

SPECIAL REPORT

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Rebuilding America's Military: The United States Navy

Brent D. Sadler

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CENTER FOR NATIONAL DEFENSE

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The Rebuilding America's Military Project

This *Special Report* is the fifth in a series from the *Rebuilding America's Military Project* of The Heritage Foundation's Center for National Defense, which addresses the U.S. military's efforts to prepare for future challenges and rebuild a military depleted after years of conflict in the Middle East and ill-advised reductions in both funding and end strength.

The first paper in this series (Dakota L. Wood, "Rebuilding America's Military: Thinking About the Future," Heritage Foundation *Special Report* No. 203, July 24, 2018, <https://report.heritage.org/sr203>) provides a framework for understanding how we should think about the future and principles for future planning.

The second (Dakota L. Wood, "Rebuilding America's Military: The United States Marine Corps," Heritage Foundation *Special Report* No. 211, March 21, 2019, <https://report.heritage.org/sr211>) discusses the current status of the U.S. Marine Corps and provides prescriptions for returning the Corps to its focus as a powerful and value-added element of U.S. naval power.

The third (Thomas W. Spoehr, "Rebuilding America's Military: The United States Army," Heritage Foundation *Special Report* No. 215, August 22, 2019, <https://report.heritage.org/sr215>) provides context and recommendations on how the U.S. Army should approach planning for future conflicts out to the year 2030.

The fourth (John Venable, "Rebuilding America's Military: The United States Air Force," Heritage Foundation *Special Report* No. 223, March 26, 2020, <https://report.heritage.org/sr223>) examines the state, status, and mindset of today's Air Force, evaluates critical aspects of the service, and recommends specific policies and actions that the Air Force needs to pursue to prepare itself for future conflicts out to the year 2040.

This paper provides a road map for deployment of a fleet designed for great-power competition with China and Russia. It proposes a balance between readiness and forward presence, peacetime competition and warfighting, over the critical 2021–2035 time frame.

This paper, in its entirety, can be found at <http://report.heritage.org/sr242>

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Rebuilding America's Military: The United States Navy

Brent D. Sadler

Since the end of the Cold War, assumptions based on U.S. preeminent military and economic power have encouraged generally passive or reactive national security policies. This must change. A theory of victory in this era's great-power competition requires that the Navy be able both to field a war-winning fleet and to compete aggressively in the peace. In the final analysis, chance aside, the outcome of war will be determined before the fighting actually starts: The better postured, resourced, and trained force is the force that wins. Ensuring that the Navy remains ready, vigilant, and postured forward is the best way to deter war and perpetuate the rules-based order that has safeguarded our prosperity and the prosperity of others for decades.

Executive Summary

In 2018, The Heritage Foundation began the Rebuilding America's Military Project (RAMP) to provide practical approaches to ensuring the nation's long-term military leadership. This paper continues that project with a focus on the Navy.

Since 2018, however, China's and Russia's increasingly provocative maritime activities have led to an added emphasis on great-power competition. In this competition, conventional approaches to deterrence and warfare are being challenged in a contest that is currently playing out below the level of armed conflict, bypassing U.S. military power as it is conceived today. In recent years, China and Russia have proven adept at keeping U.S. responses muted or irrelevant as they change facts on the ground and at sea. If left unchecked, this effect will cause the eventual erosion of strategically important alliances and the closing of markets across the world that have buoyed U.S. prosperity for decades.

Unlike the Soviet Union during the Cold War, China is an industrial and economic behemoth. To succeed in the long run, America's Navy must therefore be backed by a reinvigorated maritime industry to sustain it in peace and reconstitute it quickly in war. Today, however, the capacity to do this is in question. Additionally, the threat requires a reconceptualization of how the Navy can best pace the tremendous growth in China's navy and the steady improvement of Russia's naval forces. Events like Russia's annexation of Crimea and China's island-building in the South China Sea have made it clear that a new game plan is needed.

To contest the Chinese and Russian theories of victory, all levers of U.S. national power must be employed in a unified effort. For the Navy, this means integrating overseas naval activities with economic and diplomatic initiatives. A hint of what this looks like occurred over the summer of 2020 when increased U.S. naval presence backed clear diplomatic efforts in Southeast Asia. This success illustrates the utility of a new naval statecraft approach to great-power competition.

A naval statecraft approach backed by an appropriately sized, trained, and equipped fleet can contest China's and Russia's comprehensive competition and hybrid use of military force. At the same time, it fosters partnerships that can position the Navy both for prolonged competition and for combat should war become inevitable. Securing the posture advantage is critical for great-power competition and warfighting, a task our allies will be critical in gaining as a force multiplier. Nonetheless, allies cannot replace the U.S. Navy.

In this global contest, because of its mobility and ability to apply sustained force rapidly, the Navy presents an asymmetric challenge to Chinese and Russian theories of victory. This advantage must be pressed, but to do this, the Navy needs to recover from decades of slim and often inconsistent budgets. As a case in point, the so-called post-Cold War peace dividend was financed by cuts in defense, and the Navy's share was substantial; if its budget had only grown with inflation since 1989 compared to the money actually provided, the Navy would have lost over \$1.2 trillion in buying power.

While a larger share of the national budget is clearly needed to confront two great powers, more than money is required. The Navy must also address various cracks in its institutional hull and become a smarter customer as it builds the future fleet. Delays and significant cost overruns like those associated with the Littoral Combat Ship, *Ford*-class ships, and *Zumwalt*-class ships of the lost decade of naval shipbuilding must not be allowed to recur.

In order to prevail in competition with China and Russia, the Navy's sailing directions are clear: compete more effectively in the peacetime day-to-day contest over the principles of a maritime rules-based order while building a fleet that can win wars. To accomplish this task, the Navy must navigate various challenges from competitors and overcome the bureaucratic inertia that is the legacy of a bygone era.

To sustain the Navy in a decades-long era of great-power competition, frameworks and institutions built for an earlier cause (i.e., the Cold War and the global war on terrorism) must be reexamined, refreshed, and updated as needed. To maximize efficiencies in this era, a restructuring not unlike that of the National Security Act of 1947 is warranted. Those reforms set the Department of Defense (DOD) on a course correction in the post-World War II era for the Cold War. The Navy's performance in great-power competition would benefit from a modern review that scrutinizes such defense gospels as the Goldwater-Nichols Act and U.S. Code Title 10, among others. Either way, to get the Navy underway on a new course, urgent action is needed on a comprehensive national maritime program.

Most important, actualizing strategy and meaningful diplomacy requires backing by tangible force. Without needed ships, diplomacy and strategy are nothing more than empty posturing of the sort that China and Russia have exploited in the past and will use again to their advantage to render the U.S. irrelevant. The 2018 National Defense Strategy has been helpful, but more effective implementation of that strategy will require a naval vision and increased resourcing.

The Navy the nation needs for great-power competition requires a fleet of over 575 manned and unmanned ships by 2035. Too often, action and thus strategic impact are deferred to mitigate costs, and the result is often no action. The incipient compliance to a post-Cold War mindset has led to a situation in which the price of inaction is too high. Russia's navy continues to modernize with weapons that hold the U.S. homeland at risk in ways the Soviets never could, and China's navy, backed by a huge and energetic shipbuilding industry, is eclipsing the U.S. Navy in numbers and may soon outclass it.

Sustaining a larger and more capable fleet requires some non-glamorous investments, notably in shipyards, merchant marine, and logistic ships, which are too often sidelined. Congress and the Navy have begun the \$21 billion 20-year Shipyard Infrastructure Optimization Program (SIOP), which is helpful but not enough to meet the Navy's current maintenance needs, let alone requirements for a larger fleet. Additional shipyard capacity

is critical; at a minimum, one additional public shipyard is necessary to service the Navy's vital nuclear fleet on the West Coast where the balance of the fleet operates.

To get the attention of our competitors, action must be keyed to the near term. In the first five years, a comprehensive naval program would require an additional average of \$12.3 billion annually over current shipbuilding, operations, and infrastructure budgets. This approaches historical precedent set in the 1980s Cold War naval buildup and is mindful of today's budget and resource realities. With these added resources, new ship designs could progress to production, shipyard expansion could begin, the merchant marine could grow, and the fleet could surge forward into decisive theaters like the South China Sea and Eastern Mediterranean with the numbers and capabilities like multi-static radar and autonomous ships that are needed to force China and Russia off their game. This cannot be achieved with a hollow force.

Just as urgently needed is recapitalization of the nation's maritime industry and merchant marine, which play critical but underappreciated roles in the nation's security. If this is not done, the Navy will have to rely on questionable foreign shipping crewed by people who are likely unwilling to sail critical munitions, parts, and people to the front lines of a conflict with China and Russia. Action is needed to secure the nation's maritime industry as part of a national effort to regain international competitiveness in this strategic sector of the U.S. economy, which is vital both to our prosperity and to our security.

To summarize, the following actions need to be taken to ensure that the Navy can protect America's vital interests in an era of great-power competition:

- Standing naval task forces should be established in the South China Sea and Eastern Mediterranean in order to sustain a larger naval presence to actualize a proactive strategy of great-power competition.
- The Navy should conduct a large-scale exercise and amphibious demonstration with partner nations in the first island chain as quickly as possible, optimally in 2021, both to provide invaluable lessons for building the future fleet and to signal the beginning of an invigorated naval strategy.
- To meet the Chinese and Russian naval challenge, the Navy will need to build a 575-ship battle fleet by 2035 that includes 25 percent

unmanned vessels and several new classes of warships (e.g., escort aircraft carrier) for operations under Chinese anti-access and area denial (A2/AD) threats.

- To avoid costs overruns and delays, the Navy must become a smarter customer in its shipbuilding and expand its capacity for in-house warship design and building expertise, which has been overly outsourced.
- It is estimated that from fiscal year (FY) 2023–2035, building, operating, and maintaining a 575-ship fleet will cost \$122.76 billion more than a budget that is currently projected to grow only with inflation. When necessary growth in shipyard recapitalization and expansion are taken into account, the total cost rises to \$148 billion over 13 years (an average additional \$11.3 billion per year).
- Without action, the merchant marine and U.S.-flagged commercial fleets will remain unable to meet the requirements for wartime sealift. Expanding training capacities and stipends to commercial vessels would likely cost an additional \$1 billion a year to address shortfalls.

In the final analysis, the outcome of a future war will be determined before the fighting starts; hence, the better postured, resourced, and trained force wins. This means that keeping the Navy strong is the most critical mission. To this end, the following actions should be taken:

- A national commission with members drawn from industry, maritime communities, and government maritime agencies should be established to examine how the nation's comprehensive maritime leadership can be regained.
- A maritime czar should be named and tasked with coordinating the execution of a comprehensive national maritime rejuvenation program.
- The Department of Defense must reform several internal processes to ensure that America's naval presence is optimally employed and opportunities to enhance overseas access to ports and infrastructure (e.g., recent offers by the Republic of Palau and Papua New Guinea for basing) are not missed.

Introduction

Despite wars and rising tensions, the Navy has shrunk from its height of 594 ships in 1987 during President Ronald Reagan's Cold War buildup to 279 ships, where it has roughly plateaued. Today, to confront two global revisionist powers, China and Russia, in what is being called great-power competition, our Navy maintains approximately 100 ships at sea with a total fleet of only 298 ships. While Russia's navy has remained focused on maintaining a dangerous submarine fleet and has added lethal Kalibr cruise missiles to its smaller surface ships,¹ China's navy has grown and modernized at a remarkable rate: over 300 ships today and on track for more than 425 by 2030.² In fact, the growth of the People's Liberation Army Navy (PLAN) has exceeded all analysts' expectations, and the PLAN's remarkable modernization is likely to continue.³

Despite bipartisan support for a larger Navy and consensus regarding the return of great-power competition, the Navy seemingly cannot break through a glass ceiling of 300 ships. Moreover, as China and Russia have developed effective new theories of victory, the Navy's response has languished. While the Navy has been struggling to field new concepts of operations, deploy new capabilities, and train the leaders it needs for this era, Russia has been busy reordering its "near abroad" into a sphere of influence while undermining U.S. and North Atlantic Treaty Organization (NATO) interests. Meanwhile, China is compelled by demographic pressures and a quest for Chinese Communist Party (CCP) legitimacy to deliver continued prosperity to its populace and pursue unification with Taiwan. These pressures are driving the CCP to build a modern military able to contest the U.S. before its perceived window for success closes in the coming decade.

Failure to meet these challenges head-on will cede the maritime domain and its associated rules-based order to China and Russia as these two revisionist powers increasingly coordinate maritime operations, such as their combined July 2019 aerial circumnavigation of the disputed Takeshima/Dokto Island in the Sea of Japan.

A strong Navy has been a bedrock of America's security, as well as an assurance of its prosperity through secure trade. To ensure that this remains the case, the nation urgently needs to build, train, and sustain a Navy that can compete effectively in peacetime and win in war.

The goal of The Heritage Foundation's Rebuilding America's Military Project (RAMP) is to provide a practical approach to reconstituting U.S. military power for future conflict with flexibility for addressing the

TABLE 1

Navy Fleet Design

	Starting Point	Author's Recommendation			Navy Plan (Dec. 2020)		Range as per Future Naval Force Study
		2023	2028	2035	2023	2035	
Unmanned (LUSV, MUSV, XLUUV)	0	9	48	136	2	110	143 to 242
Aircraft Carriers (CVN, CVNE, CVS)	11	11	12	15	11	11	8 to 17
Large Surface Combatant	91	103	111	94	92	86	73 to 88
Small Surface Combatant	30	32	38	56	37	58	60 to 67
Logistics and Support Vessels	63	71	98	135	70	96	96 to 117
Submarines (SSBN, SSGN, SSN)	68	78	77	82	72	74	84 to 90
Amphibious Warships	33	34	42	57	28	52	61 to 67
Total Without Unmanned	296	329	378	439	310	377	382 to 446
Total	296	338	426	575	312	487	525 to 688

SOURCES: Office of the Chief of Naval Operations, "Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels," December 9, 2020, https://media.defense.gov/2020/Dec/10/2002549918/-1/-1/1/SHIPBUILDING%20PLAN%20DEC%2020_NAVY_OSD_OMB_FINAL.PDF (accessed February 10, 2021), and author's analysis.

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unknown. This installment of the RAMP project examines the U.S. Navy and includes recommendations for great-power competition across the spectrum of rivalry, from peacetime through warfighting. For the Navy to be effective in this competition, its operations and investments must be informed by and synchronized across all of the nation's levers of maritime power and influence.

I. The Navy's Mission

As of February 9, 2021, the Navy was comprised of 297 warships, manned by 336,978 active-duty and 101,583 reserve officers and sailors stationed across the globe. For the past 40 years, the Navy has maintained approximately 100 warships at sea, and as the overall size of the fleet has dwindled, this has meant longer deployments and greater operational demands on both ships and personnel. Each sailor and officer represents a significant investment in capital and time for effective operation of the fleet—an investment that must not be squandered and, if lost, cannot easily be replaced.

Compounding the Navy's strategic and operational challenges is a loss of confidence caused by a series of events. The never-ending "Fat Leonard" influence-peddling scandal,⁴ a series of serious collisions in 2017, and frequent senior leadership changes in 2019 and 2020 have taken their toll on morale and effectiveness. At a time when the Navy desperately needs visionary leadership, turmoil in the most senior ranks began with the last-minute withdrawal of prospective Chief of Naval Operations (CNO) Admiral William Moran in August 2019. Then came the firing of the Secretary of the Navy in November 2019, followed by the acting Secretary of the Navy's departure in April 2020. In addition, the lack of an articulated, coherent maritime vision for great-power competition contributed to the takeover of the Navy's future fleet building plan—the Integrated Naval Force Structure Assessment (INFSA)—by the Secretary of Defense in mid-2020.

At the same time, the challenges confronting the nation from China and Russia are intensifying, and both countries will continue to pursue their interests against ours at sea. They will not allow the Navy the luxury of a timeout to sort out either its culture or its seamanship. Real action, propelled by leadership with a vision and the fire to drive the Navy forward, is needed *today*. Specifically, in order to regain its leading role, the Navy must:

- Restore public confidence in its professionalism and seamanship while competing more effectively in the peacetime day-to-day contest over the principles of a maritime rules-based order.
- Develop, build, and sustain a fleet that can win wars and be reconstituted quickly both in war and between wars.

Today's need for a re-conceptualized and larger Navy is driven largely by the tremendous growth in China's navy and the steady improvement of Russia's naval forces. Although this point enjoys bipartisan recognition, it has yet to be matched with a vision of how and with what forces the Navy is to compete in great-power competition. Without a clear and accessible vision of "the Navy the nation needs," the effort to expand and train the future Navy from today's 298 ships will falter in the headwinds of a questioning Congress, distracted leadership, and a confused electorate.

II. The Competition

Since the end of the Cold War, assumptions based on U.S. preeminent military and economic power have encouraged generally passive or reactive

national security policies. The production of the 2017 National Security Strategy and 2018 National Defense Strategy signaled that such assumptions no longer inform competitive approaches to China and Russia. The 2017 National Security Strategy states that China and Russia are using economic, political, and military means to shape a world that is antithetical to U.S. values and interests.⁵ The 2018 National Defense Strategy further makes clear that China and Russia are the foremost challenges, necessitating our commitment to long-term strategic competition.⁶ Contemplating a new Cold War, it is likewise instructive to weigh the opportunity costs as Derek Leebaert has done in his study of the Cold War, *The Fifty-Year Wound*.⁷

Based on such lessons, successful great-power competition today, specifically with China, requires a comprehensive, coherent approach that, as Patrick Cronin and Ryan Neuhard argue, encompasses the economic, legal, psychological, military, and information spheres.⁸ The Navy must participate in this wider arena if it is to be an effective element of the nation's great-power competition struggle.

National security strategy is evolving to meet the strategic changes of the recent past, and shifting the Navy's focus will not be easy. It has been almost 30 years since the U.S. had to contend with the Soviet Union in the Cold War. The challenge today is compounded as we confront two great-power competitors: Russia and China. Simply repeating Cold War approaches is unrealistic; China is integrated into the world economy, and Russia is unconstrained by ideology.

As the U.S., China, and Russia vie for influence across the world, preparing for conflict is prudent. At the same time, we must now deter one opportunistic great power while we are in conflict with the other. This makes it important that the Navy be given the tools it needs to constrain future great-power confrontations geographically, as well as in duration and scale, in order to husband needed resources. This also requires that the Navy's strategic framework and force design reflect a deep understanding of competitors' strategic calculus as well as their maritime forces.

A. Russia

In 2013, General Valery Gerasimov, Chief of the Russian General Staff, penned an article on hybrid warfare that came to be known as the Gerasimov Doctrine.⁹ The doctrine is an articulation of hybrid warfare as the synchronization of hard and soft power transcending peace and war. The article and the implications of Russian hybrid warfare were on grand display during the 2014 Ukraine crisis when "little green men" secured and then ensured

Crimea's annexation by Russia.¹⁰ Yet the origin of this particular Russian doctrine actually lies in the articulation of a new and forceful Russian foreign policy in 1996 when Yevgeny Primakov became Foreign Minister.¹¹ In 1998, he would become Prime Minister and would serve until 2000.

