for the first series of four frigates in December 1973, with an option (completed later that year) for a second series of four vessels. This was the start of the largest Dutch naval construction project until the current 2020-30s RNLN fleet renewal.²¹

Late-1970s – mid-1980s: Walrus-class submarines and Multi-Purpose (M-)frigates

In view of the deepening shipbuilding crisis in the Netherlands, the Dutch government accorded the construction of a third series of S-frigates in 1977. It also drove forward the tender for an *Alkmaar*-class MCMV project (15 vessels, part of the so-called Tripartite partnership with Belgium and France, each of which would build series of the same type of ship design), who were completed in 1983-1989. Furthermore, necessary given new operational threats, but also aimed at preserving employment of the involved shipyards, six mid-1960s *Van Speijk*-class frigates (based on the British *Leander*-frigate) were modernized between 1977-1983. Weapon systems were replaced, an enlarged helicopter hangar was built and computerization reduced the crew numbers. Until 1984, this created a considerable additional need for resources for the RNLN, which would in theory be compensated by a reduced need in the following years.²²

In view of the continuing malaise of the national shipbuilding industry, the RNLN in the meantime suggested building one submarine of the *Walrus*-class and ordering as many subsystems as possible for two boats, without reporting that these vessels, already announced in the Defence White Paper of 1974, had a cost overrun of more than 50%. Sensitive to the naval argument, both the Ministries of Economic Affairs and Finance made efforts and funding on their part to pre-manufacture practice pieces in Marel steel, enabling a diving depth of 400 meters (necessary for operations against modern Soviet submarines) to be achieved. In 1978-1979 contracts followed for two submarines. In view of the employment of site personnel, the project could count on a subsidy of 30 million guilders from the Ministry of Social Affairs. The shipbuilding industry needed more orders, after which the government

21 Schoonoord, *Pugno Pro Patria*, 206-211; De Geus, *Krijgsmacht en Staatsbelang*, 151-154; Van Oosterhout, *Nederlandse Marinescheepsbouw*, 158-162, 196-201.

22 B. Roetering, *Mijnenjagers Alkmaar klasse. De Tripartites van de Mijnendienst* (Lanasta, 2019); "Van Speijkklasse/ MLM fregatten," website marineschepen.nl, <https://marineschepen.nl/schepen/van-speijk.html>. Two of these third series of S-frigates were sold to Greece. A new RNLN order for 2 L-(Air Defense) frigates followed based on the S-frigate design.

(again) made funds available for a new warship: already in 1979 construction preparations began for the so-called oceangoing Multi-Purpose (M-)frigate. At that time the replacement of the small *Roofdier*-class frigates came into view, which until then mainly performed patrol tasks in the North Sea.

Because NATO aimed for more fast full-fledged escort ships for the Atlantic Ocean to curb the growing and quieter operating Soviet submarine fleet, eventually the RNLN even came up with a warship design with a displacement of 3,500 tons instead of the earlier proposed 2,200 tons. It would among others be equipped with the latest technology such as Tactical Towed Array Sonar (TACTAS). To fill the order book of the yard Royal De Schelde in time, the construction of the M-frigates started without a final design. Platform construction was thus ahead of time with the arrival of sensors, weapon systems and command systems (yet to be developed!).²³ Further and especially larger sums were then needed for the actual construction. Bringing forward the construction of M-frigates required external financing, but the RNLN budget did not allow this. Both the aforementioned construction projects (*Walrus* and M-frigate), as well as the third series of S-frigates, illustrated the so-called 'hull policy' used by the Naval Staff; the policy premise that once the hull was in place, the weapons systems, ammunition and personnel would follow when further funds were available.²⁴

