Allied Navies in the 2020s: High-End Threats, Low-End Challenges and Promising Opportunities

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Introduction

The re-emergence of strategic competition between great powers has prompted increasing investments in high-end military capabilities. This chapter[1] discusses the significance of great power competition for the maritime forces of medium-sized and small NATO and EU members. It argues that, against the backdrop of an increasingly competitive global security environment, these forces (hereafter referred to as 'allied' navies[2]) struggle to reach quickly rising capability thresholds. Through the skilful application of novel strategies, doctrines and technologies, competitors such as Russia or China could gain a competitive advantage. In fact, they could potentially render obsolete those naval formations unable to develop the capacity to conduct naval warfare at the high end of the intensity spectrum.

To support this argument, the author identifies several key challenges for allied navies and their potential adverse effects on deterring aggression

1 This chapter is based on a recent study written for the Centre for Military Studies at the University of Copenhagen: Jeremy Stöhs, *How High? The Future of European Naval Power and the High-End Threat*, (Copenhagen: Djøf Publishing & CMS Copenhagen, 2021). https://cms.polsci.ku.dk/english/publications/how-high-the-future-of-european-naval-power-and-the-high-end-challenge/.

2 In this context, the terms 'allies' and 'allied navies' cover all NATO and EU member states with maritime forces designed for military operations. Defence policies and military arrangements of the states under discussion are informed by several normative factors: these include different levels of geostrategic freedom of action, political outlook, threat perception, different institutional affiliations (i.e. NATO/EU or both). Furthermore, naval power includes economic strength, geographic position, technical prowess and sociopolitical culture. At the same time, they are subject to the similar external pressures and challenges, in turn creating a set of shared conundrums and dilemmas discussed here. See Stöhs, *How High?*, 24.

and prevailing in a military conflict.[3] The first challenge concerns the threat posed by the proliferation of advanced sensors and the *missile gap* allied navies suffer vis-à-vis possible adversaries. Secondly, the chapter explores the operational challenges that the introduction of novel and disruptive technologies create for second-tier navies, as they prepare to conduct operations across all domains within highly contested areas of the maritime space. Thirdly, many threats and challenges are emerging below the threshold of armed conflict. They require maritime forces to conduct myriad missions in the contexts of grey zone warfare as well as maritime security and safety.

At the same time, several important opportunities arise that could allow allied navies to close capability gaps, stay in the wake of greater powers, and thus successfully defend shared interests and security. This includes taking advantage of a more stable financial environment to reverse the downward drift of naval forces, utilising technology to reach capability thresholds and capitalising on the abilities of military personnel. Finally, the author argues that, in order to make the most of these opportunities and meet the many challenges ahead, allied states must conceptualise and promulgate strategies pertaining to the maritime domain and the use of naval forces.

The Return of Great Power Competition

Today's international order remains in upheaval. The rise of China and re-emergence of Russia as powerful military actors and their efforts to reshape the world according to their own visions have placed increasing pressure on the global security framework created under the aegis of the United States.[4] In response, the US is seeking to deter and—if that fails—

3 The concept of winning interstate conflict still receives too little attention. Important contributions include Fiona S. Cunningham, "The Maritime Rung on the Escalation Ladder: Naval Blockades in a US-China Conflict", in *Security Studies in a New Era of Maritime Competition*, vol. 28, No. 4, (2020), 730–768; and Joachim Krause, "How do wars end? A strategic perspective", *Journal for Strategic Studies*, vol. 42., No. 7, (2019), 920–945.

4 "The institutions, regimes, and practices of this system, many of which—such as the Bretton Woods accords—were developed by the United States and its key allies during and shortly after the Second World War, were designed to privilege U.S. interests and those of its key security and economic partners." Peter D. Haynes, *Toward a New Maritime Strategy: American Thinking in the Post-Cold War Era* (Annapolis MD: Naval Institute Press, 2015), 2.

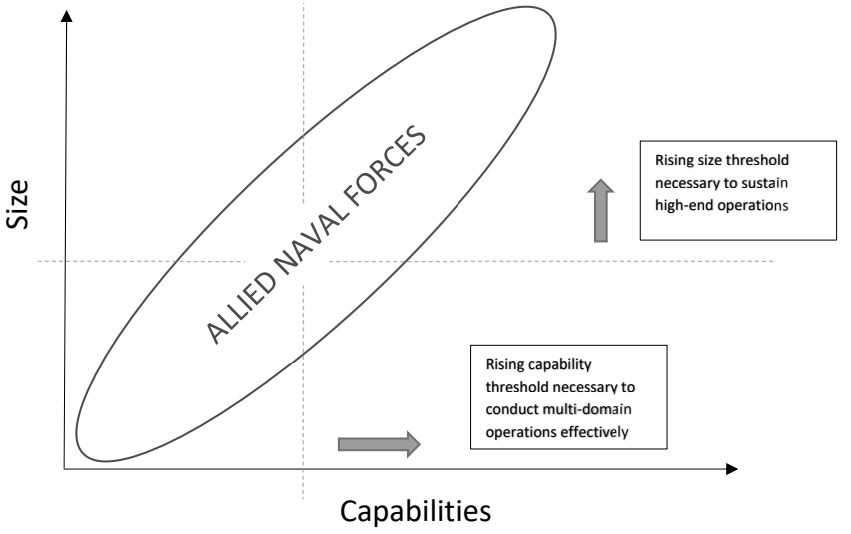
win possible high-end conflicts against peer and near-peer competitors. The return of strategic competition between great powers and the corresponding investment in high-end military capabilities creates new perils and challenges for lesser powers, not least the United States' transatlantic allies. It increases the pressure on the states under discussion to reach and pass quickly rising capability thresholds and to close expanding capability gaps.

Great power competition is clearly visible in the increasingly contested maritime domain. Within this competitive environment, the *raison d'être* of naval forces is "largely based on the maintenance and development of traditional warfighting capabilities against possible adversaries", Geoffrey Till explains.[5] Consequently, the smaller maritime forces on both sides of the Atlantic face the challenge of staying in the wake of the US Navy and its sister services and to develop the ability to hold their own in high-end military operations across all domains as part of joint and multinational forces.[6]

5 Geoffrey Till. "Small Navies in the Current Strategic Context." In *Europe, Small Navies and Maritime Security*, edited by McCabe, Sanders and Speller, (Abingdon: Routledge, 2019), 16.