The more appropriately titled Primakov Doctrine has animated recent Russian strategic actions, most notably in Ukraine, Syria, and Libya. Ominously, following a flawed August 2020 Belorussian presidential election, Russian hybrid approaches may have been at work in the sustained massed protest in the Belorussian capital of Minsk. Military power is a vital element of this doctrine, and the Russian Navy's role was on display in the Sea of Azov on November 25, 2018, when it captured Ukraine naval vessels and sailors and deployed an aircraft carrier strike force in the Eastern Mediterranean to support operations in Syria. This age-old Russian approach was recently articulated by Gerasimov: "A transition from sequential and concentrated actions to continuous and distributed ones, conducted simultaneously in all spheres of confrontation, and also in distant theaters of military operations is occurring."¹²

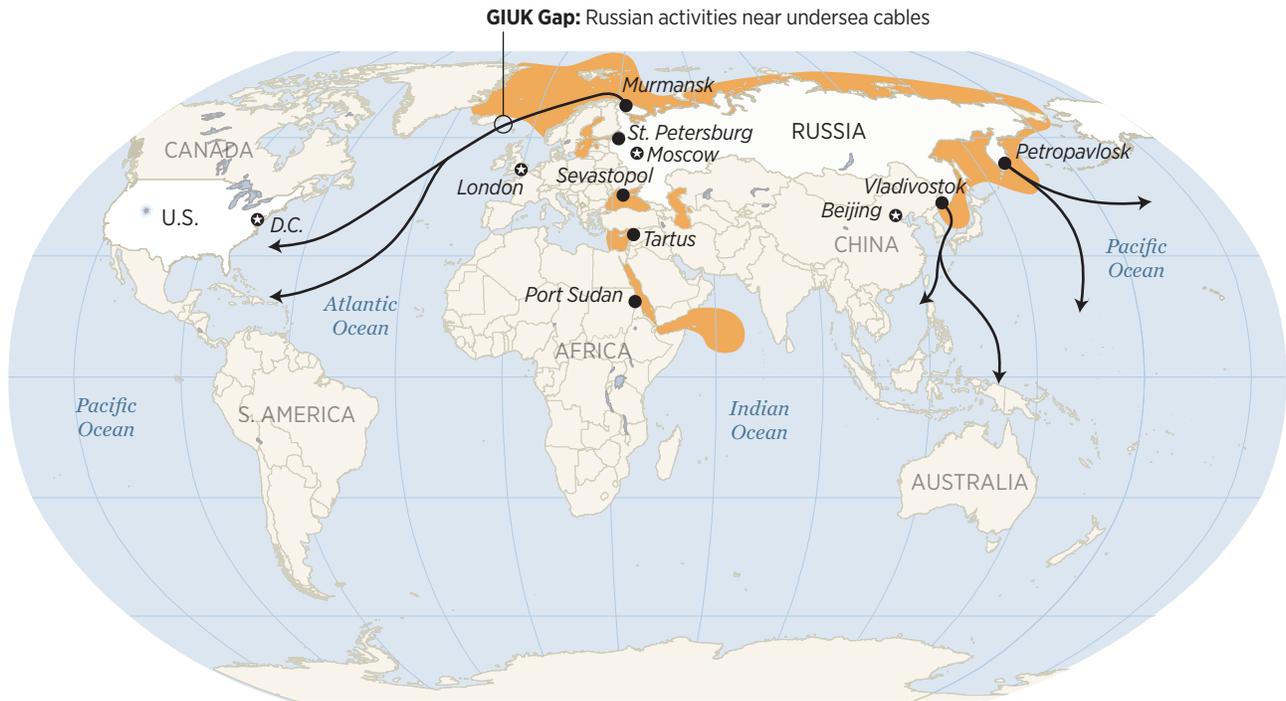
Throughout Russian history, from Catherine the Great through the Soviets, attempts were made to secure lasting footholds in the Eastern and Central Mediterranean. Securing such a position enables Russia to threaten the North Atlantic Treaty Organization's (NATO) southern flank in order to implement a counter-encirclement strategy. In line with Czarist Russian thinking, since 1964, the Soviets have maintained the 5th Eskadra (squadron) in the Eastern Mediterranean, ostensibly as a regional bulwark to defend their southern flank from NATO.¹³

Following the collapse of the Soviet Union, Russia made certain that it retained its access to the region. However, not until its September 2015 entry into Syria's civil war had there been a significant, prolonged Russian naval presence there. To sustain its renewed regional presence, Russia made a deal allowing it to operate up to 11 warships out of its only overseas naval base at Tartus, Syria, until 2066.¹⁴ This base gives the Russian Navy both a springboard for sustained operations further afield and the potential to diminish NATO's relevance in addressing broader European security concerns such as the flow of refugees from Libya and Syria.¹⁵ Russia has since expanded its posture with bases straddling the strategic Suez Canal and an agreement with Sudan to station up to four naval warships, some of them nuclear powered, at Port Sudan on the Red Sea.¹⁶ Its ships and submarines with 1,000-mile-range Kalibr cruise missiles support an active counter-encirclement strategy that burnishes Russian great-power status while weakening the unity of NATO.

MAP 1

Russian Naval Activity

■ Operating areas — Deployments outside normal operating areas



SOURCE: Heritage Foundation research.

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The Russian Navy today operates out of bases on the Arctic Ocean, Baltic Sea, Black Sea, Caspian Sea, and Pacific Ocean and one at Tartus, Syria. Its fleet consists of one aircraft carrier, four cruisers, 16 destroyers, 14 frigates, 10 ballistic missile submarines, 48 other submarines, and 105 small surface combatants.¹⁷ This force is concentrated in four fleets (the Northern, Baltic, Black Sea, and Pacific Fleets) and one flotilla (the Caspian Flotilla).¹⁸ Despite atrophying to a quarter of its Soviet strength, and despite warships that are 20 to 25 years old on average, both training and operations have improved steadily.¹⁹

Russian Naval operations are routinely conducted in the Barents Sea, Northern Pacific Ocean, Baltic Sea, Black Sea, and (since 2015) Eastern Mediterranean. Long-range deployments occur infrequently to the Indian Ocean, South China Sea, and Caribbean and to the eastern and western seaboard of the United States. In December 2017, Rear Admiral Andrew Lennon, Commander, Submarines NATO, highlighted troubling Russian activities in the vicinity of undersea cables used for critical communications

and \$10 trillion in financial transfers.²⁰ As the Northern Sea Route becomes an economically viable route for shipping, Russian infrastructure and basing have progressed to support a significant maritime presence that could impede freedom of navigation.

For the U.S. Navy to confound Russian hybrid operations, it must be able to challenge Russian covert military activities and efforts to sow discord among allies in the early phases of a Russian campaign. This requires a naval presence that is able to outclass nearby Russian naval forces in a limited confrontation, signal commitment to allies, and conduct sanction enforcement and time-sensitive but limited strike operations.

B. China

In Asia, long-standing assumptions and security constructs are being questioned and overturned. Japan, once uncertain about U.S. security and diplomatic assurances, under former Prime Minister Abe's leadership rejected pacifism in favor of a more proactive, comprehensive regional strategy. Meanwhile, years-long protests and suppression in Hong Kong have all but killed the "One Country, Two Systems" premise for peaceful unification between China and Taiwan. In this environment, Taiwan's January 2020 national elections renewing President Tsai Ing-wen's leadership have further encouraged Beijing's suspicions that Tsai's government would resist the long-term goal of unification more actively. In the wider context of great-power competition, Beijing's military modernization and expansion, diplomatic efforts to isolate Taiwan, and diversification of economic relations through the Belt and Road Initiative (BRI) support the stated Chinese objective of unification with Taiwan, not to exclude the use of force.

The Chinese Communist Party's (CCP) main "strategic direction" is unification with Taiwan, which informs the CCP's military modernization and expansion as measured against the U.S. military.²¹ It is an elusive goal that requires the Peoples' Liberation Army (PLA) to take on the U.S. and its network of Asian allies and remains beyond the PLA's ability—for now. The CCP has therefore pursued an indirect and long-term approach to supplant the U.S. as a regional economic and military power, thereby setting the conditions for the successful return of Taiwan, preferably without firing a shot.

This approach is backed by impressive anti-access and area denial (A2/AD) capabilities that are intended to deter U.S. intervention as a part of China's "counter-intervention" strategy.²² The key to this approach is dominion over the South China Sea and its critical sea-lanes, the greater consequence of which is making China the hegemon of the Indo-Pacific.²³ Should the U.S.

TEXT BOX 1

The Shoal That Changed a Nation

On April 10, 2012, a series of events began that would overturn decades of internal thinking about China and its adoption of Western norms in dispute resolution. On that day, Philippine Navy ship BRP *Gregorio del Pilar* entered Scarborough Shoal in the South China Sea to evict a large number of Chinese fishermen. Those fishermen were poaching coral and giant clams in the large lagoon and immediately radioed to Chinese authorities for assistance. Two Chinese cutters arrived just as Philippine authorities were arresting the fishermen. They prevented the *Pilar* from exiting the lagoon, and a months-long standoff ensued that drew in U.S. diplomats and the U.S. National Security Council.

As negotiations dragged on, China brought pressure on Philippine authorities to relent. A banana embargo, for example, affected 14 percent of Philippine growers and cost the Philippines more than \$53 million in lost trade with China. By the end of May, after weeks of mediation, more than 100 Chinese trawlers had amassed in and

around the lagoon during China's annual fishing moratorium.

While its role was never publicly acknowledged, the U.S. helped to broker a deal under which both sides would withdraw ahead of an approaching typhoon on June 15. However, the Chinese vessels never left and retain effective control today. The Philippines eventually entered into formal arbitration over disputed maritime claims against China, and China began a massive island-building campaign.

That China had reneged on an agreement involving senior U.S. diplomats and policymakers was sufficiently embarrassing that it forced the U.S. to reassess its approach to China. Three years later, in October 2015, the U.S. conducted its first public challenge to China's excessive maritime claims when the destroyer USS *Lassen* sailed unannounced within 12 miles from Chinese-occupied Subi Reef in the South China Sea. Since then, the U.S. has continued to conduct such operations.

SOURCES: Michael Green, Kathleen Hicks, Zack Cooper, John Schaus, and Jake Douglas, "Counter-Coercion Series: Scarborough Shoal Standoff," Center for Strategic and International Studies, Asia Maritime Transparency Initiative, May 22, 2017, <https://amti.csis.org/counter-co-scarborough-standoff/> (accessed December 6, 2020); Permanent Court of Arbitration, "The South China Sea Arbitration (The Republic of Philippines v. The People's Republic of China)," <https://pca-cpa.org/en/cases/7/> (accessed December 30, 2020); Sam LaGrone, "Confusion Continues to Surround U.S. South China Sea Freedom of Navigation Operation," U.S. Naval Institute News, updated November 6, 2015, <https://news.usni.org/2015/11/05/confusion-continues-to-surround-u-s-south-china-sea-freedom-of-navigation-operation> (accessed December 6, 2020).

continue its past reactive or relatively passive approach to this peacetime contest, it will risk miscommunicating its interests, which in turn could lead to miscalculation on China's part and lead to a long and costly war.

China's provocations in the South China Sea have increased markedly in the years since the departure of U.S. forces from their Philippine bases in 1991. They began with China's occupation and construction of facilities on the Philippines' Mischief Reef in 1994, were further expanded in 1999, and culminated in 2015's massive island-building campaign.²⁴ Such activities contribute to China's "counter intervention" strategy in two key ways: They bolster the isolation of Taiwan both diplomatically and militarily, and they enhance the PLAN's posture in case of war over Taiwan. Despite promises

to the contrary made by Chairman Xi Jinping to President Barack Obama in 2015, China now has an archipelago of manmade islands with naval and air bases backing what Secretary of State Michael Pompeo has called China's illegal maritime claims.²⁵

Similar to Russia's aversion to NATO, China has used U.S. ambivalence regarding maritime disputes to weaken U.S. security partnerships and undermine Association of Southeast Asian Nations (ASEAN) unity. And the cracks are growing: The issue has caused a split in ASEAN's 10-nation consensus,²⁶ Philippine President Rodrigo Duterte has walked away from a win in maritime arbitration against China,²⁷ and Thailand has drifted deeper into China's orbit with arms purchases since the downgrading of the U.S.-Thai military relationship following a 2014 coup.²⁸

This trend is fueled by China's growing military presence and significant and expanding economic inroads, spearheaded by the BRI's Maritime Silk Road and Silk Road Economic Belt. Under this initiative, 24 percent (\$147 billion) of all BRI investment and construction contracts through 2018 have gone to Southeast Asia, led by Singapore (as a financial hub), Malaysia, Indonesia, and Laos.²⁹ How such events play out with ASEAN is of utmost economic importance. ASEAN, for one thing, is the U.S.'s fourth-largest trading partner after Canada, Mexico, and China as well as China's second-largest trading partner after the U.S. With ASEAN's unity uncertain and regional partners questioning U.S. commitments in the face of increasingly aggressive Chinese maritime activities, the South China Sea is clearly a critical maritime arena for great-power competition.

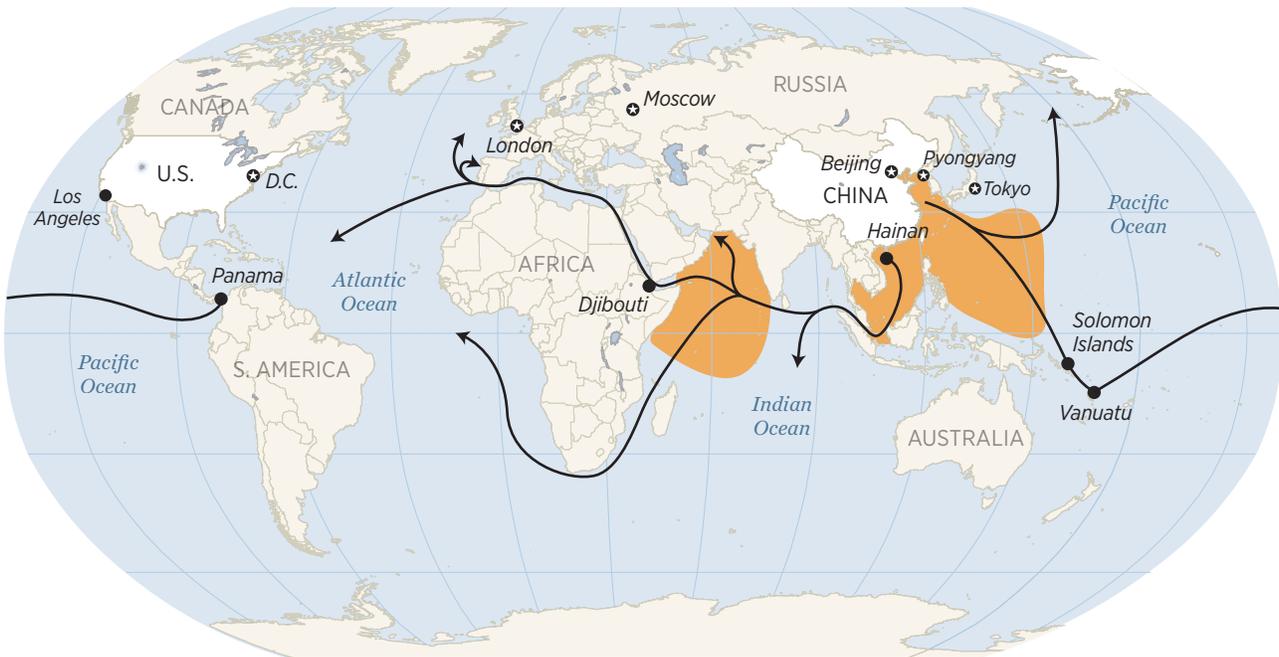
Moreover, the U.S. Navy will have to contend with a large, modern, and global PLAN that today operates over 350 warships in three fleets: North Sea, East Sea, and South Sea. Since then-President Hu Jintao's 2004 "new historic missions" to support China's overseas interests, the PLAN has developed a global naval presence and its first overseas base in Djibouti. China has joined a small group of nations that produce and deploy their own aircraft carriers. A future carrier is expected to be nuclear powered. For now, PLAN aircraft carriers are conventionally powered and include two operational carriers and a third (the second to be indigenously built) that is expected to be operational by 2024.³⁰

In the Western Pacific, PLAN operations include frequent deployments into the Philippine Sea and the Central Pacific, as well as (since 2008) a persistent naval counter-piracy force in the Indian Ocean. In conjunction with counter-piracy operations, the PLAN routinely deploys to the Mediterranean, Atlantic, and Caribbean.³¹ Additionally, mirroring U.S. hospital ships in U.S. Pacific Partnership humanitarian missions led by the USNS *Mercy*

MAP 2

Chinese Naval Activity

■ Operating areas — Deployments outside normal operating areas



SOURCE: Heritage Foundation research.

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and USNS *Comfort* in Enduring Promise missions, the PLAN has sent its own hospital ship, the *Peace Ark*, on similar missions in the Central Pacific, Africa, Latin America, and the Caribbean.³² The PLAN's global reach is enabled by an expanding network of ports made possible in part by China's Maritime Silk Road investments and a growing fleet of modern logistics ships. Featuring long-range strike weapons, PLAN ships have the ability to hold at risk U.S. interests in the Pacific and Indian Oceans.³³

However, in most day-to-day interactions, the U.S. will have to contend with the Chinese Coast Guard and Maritime Militias, not the PLAN, as it tries to protect U.S. maritime interests. Successful interaction with these forces is imperative if the Navy is to secure the maritime rules-based order in Asia.

These forces have played an important role in China's assertion of its expansive maritime claims. Employing an effective "cabbage" strategy, Maritime Militia-led fishing fleets overwhelm a defender while using the

Chinese Coast Guard ostensibly to enforce Chinese law and contain reactions by the defender at a planned disputed maritime location.³⁴ A PLAN warship is typically nearby just over the horizon to deter the defender from military escalation. Investments in a new \$6 million Maritime Militia command center in the Paracel Islands and acquisition of 750-ton, 193-foot vessels will outclass responses from the Philippines and improve coordinated operations involving the hundreds of Maritime Militia vessels, the PLAN, and the Chinese Coast Guard.³⁵

C. Multitasking

The U.S. Navy must focus on the global, systematic threats inherent in Russian and Chinese revisionist strategies that have the wherewithal to effect changes that are antithetical to U.S. interests. Iran, North Korea, and violent extremists can cause much harm, but the implications of that capability are not necessarily either systemic or existential. For this reason, prioritizing investments to compete with China and Russia will give the Navy the presence and capability it needs to support wider Department of Defense (DOD) efforts involving these three other threats. Nonetheless, the Navy will need to multitask and be postured to respond to “black swan”³⁶ events while maintaining the capacity for great-power competition—which brings us back to another complicating factor: the China–Russia nexus.

On June 5, 2019, Chinese President Xi Jinping and Russian President Vladimir Putin issued a joint statement in Moscow committing both countries to an upgraded “comprehensive strategic partnership for a new era.”³⁷ Days later, a Russian destroyer had an unsafe and unprofessional interaction with a U.S. guided missile cruiser, the USS *Chancellorsville*, in the Philippine Sea. Then, in July 2019, Russian and Chinese long-range bombers, operating together for the first time, circumnavigated Takeshima/Dokto Island in the Sea of Japan. Possession of this island is a subject of dispute between Japan and South Korea, and the ensuing recriminations between allies Japan and South Korea regarding their armed forces operating in disputed airspace were more troubling than was the reaction of these allies to China’s and Russia’s activities.³⁸

With two great-power competitors, the Navy will have to balance and synchronize its activities while not becoming distracted by Chinese and Russian efforts to achieve opportunistic gains on opposite ends of the world. This will be difficult because these two revisionist powers appear to be increasingly intent on coordinating maritime operations. At the same time, as evidenced by Russia’s military arms sales to Vietnam, Chinese

and Russian interests do not always align.³⁹ Moreover, China is on track to dedicate over \$1 trillion to developing its Maritime Silk Road, beginning in Southern China and ending in Europe, by 2027.⁴⁰

To employ the Navy to greatest effect in this global strategic contest over a rules-based order and influence, a new framework is needed. The Goldwater–Nichols Department of Defense Reorganization Act of 1986 has done much to rationalize the employment of a joint force. However, a consequence of creating land-based geographic combatant commands (COCOMs) has been a diminishment of the Navy’s role in executing a global maritime strategy. Naval statecraft, by connecting naval operations across the whole of government on a global scale, can provide such a framework. It leverages naval power as an active element of statecraft while at the same time ensuring the ability of U.S. forces to dominate in the event of larger conflict.⁴¹ A hint of this framework played out recently in the South China Sea.

III. Naval Statecraft

Great-power competition below the level of armed conflict renders the might of the U.S. military as conventionally employed strategically irrelevant. The Navy obviously must retain the ability to fight and win wars, but this capability is insufficient without development of an approach that enables the Navy to win the peacetime contest. To win this contest, the Navy must be able to synchronize its operations, forward access and basing, military sales, and interoperability with partner navies while working more effectively across the wider U.S. government.

In recent times, our Navy has played a key strategic role in effecting peacetime change: Its response to 2008’s cyclone Nargis, for example, began a chain of events that led to normalized relations and democratization in Myanmar, and 2004’s tsunami relief efforts in Indonesia led to greatly improved relations and renewed military engagement.