The political centre-right government under Prime Minister Ruud Lubbers, born and bred in Rotterdam, who took office in mid-1982, wanted to publish a Defence White Paper before 1984, but he also wished to keep parts of the large but ailing shipyard group RSV (which carried out most of the navy orders) in a slimmed-down form. In January 1983, the Dutch navy suggested that the construction of M-frigates and a second series of two *Walrus* submarines could be brought forward on the condition that in case of problems the bill would not end up (entirely) with Defence/RNLN.²⁵ In the meantime, the Ministry of Economics made a bridging loan available to the shipyard group concerned and, together with Defence/RNLN, sought a long-term solution. The Dutch navy, meanwhile, urged the government to retain the naval-oriented national yards as a strategic asset. Replacement construction capacity for the submarines and frigates would in those years not be available in Europe and had to remain assured for the Netherlands. With four submarines and twelve frigates (3rd series S-frigates, 8 M-frigates), the yard group concerned could be offered ten years of work. The same applied to the Van der Giessen-de Noord shipyard, which had started construction of 15 *Alkmaar*-class MCMVs in 1979.²⁶

23 Schoonoord, *Pugno Pro Patria*, 232-234; S.G. Nooteboom, *Deugdelijke schepen. Marinescheepsbouw 1945-1995* (Europese Bibliotheek, 2001), 165.

24 Schoonoord, *Pugno Pro Patria*, 225, 228-230, 234, 240.

25 Van Oosterhout, *Nederlandse Marinescheepsbouw*, 162-164.

26 "Alkmaarklasse mijnenjagers," website marineschepen.nl, <https://marineschepen.nl/schepen/alkmaar.html>.

Although the order was indeed (also) given in 1984 for two further *Walrus*-class submarines, the centrepiece of the Defence White Paper of 1984 was the construction start of eight M-class frigates in that year. After hard negotiations, 530 million guilders were charged to the RNLN budget, 430 million to that of the Army and 120 million to that of the Air Force. The latter amounts were considered a loan to the Dutch Navy (never to be repaid).²⁷

The result of the above *whole-of-government* approach was that the RNLN in the early 1990s could fall back on a modern fleet of 26 ocean-going frigates and submarines, as well as 15 MCMVs.

Conclusion: lessons learned and possible future policy

In 1985, the RNLN was 1.2 billion guilders short for the planning period. In addition to unexpected high oil prices, rising inflation and deep economic depression, the navy had systematically over-optimized (and sometimes deliberately misjudged) prices and payment schedules of the construction programs. The extent to which these plans were mainly financially driven was apparent from the fact that the financial situation was first updated, and options were only later tested against criteria such as naval operations and personnel. Financial and employment aspects weighed the most politically, naval operational considerations not so much.²⁸

Regarding the latter, there is a lot to learn from this nowadays: operational effectiveness of the naval forces in this case, is publicly paramount in the currently preached *whole-of-government* approach to a policy of national resilience, although additional issues such as climate, emissions and market share do indeed weigh heavily. It must be prevented that the latter weigh in too heavily as was the case recently and perhaps still is. As a high ranking naval officer of the Dutch Materiel and IT Command stated in early 2025: “for me it is more important to have ships that can win a battle than to let them have less emission of pollutants”.²⁹

The question is not so much *whether*, with a further mitigation of the naval shipbuilding industry, to deploy government support, but *how* to structure this support to be as effective as possible. As director Briene of Damen Naval already noted: “these times demand a different approach”. A one-on-one return to the ad hoc short-term policy of the 1970s and early 1980s is by no means an issue here, but its *basis* is: initiating a *whole-of-government*

27 Gijs Rommelse, ‘Follow me’. *De M-fregatten van de Karel Doorman-klasse* (Van Wijnen, 2008), 19-23.

28 Van Oosterhout, *Nederlandse scheepsbouw*, 169-171.

29 Chatham House Rules at the Symposium PartnerSHIP. Van Tideman tot Dutch Naval Design, Amsterdam, February 7, 2025, have as a result that the officer in question can't be named.

approach with a broad front of ministries as involved in the ‘golden triangle’, the ecosystem of naval shipbuilding, industry and knowledge institutes. A merger that came about in the second half of the twentieth century, but especially after 1980, with the continuous need and construction of advanced ships and weapon systems, such as the *Walrus*-class and M-frigates. What (apart from economic interests) was also of great importance in those years, and was later advocated in the *Marine Studies* of 2005 and 2014, was the government and navy’s conviction that a country that is not one of the largest maritime nations can still bring and keep modern equipment at sea, thanks to the existing technical and scientific assistance from industry and science, particularly nationally but also abroad in Europe.³⁰