6 As Christopher Martin stresses, "like all navies, whether friends or opponents of the USN, [the services under discussion construct their] naval policy with the overwhelming dominance of the USN as a crucial influence". Christopher Martin, *The UK as a Medium Maritime Power in the 21st Century*: *Logistics for Influence*, (London: Palgrave Macmillan, 2016), 62.

Figure 1: Rising Thresholds[7]



Greater Power Competition and High-End Challenges

In seeking to deter armed conflict, NATO and EU member states must prepare to engage advanced adversaries in highly contested environments with little to no warning time. From the outset of possible hostilities, their forces must expect to conduct so-called 'multi-domain operations' in various theatres: within Europe's maritime approaches to the High North and across the Atlantic Ocean; and from the shallow and confined littorals of the Persian Gulf all the way to the Indo-Pacific and the South China Sea.

From a US perspective, the concept of multi-domain operations can be understood as deploying military formations "that possess the capacity, endurance and capability to access and employ capabilities across all domains [land, air, sea, space, and cyber] to pose multiple and compounding dilemmas on the adversary".[8] In light of potential adversaries' military capacities, it is not conceivable that the armed forces of any state under discussion,

7 Illustration based on Stöhs, *How-High?*, 25.

8 US Department of the Army, *The U.S. Army in Multi-Domain Operations, TRADOC Pamphlet 525-3-* (2018), iii. https://www.tradoc.army.mil/Portals/14/Documents/MDO/TP525-3-1_30Nov2018.pdf.

much rather a single service could effectively prevail in such a contest. Instead, these formations must be part of a joint and multinational campaign aimed at degrading the adversaries' strike forces and rolling back their battle networks, frequently referred to as anti-access/area denial (A2/AD) systems.[9]

The New Missile Gap

One particular challenge allied naval services face is a growing number of advanced missiles fielded by potential adversaries. China, Russia, Iran and North Korea are investing heavily in advanced missile technology and are readily supplying missiles to proxies and non-state actors. This allows them to strike targets at increasing range, with greater precision and at higher speed—placing at risk key assets of allied military forces, such as major command-and-control facilities, logistical hubs, airbases and large military platforms such as warships.[10] They effectively limit their opponents' access to broad swathes of ocean space and restrict the latter's freedom of manoeuvre within an area of operation.[11]

The proliferation of long-range joint fires—including hypersonic missiles—pose major challenges to allied naval forces. It highlights the vulnerability of capital ships and reveals the lack of defensive and offensive capabilities among Western navies.[12] Without a substantial US naval presence in a contested area (be it the European littorals, the Persian Gulf or the Asia-Pacific region) allied navies would suffer from a *missile gap*.

Unlike the perceived missile gap vis-à-vis the Soviet Union of the 1950s and 1960s, there is ample evidence that the small and medium-sized allied

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9 Sam Tangredi, *Anti-Access Warfare*: *Countering A2/AD strategies,* (Annapolis MD: Naval Institute Press, 2013). For a critical assessment of Russia purported A2/AD networks see Michael Kofman, "It's Time to Talk A2/AD: Rethinking the Russian Military Challenge", *War on the Rocks*, 5 September, (2019). https://warontherocks.com/2019/09/its-time-to-talk-about-a2-ad-rethinking-the-russian-military-challenge/.

10 Justin Bronk interviewed in "What's Going on with Hypersonics? We Ask the Royal United Services Institute's Justin Bronk," *Hush-Kit*, 3 April, 2020. https://hushkit.net/2020/04/03/whats-going-on-with-hypersonics-we-ask-the-royal-united-services-institutes-justin-bronk/.

11 Tangredi, *Access*, 32f.

12 Richard Weitz, "Managing Multi-Domain and Hypersonic Threats to NATO," *International Centre for Defence and Security*, 24 April, 2020. https://icds.ee/managing-multi-domain-and-hypersonic-threats-to-nato/.

navies under discussion are outmatched in terms of firepower by both Russia and China. They lack so-called Battle Force Missiles (BFM) along with the necessary naval platforms, i.e. large surface combatants and submarines fitted with vertical launch systems (VLS), to counter this challenge.[13] As Figure 2 illustrates, all allied navies possess only around 2,600 VLS cells. Nearly half of the navies in Europe, including some *front-line* states, altogether lack VLS tubes. By comparison, the Russian fleet alone has more than 3,000 BFM, the number of BFM belonging to the Chinese Navy has likely passed 6,000, while the US Navy possesses in excess of 9,000 VLS cells and an even greater number of BFM,[14] not counting air-based and land-based missile systems. This fact throws into stark relief the deficient capability of navies to defend other elements of joint forces against missile barrages. Moreover, it undermines their ability to deter adversaries through denial.[15]

13 Robert O. Work, *"To Take and Keep the Lead:" A Naval Fleet Platform Architecture for Enduring*
Maritime Supremacy (Washington, D.C.: CSBA, 2005), 90. Footnote
309. "[B]attle force missiles are missiles that contribute to battle force missions such as area and local air defense, anti-surface warfare, and anti-submarine warfare. Terminal defense SAMs, which protect only the host ship, are not considered a battle force missile." Newer systems blur the lines between terminal and local air defence missiles. Generally, BFM do not include shorter-range missiles such as Evolved Sea Sparrow, Aster 15, Crotale, Rolling Airframe Missile or Mistral.

14 Keith Patton, "Battle Force Missiles: The Measure of a Fleet," Center for International
Maritime Security, 24 April 2019. http://cimsec.org/battle-force-missiles-the-measureof-
a-fleet/40138.

15 Wayne P. Hughes Jr. and Robert P. Girrer, *Fleet Tactics and Naval Operations*, 3rd edn (Annapolis, Naval Institute, 2018). On sea denial in the Asia-Pacific context, see Jonathan D. Caverley and Peter Dombrowski, "Cruising for a Bruising: Maritime Competition in an Anti-Access Age", in Security Studies in a New Era of Maritime Competition, vol. 28, No. 4, (2020), 671–700.