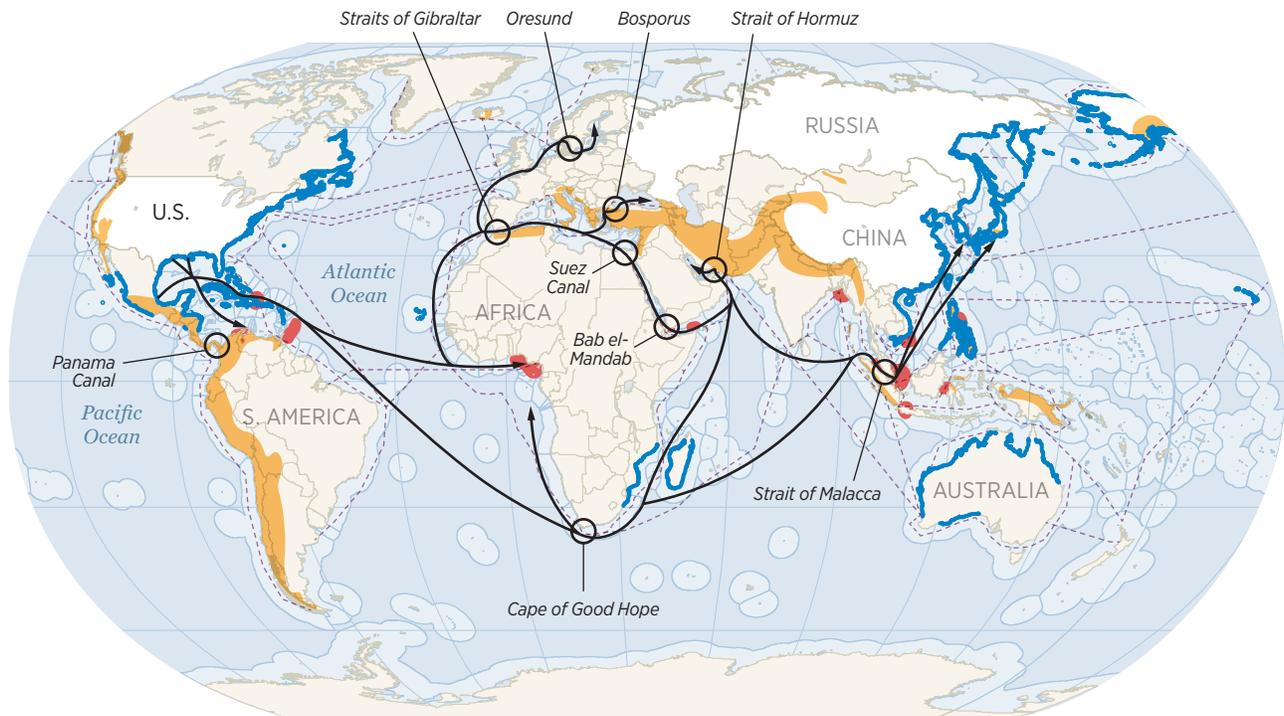
The key to success in great-power competition will be the ability to seize the initiative through an active strategy. For the Navy, this means operating in a comprehensive framework for proactive maritime activities in decisive maritime theaters. A recent analysis of disputes short of war from 1991–2018 provides several insights into how this can be done.

- Specific demands (e.g., withdrawal from seized territory and cessation of internal violence) have a significantly greater chance of success when military threats are not publicly stated, thereby providing face-saving paths to de-escalation.

MAP 3

Other Key Areas

- Areas of significant pirate activity
- Areas of significant seismic activity
- Coastlines vulnerable to tidal surge from cyclones
- Exclusive economic zones
- Major energy transportation routes
- Major chokepoints
- Major undersea cables



NOTES: Locations are approximate.

SOURCE: Heritage Foundation research.

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- Unmistakable increases in military presence geographically proximate to a specific dispute are most effective, but they are undermined if done in conjunction with economic sanctions that signal the unlikelihood of U.S. military action.
- Most important, actions to put at risk the competitor decision-maker's values and goals must be taken early.⁴²

Additionally, an “eyes-on” naval presence provides an unmistakable commitment and ready media fodder to fuel strategic counter narratives. Resources such as these can be useful against Russian mercenaries (e.g., the

Wagner Group) and China's energetic new breed of "Wolf Warrior" diplomats.⁴³ Naval forces acting in concert with economic and diplomatic levers in decisive theaters can hold at risk key goals of Chinese and Russian leaders and shape the maritime behaviors in a theater while also being positioned to respond to or preempt evolving challenges.

In 2020, for example, a remarkable months-long display of U.S. maritime power occurred in the South China Sea. It started in late April with the USS *Gabrielle Giffords* patrolling in the vicinity of the Panamanian-flagged *West Capella* as it conducted deep-water surveys in Malaysia's exclusive economic zone (EEZ), an area in which the waters and rights are disputed by China. Operational tempo built to include Air Force bomber overflights in May and culminated in July with sustained dual aircraft carrier South China Sea operations, a first since 2012.⁴⁴

Amid all this, on July 13, Secretary of State Michael Pompeo issued the first clear statement of U.S. views on China's claims: "they are unlawful."⁴⁵ And instead of merely repeating long-standing talking points about "supporting freedom of navigation and overflight" as rationale for these operations, Commander, Seventh Fleet, Vice Admiral William Merz added, "The U.S. supports the efforts of our allies and partners in the lawful pursuit of their economic interests."⁴⁶ Given the economic nature of the *West Capella's* survey operations, such statements, adroitly matched with a naval presence, resonated with our partners in tangible ways. This is demonstrated by Indonesia's subsequent naval drills in the South China Sea,⁴⁷ the Philippines' decision to leverage its 2016 maritime arbitration win against China,⁴⁸ Malaysia's protest note to the United Nations regarding China's excessive claims,⁴⁹ and Vietnam's support while serving as ASEAN chair.⁵⁰

ASEAN nations do not want to choose between the security offered by the U.S. and the largesse on offer from trade with China or Beijing's Belt and Road Initiative. A better U.S. offer is needed to tip the scales. Supporting the Free and Open Indo-Pacific strategy,⁵¹ naval statecraft provides a framework for the Navy's active role in providing such a new deal. By leveraging economic interests through such mechanisms as the Development Finance Corporation (DFC), rebranded by the BUILD Act,⁵² investments informed by an enabling naval presence and the Navy's access requirements can bolster a cost-effective forward presence while also expanding mutually beneficial trade.

Initially, this becomes possible as naval presence becomes associated with economic prosperity through maritime security and direct financial inputs related to a forward presence. For the Navy, the maritime security

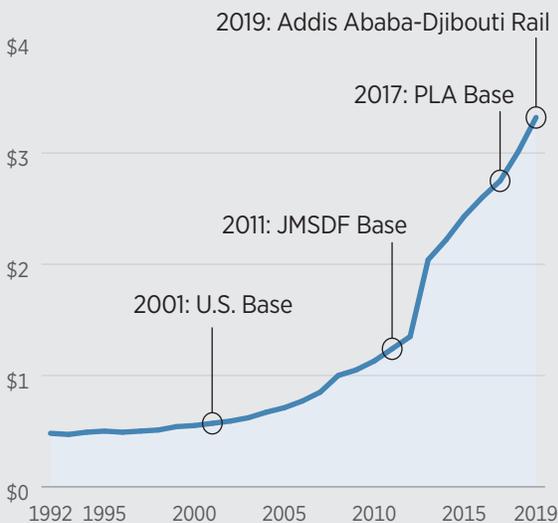
TEXT BOX 2

Naval Statecraft Case Study: Djibouti

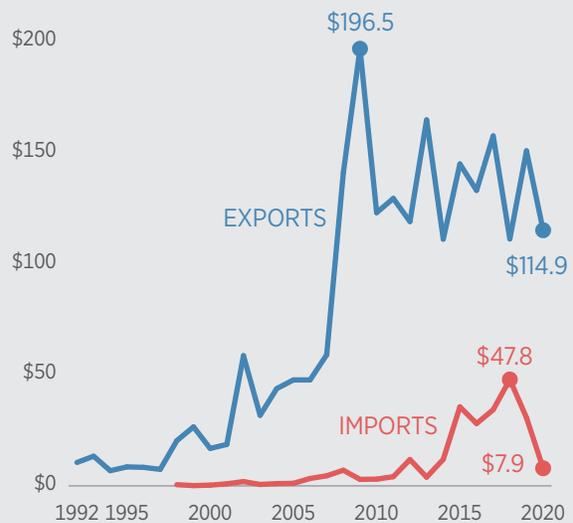
CHART 1

Djibouti GDP, Imports, and Exports

GDP (BILLIONS OF U.S. DOLLARS)



IMPORTS AND EXPORTS (MILLIONS OF U.S. DOLLARS)



SOURCES: The World Bank, "GDP (Current US\$)," <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD> (accessed December 12, 2020), and U.S. Census Bureau, "Trade in Goods with Djibouti," <https://www.census.gov/foreign-trade/balance/c7770.html> (accessed December 12, 2020).

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The in-country U.S. presence at Camp Lemonnier originally supported operations in Afghanistan in 2001 without a focus on economic development or governance projects. Today, in addition to the U.S. Agency for International Development (USAID) and the U.S. military, several other nations and agencies are also taking advantage of the country's key geographic location. For example, prepositioning food stocks there has reduced the delivery time to African destinations by 75 percent from U.S. warehouses. Additionally, Djibouti's deep-water port of Doraleh is capable of handling post-Panamax vessels and large naval vessels. While the presence of the U.S. military was initially intended to interdict fleeing Al-Qaeda personnel from Afghanistan

in 2001, Djibouti effectively supports regional multinational antipiracy and counter-terrorism operations. Moreover, with the 2018 completion of the Addis Ababa–Djibouti rail, Doraleh serves as Ethiopia's principal port and a hub for future regional economic development.

Djibouti is strategically located for the shipping of natural resources that are vital to East Asia and Europe and has attracted investment from several states. In 2011, Japan invested \$40 million to build its first foreign facility to support antipiracy operations. China's People's Liberation Army also established a base here in 2017.

In 2006, agreements were completed to expand the U.S. facility from 88 acres to 500 acres, employing over 1,200 local personnel to complete the

construction. Such economic inflows undoubtedly helped to secure the 2014 agreement to renew the U.S. base's lease for another 20 years. Based on a 2011 Department of State web page and current World Bank data on foreign direct investment in Djibouti, the presence of several foreign militaries in and near Djibouti has helped to attract approximately \$200 million annually in foreign direct investment, a fifteenfold increase over the 1995–2005 average. This investment has helped to

improve rail and road connections to Ethiopia and makes Djibouti attractive as a central banking and shipping hub for East Africa.

Djibouti's development as a center for regional economic development progresses apace, originally kick-started by inputs from USAID participation and cooperation with the U.S. military. Already, efforts there have advanced economic development significantly, providing a glimpse of what can be achieved when security missions are coordinated with development.

SOURCES: The World Bank, "Data: Djibouti," <https://data.worldbank.org/country/djibouti> (accessed December 3, 2020); The World Bank, "Foreign Direct Investment, Net Inflows (% of GDP)—Djibouti," <https://data.worldbank.org/indicator/BX.KLT.DINV.WD.GD.ZS?locations=DJ> (accessed December 25, 2020); and U.S. Department of Commerce, U.S. Census Bureau, "Foreign Trade: Trade in Goods with Djibouti," <https://www.census.gov/foreign-trade/balance/c7770.html> (accessed December 3, 2020).

that it provides must be cost-effective and have a strategic impact (e.g., that supports maintaining a forward presence in the South China Sea). To be sustainable, benefits must flow to the U.S. electorate as well, notably through beneficial trade at the same time that a host country enjoys the financial inflow that supports a naval presence (e.g., port visits and refueling).

The growth of Djibouti as a strategic base for U.S. military operations in Africa and the Middle East since the attacks of September 11, 2001, provides an excellent example of this. As the U.S. military presence grew, so did trade from the U.S., marking a six fold increase compared to the average of nine years before September 11th. Eventually, Djibouti's success and stability attracted more investors, with the establishment of bases in country by Japan and China in 2011 and 2017, respectively, and the opening of the \$4.5 billion Chinese-built Addis Ababa–Djibouti rail line connecting landlocked Ethiopian markets to seaborne trade in 2018.⁵³ Such activity has been a boon for Djibouti, has provided a modest benefit to U.S. business, and has helped to sustain an important U.S. military base, Camp Lemonnier.

Finally, interoperability with allies and partner navies can also benefit from invigorated security cooperation through military sales, creative new leasing mechanisms, excess equipment transfers, and training missions. In addition, it can facilitate co-production of critical munitions to mitigate domestic production capacity limits, help to ensure greater access to forward bases, and enable mutual support (e.g., maintenance and fueling) of common platforms and weapon systems.

IV. Imperatives for the Navy in Great-Power Competition

To compete with Russia and China more effectively across the spectrum of rivalry, the Navy will need the active support of the Secretary of Defense, the Commander in Chief, and (critically) Congress. To begin this effort, the Navy needs to address various cracks in its institutional hull by invigorating its relationship with Congress and the electorate, rethinking its role in the wider government, and overhauling outdated operational and bureaucratic frameworks.

Building the Navy the nation needs for the new era will take years of sustained effort, investment, and flexibility to adjust as conditions change and competitors react. Such a comprehensive endeavor requires that at least seven key imperatives be addressed.

A. IMPERATIVE #1: Develop a unifying narrative driven by visionary leaders.

The closest thing the Navy has to a comprehensive vision of its future is the combination of a 30-year shipbuilding plan,⁵⁴ an Integrated Naval Force Structure Assessment (INFSA),⁵⁵ and *A Design for Maintaining Maritime Superiority*.⁵⁶ Despite the *Design's* focus on delivering "High Velocity" results,⁵⁷ it was more about long-standing initiatives representing managed incremental change than it was about winning great-power competition.

In December 2020, the Navy released both its latest 30-year shipbuilding plan for a fleet that could reach 546 ships by 2045⁵⁸ and a new naval strategy called Advantage at Sea.⁵⁹ Both argue for a Navy that is able to compete with China and Russia, but the timing of their release at the end of the Trump Administration makes it doubtful that either is likely to have any enduring impact.

In an unusual move, after a meeting with the Navy's leadership in February 2020, the Secretary of Defense delayed the congressionally mandated release of the 30-year shipbuilding plan and the INFSA because of concerns that they would be cost-prohibitive and did not support the goal of achieving a 355-ship fleet by 2034.⁶⁰ Despite the publication of a series of ground-breaking Navy strategies since the end of the Cold War,⁶¹ the Navy has consistently shrunk since 1991 to a plateau of only 298 ships in 2003 where it hovers still.

Better articulation of a future force design informed by a new strategic framework is critical to maintaining better management of changing political realities while simultaneously enabling deeper collaboration across the

whole of government, Congress, and industry. However, without an accessible vision, the effort to expand the fleet beyond today's 297 ships will falter.

The tempo of great-power competition today affords a large organization like the Navy fewer opportunities to learn and adapt. This places a premium on correct metrics for identifying leaders with the right balance of judgment and initiative. Of these, initiative is arguably harder to instill in a large organization because it requires years of cultural change.

British Admiral Horatio Nelson is an example of a leader who got it right. Having trained and selected many of his captains, 12 days before the October 1805 Battle of Trafalgar, he issued a pivotal memo communicating his vision for the impending battle. In it, he explained to his captains in detail how he expected his adversary, Napoleonic France's fleet, to fight and how his fleet would operate. The British went on to sink or capture 67 percent of the French fleet, losing no ships in the process. Nelson had enabled his forces to operate coherently while acting with great initiative independently, thereby winning a historic victory.

Great-power competitors are changing the peacetime status quo to well below the U.S. threshold for conflict. To push back effectively, naval leaders steeped in great-power competition who can be the "captains of change" are necessary as the Navy embarks on a reimagining of its role. The first task should be to publish a modern version of the Nelson's Trafalgar memorandum that articulates a coherent vision of how day-to-day operations and long-term resourcing decisions will come together in today's era of great-power competition.

B. IMPERATIVE #2: Accelerate a new fleet design for contested operations.

For the first time since World War II, the Navy's movement across the Pacific Ocean is being contested. Driven by the rapid modernization and expanding operational presence of the Chinese Peoples' Liberation Army Navy (PLAN), this includes Chinese efforts to gain control of strategically located ports like Fiji, Kiribati, the Solomon Islands, and Vanuatu. Unlike the Cold War contest in the Pacific, in order to deter—let alone prevent—China from achieving its objectives, the Navy must operate under a pervasive and dangerous anti-access and area denial (A2/AD) umbrella of cruise and ballistic missiles that stretches out into the Philippine Sea over 1,000 miles from the China coast.

The Navy will sustain damage operating in this theater of operations, and with limited numbers and capacity to replace lost ships, the ability to

repair and keep today's fleet in the fight will be an imperative. In peacetime, the ability to return a damaged warship to duty expeditiously (e.g., the USS *McCain* after a collision) also signals the Navy's resilience and staying power, even against Chinese efforts to push it out of the region. The dynamic is less disruptive in the Atlantic, where trends point to a return to Cold War anti-submarine and maritime patrol missions in which the emphasis is not so much on the number of platforms fielded as it is on the type of platforms fielded.

The platforms and weapons used by the Navy to project power today reflect an assumption of freedom of maneuver. The proliferation of cruise missiles with creative means of targeting by drones has necessitated longer standoff range for littoral operations. Notable examples of this trend were the September 14, 2019, Houthi rebel cruise missile attacks on Saudi oil facilities using drones for targeting and the September 30, 2016, attack on a United Arab Emirates ship, the former U.S. HSV-2 *Swift*.

Over time, the effect on U.S. carrier operations has been to shift emphasis from sortie rates to range of carrier-launched precision strikes. This is especially true for scenarios involving an adversary with capable air defenses, and the transition is only just beginning. For example, carrier-launched F-35Cs with long-range strike munitions reflect an operational imperative to out-range Chinese weapons. To extend the range of carrier-based strikes, new refueling options provided by the Navy's unmanned MQ-25 tanker aircraft and new standoff munitions with longer operational ranges and new operational concepts can better contest Chinese and Russian forces.

Moreover, in sustaining forward crisis operations, the availability of necessary sealift to move critical material and personnel is in doubt. In September 2019, DOD conducted its largest no-notice sealift activation exercise, Turbo Activation 19-Plus, with 61 ships. Results were troubling but not surprising. The Commander of Transportation Command (TRANSCOM) had testified that there were problems in March 2019,⁶² and a December 2019 exercise after-action report stated that only 39 of the 61 vessels in the Ready Reserve Fleet, which provides sealift for the military, were ready for tasking.⁶³

An additional concern is the Navy's admission in late 2018 that it lacks capacity to escort sealift during combat—this as the Russian and Chinese navies increasingly hold previously secure sea-lanes at risk. It is important to note that Chinese military strategists have made it clear that the Navy's logistics and communications networks will be the first targets in a “paralysis and destruction warfare” campaign.⁶⁴

Today's fleet, reflecting the missions of the past 30 years and the threats with which it has had to contend, remains centered on the carrier strike group, amphibious ready group, and small mission purpose task forces (e.g., theater anti-submarine warfare) or single ships on independent tasking (e.g., exercises and engagement with partner navies). Driven by Russian and Chinese capabilities and the geography of the battle space, naval forces have been adapting their operational concepts as reflected in Expeditionary Advanced Base Operations (EABO) and Distributed Maritime Operations (DMO). As these concepts progress to ever more complex field testing, lessons learned will dictate the need for new platforms and capabilities. It is already obvious that the future fleet will have to incorporate new designs to adapt to the China–Russia challenge.

For a fleet in transition, challenges to the assumptions that have informed force structure and force design should be expected. With this in mind, future force design must overcome legacy architecture while extracting the fullest capability of existing platforms in addressing several challenges. Where this is not possible, new platforms tailored to new missions taking full advantage of evolving capabilities will be needed.

First, the Navy has only limited assets available for convoy escort duty. The Navy does not intend to use battle force ships for convoy duty. There simply are not enough ships available.

The MQ-4C unmanned patrol aircraft, which reached initial operating capability (IOC) as of May 2020, is supposed to replace the Navy's aging EP-3 intelligence aircraft, but development of sensors needed for an anti-submarine role will require significant work. Another potential unmanned platform, the MQ-9B, could operate more easily at lower altitudes and be modified for anti-submarine warfare (ASW).⁶⁵ It also has a potential role in convoy protection, using radar and sensors optimized for ASW such as miniature sonobuoys, currently being developed, to localize hostile submarines. An MQ-4C and MQ-9B with submarine detecting sensors working with existing maritime patrol aircraft such as the Navy's P-8 can hold hostile submarines at risk. However, it may be just as easy to avoid the threat given the ability to detect hostile submarines at adequate range. Once threats are localized by the MQ-4C or rotary-wing MQ-9B, convoys could be redirected while manned P-8 aircraft engage threats with air-dropped torpedoes. To accomplish such an air patrol cordon in the Pacific cost-effectively will require an archipelago of supporting bases.

Second, the Navy has no screen or escort vessel available for sustained operations in the first island chain. Dispersal is a method of defense against the large number of Chinese cruise and ballistic missiles targeting

the Western Pacific. It is one tactic ostensibly to be employed by the large numbers of small amphibious vessels and associated logistics support ships proposed by former Secretary of Defense Mark Esper.

Preventing the large numbers of Chinese aircraft, submarines, warships, and Maritime Militia from intercepting such dispersed U.S. expeditionary forces requires an escort or screen. This takes into account the protection afforded by expeditionary Marine Corps and Army land-based, long-range anti-ship weapons as well as air and missile defenses. However, without a platform capable of sustained air and maritime dominance within the first island chain, it is doubtful that such effect could be provided with manageable risk by existing aircraft carriers operating outside of the first island chain.