Possible national approach

Although the US suffers from a proportionally greater shortage of shipyards than Europe, the *National Maritime Statecraft* as initiated by former US Secretary of the Navy Del Toro, but also the policy for a new *Office of Shipbuilding* taken up under the Trump administration,³¹ can serve as an example to allow the intended Dutch (and partly in the Netherlands built Belgian) fleet modernization to take place on a national level in these times of looming war in a timely manner and without the unfortunately usual delays and cost overruns. All levels of government power must be put on the table to maximize the impact, as already modestly tackled with recent policy regarding a Security Fund for start-up companies etc. with input from Defence and Economic Affairs. An actual ship industrial base strategy must underlie such a policy. A more structural *whole-of-government* approach, in line indeed with the approach in the 1970s and 1980s by, in addition to Defence, departments such as Economic Affairs, as well as Social Affairs, Finance, General Affairs, but then more well-thought-out, structural and with more ministries (such as Infrastructure, Home Affairs, Education?) involved, and especially with an eye for the long-term approach/strategy. The latter also with a view to offering the industry and associated knowledge institutes, above all the RNLN and its allies, a stable workload projection and thus more certainty.³² The placed but also anticipated orders in the Netherlands for new ships for the Dutch (and Belgian) navy are already subject to changes: first 2, than 4, currently 2/3 ASW-Frigates; 6, but currently 4 ATS, etc.³³ The same applies to funding for infrastructure and workforce improvements for shipbuilders and their suppliers.

30 “Het Tweede Interbellum. Marinescheepsbouw vanaf circa 1991,” in *Glossy Partnership. Van Tideman naar Dutch Naval Design* (2025), ed. Joke Korteweg, 48–49.

31 Paul Berger, “Trump Administration Readies Order to Bolster U.S. Shipbuilders, Punish China,” *Wall Street Journal*, March 4, 2025.

32 See for U.S. ideas on this subject: *Shipbuilding and Repair: Navy Needs a Strategic Approach for Private Sector Industrial Base Investments*, GAO Report GAO-25-106286, a report to Congressional committees, February 2025.

33 J. Karreman, “Plan voor twee extra fregatten voor marine,” website marineschepen.nl, 2024, <https://marineschepen.nl/nieuws/Twee-extra-fregatten-voor-marine-030924.html> J. Karreman, “België wil extra fregat bestellen bij Damen

Possible European approach

Undeniably, in the past the ‘made in Holland’ factor has played into the hands of the RNLN in maintaining a certain fleet size and a continuous modernization of this force, because it had and still has a relationship with shipyard capacity, a relationship that has become stronger over the years as has been noted. The Dutch defence-related industry relies heavily on Germany and the US. But when it comes to the naval industry (and radar and sensor production), the Netherlands depends less on foreign countries. That this is the case can be attributed to both the national naval wharf history, as well as the path the RNLN has taken in the 1980s with very modern ship classes through a *whole-of-government* approach in continuously innovating the fleet. But operating only nationally carries risks, is relatively expensive (hence the construction of hulls by Damen Naval in Romania) and is no longer an option due to a brain drain regarding certain ship classes such as submarines. In addition to the previously mentioned EDF for the defence/navy related innovation, the Dutch national naval/maritime industry itself also refers to a European consolidation. The defence industry in Europe is fragmented and relatively small. In the context of the European Aerospace, Security and Defence Industries Association of Europe (ASD, established in 2004), initiatives can be developed. Ideally, in the eyes of some Dutch maritime defence industries, a kind of Airbus group model for naval vessels should be developed in order to realize large, and therefore relatively less expensive, long-term series of warships to be built.³⁴ Perhaps in this light - despite a difficult start - the NH90/NHIndustries helicopter project can be taken as an example as well. In the end it is a successful enterprise, in which Airbus Helicopters (Germany and France), Italian Leonardo and Dutch Fokker Aero structures work closely and successfully together.