Figure 2. Vertical Launch System Cells Allied Navies in 2021[16]

Country	**Ship classes and approx. number of VLS cells**	Total	**'Strike Length' VLS cells for Sea-Launched Cruise Missiles (SLCM)**
United Kingdom	6 × 48 (Type 45, Daring class) 13 × 32 (Type 23, Duke class)	704	- *Tomahawk cruise missile deployed on Trafalgar and Astute-class submarines
France	2 × 48 (Forbin class) 6 × 32 (Aquitaine class)	288	6 × 16 = 96 SLCM deployed on Aquitaine class
Spain	5 × 48 (Álvaro-de-Bazán class)	240	5 × 48 = 240 No SLCM
Denmark	2 × 36 (Absalon class) 3 × 56 (Iver Huitfeldt class)	240	3 × 32 = 96 No SLCM
Italy	2 × 48 (Andrea Doria class) 8 × 16 (Carlo Bergamini class)	224	No SLCM
Netherlands	4 × 40 (De Zeven Provinciën class) 2 × 16 (Karel Doorman class)	192	4 × 40 = 160 No SLCM
Canada	12 × 16 (Halifax class)	192	-
Germany	4 × 16 (Brandenburg class) 3 × 32 (Sachsen class)	160	3 × 32 = 96 No SLCM
Turkey	2 × 8 (Barbaros class) 2 × 16 (Salih Reis class) 4 × 8 (Gabya class)	80	-
Greece	4 × 16 (Hydra class)	64	-
Norway	3 × 8, 1 × 16 (Nansen class)	40	-
Belgium	2 × 16 (ex-Karel Doorman class)	32	-
Portugal	2 × 16 (ex-Karel Doorman class)	32	-
	Several navies in Europe, including those of 'front-line states', altogether lack the ability to deploy battle force missiles from vertical launch systems.	0	
Allied Navies total:		*2500+*	*688*
United States	68 × 90/96 (Arleigh Burke class) 22 × 122 (Ticonderoga class) 2 × 80 (Zumwalt class)	*9000+*	*8700+* Arsenal of SLCM Not included are VLS and BFM on submarines.

16 Illustration from Stöhs, *How-High?*, 37. Finnish vessels are fitted with the South African Umkhonto Block 2 short-range SAM, launched from eight-cell VLS on its four Hamina-class FAC and two Hämeenmaa-class MW vessels. However, these missiles cannot be considered BFM.

At the same time, these navies also suffer from shortfalls in offensive missile capabilities. They do not possess the long-range strike capabilities necessary to effectively penetrate even modest battle networks (i.e. Iran's) without US assistance, not to speak of Russian and Chinese integrated and layered defences.[17] Compared to the thousands of ship-launched cruise missiles in the US Navy's arsenal, only two allied navies (the UK's and France's) are fitted with a handful of long-range cruise missiles.[18] Because this capability is expensive, technologically complex and politically highly sensitive, all other states have remained reluctant to acquire these long-range naval strike assets. They rather rely on the land-attack modes of a modest number of short-range ASM, thereby placing the launch platforms closer to harm. In sum, the current missile gap limits their ability to place enemy battle forces at risk and thus to deter through the threat of punishment.[19]

Search, Find and Deter

The proliferation of precision-guided munitions (including intermediate-range and hypersonic missiles) is one of the greatest concerns among allied defence planners. However, it is only part of a larger problem. Missiles are only as good as the network of sensors that provide targeting data.[20] It is therefore no surprise that great power competition has prompted massive investments in sensor and communication capabilities. By fusing together sensors and effectors—from the seabed to space, across sea, air, land and cyberspace, and along the electromagnetic spectrum—great powers are

17 Ben Barrie et al., "Defending Europe: Scenario-Based Capability Requirements for NATO's European Members," *IISS Research Papers*, 10 May, 2019.

18 "The Royal Navy operates the U.S.-designed Tomahawk and relies solely on its nuclear attack submarines for this role. Meanwhile, the French *Marine Nationale* is the only European navy currently capable of launching a small number of cruise missiles from carrier-based Rafale combat aircraft as well as *Aquitaine*-class frigates; the latter have a maximum capacity of merely sixteen Naval Cruise Missile naval stand-off weapons. Stöhs, *How-High?*, 39.

19 Michael J. Mazarr, *Understanding Deterrence*, Santa Monica: RAND (2018). https://www.rand.org/content/dam/rand/pubs/perspectives/PE200/PE295/RAND_PE295.pdf.

20 "The issue is really still whether the command system which fires the missile has some way of knowing what the situation is well beyond the horizon". Norman Friedman, "Technological Review: Shipboard Anti-ship Missiles," in *World Naval Review 2017*, ed. Conrad Waters (Barnsley: Seaforth Publishing, 2016), 179.

seeking to enhance their battle command architectures, establish networked forces and thereby gain the upper hand in a possible conflict in the future.

To this end, states are heavily investing in novel technologies that could potentially revolutionise warfare. It is believed that, by leveraging these new 'game changing' and 'disruptive technologies', including artificial intelligence (AI)-enhanced and increasingly autonomous systems and platforms, strategic competitors are seeking to render void the capabilities of the United States and its allies.[21] These developments are placing compounding pressures on allied command and control, computers and communication (C4), intelligence, surveillance, target acquisition and reconnaissance (ISTAR) capabilities.

In the maritime domain, great power competition and the ongoing technological (re-) evolution have created what Andrew F. Krepinevich calls a "mature precision-strike regime".[22] In such a regime, sea control is difficult to obtain, due to the ability of competing powers to "scout and effectively engage [enemy forces] at extended ranges".[23] In the future, winning the initial phase of a conflict, the 'hider-finder' or scouting campaign, "will prove crucial […] to accomplish[ing] key missions at and from the sea".[24] More credible information arrangements are pivotal in preventing medium and small navies from becoming moribund in the opening stages of a quickly evolving crisis with peer or near-pear competitors.

Allied and partner nations will need to (a) improve sharing data across the network of sensors, platforms and formations; (b) establish a more comprehensively recognised maritime picture; (c) gain a higher degree of cross-domain awareness; (d) provide consistent intelligence, surveillance, targeting acquisition and reconnaissance; and (e) direct and control military measures against potential adversaries in contested environments. This

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21 Ben FitzGerald, Kelly Sayler and Shawn Brimley, "Game Changers: Disruptive Technology and U.S. Defense Strategy," *Center for a New American Security*, September 27, 2013. https://www.cnas.org/publications/reports/game-changers-disruptive-technology-and-u-s-defense-strategy.