On October 6, 2020, the Secretary of Defense hinted at what the screen force could be during a “fireside chat” hosted by the Center for Strategic and Budgetary Assessments (CSBA).⁶⁶ Given past congressional mandates requiring the Navy to field a fleet of no fewer than 11 aircraft carriers, the Secretary’s call for as many as six light aircraft carriers to augment a smaller fleet of *Nimitz*-class and *Ford*-class nuclear aircraft carriers was unexpected.

A light aircraft carrier (CVNE) designed to operate in this highly contested maritime environment in the East and South China Seas is appropriate and necessary. In order to mitigate the need for the additional logistic support (i.e., fuel tankers) associated with added escort ships and to maintain a nimble force in this hotly contested theater of operations, the CVNE should be nuclear powered and employ robust active defenses against cruise and ballistic missile attack.

However, while submarines will play a vital role in the first island chain, control of the sea and defense of expeditionary forces require robust communications that vitiate the stealth that is critical for a submarine’s survival. Moreover, as demonstrated during the Pacific campaigns of World War II, submarines have a mixed track record when it comes to sea denial. A new light aircraft carrier could be cost-effective if designed using existing propulsion systems, hull forms, and support systems. Outside of the first island chain, a second smaller light aircraft carrier (CVS) could be designed for anti-submarine operations utilizing existing LPD-17 hull and propulsion designs already under construction, which could also be built sooner bolstering the Navy’s near-term needs.

With this in mind, CVNE and CVS could prove fiscally feasible and invaluable to the success of the National Defense Strategy. To be clear, a CVNE will be expensive to develop and initially will take eight or more years to construct, while a CVS could be fielded in five years. However, the Navy

has considered such ships before, and that experience should inform new designs. For example, a 2017 RAND study found that a 70,000-ton (smaller than today's 100,000-ton *Ford* class) light nuclear carrier (RAND's CVN LX) could be a viable adjunct to the CVN.⁶⁷ While the RAND study did not evaluate a light carrier in a screen role, it should inform the design of a future light aircraft carrier optimized for sea control in the first island chain. A CVNE designed for first island chain operations should have resilient defenses (i.e., laser and rail gun for cruise and ballistic missile defense); draft less than 35 feet for access to a wider array of ports and waterways; top speed in excess of 30 knots; and the ability to deploy rapidly between 40–60 unmanned and 10–15 manned aircraft for local air dominance and sea control. Building a CVNE and CVS is not a cost-benefit proposition for a cheaper CVN replacement. Rather, such ships should be considered as augmenting CVNs, expanding the Navy's depth of at-sea airpower capacity and fulfilling new missions. That said, if not managed well, there is a risk that the added demand on existing supply chains could cause unexpected costs and delays and strain existing shipbuilding programs.

Current logistics ships and amphibious warships are too large, crewed by civilians, or of questionable survivability for combat operations in the first island chain. As the Marine Corps and the Army develop new maritime weapons and ship-to-shore vehicles, the Navy will have to develop the ships to move and sustain dispersed small but lethal expeditionary units. The Navy's amphibious fleet currently consists of 33 large warships, which are suited to moving hundreds of marines largely uncontested, and a logistic fleet operated by the Military Sealift Command (MSC).

MSC operates 110 ships around the world, with all but the expeditionary fast transports (EPFs) being large ships with drafts of more than 25 feet and displacements of over 33,000 tons. This makes the majority of these ships ill-suited for operations at austere ports and shallow waters in and among atolls, rocks, and small islands where expeditionary forces would need to maneuver and be resupplied in order to execute their missions effectively. Only the EPF, with a 15-foot draft and top speed of 40 knots, is well suited to the type of maritime maneuver warfare envisioned here.

Although the October 2016 loss of the ex-USNS *Swift* to a Houthi rebel cruise missile off the coast of Yemen does raise questions about this class of vessel's survivability, retaining the EPF's shallow draft, small crew, helicopter deck, 600-ton cargo capacity, and ability to transport more than 300 personnel while sacrificing some speed to enhanced survivability could offer a future viable platform for these operations. However, the fact that these vessels are manned by civilian crews raises multiple legal and operational

questions. Either these questions must be resolved, these ships must be given a new mission, or the crews must be shifted to military personnel.

Third, American submarine design is not optimized for sustained shallow-water operations in a contested area. The Navy's fleet of submarines, all nuclear powered, consists of ballistic missile, attack, and guided missile boats. All of these subs are optimized for stealth and extended operations underwater to monitor an adversary, attack shipping, destroy enemy submarines, and launch land attacks with long-range cruise and ballistic missiles. In a fight against China, particularly within the first island chain, operations in very shallow waters would be highly likely.

Submarines longer than the water is deep (377 feet for a *Virginia*-class sub) require cool and steady commanding officers and highly experienced crews to sustain days and weeks of such high-stress operations. The dangers of entanglement with masses of fishing vessels and their nets, being run over by a high-speed deep-draft merchant ship, or running into an uncharted sea mountain are always present and are made worse when an enemy is searching for you or dodging mines without the luxury of being able to hide in deep waters. For shallow-water operations, unmanned, smaller submersibles like the 51-foot Orca Extra Large Unmanned Undersea Vehicle (XLUUV) are a better choice. Moreover, at a cost of \$3.4 billion per unit and with construction spanning upwards of five years, the manned submarines available to the Navy if war does come will likely be all it will have, and their employment must therefore be judicious.

As future *Virginia*-class attack submarines are being built with an 84-foot payload module for vertical launch weapons, the design indicates that the Navy intends to focus these boats on strike missions and deep-water operations. However, lessons from the last Pacific War illustrate the importance of shallow-water operations. As new platforms like XLUUV join the fleet, its smaller size and quicker, cheaper replacement provide a better-adapted shallow-water submarine option.

Fourth, the Navy has only limited forward repair capacity. The Navy currently operates two submarine tenders and no similarly tasked ships for the repair of surface warships at sea. Because frontline ports and repair yards are within range of Chinese cruise and ballistic missiles, a mobile repair capability is necessary. World War II demonstrated the importance of forward tenders like those used at Ulithi Atoll. Tenders providing "good enough" repair utilizing underwater cofferdams, temporary bows, and jury-rigged steering systems, among many other creative battlefield repairs, ensured that ships could return to the fight promptly or, if more extensive repairs were needed, make the journey home safely.

Today, the Navy operates its two submarine tenders in the Indian and Pacific Oceans, supporting up to 12 submarines at any given time. When these two tenders reach the end of their service lives in the mid-2020s, unless a replacement is built, the Navy will be left with no dedicated at-sea repair capacity and will have to rely instead on in-port repairs far from the theater of operations. The repair of new unmanned systems will also create an unmet demand, and the expertise and capacity to sustain these platforms at sea will be needed on new task-designed repair platforms. Float-on, float-off (FLO-FLO) ships like the MV *Treasure*, which lifted the USS *McCain* out of the water and transported it after a 2017 collision, have potential for use in a forward repair role.⁶⁸ Having adequate repair ships operating with the fleet is a lesson that the Japanese Imperial Navy, British Royal Navy, and U.S. Navy all learned during World War II's Pacific campaigns, and it should not have to be relearned in present-day conflict.

Fifth, the U.S. fleet is not optimized for sustained contested strike operations. The Navy's long-range strike capacity against land and naval targets is deployed by launch systems from ship, submarine, or aircraft. Aircraft would be reloaded on aircraft carriers or airfields, and submarines would conduct reloads in port with a submarine tender. Surface ships with a vertical launch system (VLS) can be reloaded only at select bases with specific cranes and proximate arsenals, which limits time on station for combat missions and provides fixed logistic bases for an adversary to attack. Based on a CSBA study, a vertical launch reload-at-sea capability could provide the equivalent of an additional 18 destroyers or cruisers in a Pacific war scenario.⁶⁹

In another novel approach to sustaining forward strike capacity, Bryan Clark and Timothy Walton have recommended six unmanned or optionally manned corvettes (DDC) joined with two larger manned destroyers (DDG) in a strike surface action group.⁷⁰ The six DDC would then rotate from firing points to rear locations for reload. Disaggregating VLS-capable warships in this way could provide a 133 percent increase in VLS cells available for missiles while allowing for deployment of more air defense or long-range hypersonic weapons from larger manned ships.

Still another possibility would be to use the known design of the large amphibious ship (the *San Antonio*-class LPD-17) and modify it to act as a support ship to reload and maintain the DDCs. It could also carry vertical launch cells for hypersonic long-range strike missiles and have high-power radars installed in a command cruiser (CLC) role. Such a ship could also become a replacement for the existing fleet command ships (LCCs). A future command ship will have tremendous importance in a future

fleet where effective command and control will be critical in employing unmanned platforms.

It is assumed that in a future conflict, shore-side or global communications will be denied at least for prolonged, critical periods of time. A command ship will therefore become a critical node providing local command and control and battle space awareness to ships associated with its battle group. The sharing of battle space information and interoperability in communication systems will be critical across all service branches—something the Chief of Naval Operations and the Air Force have partnered to develop called Joint All Domain Command and Control (JADC2). Such local at-sea networking of manned and unmanned joint forces will be a key element of the evolving American way of war, with successors to today's LCCs providing a critical node in a JADC2 communications architecture.

Sixth, the fleet has limited options for operations below the level of armed conflict. The Defense Science Board recently found that DOD is underperforming and ill-equipped for great-power competition in the “gray zone” below armed conflict. The board recommended that the military build new capabilities to force countries like China and Russia to suffer consequences for their nefarious gray zone activities.⁷¹ The Navy's experiences with Russian activities in the Sea of Azov and Chinese coercive tactics in the East and South China Seas are instructive.

To compete more effectively in the gray zone, commanding officers must have more options for the employment of non-lethal force. To counter aggressive and unprofessional seamanship, U.S. ships with reinforced hulls can enable the shouldering of hostile ships without outright use of weapons. An added benefit that enjoys Congress's attention is that such ships could also operate longer in the Arctic because the reinforced hulls could be designed to double as ice protection.

Aside from fire hoses and lasers intended to disable small watercraft and drones, the Navy has yet to invest in and repurpose promising riot-control technologies for use in maritime situations. Such capabilities could have had a positive impact during several past maritime incidents. In March 2009, for example, while in international waters in the South China Sea, five Chinese fishing vessels surrounded and harassed the USNS *Impeccable*, causing it to come to all-stop on several occasions and use its fire hoses at least once against the harassers. Similar incidents include (among others):

- The September 2010 collision between a Japanese coast guard vessel and Chinese trawler,

- The 2012 Scarborough Shoal standoff,
- The March 2014 second Thomas Shoal incident, and
- The May 2014 China–Vietnam Haiyang oil rig standoff.

A common lesson from these incidents is the importance of having methods to keep harassers at a distance from the ship’s track and, failing this, the ability to shoulder other vessels safely. As the U.S. Coast Guard looks to expand its presence in these waters, it too will benefit from additional non-lethal options to compel harassing vessels to remain clear. While promising technologies are coming, the Navy’s deployed ship’s best option for gray zone confrontations remains a blast of water from a fire hose and, when available, speed to get away from harassers.

As China’s *The Science of Military Strategy*⁷² and Russian General Gerasimov’s application of hybrid warfare both make clear,⁷³ the common approach used by China and Russia leverages our military’s weaknesses. By addressing these weaknesses and faulty assumptions, the Navy can become a more resilient and harder target in war, but more work will be needed in the “gray zone” of great-power competition.

C. IMPERATIVE #3: Expand shipyard capacity.

The Navy’s demonstrated inability to return ships to service in a timely manner is unacceptable. After their collisions with commercial ships in 2017, it took the USS *Fitzgerald* over a year to depart its dry dock⁷⁴ and almost two years to return to sea, and the USS *McCain* spent nine months in dry dock.⁷⁵ With a fleet that is small relative its requirements and with limited shipbuilding capacity, quick turnaround on battle damage repairs is vital in war, and the lack of this capability in peacetime cedes critical presence that competitors can exploit. Despite the Navy’s best effort, often on the backs of its sailors, its public shipyards charged with sustaining the nuclear submarines and aircraft carriers complete 75 percent of maintenance more than 30 days late.⁷⁶ Such delay obviously has operational implications.

The Navy’s shipyard predicament is the result of decades of priority being given to cost efficiencies, procurement, and near-term operational requirements. On the day after the Iron Curtain came down, the Navy had eight public shipyards to service its nuclear fleet: four on each coast. Amid the euphoria created by the successful 1990–1991 war in Iraq and the collapse of the Soviet Union, the Base Realignment and Closure (BRAC) Act of 1988⁷⁷

began to deliver on the post-Cold War “peace dividend” by closing half of the Navy’s public shipyards.⁷⁸ Today’s workforce is not only overworked, but also must make due with antiquated capital equipment, such as sheet metal rollers, plasma cutters, and cranes, that averages 24 years in age compared to private shipyards’ capital equipment, which averages just seven to 10 years in age.⁷⁹

The Navy has recently begun to address some of the shortfall in maintenance capacity. Its Shipyard Infrastructure Optimization Program (SIOP), submitted to Congress in September 2018, is a \$21 billion, 20-year program.⁸⁰ Unaddressed, however, are the Navy’s four overseas shipyards (one in Spain, one in Bahrain, and two in Japan), in which about 70 percent of all maintenance is completed late. In the U.S., the Navy also uses 26 private shipyards, located mostly near the Navy’s bases, for over 240 conventionally powered ships. Reflecting a Cold War European theater focus, this unbalanced dry-dock capacity is located on the East Coast despite a larger number of ships on the West Coast.⁸¹ This has also placed tremendous hardship on families that must relocate in the middle of an assignment from a homeport to shipyard across the country. As a result, delays are compounded and costs are increased by a private, public, and overseas shipyard maintenance capacity, and a skilled workforce operating beyond capacity and without modern equipment.

Fully funding the Navy’s SIOP is necessary but will not address the shortfall servicing today’s fleet let alone a larger one that the nation will need for great-power competition. Some of the near-term shortfall can be mitigated by shifting workload from the four public shipyards to private shipyards, but that will not address the shortfall in nuclear maintenance capacity unless a fifth modern public shipyard is established, preferably on the West Coast. Another urgent need will be to increase the shipyard workforce through invigorated training and retention incentives.

Finally (and surprisingly), no comprehensive root-cause analysis of maintenance delays at all shipyards servicing the Navy has been conducted. To ensure that monies are spent wisely and the correct remedies put in place, such a comprehensive root-cause analysis should be included in periodic progress reports, accompanied by SIOP updates, that are submitted to Congress.

D. IMPERATIVE #4: Emphasize persistent operations in decisive theaters.

By contesting the U.S. below the level of armed conflict, both great-power competitors avoid our military strengths by operating in a Navy blind

spot. Peacetime U.S. naval action taken in decisive theaters, like pressure points in the martial art Aikido, can enable an economy of force to cause a competitor to change behavior. This requires that the Navy's presence be rebalanced to enable specific targeting of Chinese and Russian national leadership's strategic calculus while attracting new security partners and bolstering alliances.

Ever since promulgation of the 2018 National Defense Strategy, a concept called Dynamic Force Employment ostensibly has provided a framework for the execution of such missions. However, to be effective, such operations must have a lasting impact on the strategic calculus of leadership in Moscow and Beijing. It is clear that preventing a repeat of Russia's intervention in Syria and annexation of Crimea, as well as China's South China Sea island-building campaign, would require a presence that is both significant and sustained.

In the case of Russia, most of the crises since 2008 have occurred in the Eastern Mediterranean region, to include the Black Sea and the Balkans. U.S. programs such as the Black Sea Maritime Initiative and enhanced Baltic Integrated Air and Missile Defense that have been employed are potent, regionally focused components of a resilient theater posture. In the North Atlantic, predictable Carrier Strike Group and amphibious presence has been coupled with reactivation of the U.S. Second Fleet, which provides necessary maritime command and control capability in the Atlantic.

However, to affect Russia's strategic calculus, a naval presence must put at risk Russian "counter encirclement efforts" and undermine naval operations that are intended to sow discord among U.S. partner nations. A dedicated U.S. naval force in the Eastern Mediterranean would complicate Russian military adventurism, contribute to mitigating Russian malign influence, and bolster security commitments to NATO and Israel. Such a force would support current NATO standing naval forces, such as Group Two operating in the Mediterranean.⁸² However, because of differences within NATO with respect to the execution of great-power competition, such a task force would necessarily be independent initially from NATO. Its proximity to the Suez Canal and the Black Sea would make such a force a strong guarantor of access to critical ports (e.g., Greece's port of Piraeus) that increasingly are operated by Chinese state-owned entities.

With respect to China, America's interests lie in undermining China's principal strategic direction (forced reunification of Taiwan with the mainland), challenging "national rejuvenation," and backing this effort by building a modern military by 2035.⁸³ It is important to stress that in the Chinese context, "national rejuvenation" is actually a restructuring of the

current world order on the Chinese Communist Party's terms. To counter this, the Navy must unbalance the force correlation in the Western Pacific with greater numbers of ships and greater capabilities to hold PLA forces at risk. At the same time, it must be able to contest Chinese peacetime operations involving not only the PLAN, but also the Chinese Coast Guard and Maritime Militia. This means that forces with both high-end and low-end capabilities will have to be sustained in theater for prolonged periods of time. The size of China's maritime forces precludes a force-on-force response; a better option would therefore be to pick a decisive theater and "play zone defense."

A way to accomplish both tasks would be to establish dedicated U.S. naval task forces in the South China Sea and Eastern Mediterranean. These task forces would draw on lessons learned from experiences of the Combined Joint Task Force Horn of Africa and Central Command's Naval Task Forces. To ensure mission focus while not alienating some partners that are wary of participating in great-power competition, these task forces should be limited initially to U.S. participation. Only after registering measurable successes should options to include allies be entertained.

While prioritizing presence in decisive theaters, the Navy obviously will have to be present in and respond to crises in other places, but that must not be allowed to detract from maintaining a persistent presence in those decisive theaters. The DOD mechanism for ensuring this is called Global Force Management (GFM).⁸⁴ Today, however, the GFM process is driven by risk calculations of the geographic combatant commands, such as Central Command, which is responsible for the Middle East. Each geographic command is responsible for ensuring adequate forces for potential war and near-term military objectives in its particular corner of the world. Put another way, GFM prejudices force assignments to the detriment of effecting a long-term global competitive strategy.

The GFM process therefore needs to be reformed to ensure that the employment of forces is aligned with strategic objectives and specific National Defense Strategy goals. This will place greater priority on the use of military forces to support peacetime operations necessitated by great-power competition, principally in the South China Sea and Eastern Mediterranean.

Finally, the Navy does not have a doctrine for peacetime competition, nor does it train to conduct aggressive peacetime operations independently or with partner navies.⁸⁵ Given that our competitors are willing to risk collisions and damage to their ships, our crews need to train to respond, and ships should be appropriately equipped. In dealing with

non-military Chinese vessels, especially the Maritime Militia, our ships have little capability to stand their ground when swarmed by such vessels aside from ramming.

As Hunter Stires points out, new tools are needed to contest the maritime insurgency that China is waging in the South China Sea.⁸⁶ The Navy should leverage the Marine Corps' efforts in crowd control by field testing and deploying non-lethal Active Denial Systems based on microwave and acoustic technologies.⁸⁷ Priority should be given to developing new capabilities for commanding officers operating in waters where they will encounter the Chinese Maritime Militia.

To date, there has been little dedicated effort to exercise with partner navies or coast guards to practice effective measures to counter the tactics that the Chinese Coast Guard (e.g., shouldering) and Chinese Maritime Militia (e.g., swarming) often employ. While some partner navies and coast guards (e.g., Japan's) undoubtedly have invaluable experience, the Navy should seek to develop new tactics and capabilities to neuter the Chinese "cabbage" strategy.

E. IMPERATIVE #5: Focus on tradition while building new core competencies.

"It is by no means enough that an officer of the Navy should be a capable mariner. He must be that, of course, but also a great deal more."⁸⁸ Our Revolutionary War naval hero John Paul Jones's immortal words are memorized by every new plebe at the Naval Academy. The quote goes on to stress the characteristics of being an effective naval officer, but its admonition to be more than a capable mariner has added emphasis in today's era of great-power competition. The officers and sailors of the Navy today often operate in contested waters, making their skills as mariners and ability to place their actions into a global context of strategic importance. For this reason, the Navy needs to:

- Allow commanding officers more discretionary time to train their crews,
- Continue to focus on retention and invigorated recruiting to man the Navy of the future,
- Train and exercise with a view to great-power competition and future war, and

- Leverage the resources of the Navy Reserve and Naval Militia more effectively.