The above mentioned development can contribute to a more sustainable, European-oriented fleet construction solution, while maintaining national industrial-scientific input, which can successfully counter the increasing and ever-accelerating threat on the global oceans. It also ties in with the recent EU initiative of a so-called European Defence Industry Programme (EDIP). In this context, the EU is providing €1.5 billion in subsidies over 2025-2027 to boost Europe’s defence readiness. This approach should also increase the competitiveness and responsiveness of the European defence industry and stimulate joint procurement.³⁵

This European approach, especially in combination with a national *whole-of-government* approach, can and must lead to a revitalization and modernization of both the national

– regeerakkoord,” website marineschepen.nl, 2025, <https://marineschepen.nl/nieuws/Belgisch-regeerakkoord-derde-fregat-020225.html>.

34 Theo van Vugt, “12 vragen aan Hugo Loudon. [RH Marine] ‘Defensie wordt weer heel groot,’” EW, March 6, 2025, 81, 10: 66-68, 68.

35 “EDIP. A Dedicated Programme for Defence,” EU website, Defence Industry and Space, https://defence-industry-space.ec.europa.eu/eu-defence-industry/edip-dedicated-programme-defence_en (last accessed 11 January 2026).

Dutch naval shipbuilding industry, as well as those elsewhere in Europe, and with this a feasible and accelerated RNLN fleet renewal as well as that of other European navies in these times of looming war.

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Conclusion

Conclusion

Anselm van der Peet and Roy de Ruiter

This edited volume presents the results of the April 2025 Rotterdam Seapower Symposium, which restarted an earlier Dutch tradition of regularly organizing conferences on maritime strategy. Limited in scope, this symposium focused on the current challenges facing European navies. Three themes can be identified. The first theme is challenges and changes. It provides insight and nuance to the maritime domain developments facing Europe. The second and third themes provide two principles that can help European navies cope with these challenges. First, European navies must accept that they must stand on their own in this increasingly divided world. More European autonomy is crucial. Consequently, the third theme is the need to intensify cooperation and even integration with all relevant stakeholders, not only the military. Cooperation is key when dealing with the diversity of challenges facing European navies.

Theme 1: challenges and changes

Europe is confronted with a whole set of challenges. It is almost a perfect storm. The United States and China increasingly act confrontationally, while a devastating war of attrition rages on the European continent. The Russian Federation considers itself at war with Europe. Meanwhile, the impact of climate change on maritime security in the high north is becoming increasingly profound. With the retreat of ice, new trade routes become available and scarce resources become accessible. US President Donald Trump's ambition to acquire Greenland, Russian underwater vehicles planting their national flag on the bottom of the Arctic Sea, and China positioning itself as a near-Arctic country are examples that remind us of the colonial scramble for Africa in the late 19th century. Where does this leave Europe? Anne Runhaar calls on Europe to adapt to the challenge of operating in this region by allocating resources, preparing personnel and equipment for this still harsh environment, and installing a designated command structure that is now missing.

China's increasingly dominant geopolitical role is another fundamental challenge. Beijing already puts severe pressure on European economies. Europe, believing in globalization, became highly dependent on Chinese products, technology, and resources and even allowed Chinese companies to buy interests in European companies like ports, for example. Ter Haar et al. investigated the vulnerability of foreign investments in Critical Maritime Infrastructure (CMI). Their case study of the ports of Antwerp and Zeebrugge demonstrates that the risk of China taking over control of European harbours is limited. Ownership is predominantly

Belgian (60%) and in other European countries' hands. Chinese companies own only 0.6% of the port facilities, even less than countries such as Singapore. However, China has other, more effective means to achieve strategic geoeconomic effects. Nevertheless, with Chinese investments concentrated on deep-water container terminals and knowing that Chinese firms have strong relations with the state, it is vital to remain vigilant. Preventing disruptive influence in crucial parts of the port and safeguarding strategic autonomy and resilience are important.