22 Andrew F. Krepinevich, *Maritime Competition in a Mature Precision-Strike Regime* (Washington, DC: CSBA, 2015).

23 ibid., 88.

24 The scouting campaign is the initial stage of a conflict in which adversaries seek to identify enemy forces quickly in order to target them with their strike forces. ibid., 5, 109f.

would allow them to "deter by detection",[25] thereby reducing the risk of a surprise attack and limiting the first-mover advantage in the opening stages of a conflict.

However, many of the maritime forces under discussion suffer from severe shortcomings in their ability to conduct and contribute to complex military operations. The deficiency of command-and-control and ISTAR capabilities is particularly pronounced among navies that have suffered from disproportionate downsizing relative to their (national and international) security obligations over the past few decades. The smallest forces under scrutiny, including several in immediate proximity to Russia's battle network, lack a critical mass of advanced sensors, weapons and platforms that would allow them to reach capability thresholds to contribute to multi-domain operations.[26]

As the United States pushes towards the concept of multi-domain operations and competes with its strategic rivals to utilise disruptive technologies, allies and partners are struggling to follow suit. They face challenges aplenty to establish the C4ISTAR capabilities required to co-ordinate, integrate and interoperate effectively across all the domains of conflict.[27]

Great Power Competition and Low-End Challenges

While technological and operational challenges at the high end warrant immediate responses, allied defence planners must address threats that run the gamut of the conflict spectrum. Besides challenging their opponents symmetrically, Russia, China and their proxies are employing complex, hy-

25 Thomas G. Mahnken, Travis Sharp and Grace B. Kim, *Deterrence by Detection: A Key Role for Unmanned Aircraft Systems in Great Power Competition*, Washington D.C., CSBA (2020).

26 Thomas Durell Young NATO's Selective Sea Blindness: Assessing the Alliance's New Navies," *Naval War College Review* 72, No. 3 (2019), 21–32. Deborah Sanders, *Maritime Power in the Black Sea* (Abingdon: Routledge, 2014).

27 William A. Perkins and Andrea Olivieri, "On Multi-Domain Operation: Is NATO Today Sufficiently 'Joint' to Begin Discussions Regarding Multi-Domain Command and Control?", *The Journal of the JAPCC* 26 Spring/Summer 2018). There are no alternatives to the NATO command structures. In fact, a recent IISS study concluded that "it does not seem feasible at this point for Europeans to attempt to run demanding operations". Barrie et al., "Defending Europe," 3.

brid forms of warfare to achieve strategic aims.[28] Among this "fused mix of conventional weapons, irregular tactics, terrorism and criminal behavior in the battlespace"[29], most actions take place below the threshold of conventional warfare, in the so-called *grey zone*.[30] The maritime domain offers plentiful opportunities to engage in activities short of armed conflict. This includes the clandestine tapping of underwater cables, covert intrusions into territorial waters and using law as a weapon of war (lawfare).[31] Maritime forces have an important part to play in countering hybrid strategies aimed at undermining transatlantic cohesion and international rules and norms.

Beyond the grey zone, constabulary duties and naval diplomacy have become an integral part of nearly all navies under discussion. They are crucial in providing security and prosperity for the transatlantic nations: from protecting sovereign interests in the exclusive economic zones to addressing common maritime security challenges across the high seas. By ensuring freedom of navigation and upholding good order at sea, navies buttress "an open and fair international economic system and sustainable access to the global commons".[32] As they represent flexible instruments in the foreign policy toolkit of many seafaring states, maritime forces can prevent and manage crises and their spillover effects.[33]

Despite an increasing need to meet high-end challenges, there will likely be no decrease in the demand for low-end operations. Rather, allied navies

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28 Martin Murphy, Frank Hoffman and Gary Schaub, "Hybrid Maritime Warfare and the Baltic Sea Region," Centre of Military Studies Report, 1 November, 2016, 3.

29 Joseph S. Nye Jr. in *The Future of Power: Its Changing Nature and Use in the Twenty-First Century.* Quoted in ibid.

30 "The definition of gray zone conflicts remains both expansive and elusive", Frank Hoffman explains. See Frank Hoffman, "Examining complex forms of Conflict: Gray Zone and Hybrid Challenges," PRISM / National Defense University, 8 November, 2018. https://cco.ndu.edu/News/Article/1680696/examining-complex-forms-of-conflict-gray-zone-and-hybrid-challenges/.

31 Lawfare can be understood as shaping the legal context to gain legal superiority over an adversary. It is aimed at achieving "kinetic objectives, degrading the enemy's will to fight, and shaping the narrative of war through legal strategies". Jill I. Goldenziel, "Law as a Battlefield: The U.S., China, and Global Escalation of Lawfare", in Cornell Law Review, vol. 106, 2020. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3525442.

32 European Union External Action Service, *Global Strategy for the European Union's Foreign and Security Policy: Shared Vision, Common Action: A Stronger Europe* (European Union External Action Service, 2016), 8.

33 Geoffrey Till, *Seapower: A Guide for the Twenty-First Century* (Abingdon: Routledge, 2013), 34f.

must prepare to cover a broad range of naval tasks and missions; for even the most benign environment can turn hostile at a moment's notice. Hence, a critical mass of capacities that ensure "endurance and staying power" will be essential for maritime forces to ensure maritime security, counter hostile activities in the grey zone as well as deter and win armed conflict.[34]

Opportunities

Despite the mounting challenges described above, several important trends and corresponding opportunities might allow small and medium-sized navies to successfully navigate the dangerous waters of looming challenges in the maritime domain.

Reversing the Downward Drift

It appears that the downward drift of naval capabilities, which lasted for more than two decades, has been arrested and is being reversed.[35] In fact, at the latest since the annexation of the Crimea and the War in Ukraine, NATO and EU members appear to have come to terms with the fact that the post-Cold War 'honeymoon period' is over. More resources are again being allocated to national and collective security and defence. 2015 marked the first time in more than two decades that Europe's cumulative total defence expenditure increased;[36] and several NATO members are fulfilling their pledge to spend two per cent of their gross domestic product (GDP) on defence.