With respect to personnel readiness, the Navy's 2018 *Design for Maintaining Maritime Superiority* emphasizes several core attributes: integrity, accountability, initiative, and toughness. To be sustained and strengthened, however, these foundational attributes, like muscles, must be exercised and tested. Shortly after assuming his responsibilities as Chief of Naval Operations (CNO), Admiral Michael M. Gilday issued a fragmentary order (FRAGO) reiterating the importance of these attributes.⁸⁹ Those attributes will be critical in a more dispersed fleet, where commanding officers' discretion will be of strategic importance while operating in competition with China and Russia.

Sadly, as operational requirements weigh on a smaller fleet, precious little time remains for crews to learn their ships and give junior officers the time to build confidence as mariners. A larger fleet makes it possible for more ships to distribute the operational demands; today, a third of the Navy's ships are typically at sea, and the ensuing high operational tempo has been detrimental.

The collisions involving the USS *McCain* and USS *Fitzgerald* claimed the lives of 17 sailors during two unrelated routine "independent steaming" operations in the Western Pacific. The Chinese were quick to exploit these situations by saying that the U.S. Navy was unsafe and should not be operating in the Western Pacific—hardly surprising for Chinese propaganda but tough for a proud Navy to stomach.

Subsequent Navy reviews identified several broad institutional recommendations, most notably that "[t]he creation of combat ready forces must take equal footing with meeting the immediate demands of Combatant Commanders."⁹⁰ In short, the commanding officers, while held accountable to the readiness of their crews, must also be given the time and resources to ensure adequate training and familiarity with their ships.

Another finding was that each ship needs to be fully manned. For the 355-ship fleet planned for 2034, the Navy assesses that end-strength manpower will need to grow by approximately 35,000 sailors.⁹¹ Funding is requested in the FY 2021 budget to continue the increase in active-duty manning by an additional 7,300 sailors.⁹² If this is not managed well, overworked sailors and officers on undermanned ships will vote with their feet. Recent trends in the accession of new sailors and officers have been positive, but whether this can be sustained remains to be seen. Working against attempts to reduce needed manning on a by-ship basis is the manpower-intensive

TEXT BOX 3

The Battle of Java Sea

The end of the American, British, Dutch, and Australian (ABDA) Striking Force (SF) came quickly after the February 27, 1942, Battle of Java Sea. Comprised of antiquated U.S. Asiatic Fleet ships redeployed from China and the Philippines, this force attempted to slow the Japanese naval juggernaut as it rushed to secure vital oil and rubber resources in Southeast Asia.

Despite years of Asia service, Dutch and British prewar sensitivity to provoking the Japanese meant that U.S. ships would be operating from unfamiliar ports in little-known waters as the war rapidly progressed. British preoccupation with defending Singapore resulted in this meager naval force's being divided. Overall command of Allied forces ABDA went to British General Archibald Wavell, with U.S. Admiral Thomas Hart (who because of political intrigue would be replaced by Dutch Admiral C. E. L. Helfrich in mid-February) commanding all naval forces.

The Japanese advanced rapidly, using occupied air bases to extend land-based air cover throughout the East Indies. After the fall of Singapore on February 15 and Bali by February 20, the SF was cut off, and overall ABDA leadership went to Dutch Admiral Karel Doorman.

Throughout the campaign, air reconnaissance had been spotty, but on the evening of February 26, it proved fatal when the SF sortied to intercept anticipated Japanese invasion forces. At the same time, the USS *Langley*, transporting crated P-40 fighters, approached Tjilatjap on Java's Indian Ocean coast. Ensuing communications snafus

exposed the ship to daylight observation and attack from Japanese aircraft on February 27.

As the so-called Malaya Barrier collapsed, limited prepositioned supplies of critical five-inch anti-aircraft ammunition and torpedoes left the remaining naval forces exposed to air attack and without their most feared offensive weapon. To make matters worse, lack of prewar tactical exercises by Asiatic Fleet destroyer squadrons resulted in excessive expenditure of torpedoes.

Despite limited offensive capabilities against a modern and well-trained Imperial Japanese Navy, the SF's final sortie on the evening of February 27 resulted in the sinking of flagship light cruiser HNLMS *De Ruyter* and the collapse within days of the ABDA Striking Force. On March 1, the heavy cruiser USS *Houston* was lost while retreating along with merchantmen and warships vainly fleeing to Australia or British Ceylon while hunted by Vice Admiral Nagumo's carriers in the Indian Ocean. Some losses came too quickly. Such was the case of Dutch cruiser Java after a single torpedo hit proved mortal due to limited watertight integrity.

For both sides' navies, the heavy expenditure of munitions was problematic, but it was especially so for the Japanese, whose profligate use regardless of target at times jeopardized the tight operational time line required to secure resources—especially Dutch petroleum. As the Navy looks to Expeditionary Advanced Base Operations (EABO) and Distributed Maritime Operations (DMO) to contend with China's Navy in a potential war, it should heed the lessons of Java Sea.

SOURCE: Donald M. Kehn, Jr., *In the Highest Degree Tragic: The Sacrifice of the U.S. Asiatic Fleet in the East Indies During World War II* (Lincoln, NE: Potomac Books, 2017).

design of current ships (as opposed to new designs for unmanned or optionally manned ships).

To help naval leaders put in context their actions in great-power competition, there has been renewed interest in senior officer training.

Specifically, to improve understanding of our competitors, former Secretary of Defense Mark Esper directed the National Defense University (NDU) to devote 50 percent of its coursework to China. While helpful, however, this is too narrowly focused and fails to take proper account of Russia's role in great-power competition. Nor does it necessarily target the group making the majority of day-to-day operational decisions: commanding officers.

Training and exercising crews on the operational doctrines required in great-power competition and modern naval war will be critical to ensuring that they respond as if it were second nature in a crisis. China and Russia are changing the way the Navy will have to fight, leading to new concepts of operation that represent an actualization of the DOD theory of victory in a great-power war. The Navy's Distributed Maritime Operations concept aims to complicate an adversary's targeting by disaggregating the fleet. The Marine Corps' new operational concepts, Littoral Operations in a Contested Environment (LOCE) and Expeditionary Advanced Base Operations (EABO), call for smaller and more dispersed Marine units conducting missions that range from scouting (intelligence, surveillance, and reconnaissance) to coastal defense to forward arming and refueling points (FARPs) for F-35B operations. The Army's evolving Multi-Domain Operations (MDO) concept is enabled by invigorated investment in ground-launched cruise and ballistic missiles.

For the theory of victory in a great-power war to work, Navy ships will have to operate with these forces, and these untested concepts of operation will require a significant change in the Navy's force structure. Field tests of such concepts with the crews expected to execute them are urgently needed to inform resource decisions. One example is the Navy's large-scale exercise (LSE), originally scheduled for 2020 but delayed until 2021 because of concerns related to the COVID-19 pandemic. When executed, LSE will provide invaluable field experience, especially regarding integration with unmanned systems.⁹³

In the future, LSE and other such exercises must explore the synthesis of DMO with EABO and MDO to generate significant learning not unlike that created by Nifty Nugget. Nifty Nugget was conducted over 21 days in October 1978 to test the logistics systems that were assumed to be capable of supporting a war in Europe. The immediate results were ugly: They revealed that the U.S. was not ready to execute its plans to sustain a major war in Europe. By effectively challenging key operational planning assumptions, Nifty Nugget led to realistic looks at the domestic industrial base, airlift and sealift deficiencies, and resourcing of biennial mobilization exercises.

Such an exercise and outcome should be welcomed as the Navy looks to new force designs to compete with China and Russia.

In a time of sharpening competition, there also are some latent capacities available to the Navy: notably, the Navy reserves and the little-known state naval militias. The impact of COVID-19 on maintenance at the Navy's four public shipyards, for example, led to the activation of 1,629 reservists to backfill the quarter of the civilian workforce who were deemed "high risk." Such actions have helped the Navy to conduct maintenance on schedule and are testament to the Navy's resilience when utilizing its reserve forces.

The largest and perhaps most recognizable element of the reserves is the Selected Reserve (SELRES), made up of individuals who provide periodic support to active units and others who perform in a full-time or activated role.⁹⁴ As of March 2020, there were 59,641 SELRES (10,153 full-time support); 44,176 Individual Ready Reserve (IRR) ready for recall; and 167 reserve aircraft crewed by reserves.⁹⁵ These reserve aircraft are critical in both peacetime and war because of their high utilization as the Navy's only organic inter-theater air logistics platform.⁹⁶ Unfortunately, reserve infrastructure averages 43 years old with over 20 percent deemed substandard. To continue providing air logistic support that saves the Navy almost \$1 billion annually, the Navy must eventually replace the reserves' 25 C-130 airplanes with the C-130J.⁹⁷

Interestingly, the reserves do not operate any of their own ships, but this is not the case with respect to state naval militia. The naval militia, like the better-known and larger National Guard, is a state entity that supports a range of state defense and disaster response. After the establishment of the naval reserve in 1915, the role of naval militias waned until the attacks of September 11, 2001. Following those attacks, New York and New Jersey naval militias played a notable role, ferrying people fleeing lower Manhattan and bringing in first responders.

Because of its experience and capability, the naval militia is able to support capacity building and training with key partner nations through the National Guard's State Partnership Program (SPP).⁹⁸ Established by Title 10 of the United States Code, the SPP engages with 78 countries' military, security, and government organizations.⁹⁹ SPP engagements are broader in scope than military-to-military engagements, with the same units often routinely training with the same partner nation's units, fostering a degree of interoperability and trust that is unique to such exercises. The few states with active naval militias (Alaska, New York, New Jersey, Ohio, and South Carolina) could be prime candidates for greater participation by those militia in SPP activities to enhance maritime cooperation.

F. IMPERATIVE #6: Secure and enhance an improved naval force posture.

The U.S. way of war depends on secure air lanes and sea-lanes to move men and material to a fight. The tyranny of distances involved requires a significant investment and recapitalization of Cold War (and even some World War II) bases that were once considered irrelevant. The focus of today's logistic network and posture must change from efficiencies to the resilience of military basing or posture. Specifically, DOD and Navy internal processes must become more responsive to new basing opportunities, better leverage other agencies to enhance forward posture, and increase the Navy's organic capacity to recapitalize antiquated infrastructure in order to build a dispersed basing posture that is more resilient to attack.

Despite the growth of great-power competition, the past ten years have seen little growth in or diversification of the Navy's basing network. At his change of command, outgoing Naval Forces Europe–Africa Commander Admiral James Foggo III called the increased competition in his area of responsibility “the Fourth Battle of the Atlantic.”¹⁰⁰ This increased competition has led to improvements at a Cold War airbase at Keflavik, Iceland, to support renewed maritime patrols in the North Atlantic.¹⁰¹

While the challenge in Europe is largely to deter a land war with naval operations playing a supporting role, the maritime environment is very different in Asia. Since withdrawing from bases in the Philippines in 1991, the center of gravity for U.S. forces in the Pacific has been in Northeast Asia. This posture is vulnerable to Chinese ballistic and cruise missile saturation attack. Additionally, it engenders long supply lines that will be stressed to ensure prompt response to crises and natural disasters across a massive area of responsibility.

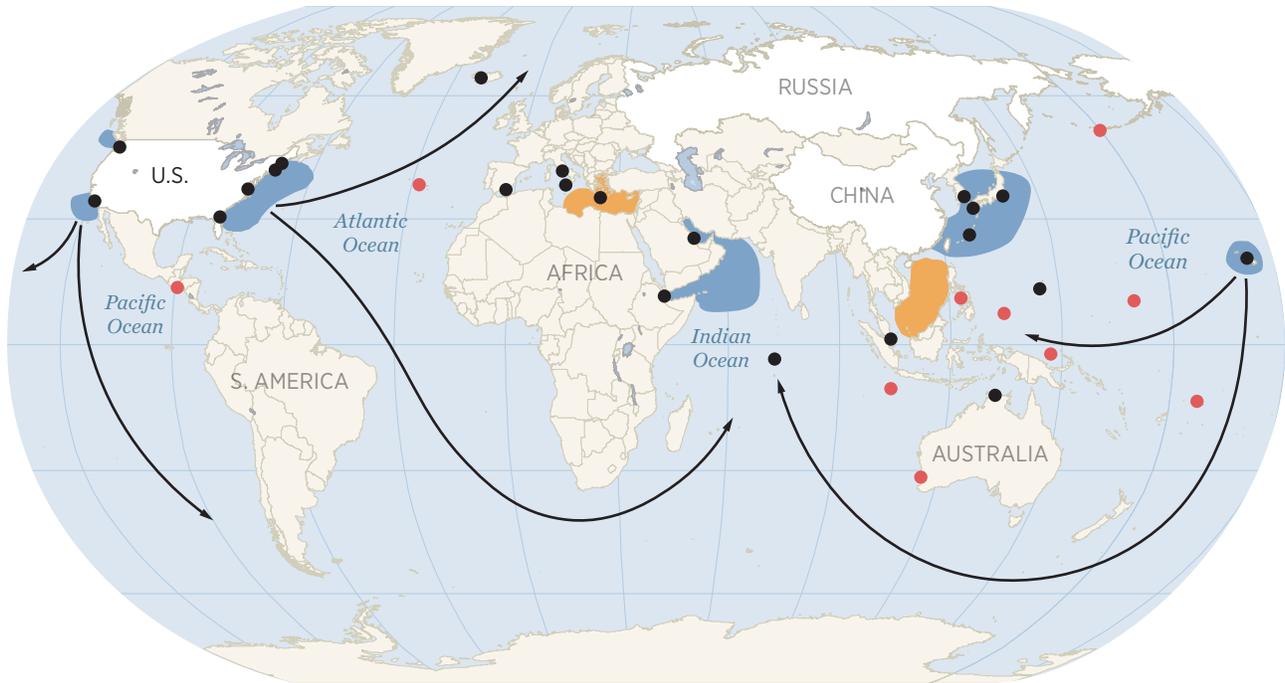
The need to find new basing and posture options is palpable. However, despite recent offers by Papua New Guinea for a base on Manus Island and by the Republic of Palau for permanent basing of U.S. forces, the only significant growth in basing has been the Marine Rotational Force–Darwin (MRF–D) in Australia, which is as far away from the South China Sea as U.S. bases in Guam are. Indo-Pacific Command has attempted to address this posture challenge.

Commander, U.S. Indo-Pacific Command (USINDOPACOM) Admiral Philip Davidson has made clear that a new posture construct is required to meet the challenges from China and Russia in the Indo-Pacific.¹⁰² He has stressed that what is needed is a more distributed posture of forces that is sustained by resilient logistics, is capable of interconnected shore and naval long-range fires, and is highly mobile for survivability.¹⁰³

MAP 4

U.S. Navy Operating Areas: Current and Future

- Current major operational bases
- Proposed future operational bases
- Fleet concentration areas since 2001
- Decisive theaters for sustained increased naval presence
- Large-scale exercises and dynamic force employment



SOURCE: Heritage Foundation research.

SR242  heritage.org

As Chinese and Russian naval activity moves farther into the Pacific, it jeopardizes critical lines of communication, creating a need to recapitalize bases in the Central Pacific. To this end, USINDOPACOM has proposed a package of Regain the Advantage initiatives to secure logistic routes, bolster allies in East Asia, and improve military effectiveness by enhancing integrated air defense capability in Guam, increasing the arsenal of long-range precision munitions, and developing infrastructure west of the dateline.¹⁰⁴ Davidson’s five-year, \$20 billion proposal is modeled on the European Deterrence Initiative, which has invested \$22 billion in Europe since Russia’s 2014 annexation of Crimea.

The purchase and delivery of needed fuel require contracted services and a logistics vessel or warship that can moor in a port where the fuel is available. Moreover, critical repair parts are often shipped via commercial

cargo air to a port for pickup by the ship in need or transshipped to the ship by military aircraft. The fact “that China has access to 10 percent of the shipping rights into and out of Europe” has drawn attention to vulnerabilities in this type of naval logistic network.¹⁰⁵ In a crisis—and certainly in war—deliveries that in peacetime often rely on commercial carriers could be interdicted or delayed with operational consequences. The challenge is especially stark in the Western Pacific and Indian Ocean regions far from U.S. suppliers and with limited choices for transshipment to cover the great distances involved. The bottom line is that the Navy will need multiple suppliers and ports of convenience to operate and sustain itself against Chinese and Russian attacks and other activities.

For the past 30 years, the trend has been to downsize or regionalize U.S. bases for purposes of cost efficiency. To insulate post-Cold War base closure from domestic politics, Congress created a process whereby Congress had 45 days to reject recommendations of the President; otherwise, they would be approved pursuant to the Defense Base Realignment and Closure Act (BRAC) of 1990. BRAC continued an effort to rationalize base infrastructure that began under President John Kennedy in 1961 and culminated with the final round of recommendations in 2005. Congress has not authorized a new round of BRAC recommendations since then.¹⁰⁶

Since 2017, Congress has included language in the annual National Defense Authorization Act (NDAA) precluding any new BRAC rounds. Therefore, to disperse basing and increase shipyard capacity, a new process modeled on the BRAC is needed. To this end, DOD should lead an interagency body to review and recommend specific domestic and foreign posture projects. An early goal should be to recommend the addition of one new shipyard on the West Coast with a dry dock suitable for a *Ford*-class aircraft carrier and the longer *Virginia*-class submarines with installed payload modules. This added capacity will be urgently needed as these ships join the fleet, especially given the larger proportion of naval assets in the Pacific and earthquake structural integrity concerns at Puget Sound Naval Shipyard's Dry Dock No. 6.

The Navy will also need to improve its leveraging of resources across the government to support its overseas posture needs. The Development Finance Corporation (DFC), for example, was created by the BUILD Act in 2018 and is in effect a U.S. government development bank. The Navy should embed staff experienced in security cooperation and naval operations at the DFC to inform infrastructure investments beneficial to sustaining forward presence. To ensure that DFC efforts support great-power competition, Congress should require that the DFC include in its annual report, as

TEXT BOX 4

Oceans Ventured

[Ronald] Reagan promised a robust increase in defense spending to build significantly the size and capability of American military and naval forces. He rejected the Soviet-declared Brezhnev Doctrine and made clear his intention to pursue a “forward strategy.” In addition to pursuing the declared policies, he also intended to launch a highly classified program to exploit Soviet economic, political, military, and psychological vulnerabilities.

In November 1976, a bipartisan group formed an advocacy group under the resurrected name the Committee on the Present Danger (CPD). For the next four years it published papers, gave speeches, organized conferences, and lobbied for rebuilding American nuclear, land, and naval forces to reestablish a balance (33 Republican and Democratic members of the CPD later served in the administration of Ronald Reagan). The yearlong study produced National Security Decision Memorandum (NSDM) 344, “Navy Shipbuilding Program,” on January 18, 1977. Coming two days before the inauguration of President [Jimmy] Carter, the study may have made the navy’s heart beat faster, but it had no chance of enactment. By 1978, the U.S. Navy had been reduced to 464 active warships and thirteen carriers. The USSR was not slow in taking advantage of this fading of deterrence, fomenting revolution in Central America and establishing a forward naval presence in the South China Sea at former U.S. bases in Vietnam.

Carter’s Defense Secretary, inordinately fearful of losing carriers in wartime, believed they had to be kept at least “1,500 nautical miles from Soviet land bases,” if they were to survive long enough to win in a sea war. Otherwise, his chief naval concern was that resupply of forward allies by convoy must be able to take place thirty days after a conflict started. To ensure Navy’s views informed future force structure decisions, it organized a major naval policy and strategy study, to be conducted at the Naval War College and in Washington under the leadership of Bing West. The study was called Sea Plan 2000 and

had momentous effect. The analysis tallied army, air force, and coast guard forces available to support naval operations, as well as allied naval and air forces that could be counted on, and finally calculated navy and marine corps force levels required to deter threats. Ironically, this comprehensive plan, undertaken and paid for by the Carter Pentagon, became one of the main sources for fleshing out Ronald Reagan’s naval policy initiative and a critical part of his campaign platform.

In 1980 Richard Allen organized his team of experts, including congressional and Pentagon budget experts working on their own time, to prepare a detailed new defense budget and a budget supplemental for additional funding. It would include a new exercise—Ocean Venture 81, a massive naval operation into the northern seas that the Soviets viewed as their maritime sphere of influence. It was approved by Reagan before his inauguration and launched just seven months after he entered the White House. In March 1982, Atlantic Fleet commander Admiral Train and Striking Fleet commander Vice Admiral Lyons briefed Ocean Venture 81 to legislators and staff members on Capitol Hill. It was important that Congress learn firsthand what the navy had just done, and why and how. Congressional support for the Reagan shift in U.S. foreign and military strategy was essential, and here was a real-world example of the Reagan strategy in action. Updated and refined, these exercises under different names were repeated every year thereafter, until the Soviet Union and its navy collapsed at the end of the decade.