The total blackout in major parts of Spain and Portugal in April 2025 demonstrates that this can have a serious impact. Evelien Scheffers applied network theory to test the resilience of the power supply to European naval wharfs. The outcomes indicate that most European shipbuilders have sufficient and redundant access to the European power supply network. Nevertheless, also in this case it is important to remain alert. The recent blackout in Berlin, January 2026, again demonstrates the vulnerability and impact of an effective sabotage of the power supply.

In addition to the war in Ukraine, the dominant incidents affecting maritime security in European waters are hybrid attacks, especially in the Baltic Sea. The region is no longer the quiet backwater it was following the end of the Cold War. Incidents threaten the regional economy and society, and there is always a risk of unintended escalation. Europe and NATO are adapting with operations such as *Baltic Sentry* and other designated task forces to reduce response time and improve situational awareness. The result is a sharp decline in hybrid incidents since the summer of 2025; however, Niklas Granholm rightly warns to remain vigilant, uphold deterrence, and be adept to the enemy's new tactics. Julian Pawlak argues that hybrid attacks in the Baltic require a new approach to deterrence in this region, not only denial and punishment, but also detection, considering the importance of attribution in hybrid warfare. From the perspective of deterrence, the Baltic Sea offers strategic opportunities. This sea is an economical lifeline for Russia. Approximately 40% of its seaborne trade passes through these waters. The revenues cover one-third of its defence budget.

Randy Papadopoulos comments on the immense task of renewing and enlarging ageing NATO-fleets after years of cuts. To make the challenge even more complex: what type of fleet is best prepared for today's and future challenges? For example, what will be the impact of drones? The naval wars in the Black and Red Sea demonstrate how effective these unmanned systems can be, even for actors without serious naval capabilities. The Russian fleet had to retreat to safer waters after several ships were sunk. The U.S. Navy performed better in the Red Sea; however, the exchanges between the Houthis and the U.S. Navy constituted the longest naval battle since 1945. In this regard, Papadopoulos emphasizes the importance of being able to sustain a war. Navies should prepare not only for battle, like ships in the Flag

Officer Sea Training (FOST) or other exercises, but also for long-term campaigns. Numbers and sustainment matter.

A hybrid fleet with a mix of manned and simpler, unmanned capabilities could be an answer to the challenges facing NATO-navies. It will complicate an adversary's ability to find, fix, and track naval units, making it more difficult to target weapons. It also provides an opportunity to balance the proliferation of relatively affordable weapons and deal with sea denial tactics.

Theme 2: increase Europe's autonomy

Sebastian Bruns dives into one of the most fundamental challenges facing Europe at this moment: the tension in the transatlantic relationship given the America First policy of the current US administration. This is a shock, especially for the German navy. America-German naval relations laid the foundations for the modern-day German navy. After World War II, the U.S. Navy functioned as its mentor. This relation rests on mutual trust. Unfortunately, this is under severe strain at the moment. Bruns warns that trust cannot be surged endlessly. While the U.S. Navy remains an important partner, the German navy must stand on its own, together with other European navies.

In her discussion of the UK Strategic Defence Review of 2025, Emma Salisbury also emphasises the priority the UK gives to cooperation with its allies. Primarily, in the Euro-Atlantic region and secondarily with regular deployments to the Indo-Pacific. A region critical to Europe's prosperity and security, the challenge is maintaining a balance between the two regions. Salisbury argues that the UK should strengthen its partnerships with countries in the Indo-Pacific region. Roy de Ruiter agrees with this view, but pledges for a more European approach. The individual deployments of European countries to the Indo-Pacific have limited impact and waste scarce resources. The deployment of integrated European task forces or carrier strike groups offer a more effective approach to balancing the limited assets of European navies between both regions. Furthermore, a European task force would be a more credible force to uphold European interests and the international rules-based order. Moreover, it provides a much stronger signal of commitment to regional allies and demonstrates that Europe is a valuable ally worth fighting for.

In his more theoretical approach, Daniel Turk argues that smaller commercial seapower states have more leverage than traditional seapower literature suggests. With their limited numbers, European naval powers can punch above their weight. The rising importance of CMI for energy and communication give 'commercial seapowers' more agency. For example, offshore wind farms, pipeline networks, and seabed telecommunication cables in the North Sea have turned this region in 'Europe's new economic powerhouse'. Trade is the barometer of a state's strategic interests, especially in the case of the commercial seapower

states in Europe, whose navies, albeit in a modest capacity, are an instrument of such policy. Therefore, Europe's position in global trade justifies a greater European global presence.