Admittedly, several important qualifiers raise doubts about whether the overall upward trend of the past several years will be sustainable in the long run: For one, the defence expenditure of important allied nations (such as Spain, Greece and the Netherlands) has remained largely stagnant

34 Niklas Granholm, "Small Navies and Naval Warfare in the Baltic Sea Region," in McCabe, Sanders, Speller, *Europe, Small Navies and Maritime Security*, 81.

35 Jeremy Stöhs, "Into the Abyss? European Naval Power in the Post-Cold War Era," *Naval War College Review*, 71 No. 3 https://digital-commons.usnwc.edu/nwc-review/vol71/iss3/4/.

36 For more information see Alessandro Marrone, Olivier de France and Daniele Fattibene. 2016. Defence Budgets and Cooperation in Europe: Developments, Trends and Drivers: Istituto Affari Internazionali, 2016.

for more than a decade, complicating efforts to effectively revitalise naval forces.[37] Moreover, as economies lie dormant and large stimulus packages require financing, the COVID-19 pandemic is casting dark clouds over military modernisation.[38]

Somewhat surprisingly, despite the current crisis, several governments have signalled their continued willingness to go forward with (and expand) their planned military investments.[39] Post-EU Britain (while cutting the size of its army) has announced its largest increase in military investments since the Cold War; Sweden is committed to increasing defence spending by up to 40% over the coming years; while Turkey's total defence spending has nearly doubled since 2010. Currently, there are no indications that allied maritime forces face reductions of a similar magnitude as those during the 1990s and 2000s.[40]

Despite their constant lamentations at having too few resources, it appears likely that military leaders and defence officials will enjoy a far more

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37 Spain is a case in point, with defence expenditure remaining stagnant for more than a decade (hovering around 1.2% of GDP). Whether the *Armada Española* will be able to continue operating fixed-wing aircraft from its carrier or to successfully revitalise its submarine flotilla remains questionable. Similarly, the Royal Netherlands Navy and Deutsche Marine are struggling to increase their readiness and to modernise their fleets due to financial constraints, structural deficiencies and flawed procurement processes. Netherlands defence spending has largely remained stagnant, stalling important modernisation projects (e.g. a new class of submarines) or the addition of vital assets (maritime patrol aircraft). Germany's malaise regarding the procurement of new surface combatants (F-125 Baden Württemberg), the NH90 helicopter and maintenance are well documented.

38 A study in 2016 warned there was "no hard evidence that the upward trend [among European navies is] going to endure [or that states will] spend their money better or with more intra-European cooperation than before". Marrone *et al.* 2016, 3.

39 Andrew Chuter, "UK to boost defense budget by $21.9 billion. Here's who benefits – and loses out," *DefenseNews*, 19 November, 2020. https://www.defensenews.com/global/europe/2020/11/19/uk-to-boost-defense-budget-by-219-billion-heres-who-benefits-and-loses-out/; "Sweden embarks on its largest military build-up for decades," *The Economist*, 24 October, 2020. https://www.economist.com/europe/2020/10/19/sweden-embarks-on-its-largest-military-build-up-for-decades.
Turkey's spending has increased from 11bn USD to 22bn. *Stockholm International Peace Research Institute*. SIPRI Military Expenditure Database, 1949–2019. https://www.sipri.org/databases/milex.

40 Not least because this would effectively strip several states from naval capabilities altogether. See Jeremy Stöhs, Decline of European Naval Power: Challenges to Sea Power in an Age of Fiscal Austerity and Political Uncertainty, (Annapolis MD: Naval Institute Press, 2018).

favourable financial environment than their predecessors. This allows them to conduct long-term planning (something quite unfamiliar to several states), draft and implement policies, and thus to address the challenges that lie ahead more effectively.

Riding the Wave of Technological Innovation

Advancements in technology offer allied nations significant opportunities to close capability gaps vis-à-vis their competitors. From a conceptual and technological standpoint, the transatlantic community of states appears to be in an encouraging position to develop and apply innovative and potentially disruptive technologies to their maritime forces. Their defence industrial base—although largely adjusted to peacetime requirements—is able to provide fleets with state-of-the-art technology.[41]

On a multi-, mini- and bilateral level, initiatives have been called to life that focus on applying disruptive novel technologies in the maritime domain.[42] Autonomous systems, ISTAR sensor networks, cyber-capabilities and high-power lasers have the potential to outflank the quantitate dilemma many smaller navies face when up against larger adversaries. They offer much-needed redundancies, augment and increase the respective warfighting potential, and provide navies an opportunity to explore asymmetric avenues to address high-end security challenges. Off-the-shelf technology can deliver relatively cheap force multipliers for smaller and financially challenged maritime forces. They allow services (and allied forces in general) to overcome legacy thinking centred on large platforms (warships) rather than on weapons and sensors and, in turn, create the basis for more credi-

41 From sonars, radars, and electronic countermeasures to naval guns, advanced missiles, marine propulsion, and complex combat systems. A particular focus is placed on underwater capabilities, including submarines and mine countermeasures.

42 NATO has launched the Maritime Unmanned Systems Initiative to enhance the Alliance's capabilities, particularly in the areas of anti-submarine warfare and mine countermeasures. Three projects of the EU's Permanent Structure Co-operation (PESCO) aim to achieve similar effects. European Union, "PESCO Projects: Maritime Unmanned Anti-Submarine System (MUSAS)". https://pesco.europa.eu/project/maritime-unmanned-anti-submarine-system-musas/. The OCEAN2020 project, financed by the European Union's Preparatory Action on Defence Research, seeks to enhance 'situational awareness in a maritime environment'. See Stöhs, *How High?*, 47.

ble sea-denial capabilities.[43] By delegating the use of AI and autonomous systems and disruptive technologies to lower-level commanders, allied navies could exploit the potential of disruptive technologies more quickly and to a greater degree than their competitors with their highly rigid and inflexible, top-down command structures.[44]

Finally, the rising cost of building and maintaining maritime forces coupled with still most defence spending across allied states creates the need for economies of scale. States are forced to bond together with and draw from each other's industrial capacity to avoid techflation, i.e. the rising costs of new equipment that exceed inflation and the consequent increase in per-unit costs due to the relatively small numbers being procured.[45]

Recent consolidation in the shipbuilding sector, such as the fusion of the German shipbuilders or the merger between the French Naval Group and the Italian Fincantieri (Naviris), are indicative of this process.[46] In the future, a more cooperative and consolidated defence industrial base across allied nations could avoid wasteful offset agreements, prolonged tenders and competition, and deliver more *bang for the buck*.