Using data as of November 1985, the CIA’s Office of Soviet Analysis concluded in a recently declassified secret analysis that the Soviets had perceived a marked U.S. increase in emphasis on sea power and an increased and rapidly developing threat to the Soviet Union from the sea. In the CIA’s analysis, the Soviets viewed U.S. aircraft carriers as increasingly capable and survivable systems in the Norwegian Sea and northwestern Pacific.

required under Section 403 of the BUILD Act, information on the efficiency of specific projects with respect to military access and forward sustainment with an initial focus on Southeast Asia.

G. IMPERATIVE #7: Implement a comprehensive national shipbuilding plan.¹⁰⁷

During a July 17, 2017, Senate Armed Service Committee hearing, John Lehman, who had served as Secretary of the Navy from 1981–1987, was asked to reflect on the Reagan-era buildup of naval forces and presence. At the time, his thinking was that a rapid buildup in forces and naval exercises would demonstrate the power of NATO to command the seas and that 90 percent of the needed deterrent power could be achieved in the effort's first year. Also important to his success as Secretary of the Navy was a clear articulation of the strategy and its risks to Congress, which earned him sustained bipartisan support for an expensive endeavor: building the 600-ship Navy. Forceful renewed naval presence left no doubt among friend and foe that the buildup was real and lasting.¹⁰⁸

Years later, statements of ex-Soviet leaders and declassified assessments indicate that the approach of President Reagan and Secretary Lehman was correct.¹⁰⁹ The question before the nation today is whether a similar feat can be replicated to affect China's and Russia's strategic calculations.

The post-Cold War record on shipbuilding is not a reassuring one. A culture of organizational efficiency and cost savings has led to an institutional predilection for reducing fleet size, the atrophy of supporting infrastructure, and near elimination of in-house naval engineering design support. The Navy's FY 2021 shipbuilding budget, for example, was \$3.6 billion less than the amount projected in its own 30-year shipbuilding plan.¹¹⁰ At the same time, the cost to implement long-delayed infrastructure investment in the Shipyard Infrastructure Optimization Program will likely grow beyond the initially projected \$21 billion over 20 years just to support today's fleet. Additionally, in order to ensure a continued undersea nuclear second-strike capability, the Navy must dedicate a substantial portion of its shipbuilding budget (an average of approximately 20 percent annually for FY 2021 to FY 2025) to ensure that the *Columbia*-class ballistic missile submarines arrive on schedule to replace the aging *Ohio*-class subs.¹¹¹

Moreover, a larger fleet's effectiveness will depend on the expansion of shipyard capacity, the merchant fleet, and the maritime workforce. In this connection, efficiencies could be gained by coordinating shipbuilding with the U.S. Coast Guard. Like the Navy, the U.S. Coast Guard confronts capacity

challenges as demands grow for it to protect the arctic, defend against illegal fishing, and increasingly deploy overseas in training missions that support the National Defense Strategy.¹¹²

The Coast Guard's future force structure is guided by its 2004 program of record (POR) and Fleet Mix Analysis Phase 1 (2009) and Phase 2 (2011) studies, all of which predate the current National Defense Strategy.¹¹³ As both the Navy and the Coast Guard contend with the operational demands of great-power competition, there is precedent as well as operational necessity for collaboration in designing their fleets. In 2002, 2006, and 2013, for example, the two signed Joint National Fleet Policy Statements to ensure that they can support each other and avoid redundancy. Also, the President is authorized to align the Coast Guard under the Navy in wartime, so they must be able to operate together seamlessly. For these reasons, it has been suggested at congressional hearings that there is opportunity for both services to benefit from a combined procurement plan. One such platform the Navy may find utility in is the Coast Guard's National Security Cutter with a displacement of 4,500 tons that is currently in series production.¹¹⁴

During war, a merchant marine fleet plays an invaluable role in moving critical military supplies and troops. Despite incentives intended by the Merchant Marine Act of 1920, also known as the Jones Act, to ensure that a fiducial merchant fleet is available for war, it has instead withered and become uncompetitive with global shipping. Statistics speak for themselves: 2019's Turbo Activation 19-Plus exercise demonstrated that only 64 percent of the Ready Reserve Fleet was able to deploy on time. Moreover, the average age of these merchant ships is 45 years, well over the industry end-of-life average of 20 years, and "DoD faces a gap of approximately 76 fuel tankers to meet surge sealift requirements."¹¹⁵

Because of market distortions caused by the Jones Act, U.S. commercial shipyards today are upwards of 60 percent less efficient compared to overseas shipbuilders and are producing ships of limited value to the Navy's logistic needs (e.g., drafts too deep or unsuitable for austere ports) at a 700 percent price premium.¹¹⁶ Further weakening the competitiveness of U.S.-flagged vessels, a 50 percent ad valorem duty on any non-emergency maintenance done overseas imposed by the Tariff Act of 1930 has the effect of driving U.S. shippers away from yards near their routes to U.S. shipyards that are less modern and less cost-effective.¹¹⁷ A better approach would focus on improving the competitiveness of domestic shipyards in providing valued services.

More important than access to U.S.-built ships and critical in the early stages of conflict is the availability of trained U.S. merchant mariners.¹¹⁸

Today, U.S. mariners are in short supply: In a sustained crisis, there would be a shortfall of 15 percent of requirements (approximately 2,000 mariners) in a group with an average age of 46 years.¹¹⁹ Added to this is the fact that in 1951, there were 1,288 U.S. merchant ships; today, there are 81.¹²⁰ Moreover, of the 81 large U.S.-flagged vessels that would be available for military use through the Maritime Security Program (MSP) stipend, none were produced in the U.S.¹²¹

Administrator Mark Buzby of the U.S. Maritime Administration, responsible for ensuring sealift for our military, warned in March 2020 that the merchant fleet is likely unable to deliver in a conflict and that, with only one shipyard able to build the needed logistic ships, the capacity to shift to needed production when necessary is questionable.¹²² A first step in remedying this problem would be to repeal vestiges of the Tariff Act of 1930 requiring ad valorem duties on non-emergent repairs of U.S.-flagged vessels conducted overseas. This would enable U.S. shippers to become more competitive in the international marketplace by taking advantage of cheaper and more modern overseas facilities.

Second, repealing the Jones Act would enable access to cheaper and more plentiful shipping in peacetime. Intended to boost U.S. shipbuilding and naval preparedness, the Jones Act has fallen woefully short of both at a steep cost to American consumers. Because of the economic protectionism enabled by the Jones Act, the industry has shrunk significantly and has failed to be competitive with international shipbuilders.

It should also be stressed that repeal of these acts comes with the responsibility to ensure adequate sealift for the Navy in war while moving domestic shipbuilders into a new paradigm and addressing unfair trade practices of foreign shipbuilders. Among other things, this means investing in a revitalized U.S. maritime industry, which in turn means creating a merchant maritime fleet designed to support the military during a conflict when the availability of foreign-flagged commercial shipping is in doubt. During Desert Storm, for example, 13 foreign-chartered vessels refused to enter a war zone. Today, military sealift would have to include a combination of domestic shipping, America's allies, and contractual obligations with third parties to meet a need for 19.2 million square feet of capacity and 86 tankers.¹²³

The MSP, which provides stipends of \$5.3 million per ship to 60 commercial cargo ships will play a role in managing the transition to a post-Jones Act world.¹²⁴ Expanding the MSP as Jones Act and Tariff Act protections are phased out could mitigate the loss of U.S. commercial shipbuilding while incentivizing shipbuilding that meets the Navy's needs and is more

competitive in a global market. A CSBA market analysis indicates that broadening MSP stipends for fuel tankers to \$10 million a ship would meet the Navy's requirements.¹²⁵ Expanding MSP in this way would cost an additional \$860 million over current stipends. Repeal of the Jones Act, by subjecting the domestic industry to competition, would also encourage improved business practices and cost-saving innovation.

Managing this transition while ensuring adequate and available military sealift will require a period of government investment at a cost upwards of \$1 billion a year at least until 2035. Policymakers should also explore other government-imposed tax and regulatory barriers that impede the U.S. maritime industry's competitiveness.

The shortfall in available merchant mariners to crew logistic ships during war has grown despite Jones Act requirements for U.S.-crewed domestic ships and an \$8,000 per year Student Incentive Payment (SIP) with subsequent obligated merchant marine service.¹²⁶ To increase the incentives to attract and retain new maritime industry hires—specifically, to crew U.S.-flagged commercial vessels—the current three-year commitment to service in the merchant marine could be extended to five years with an increased SIP of \$12,000 a year. Stipends for vocational training in maritime skills with commitments to grow a skilled U.S. workforce for the merchant marine as well as a U.S.-flagged commercial fleet should also be considered.

Today, the Maritime Administration, which is responsible for such initiatives, is considering whether to expand training capacity through new training vessels (\$300 million appropriated in 2019) along with more instructors and more schools (e.g., \$100 million for an additional State Maritime Academy).¹²⁷ To ensure that such investments are having the desired effect, a goal of training and sustaining a reserve force adequate to manning 120 percent of the need for sustained wartime operations should be set. This would require a reserve mariner force of 16,329, or 4,561 more than the current inventory of 11,768.

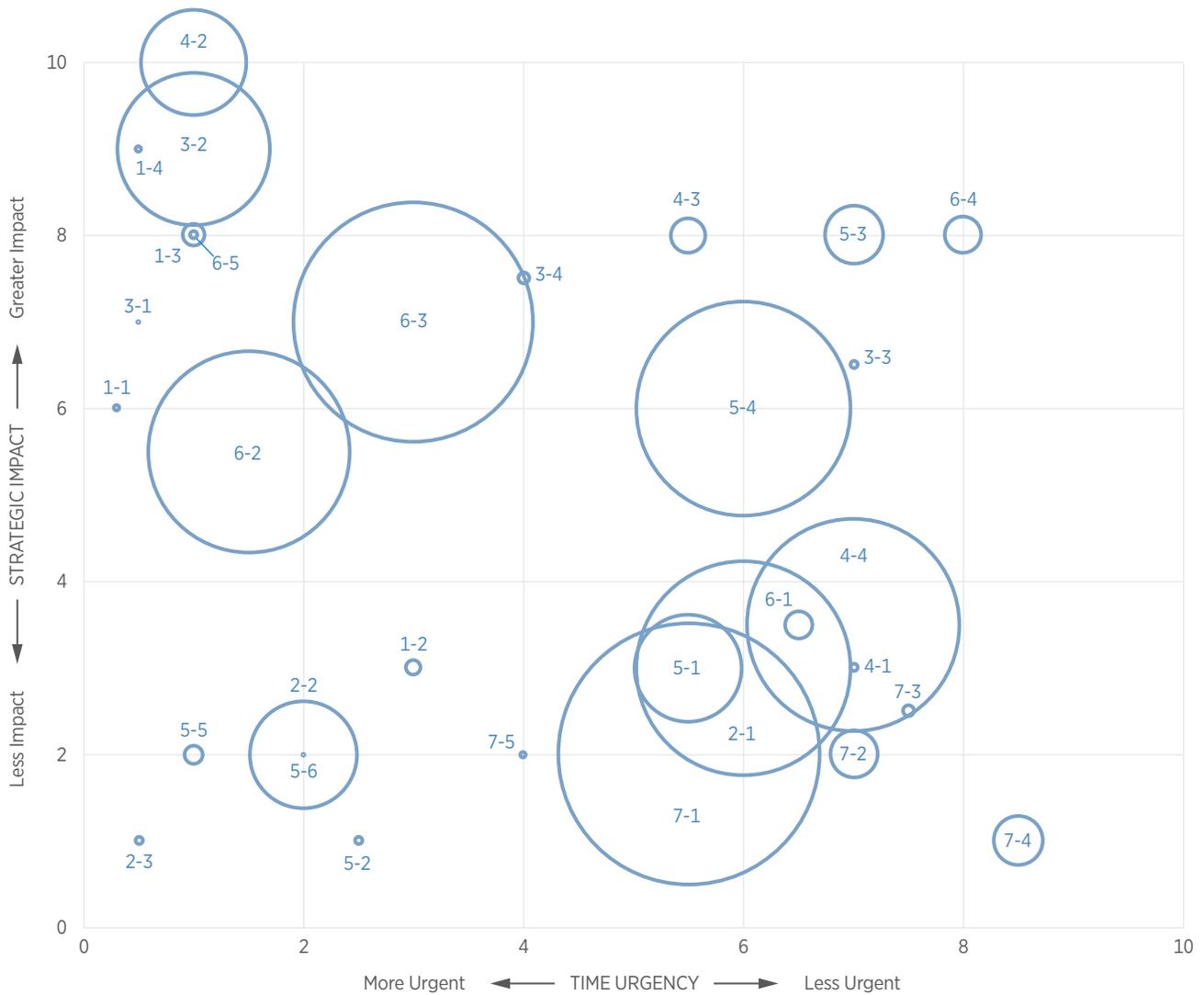
As was true during the Reagan naval buildup, greater budgets for the Navy must come with commitments to greater diligence and effectiveness in the use of these funds. Looking ahead, naval shipbuilding must improve from its 2008–2018 track record of \$8 billion more than planned for 11 lead ships produced with half of them more than two years overdue.¹²⁸ While things have improved, the ultimate metric for judging commitment to this promise is delivery of warships on time and at the numbers needed to pace China's and Russia's maritime threats. This will require recapitalizing the Navy's in-house engineering capacity, which is critical in early design and program success, as well as adjusting ship acquisition processes and

FIGURE 1

Planning for the Future: Key Initiatives for the U.S. Navy

The chart below shows relative values for Strategic Impact, Time Required, and Effort Required for 31 key initiatives.

Circle size =
Resources and
duration of effort
required



SOURCE: Author's analysis.

revitalizing the partnership between the Naval Sea Systems Command (NAVSEA) and industry. At the same time, partnership with Congress will be vital to ensuring predictability in shipbuilding plans with long-term budgeting, stability in design, and adequate intervals in series production to advantage economies of scale and fabrication experience.

Label	Initiative	Time Urgency 0-10	Strategic Impact 0-10	Resources + Duration of Effort Required 0-30,000
DEVELOP A UNIFYING NARRATIVE DRIVEN BY VISIONARY LEADERS				
1-1	Articulate Vision	0.3	6.0	20
1-2	Educate Leaders	3.0	3.0	100
1-3	Develop Leaders	1.0	8.0	200
1-4	Promote Dynamic Leaders	0.5	9.0	15
ACCELERATE A NEW FLEET DESIGN FOR CONTESTED OPERATIONS				
2-1	Increase Shipyard Capacity	6.0	3.0	20,000
2-2	Expand Shipyard Workforce	2.0	2.0	5,000
2-3	Identify Systemic Issues	0.5	1.0	20
EXPAND SHIPYARD CAPACITY				
3-1	Reform Global Force Management	0.5	7.0	2
3-2	Dedicate Task Forces in Eastern Mediterranean and South China Sea	1.0	9.0	10,000
3-3	More Non-Lethal Options	7.0	6.5	20
3-4	New Concept of Operations Exercises	4.0	7.5	50
EMPHASIZE PERSISTENT OPERATIONS IN DECISIVE THEATERS				
4-1	Doctrinal Training	7.0	3.0	20
4-2	Large Scale Exercise	1.0	10.0	5,000
4-3	International Training Missions	5.5	8.0	500
4-4	Grow Manning	7.0	3.5	20,000
FOCUS ON TRADITION WHILE BUILDING NEW CORE COMPETENCIES				
5-1	Base Resiliency Plan	5.5	3.0	5,000
5-2	Review Title 10	2.5	1.0	20
5-3	Logistic Force Pacific	7.0	8.0	1,500
5-4	Base Recapitalization Fund	6.0	6.0	20,000
5-5	Embed Department of Navy Personnel at the Development Finance Corporation	1.0	2.0	120
5-6	Add Department of Defense Assessment in Congressionally Mandated Development Finance Corporation Reports	2.0	2.0	3
SECURE AND ENHANCE AN IMPROVED NAVAL FORCE POSTURE				
6-1	Develop and Utilize Global Scaled Modeling and Simulation	6.5	3.5	300
6-2	Design and Build New Class of Tenders	1.5	5.5	18,000
6-3	New Class of Warships Optimized for First Island Chain Operations	3.0	7.0	25,000
6-4	Upgrade Small Surface Combatants for Gray Zone Operations	8.0	8.0	600
6-5	Deploy Non-Lethal Gear on Forward Deployed Ships	1.0	8.0	20
IMPLEMENT A COMPREHENSIVE NATIONAL SHIPBUILDING PLAN				
7-1	National Maritime Program	5.5	2.0	30,000
7-2	Incentivize Maritime Recruiting	7.0	2.0	1,000
7-3	Deregulate Shipping	7.5	2.5	50
7-4	Reform Design Factory	8.5	1.0	1,000
7-5	Establish a Shipbuilding Department of Defense Capital Account	4.0	2.0	12

In a 2018 report, the Government Accountability Office made a key assessment: The greatest root cause of cost overruns and delays since 2008 has been concurrency.¹²⁹ “Concurrency” is a term of art that refers to the overlap in technology development, design, and construction of a ship. For example, in the case of the *Ford* class, there was prolonged technology

development concurrence as 13 key novel technologies matured. The resultant redesign caused the eventual cost of construction to be \$2 billion over estimate and delivery to be delayed by two years.¹³⁰ Mechanisms to mitigate and lessen this concurrency are obviously needed.

Seeking cost savings, the Navy reduced its in-house NAVSEA naval engineer staff by 75 percent by the late 1990s. The effect was to outsource new warship design to industry, which required an average of 48 months to reach preliminary design and contract design milestones compared to 24 months with in-house design.¹³¹ The British Royal Navy noted a similar effect when it downsized its Royal Corps of Naval Constructors. Having outsourced its design competencies, the Navy relied on industry to design the Littoral Combat Ship (LCS) and the *Zumwalt* DDG 1000. Series production for both ships was less than originally planned: only 32 of 52 for the LCS and three of 32 for the DDG 1000. In addition, cost overruns were 173 percent for the LCS and 47.9 percent for the DDG 1000, and it took two years for both ships to reach IOC.¹³²

In the final analysis, limited in-house naval architect expertise complicated the development of specifications that would be useful for industry, in effect making the Navy a less than fully informed customer and leading to costly decisions. Best business practices indicate that unexpected engineering problems and fabrication issues (availability of dry dock, special machined tools, etc.) can be minimized by using NAVSEA-led Integrated Product Teams with industry subject-matter experts to develop business strategies for shipbuilding. Additionally, a life-of-project flag-level officer or Senior Executive Service civilian should be assigned to oversee a review board made up of members from the Navy and industry who can use good engineering sense to address changes in the operating and policy environment.

Fabrication of highly complex warships takes from three to five years, and for lead ships in a new class, the design process can consume an additional three or more years. The Navy has used several purchasing methods, but since 1950, ships have largely been fully funded in the years when they have been procured. At times, the Navy has used advance payments and incremental funding. All three methods have utility. For example, advance procurement has been used to purchase long-lead-time materials (e.g. ship reduction gears can take three years to produce) that otherwise would have delayed ship delivery and caused cost overruns. Incremental funding divides total cost of procurement over several payments and allows for year-to-year budget flexibility.¹³³ Another method, advance appropriations, has been resisted by congressional appropriations committees despite being used for over \$339 billion in non-defense spending.¹³⁴

To enable purchasing flexibility, a novel method was approved several years ago. Established with the FY 2015 budget, the National Sea-based Deterrence Fund provides the Navy an account for holding appropriated funds for up to five years and grants several authorities—advance procurement, incremental funding, advance construction, and cross-class common component purchasing—within one budgetary package. Advance construction funds infrastructure and workforce stability needed in the fabrication of a ship. Common component purchasing is the transfer of funds between accounts for the same parts.¹³⁵ In 2017, \$630 million was transferred from the Navy’s shipbuilding account to this fund;¹³⁶ in 2020, another \$209 million was transferred.¹³⁷ As currently authorized, this fund is being used to fund construction of the *Columbia* class SSBN.

The complexity and interrelatedness of U.S. shipbuilding and merchant marines make it necessary to implement a national maritime revitalization program. A February 2020 U.S. Department of Transportation report, *Goals and Objectives for a Stronger Maritime Nation*, is a partial response to a 2014 congressional request for a national maritime strategy. An implementation plan is scheduled to follow in early 2021. A national maritime strategy should complement the Navy’s SIOP for public shipyards and be resourced to assist industry in becoming more competitive internationally.

The foregoing seven imperatives are not a sequential or prioritized listing. Rather, they involve concurrent tasks with varying levels of intensity as dictated by urgency and strategic impact. For example, the strategic impact of operating standing naval forces in the South China Sea would be immediate and significant, and the strategic impact of expanding public shipyard capacities for the operational sustainment of the fleet would be small but no less important in the overall effort. Thus, as the accompanying graphic illustrates, while the levels of effort may be similar in a single budget year, the shipyard effort will require a years-long commitment and be resourced gradually over a longer time frame.