Theme 3: cooperation is key

The vulnerability of CMI is of particular concern in European waters, such as the North Sea and the Baltic Sea. The incidents in the latter waters demonstrate the challenge of dealing with hybrid warfare. First, there is the problem of attribution. Second, these ambiguous actions remain below the threshold of war, limiting the options to respond without an unwanted escalation into a nuclear war. Recent operations such as *Baltic Sentry* confirm the effectiveness of this approach. However, Henrik Schilling warns that it is for now too premature to declare victory because there are many other opportunities to disrupt European societies. At the same time, there is no need for defeatism. NATO countries dominate the North Sea and the Baltic Sea, and Russia's reliance on these waterways for its oil export also points to its strategic vulnerability.

To counter hybrid attacks, cooperation is key. Militarily, to assemble sufficient capacity to build a recognised maritime picture. A better situational awareness enables European navies to monitor European waters and shorten reaction times and improve the ability for attribution in case of an incident. Cooperation should be an effort by the entire society, not only the military or navies. For example, CMI operators and authorities can share responsibility for monitoring, surveillance, and protection. In addition, European nations could also consider the use of Private Maritime Security Companies (PMarSCs). Santiago José del Castillo Toquero argues that if companies comply with strict procedures, mandates, and rules, they can increase the means available for monitoring and surveillance.

Anselm van der Peet also considers more cooperation as an answer to the challenges faced by European navies. In the case of shipbuilding, experience with the successful Dutch frigate programme in the 1970s and 1980s demonstrated that this could benefit from a whole-government approach. At the time, an ecosystem of industry, the ministries of Defence, Economic Affairs and Social Affairs, the navy, and science was successful in renewing the Dutch fleet. This could be an example for shipbuilding projects today; however, nowadays it should be a European ecosystem. The consolidation of European shipbuilding in a naval variant of Airbus could be the key in an increasingly fragmented world order. Only then can Europa create the capacity to build and repair ships and replace losses for innovation and resilience. Papadopoulos adds that one of the key advantages of multinational rules-based navies is the opportunity to cooperate, share costs and risks, and stimulate innovation.

Holiday is over...

When the American band The Eagles in 1994 came back on stage following the band's breakup in 1980, the lead singer Glenn Frey joked to the audience: "For the record, we never broke up; we just took a 14-year vacation".¹ This also applies to the Rotterdam Seapower Symposium of 2025. The need for maritime thinking never disappeared. However, enjoying the peace dividend and life without an existential threat did quiet it down and led to a more than two-decade vacation from world politics. The holiday is over. We now live in a world in transition to a new order with dangerous challenges and even plain threats, not least in the maritime domain. There is an urgent need for critical reflection and debate on the global challenges facing European navies in these uncertain times. The Rotterdam Seapower Symposium is therefore above all a platform for scholars, officers, practitioners, and policymakers to facilitate this strategic conversation and help them find answers to these pressing challenges.



¹ The Eagles, *Hell Freezes Over*, Geffen Records, 1994.

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Anselm van der Peet and Roy de Ruiter

This collection of papers by a group of international scholars sheds light on the current fast changing world. It makes the maritime domain more dynamic by the day. The world seas are important for our security, prosperity, energy supply and transition, and the transfer of data. Unsurprisingly, indicators of a looming conflict will therefore show themselves first and foremost in the maritime domain. This includes threats to critical underwater infrastructure and ports, the problems of the Russian shadow fleet, as well as increased tensions near choke points like the Red Sea by the Houthis, and an increasingly powerful and assertive China in the South China Sea. All these challenges were addressed at the Rotterdam Seapower Symposium held in April 2025. The papers from this academic event included in this proceedings are predominantly based on primary research, archival evidence, and contemporary sources. The scholars involved, as well as their methodological approaches, provide a cutting edge view on these timely and important topics.