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43 According to one view, currently, these "navies are deficient in building integrated capabilities, ensuring common operating procedures, projecting battlespace awareness, and accomplishing interoperability in all maritime combat domains." Thomas-Durell Young, "NATO's Selective Sea Blindness: Assessing the Alliance's New Navies," *Naval War College Review* 72, No. 3 (2019), 13.

44 Decentralised decision-making is germane to the Western approach to warfare.

45 "The global increase in warfighting capabilities throws into stark relief the comparatively small defense budgets and modest industrial capacities from which [individual navies] can draw as they modernize. Consequently, they suffer disproportionately from techflation and diseconomies of scale; which, in turn, creates even greater dependencies on foreign training, support, and technological assistance. […] This adds credence to worries that small- and medium-sized states are nearing the 'end of the line' regarding naval modernization and the ability to afford the next generation of military technology." Stöhs, *How High?*, 70, 73.

46 Sabine Siebold, Tom Käckenhoff, Jan Schwartz, "Konsolidierung im Marine-Schiffbau nimmt Fahrt auf," www.reuters.com, 14 May, 2020. https://www.reuters.com/article/deutschland-werften-luerssen-german-nava-idDEKBN22Q1UQ.

Personnel—A Nation's Best and Brightest.

In tackling future challenges, arguably the greatest resource for any navy is its people, for Alfred T. Mahan's words still hold true: "Historically, good men with poor ships are better than poor men with good ships."[47]

As navies again seek to regain their capacity to conduct complex maritime missions after years of downscaling, the dearth of qualified personnel has become a most troubling issue. Recruitment and retention problems have beset several navies and have largely contributed to a lack of readiness among Europe's premier navies.[48] As Anders Puck Nielsen points out, the smaller the pool of naval professionals becomes, the more difficult it is to balance between sailors' various sea and shore deployments and to maintain high-standards of training.[49] What is more, the smaller the navy, the more difficult it is to "produce leaders who have the credibility to give advice at the national level on what naval forces are capable of providing", Thomas D. Young adds.[50]

Despite these problems, the majority of allied sailors, airmen and marines are well educated, highly professional and dedicated individuals. Through shared membership in NATO and the EU, they are regularly assigned to a range of duties and positions in different international contexts. The fleets frequently undergo training to the highest of standards, such as damage control in Neustadt, Germany or Fleet Operational Sea Training in the UK. As part of NATO's Standing Maritime Groups and recurring naval exercises (e.g. Dynamic Mongoose/Manta) they seek to improve interoperability and hone their skills in complex operational environments.

While there is no instant cure for personnel shortages (it takes decades to grow a cadre of naval professionals and leaders), there is a silver lining

47 Alfred T. Mahan 2013. *The Influence of Sea Power Upon the French Revolution and Empire, 1793–1812.* (Berlin: Europäischer Hochschulverlag, 2013), 102.

48 Has the Royal Navy solved its manpower problems? *Navy Lookout*, 18 March, 2018. https://www.navylookout.com/has-the-royal-navy-solved-its-manpower-problems/. Laurant Lagneau, "La Marine nationale a des difficultés pour recruter, ce qui met certaines spécialités sous grosse tension," *zone militaire opex360*, 1 November, 2019. http://www.opex360.com/2019/11/01/la-marine-nationale-a-des-difficultes-pour-recruter-ce-qui-met-certaines-specialites-sous-grosse-tension/.

49 Anders Puck Nielsen, "Why Small Navies Prefer Warfighting over Counter-Piracy," in Edward R. Lucas et al. (eds.), *Maritime Security: Counter-Terrorism Lessons from Maritime Piracy and Narcotics Interdiction* (Amsterdam, IOS Press, 2020), 97–109.

50 Young, "Blindness", 15.

for allied naval forces. Armed forces are revisiting their recruitment models and are running innovative advertising campaigns to reach out to and gain interest among a broader audience.[51] Paired with better pay, improving conditions of service (e.g. new crewing concepts alongside greater habitability on warships) and people instilled with greater sense of urgency and purpose, allied navies are likely to attract, retain and draw from some of the nations' best and brightest.

Challenges, Opportunities and Allied Maritime Strategies

This article has shown that allied navies face significant challenges. Strategic competition between the United States, China and Russia has led to a global increase in high-end warfighting capabilities. The proliferation of advanced missiles, sensors and potentially disruptive military technologies has created new perils for the small and medium-sized navies on both sides of the Atlantic. In order to contribute effectively to joint, multi-domain operations in increasingly contested environments, they must improve their offensive and defensive potential and greatly enhance both their command-and-control and ISTAR structures. In addition, navies must address persistent threats and challenges below the threshold of armed conflict—in the grey zone of strategic competition as well as across the field of maritime security and safety.

Importantly, the current environment also offers allied navies several promising opportunities to successfully tackle the daunting challenges that lie ahead. Having arrested their downward drift, allied navies are seeking to revitalise their warfighting capabilities with the help of novel technologies and increasingly professional forces. For these efforts to succeed, they need to be coordinated with allies and partner states—from the tactical level to the strategic level. Accordingly, naval leaders, defence planners and their political masters must constantly rethink the role of maritime forces and readjust their policies.

The best way to understand the manifold roles of naval forces is to draft and disseminate strategies.[52] This is particularly true for the small and medium-sized states under discussion: "The exercise of a nation thinking

51 Social media plays an important role in this and many military forces are increasingly using professional and innovative ways of reaching out to and gaining the interest of young citizens.