V. Force Design and Force Structure

Confronting the challenge of great-power competition requires a comprehensive plan of action. The preceding pages have focused on the threat from China and Russia and the institutional reforms and policy adjustments that are needed to meet that threat. However, no matter what else is done, there has always been one central question: How many ships do we need?

To make an informed recommendation, one has to know what activities the Navy must conduct, what capabilities are required for those activities,

and how to meet these requirements within the limits imposed by the size of crews. This is the *force design*, and it includes an articulation of missions, deployment patterns, operational tempo sustained, and required capabilities. Then one must take these requirements, apply rational budget projections, and determine the numbers of ships, the presence plan, and future construction delivery timelines to define the *force structure*.

A. Current Ideas

As noted, several current concepts of operations inform the Navy's force design. These concepts include the Army's Multi-Domain Operations (MDO); the Marine Corps' Littoral Operations in a Contested Environment (LOCE) and Expeditionary Advanced Base Operations (EABO); and the Navy's Distributed Maritime Operations (DMO). All of these concepts aim to complicate Chinese targeting by dispersing strike capabilities both at sea and as new ground-based anti-ship capabilities arrive from shore.

To increase the survivability of forces executing EABO and MDO operations within dense Chinese offensive capabilities, numbers and stealth will be important. The numbers of units the Chinese would have to target is intended to overwhelm their systems and accelerate the depletion of their long-range weapons, notably mid-range and long-range ballistic missiles and land attack cruise missiles. Stealth, to include decoys, is also important to ensure that small, dispersed forces are able to execute their own offensive operations against Chinese maritime forces.

As Bryan Clarke and Timothy Walton have argued, these forces will need to have the ability to conduct targeting passively so as to not give away their location. One technique is multistatic electromagnetic sensing where radar transmitter and receiver are geographically separate.¹³⁸ Another force design recommendation is the use of unmanned ships with vertical launch systems (VLS) to provide more strike capacity while freeing space on manned ships for defensive weapons (i.e., air and missile defenses). As envisioned by Clark and Walton, replacing one destroyer in a three-ship surface action group (SAG) with six VLS-equipped unmanned corvettes (DDC at approximately 2,000 tons) can increase strike capacity by 133 percent while increasing a defender's targeting problem by 267 percent.¹³⁹

These recommendations are currently conceptual today, but they clearly have a part to play in the realization of EABO and DMO concepts.

Today, the Navy employs the fleet in several formations appropriate to the mission. These formations include the Carrier Strike Group (CSG); Expeditionary Strike Group (ESG); Amphibious Ready Group (ARG);

Surface Action Groups (SAG); and independent operations. The CSG and ESG are the largest groupings and are intended to execute contested operations, CSG for strike operations and ESG for amphibious operations.¹⁴⁰ As the Navy looks to incorporate several new capabilities and concepts of operations (e.g., DMO), new formations will need to be considered along with new missions.

B. Evolving Deployment Patterns

In 2014, the Navy rolled out its Optimized Fleet Response Plan (OFRP), intended to increase stability in maintenance and deployments. As conceived and detailed in Navy instructions, the notional OFRP 36-month framework includes a maintenance phase consisting of a six-month shipyard repair (up to 16 months for aircraft carriers in dry dock) and a one-month shakedown; an eight-month period of training culminating in certification of a ship for deployment; a seven-month deployment (traditionally capped by a month of in-port reduced activity for crew rest); and a 13-month sustainment phase during which the ship may be tasked for short-duration operations such as Dynamic Force Employment (DFE).¹⁴¹ DFE operations are conducted for a specific strategic message or effect in accordance with the National Defense Strategy to increase operational unpredictability against an adversary.

Two years into the OFRP's establishment, then-Fleet Forces Commander Admiral Phillip Davidson expressed optimism that the predictability offered the Navy would lead to improved retention of sailors and the clearing of backlogged maintenance.¹⁴² Six years later, results have been mixed: Deployments of CSGs have not averaged the targeted seven months, and maintenance delays continue.¹⁴³ Acknowledging challenges in executing the OFRP, Chief of Naval Operations Admiral Michael Gilday indicated that there is probably no room for changes in the training and maintenance phases but that he was looking at the sustain phase following deployment when readiness is highest.

In January 2020, it was announced that DOD and the Navy were conducting reviews of the OFRP, acknowledging that the number one factor in its success was dependence on the clearing of maintenance backlogs.¹⁴⁴ Without any viable alternatives proposed by the Navy, it appears that the OFRP will continue into the foreseeable future.

As new unmanned or optionally manned platforms begin to enter the fleet in the coming years, the hope is that they will reduce operational stress on the manned ships and provide much-needed capacity. Early in

2021, Pacific Fleet's Surface Development Squadron One will conduct a fleet battle problem to refine the Navy's unmanned fleet design and roles for the Large Unmanned Surface Vessel (LUSV) and the Extra Large Unmanned Underwater Vessel XLUUV. Previous experience with carrier-borne MQ-25 unmanned tanker aircraft, K-MAX optionally manned logistics helicopters used in Afghanistan, the MQ-4C drone deployed to Guam in 2019 for maritime patrol, and the Sea Hunter (now MUSV) that sailed unmanned in a 2018 round trip from San Diego to Hawaii—indicates that the benefits will be narrow. Congress is rightly skeptical and has placed limits on future procurement of unmanned platforms pending certification of critical subsystems and has prohibited the installation of offensive systems on unmanned platforms pending a legal review.

Such concerns aside, it appears that the development and deployment of unmanned systems in the Navy is an irreversible trend and that the task will be to determine how missions are shared among unmanned, manned, and mixed formations of ships and aircraft. Until reliability is proved with sea-time experience, unmanned platforms will likely perform missions in the near term that enhance the operational effectiveness of the manned ships or as unmanned support ships.

Evolving deployment patterns of the Army, the Air Force, the Marine Corps, and (to a lesser extent) the Coast Guard should inform the Navy's own deployments. As both the Army and the Marine Corps begin to field new anti-shipping capabilities and implement their MDO and EABO concepts, coordinating and exercising their deployed forces with the Navy will be critical. The Air Force's forward deployment of B-1 and B-52 bombers in Continuous Bomber Presence (CBP) and forward deployment of fighter aircraft in Theater Security Packages (TSP) have been similarly valuable when coordinated with naval operations as was done in June 2020 in the South China Sea.

In addition, the successful Western Pacific deployment of the Coast Guard Cutter *Bertholf* in 2019 made a compelling case for continuing such deployments.¹⁴⁵ How the Navy chooses to employ these cutters in the future could well be an important factor in enabling better interoperability with the region's coast guards and maritime police.

C. Knowing the Environment of Presence Operations

Chinese and Russian naval exercises are a likely pretext for offensive operations and, while occurring throughout the year, typically fall into predictable time frames as a result of conscript training schedules and weather.

Nonetheless, smaller operations and especially submarine operations are not so constrained and require persistent vigilance. Overall, this allows some flexibility in planning presence operations and predicting when and where a crisis is most likely to occur.

Another concern is operational distraction when a military response is required quickly as it is, for example, following such events as a hijacking or piracy like the 2009 *Maersk Alabama* incident made famous in the Tom Hanks movie *Captain Phillips*. Having a ship nearby that is able to respond to such events in the Indian Ocean, for example, can minimize the chance that ships in a decisive theater (e.g., the South China Sea) will have to be withdrawn. With this in mind, predictable operational patterns were analyzed to inform requirements for persistent naval presence in several key maritime systems: the Taiwan Straits and East China Sea, South China Sea, North Atlantic, Eastern Mediterranean, Indian Ocean, Persian Gulf, Central Atlantic, Caribbean, and Gulf of Guinea.

D. New Naval Groupings

Peacetime success requires a naval force that is tailored to the specific challenges of its theater of operations while able to reposition rapidly and execute combat missions and respond to an unexpected crisis. Grouping ships with differing capabilities into a coherent task-focused force is long-standing Navy practice, but today's Carrier Strike Group, Expeditionary Strike Group, and Amphibious Ready Group do not address the full range of this era's peacetime missions, let alone take advantage of new capabilities.

The Eastern Mediterranean and South China Sea Task Forces are meant to address great-power competition in decisive theaters. Understanding what specific force groupings are required and what will constitute them is the next step in developing a recommended force structure. Several new missions as well as a reformulation of some long-standing ones should be considered.

1. *Task Force South China Sea*. This task force would provide a persistent presence in the South China Sea to monitor, anticipate Chinese challenges, and preempt with shows of force. During peak exercise and fishing season (February through October), the force would swell in numbers of surface combatants (guided missile frigates [FFG] and LCS) to include an aircraft carrier strike group. During the lighter operational season, the aircraft carrier could be supplemented by an

amphibious ship optimized for air operations (e.g., landing helicopter assault ships [LHA]).

While the actual composition would unavoidably change, it would have to include an air element (sea-based and shore-based) that is strong enough to outclass any immediate air challenge to its operations and a submarine component. This would likely mean sustaining an aircraft carrier strike group in the Western Pacific not unlike the carrier presence maintained in the Persian Gulf until the mid-2010s. Eventually, unmanned XLUUV submarines and a task-specific scout platform employing mostly unmanned platforms would be operated in this theater to pace the large number of Maritime Militia, Chinese Coast Guard, and Chinese PLAN.

At a minimum, the task force would need to be resourced on any given day to ensure its ability to monitor and make an adequate display at one of three disputed features (e.g., Scarborough Shoal, Second Thomas Shoal, and South Luconia Shoals). Such a minimum force would likely include three FFG/LCS with a lead DDG or CG, maritime patrol aircraft, LPD, or like ship with embarked special forces to conduct vessel boarding and limited small island resupply, and two submarines.

- Task Force Eastern Mediterranean.* This task force would provide a persistent presence in the Eastern Mediterranean to monitor, complicate, or challenge Russian naval operations like those in Syria and Libya today. Russia has agreements in place to base as many as 11 ships in Tartus, Syria, and recently added Port Sudan on the Red Sea for as many as four warships. A U.S. naval presence should be sized to pace regional Russian naval presence, as well as episodic Chinese deployments, and be able to conduct limited strike operations. At a minimum, such a force would include two CG/DDG armed with a balance of anti-air, anti-ship, and land-attack weapons; one submarine; and an LPD with embarked special forces for vessel boarding and counterterrorism operations. Maritime patrol and air support could be provided from land-based aircraft operating out of NATO bases and (if offered) British Akrotiri airbase on Cyprus. As with the South China Sea task force, the mission is to effect proactive great-power competition activities.

3. *Carrier Strike Group.* A Carrier Strike Group is designed to provide air power for strike operations, principally land strikes, and localized air dominance. These groups as traditionally constituted are large (a CVN and air wing, four–six DDG/CG, two logistic ships, and a submarine) and are intended to project power into contested waters. The geostrategic statement that a CSG makes when it arrives in a region is unmistakable and backed by decades of historical precedent. These forces are constituted for projecting power forward and should be used judiciously.
4. *Fast Carrier Screening Force.* As concepts for contested operations in the first island chain (i.e., EABO, LOCE, MDO) mature, there will be a need for a covering or screen force. Such a grouping would be centered on a carrier designed for air dominance and anti-submarine and anti-surface warfare. It would be assumed that this group would operate in and among the many islands and shallow waters often encountered among the Visayas in the Philippines and the Sulu Sea.

Development of such a new platform would take upwards of eight years, but when fielded, it would be composed of a CVNE (displacing approximately 60,000–70,000 tons) with a primarily unmanned air wing and two or three DDG/CG. Logistic support is mitigated by the CVNE's being nuclear powered, which allows it to carry more aviation fuel, with replenishment forces comprised of an oiler and tender (munitions replenishment and repairs) that would rendezvous at secure sites following screening operations in conjunction with Marine and Army movements along the first island chain.

5. *Surface Strike Group (w/ DDC).* As originally proposed by Bryan Clark and Timothy Walton, this concept envisions a surface action group designed to conduct land strikes using long-range cruise missiles and forthcoming intermediate range conventional prompt strike (IRCPS) hypersonic missiles. The group would include six LUSV (DDCs) with VLS carrying strike weapons; two DDG for air and missile defense; and a munitions logistic ship for VLS reload (T-AKM).

To support the unmanned LUSVs, either a purpose-built support ship would be needed for repair and maintenance (AR) or the munitions logistic ship would have to be designed to provide these services with trained maintainers. One solution that would accomplish the repair,

maintenance and T-AKM roles could be a modified LPD-17 hull that incorporated improved radars and VLS systems for long-range hypersonic strike weapons and used its larger size to conduct VLS reloads at sea with the LUSVs in a command cruiser or CLC role.

6. *First Island Chain Amphibious Ready Group (Fast and Traditional Versions)*. An Amphibious Ready Group is typically a group of three large amphibious vessels (LHD or LHA, LSD, and LPD) used to move Marines in a uncontested environment. This grouping would be used in peacetime or in areas where a maritime threat is low. A modified ARG would be designed for the movement of Marines among the first island chain during contested operations or conflict. Ideally, the modified ARG would operate in conjunction with a Carrier Screening Force and consist of fast-moving (sustained speeds of 20 knots for three days), shallow-draft (less than 22 feet) vessels: a frigate, two Light Amphibious Warships (LAW),¹⁴⁶ and two–four MUSV optimized for deception and air defense. In addition to the Marines carried, Navy combat engineers (SeaBees) would deploy for airfield and port repairs to enable follow-on forces as needed. Additionally, these forces should be able to acquire fuel without access to modern port facilities or an oiler ship.
7. *Expeditionary Strike Group and Lightning Strike Group*. In essence, an Expeditionary Strike Group is an ARG with a naval force in escort designed for forcible entry in contested littorals. Proposals for a repurposed LHA for air operations would employ F-35 aircraft in place of amphibious assault aircraft (helicopters). This so-called Lightning Strike Group would be intended for air defense and maritime presence operations in areas with a limited threat. A second iteration of the Lightning Strike Group would see an air wing designed for anti-submarine warfare using helicopters and unmanned XLUUV and MUSV deployed from flight-one LHA variants with a well-deck. Such a variant of the Lightning Strike Group for ASW would be a transition to the next force grouping.
8. *Theater Reconnaissance and Anti-Submarine Patrol Force (Opposed and Unopposed)*. Such a group would be centered on a conventionally powered scout carrier deploying future fixed wing unmanned air, sea, and subsurface platforms to conduct and sustain wide-area patrol and reconnaissance. In an opposed configuration, deployed MUSV could

be configured for air defense and a DDG or FFG attached depending on the surface or subsurface threat expected.

Cost and delivery timelines for such a ship could be minimized by using the existing LPD-17 hull design. This allows for keeping propulsion and the majority of ships' systems unchanged. Some adjustments made for increased fuel carrying capacity and an improved flight deck that supports F-35B vertical takeoff and landing and unmanned flight operations. F-35B capacity would be for air defense and as an at-sea forward arming and refueling point (FARP) for Marine Corps units ashore.

9. *Contested Logistic Support Force.* Amphibious and land forces operating within the first island chain during a crisis will require urgent at-sea battle damage repair and logistic support necessitating a new Contested Logistic Support Force. This grouping would be centered on a multi-role logistic ship to provide urgent repairs, enabling a damaged ship to retire to a shipyard for critical replenishment of munitions and refueling. Today, this mission would be conducted by large Combat Logistic Forces (CLF) like 50,000-ton oilers and 40,000-ton dry cargo ships. To service a geographically dispersed, large number of smaller units (First Island Chain ARGs), more numerous logistic vessels would be needed that could operate in the shallow waters and under threat in the first island chain.

While most often operating with an escort (an FFG or a DDG), these logistics ships would require limited defenses to enable independent and dispersed operations while under threat of attack. Ideally, these units would operate within the anti-access capabilities employed ashore by the Marines and the Army to protect against attack from air or surface ships. The submarine threat would have to be considered in the ship's hull design to allow for deployable sensors (e.g., torpedo detection) and limited defensive weapons (e.g., torpedo decoys and point missile defenses).

10. *Basing and Heavy Logistics Support Force.* Sustaining the fleet in battle will require repairs and advanced bases. This force, operating away from immediate threat, would focus on establishing bases for operations, much as Ulithi Atoll did during World War II in the Pacific. In peacetime, such a grouping would be focused on reconstituting

antiquated bases or upgrading existing infrastructure for U.S. forces (Chuuk Lagoon, Pohnpei, etc.) and would consist of large CLF ships, construction battalions for port and airfield work, and a new large repair and manufacturing ship.

A new class of surface tenders or repair and manufacturing vessels would provide substantial battle damage repairs, utilize additive manufacturing to supply needed replacement parts quickly, and employ a team of naval architects and craftsmen. In the immediate peacetime future, expeditionary fast transports with embarked construction teams would be deployed to the Central and South Pacific to conduct infrastructure upgrades for follow-on forces, ideally in conjunction with military exercises so that exercise-related consecution (ERC) funds could be used.

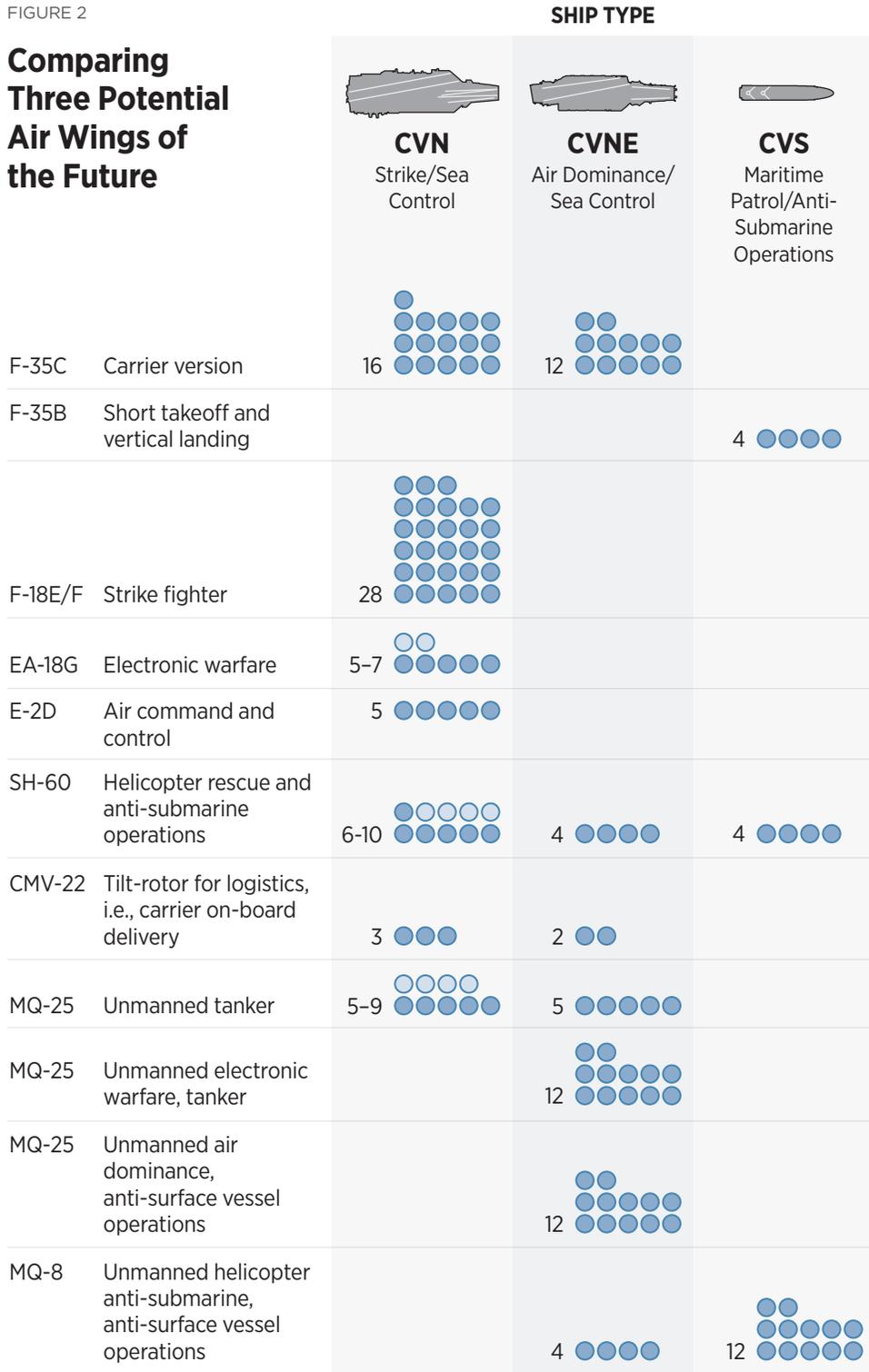
11. *Maritime Escort Force.* As noted earlier, the Navy today will not be able to provide convoy escorts to military sealift. This predicament can be addressed in several novel ways, all centered on a Maritime Escort Force construct comprised of unmanned vessels; land-based maritime patrol aircraft, both manned and unmanned; traditional escorts when force levels allow; and deployable systems installed on merchant vessels.