52 The Kiel International Seapower Symposia were intended specifically to bring together leaders from across the globe and to foster these kinds of mental exercises.

about its maritime situation, the threat thereto and the importance of the maritime domain to the national economy and security, and verbalising how it wants to preserve this key national attribute into the future will focus government and public discourse," William Combes explains.[53] In the past, some of these "thought exercises" have failed to assess the strategic environment correctly (*A Cooperative Strategy for 21st Century Seapower*)[54] or lacked the necessary "means" and "ways" to achieve the desired "ends" (*EU Maritime Security Strategy*).[55] Others have suffered from political myopia and institutional neglect (Poland and Germany)[56] or were not made publicly available in the first place (Greece)[57]—thus failing to explain to the population why (in times of peace) vast sums of money were being spent on naval forces.

In the future, the failure to adequately identify and address challenges could have far-reaching ramifications for the security and prosperity of allied nations. Naval and maritime strategies must accurately gauge the characteristics of the challenges ahead and clearly state their level of ambition in order to derive an understanding of the required capabilities as well as explain this to the public. They should plan explicitly for higher-end capa-

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It was a great pleasure to develop the content of the conference series together with the team at the ISPK's Center for Maritime Strategy & Security and share the floor with distinguished experts. The author hopes that the ideas developed at KISS will, in one way or another, influence and inform the allied maritime strategies of the future. The author would like to thank Sebastian Bruns, Johannes Peters, Julian Pawlak, Adrian Neumann, Randy Papadopoulos, the team at ISPK as well as everybody who contributed to the success of the conferences over the past years. https://www.kielseapowerseries.com/en/.

53 William Combes, "Maritime Security Strategies for Very Small States: The Baltic States," in *Europe, Small Navies and Maritime Security*, ed. McCabe, Sanders, Speller, 128.

54 Bryan McGrath interviewed by Cdr. Salamander: "Episode 575: The Navy's Problems and a Plan to Fix Them, with Bryan McGrath," *Midrats*, 10 January 2021. https://www.eaglespeak.us/2021/01/on-midrats-10-january-2021-episode-575.html.

55 Brendan Flynn, "The EU's Maritime Security Strategy: A Neo-Medieval Perspective on the Limits of Soft Security?" *Croatian International Relations Review 22,* No. 75, 2019.

56 The evolution of recent maritime strategic thinking and processes of drafting maritime and naval strategy in Germany and Poland respectively is described by Sebastian Bruns and Andrzej Makowski in: Sebastian Bruns and Sarandis Papadopoulos (eds.), *Conceptualizing Maritime & Naval Strategy*, (Baden-Baden: Nomos, 2020).

57 In the absence of official publications by the Greek government and Ministry of Defence, one must turn to other sources such as statements by high-ranking defence officials to infer the strategic rationale of the Greek navy.

bility profiles, and link naval concepts and planning to corresponding modernisation and procurement programmes.[58] However, they must not forget to include a maritime focus and emphasise the need for full-spectrum capabilities that leverage the constabulary and diplomatic functions of maritime forces.

Works cited

Barrie, Ben et al., "Defending Europe: Scenario-Based Capability Requirements for NATO's European Members," *IISS Research Papers*, 10 May, 2019.

Bruns, Sebastian and Papadopoulos, Sarandis (eds.), *Conceptualizing Maritime & Naval Strategy*. Baden-Baden: Nomos, 2020.

Caverley, Jonathan D. and Dombrowski, Peter. "Cruising for a Bruising: Maritime Competition in an Anti-Access Age", in Security Studies in a New Era of Maritime Competition, vol. 28, No. 4, (2020), 671–700.

Chuter, Andrew. "UK to boost defense budget by $21.9 billion. Here's who benefits – and loses out," *DefenseNews*, 19 November, 2020. https://www.defensenews.com/global/europe/2020/11/19/uk-to-boost-defense-budget-by-219-billion-heres-who-benefits-and-loses-out/.

Combes, William, "Maritime Security Strategies for Very Small States: The Baltic States," in *Europe, Small Navies and Maritime Security*, edited by McCabe, Sanders and Speller. Abingdon: Routledge, 2019, 117-132.

Cunningham, Fiona S. "The Maritime Rung on the Escalation Ladder: Naval Blockades in a US-China Conflict", in *Security Studies in a New Era of Maritime Competition*, vol. 28, No. 4, (2020), 730–768.

European Union External Action Service, *Global Strategy for the European Union's Foreign and Security Policy: Shared Vision, Common Action: A Stronger Europe.* European Union External Action Service, 2016.

FitzGerald, Ben, Sayler, Kelly, and Brimley, Shawn. "Game Changers: Disruptive Technology and U.S. Defense Strategy," *Center for a New American Security*, September 27, 2013. https://www.cnas.org/publications/reports/game-changers-disruptive-technology-and-u-s-defense-strategy.

Flynn, Brendan. "The EU's Maritime Security Strategy: A Neo-Medieval Perspective on the Limits of Soft Security?" *Croatian International Relations Review 22,* No. 75, 2019.

Friedman, Norman. "Technological Review: Shipboard Anti-ship Missiles," in *World Naval Review 2017*, edited by Conrad Waters. Barnsley: Seaforth Publishing, 2016.

58 For more detailed recommendations see Stöhs, *How High?*, 71.

Goldenziel, Jill I. "Law as a Battlefield: The U.S., China, and Global Escalation of Lawfare", in Cornell Law Review, vol. 106, 2020. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3525442.

Granholm, Niklas. "Small Navies and Naval Warfare in the Baltic Sea Region," in *Europe, Small Navies and Maritime Security*, edited by McCabe, Sanders and Speller. Abingdon: Routledge, 2019, 71-88.

Haynes, Peter D. *Toward a New Maritime Strategy: American Thinking in the Post-Cold War Era.* Annapolis MD: Naval Institute Press, 2015.

Hoffman, Frank. "Examining complex forms of Conflict: Gray Zone and Hybrid Challenges," PRISM / National Defense University, 8 November, 2018. https://cco.ndu.edu/News/Article/1680696/examining-complex-forms-of-conflict-gray-zone-and-hybrid-challenges/.

Hughes Jr., Wayne P. and Girrer, Robert P. *Fleet Tactics and Naval Operations*, 3rd edition. Annapolis: Naval Institute, 2018.

Hush-Kit. "What's Going on with Hypersonics? We Ask the Royal United Services Institute's Justin Bronk," *Hush-Kit*, 3 April, 2020. https://hushkit.net/2020/04/03/whats-going-on-with-hypersonics-we-ask-the-royal-united-services-institutes-justin-bronk/.

Kofman, Michael. "It's Time to Talk A2/AD: Rethinking the Russian Military Challenge", *War on the Rocks*, 5 September, (2019). https://warontherocks.com/2019/09/its-time-to-talk-about-a2-ad-rethinking-the-russian-military-challenge/.

Krause, Joachim. "How do wars end? A strategic perspective", *Journal for Strategic Studies*, vol. 42., No. 7, (2019), 920–945.

Krepinevich, Andrew F. *Maritime Competition in a Mature Precision-Strike Regime.* Washington, DC: CSBA, 2015.

Lagneau, Laurant, "La Marine nationale a des difficultés pour recruter, ce qui met certaines spécialités sous grosse tension," *zone militaire opex360*, 1 November, 2019. http://www.opex360.com/2019/11/01/la-marine-nationale-a-des-difficultes-pour-recruter-ce-qui-met-certaines-specialites-sous-grosse-tension/.

Mahan, Alfred T. *The Influence of Sea Power Upon the French Revolution and Empire, 1793–1812.* Berlin: Europäischer Hochschulverlag, 2013.

Mahnken, Thomas G., Sharp, Travis, and Kim, Grace B. *Deterrence by Detection: A Key Role for Unmanned Aircraft Systems in Great Power Competition*. Washington D.C.: CSBA, 2020.

Marrone, Alessandro, de France, Olivier, and Fattibene. Daniele. Defence Budgets and Cooperation in Europe: Developments, Trends and Drivers: Istituto Affari Internazionali, 2016.

Martin, Christopher. *The UK as a Medium Maritime Power in the 21st Century*: *Logistics for Influence.* London: Palgrave Macmillan, 2016.

Mazarr, Michael J. *Understanding Deterrence*, Santa Monica: RAND (2018). https://www.rand.org/content/dam/rand/pubs/perspectives/PE200/PE295/RAND_PE295.pdf.

McGrath, Bryan, interviewed by Cdr. Salamander: "Episode 575: The Navy's Problems and a Plan to Fix Them, with Bryan McGrath," *Midrats*, 10 January 2021. https://www.eaglespeak.us/2021/01/on-midrats-10-january-2021-episode-575.html.

Murphy, Martin, Hoffman, Frank, and Schaub, Gary. "Hybrid Maritime Warfare and the Baltic Sea Region," Centre of Military Studies Report, 1 November, 2016.

Navy Lookout. Has the Royal Navy solved its manpower problems? *Navy Lookout*, 18 March, 2018. https://www.navylookout.com/has-the-royal-navy-solved-its-manpower-problems/.

Nielsen, Anders Puck. "Why Small Navies Prefer Warfighting over Counter-Piracy," in Edward R. Lucas et al. (eds.), *Maritime Security: Counter-Terrorism Lessons from Maritime Piracy and Narcotics Interdiction.* Amsterdam: IOS Press, 2020, 97-109.

Patton, Keith. "Battle Force Missiles: The Measure of a Fleet," Center for International Maritime Security, 24 April 2019. http://cimsec.org/battle-force-missiles-the-measureof-a-fleet/40138.

Perkins, William A. and Olivieri, Andrea. "On Multi-Domain Operation: Is NATO Today Sufficiently 'Joint' to Begin Discussions Regarding Multi-Domain Command and Control?", *The Journal of the JAPCC* 26, Spring/Summer 2018.

Sanders, Deborah. *Maritime Power in the Black Sea*. Abingdon: Routledge, 2014.

Siebold, Sabine, Käckenhoff, Tom, and Schwartz, Jan. "Konsolidierung im Marine-Schiffbau nimmt Fahrt auf," www.reuters.com, 14 May, 2020. https://www.reuters.com/article/deutschland-werften-luerssen-german-nava-idDEKBN22Q1UQ.

Stockholm International Peace Research Institute. SIPRI Military Expenditure Database, 1949–2019. https://www.sipri.org/databases/milex.

Stöhs, Jeremy. *How High? The Future of European Naval Power and the High-End Threat*. Copenhagen: Djøf Publishing & CMS Copenhagen, 2021. https://cms.polsci.ku.dk/english/publications/how-high-the-future-of-european-naval-power-and-the-high-end-challenge/.

Stöhs, Jeremy. "Into the Abyss? European Naval Power in the Post-Cold War Era," *Naval War College Review*, 71 No. 3(2018). https://digital-commons.usnwc.edu/nwc-review/vol71/iss3/4/.

Stöhs, Jeremy. *Decline of European Naval Power: Challenges to Sea Power in an Age of Fiscal Austerity and Political Uncertainty*. Annapolis MD: Naval Institute Press, 2018.

Tangredi, Sam. *Anti-Access Warfare*: *Countering A2/AD strategies.* Annapolis MD: Naval Institute Press, 2013.

The Economist. "Sweden embarks on its largest military build-up for decades," *The Economist*, 24 October, 2020. https://www.economist.com/europe/2020/10/19/sweden-embarks-on-its-largest-military-build-up-for-decades.

Till, Geoffrey. "Small Navies in the Current Strategic Context." In *Europe, Small Navies and Maritime Security*, edited by McCabe, Sanders and Speller. Abingdon: Routledge, 2019, 15-25.

Till, Geoffrey. *Seapower: A Guide for the Twenty-First Century*. Abingdon: Routledge, 2013.

US Department of the Army, *The U.S. Army in Multi-Domain Operations, TRADOC Pamphlet 525-3-* (2018), iii. https://www.tradoc.army.mil/Portals/14/Documents/MDO/TP525-3-1_30Nov2018.pdf.

Young, Thomas-Durell. "NATO's Selective Sea Blindness: Assessing the Alliance's New Navies," *Naval War College Review* 72, No. 3 (2019).

Weitz, Richard. "Managing Multi-Domain and Hypersonic Threats to NATO," *International Centre for Defence and Security*, 24 April, 2020. https://icds.ee/managing-multi-domain-and-hypersonic-threats-to-nato/.

Work, Robert O. *"To Take and Keep the Lead:" A Naval Fleet Platform Architecture for Enduring Maritime Supremacy.* Washington, D.C.: CSBA, 2005,