The first layer of defense would be provided by a maritime patrol force of P-8 manned aircraft and unmanned MQ-4Cs and MQ-9s operating from land for sustained maritime surveillance. For unmanned aircraft, it will be important to develop sensors that are optimized for anti-submarine warfare, and the miniature sonobuoys currently being developed by ERAPSCO and Spartan Corporation will be needed to localize hostile submarines.¹⁴⁷ A second layer of defense would be deployable decoys and sensors installed on select merchant vessels operated by small naval teams and, when available, a traditional escort (FFG/LCS eventually leveraging MUSV).

12. *New Naval Air Wings.* The evolving missions for the Navy within the first island chain and broad-area anti-submarine patrol in the Central Pacific and North Atlantic require three classes of aircraft carriers: the well-known CVN of the *Nimitz* class and *Ford* class, a CVNE designed for screening operations of expeditionary forces within the first island chain, and a CVS designed for large-area maritime patrol

FIGURE 2

Comparing Three Potential Air Wings of the Future



SOURCE: Richard R. Burgess, "Navy's Future Carrier Air Wing Configuration Coming into Focus," *Seapower Magazine*, September 14, 2020, <https://seapowermagazine.org/navys-future-carrier-air-wing-configuration-coming-into-focus/> (accessed November 23, 2020).

and anti-submarine operations. Each class of carrier with its specific role requires an air wing appropriate to the mission. For CVNs of the future, the airwing will retain a strike mission focus likely consisting of: 44 strike fighters (28 F/A-18E/F and 16 F-35C); five to seven EA-18G electronic warfare aircraft; five E-2D for air command and control; six to 10 SH-60 helicopters; three CMV-22 Osprey tilt rotor aircraft for logistics support; and five to nine MQ-25 unmanned tanker aircraft.¹⁴⁸ While the CVN air wing is optimized for strike operations, the CVNE and CVS air wings would be optimized for their role and incorporate more unmanned platforms to allow more aircraft to be carried and supported on a smaller hull.

In the future, partnering unmanned air platform designers with shipbuilders should be pursued to inform designs that are optimized for naval air operations. Beginning with the 2021 establishment of an Unmanned Carrier-Launched Multi-Role Squadron (VUK-10), the MQ-25 is first in line among unmanned platforms to be incorporated into the air wing in an air-refueling or tanker role.¹⁴⁹ Future developments will likely see the MQ-25 take on new roles utilizing electronic warfare and sensor under-wing pods for sea control and air dominance.

The Navy has also been investing in unmanned helicopters, such as the MQ-8C Fire Scout, with a 12-hour endurance carrying a 300-pound payload.¹⁵⁰ Future developments could enable the MQ-8 to participate in sea-control and anti-submarine operations. Assuming the Navy is able to continue recent years' advances in existing unmanned aircraft, it is reasonable to project that by 2030, they could be incorporated into future aircraft carrier air wings optimized for unmanned systems. A summary of the Navy's current thinking on the CVN future air wing and what a CVNE and CVS air wing might look like is included in Figure 2.

The role and area of operations expected of a CVNE deemphasizes the need for long-range strike operations while emphasizing sustained air defenses. The concept would center on teaming one manned F-35 with two MQ-35s (one tanker, one armed) for sustained air defense operations. SH-60 and MQ-8 helicopters would conduct anti-submarine warfare and intercept hostile small surface vessels; it is also expected that an SH-60 would be available for rescue and recovery operations in a long-standing role on CVNs. The embarkation of the tilt rotor CMV-22 is intended for

logistic support and can also support remote Marine or Army advance operating bases in a limited capacity. To support rapid sortieing of air defense aircraft in the face of a threat, the CVNE would likely incorporate three catapult systems, the *Ford*-class Electromagnetic Aircraft Launch Systems (EMALS).

The CVS would be intended to fill a peacetime presence and maritime patrol mission while in wartime filling in gaps in shore-based air cover of key sea and air lanes. It would not employ a catapult system but would rely instead on vertical takeoff and landing aircraft for air defense and helicopters to execute its patrol and anti-submarine mission. A future CVS design would build on lessons of 1964's MASTER STROKE exercise and 1960's *Wasp*-CVS design that proved the value of CVS bow-mounted sonar and close-in anti-submarine weapons and defenses; today, in place of bow-mounted sonar, a towed array would be more appropriate. Additionally, an escort with variable depth sonar could be paired with the CVS to bolster submarine detection and close-in defense.¹⁵¹

An option to consider is repurposing the *San Antonio* class (LPD-17) or *America* class (LHA-6) for a CVS role by reinforcing its large flight deck for F-35s and converting its well-deck for extra fuel storage and aircraft. Studies indicate that repurposing the LPD-17 hull for this role would require that stability issues caused by the greater topside weight of a reinforced flight deck be addressed.

The addition of two new classes of aircraft carriers provides the Navy several benefits in the long run. First, it disperses its high-end fighter-strike aircraft among more platforms, mitigating the loss of any single CVN. Second, by increasingly leveraging unmanned aircraft, the CVS and CVNE can deliver significant air power from smaller hulls, thereby mitigating some construction and operation costs and broaden the shipyards where they could be built and repaired. Third, the addition of a CVNE and CVS to the fleet provides more flexibility in peacetime presence operations for the employment of CVNs and during wartime for deterrence operations against opportunistic foes.

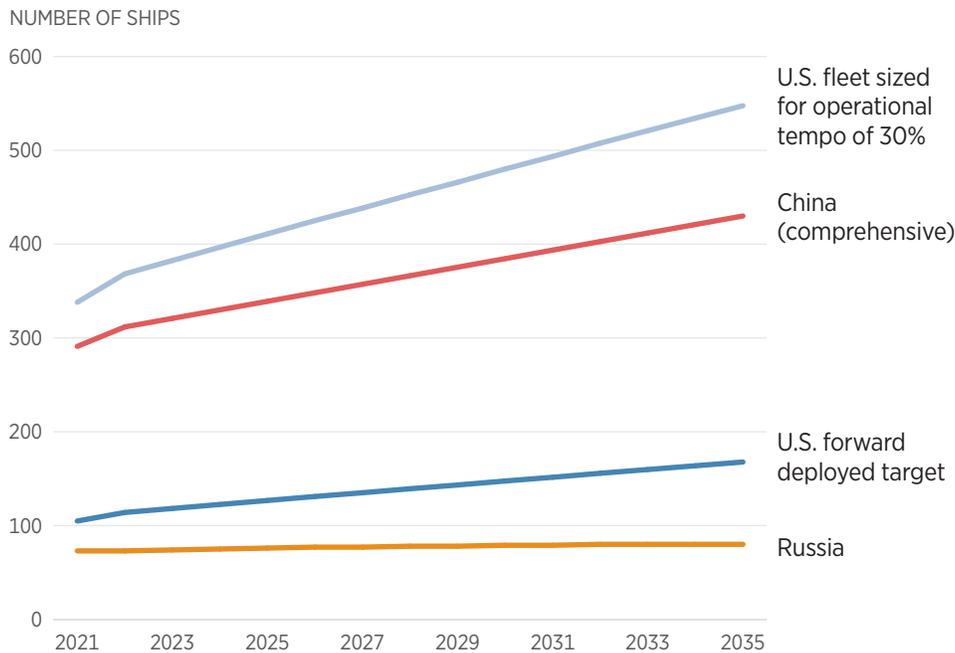
E. Force Structure: The Numbers

A key element in DOD's force sizing construct has been the two major regional conflict (two-MRC) model: that is, sizing the force so that it is able to fight two regional wars simultaneously. However, a conflict with Russia and China would very likely exceed the traditional understanding of "regional" in MRC. The Heritage Foundation has advocated adhering

CHART 2

Keeping Pace with Chinese, Russian Naval Growth

Shown below are the number of ships the U.S. must have in its fleet in order to keep pace with both the Russian and Chinese navies while maintaining a 30 percent operational tempo.*



* A 30 percent operational tempo ensures adequate time for ship maintenance and crew training without sacrificing day-to-day operations.

SOURCES:

- Defense Intelligence Agency, "Russia Military Power: Building a Military to Support Great Power Aspirations," 2017, p. 66, <https://www.dia.mil/Portals/27/Documents/News/Military%20Power%20Publications/Russia%20Military%20Power%20Report%202017.pdf> (accessed January 13, 2021).
- Office of Naval Intelligence, "UPDATED China: Naval Construction Trends vis-à-vis U.S. Navy Shipbuilding Plans, 2020-2030," unclassified paper prepared for Senate Armed Services Committee, February 2020, p. 4.
- John Grady, "Analyst: China Exceeded Expectations in Speed of Naval Growth," *USNI News*, September 10, 2020, <https://news.usni.org/2020/09/10/analyst-china-exceeded-expectations-in-speed-of-naval-growth> (accessed September 10, 2020).
- Michael A. McDevitt, "China's Navy Will Be the World's Largest in 2035," *Proceedings*, February 2020, <https://www.usni.org/magazines/proceedings/2020/february/chinas-navy-will-be-worlds-largest-2035> (accessed October 20, 2020).
- Michael Kofman, "A Year of Challenging Growth For Russia's Navy," *Proceedings*, March 2020, <https://www.usni.org/magazines/proceedings/2020/march/year-challenging-growth-russias-navy> (accessed October 20, 2020).

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to the two-MRC construct, at least with regard to sizing the number of brigade combat teams.¹⁵² The National Defense Strategy Commission also recommended retaining the two-MRC construct; however, because of the

uncertainty inherent in how DOD would manage multiple crises at once across the five challenges of the National Defense Strategy, a more specific construct is needed.¹⁵³

At least with respect to sizing the Navy, it is recommended that the most challenging combination of the NDS's five challenges be used: a war with China and Russia. It is further recommended that adequate forces be available to enable "deterrence by punishment" against any unengaged rival (e.g., North Korea or Iran) as well as to conduct targeted operations of short duration such as suppression of violent extremists planning attacks against U.S. interests.

To determine a recommended force structure, several factors are weighed, starting with the current size, capacity, and operating patterns of the threat (in this case, China's and Russia's navies) and then using the current U.S. fleet size and disposition to determine where and with what capabilities to prioritize presence. Next, allowance is made for the growth of the threat navies and likely deployments out until 2035 (much beyond then, projections become very fluid). These projections draw on several sources, but notably the work done by the Office of Naval Intelligence (ONI) and Rear Admiral Michael McDevitt of the Center for Naval Analyses in predicting the size of China's and Russia's blue-water fleets out to 2035.

The CNA's analysis anticipates that China's blue-water navy will grow from today's 131 ships to 270 modern warships with a larger proportion of nuclear submarines, not counting another 160 near-seas vessels.¹⁵⁴ Russia's blue-water navy will likely remain relatively flat at 73 blue-water ships with perhaps modest growth in the numbers of submarines and frigates or destroyers. The rationale is based on several factors, notably that shipbuilding is considered Russia's worst-performing defense sector and faces a host of challenges in overcoming obsolescent infrastructure and flat budgets.¹⁵⁵ Finally, the most recent 30-year shipbuilding plan (FY 2020) is used as a benchmark for U.S. fleet growth.

For the Navy to be a smarter customer and to ensure that ships are delivered on time even with limited resources, adequate design diligence will be essential. Typically, design to fabrication of a lead ship can take three–eight years for ships utilizing existing systems, hull forms, and propulsion. In rare cases, such as the *Victorious*-class ocean surveillance vessel, timelines can be expedited with effective early design collaboration and adherence to as many existing systems and designs as possible.

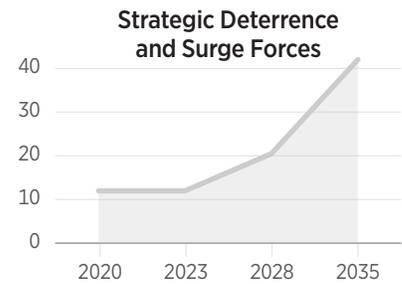
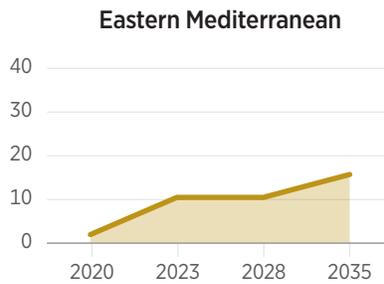
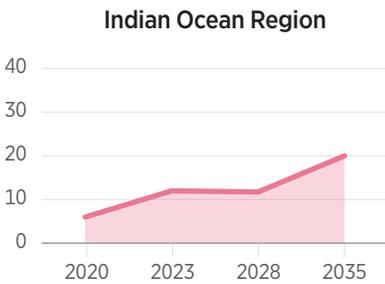
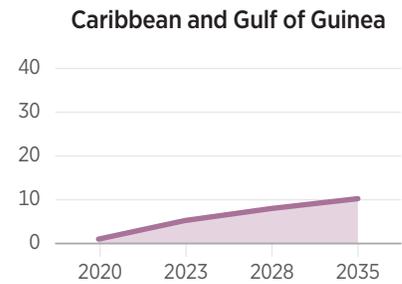
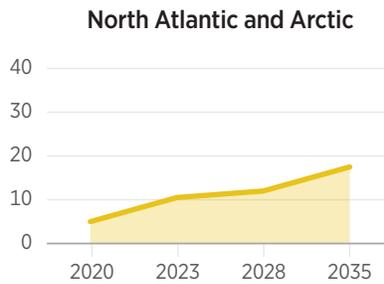
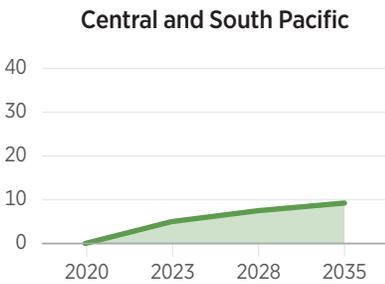
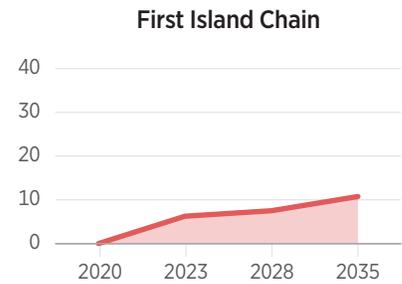
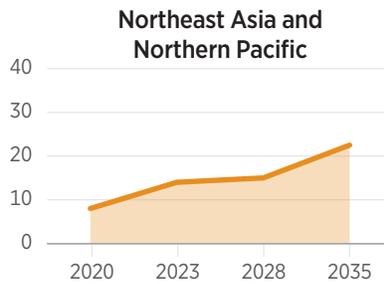
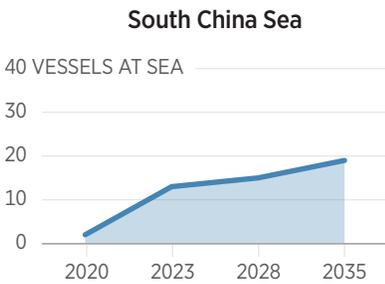
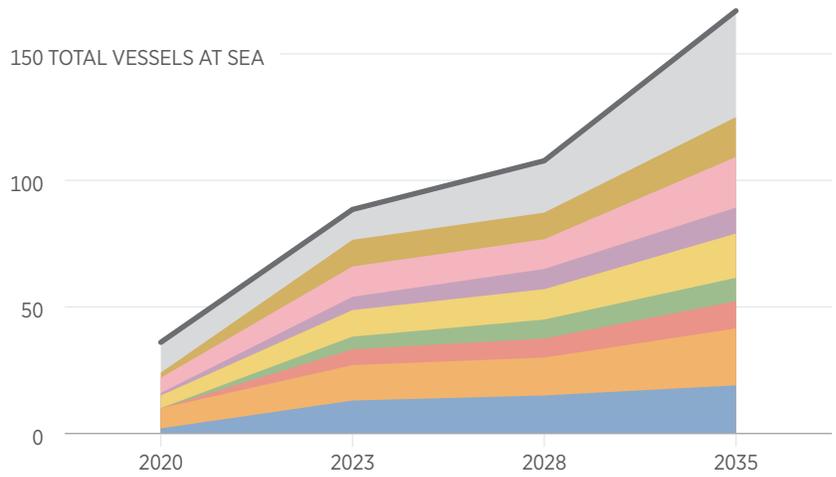
The new classes of ships recommended include:

- A nuclear-powered aircraft carrier (CVNE) optimized for Western Pacific operations;

CHART 3

Implementing a New Navy Force Design

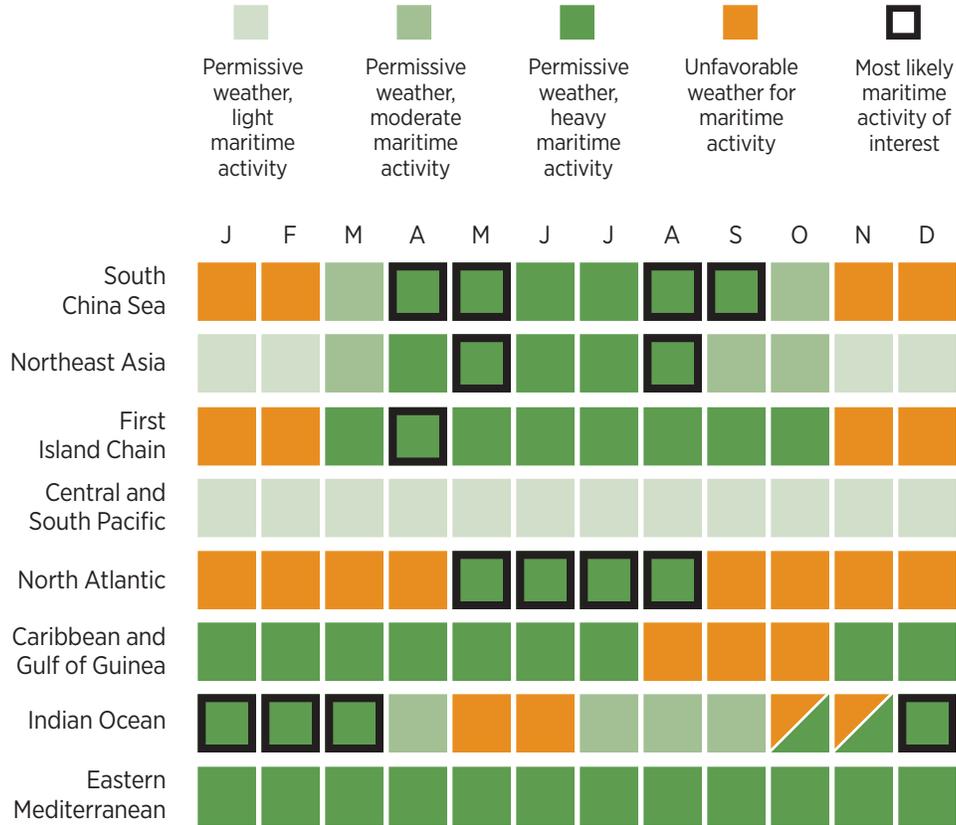
Shown below are the number of U.S. Navy vessels needed in nine regions that have Chinese and Russian maritime activity. These levels are necessary to support exercises, infrastructure, and presence operations.



SOURCE: Author's analysis based on U.S. Navy's 2016 Integrated Naval Force Structure Assessment and the Office of Naval Intelligence.

CHART 4

Maritime Activity Around the World, by Month



SOURCE: Author's analysis.

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- A scout carrier (CVS) using the hull and propulsion system of the *San Antonio* class (LPD);
- A command cruiser and strike support ship for Strike Surface Action Groups and fleet command ships (CLC) based on the *San Antonio* class (LPD);
- A small “nurse” repair and replenishment ship (AR-L) supporting first island chain littoral operations; and
- A factory and repair ship (AR) to repair damaged vessels nearer the conflict and minimize the time during which a vessel has to operate in extremis.

Additionally, others (notably Bryan Clark and Timothy Walton) have recommended the following new classes of ship:

- A 2,000-ton unmanned or optionally manned corvette (DDC or LUSV) with VLS cells;¹⁵⁶
- A missile reload ship (T-AKM) operating in conjunction with the DDC;¹⁵⁷
- A Light Amphibious Warship (LAW) of 1,000–8,000 tons;¹⁵⁸
- A large unmanned submersible (XLUUV in prototyping);¹⁵⁹ and
- A medium unmanned surface vessel (MUSV in prototyping).¹⁶⁰

Implementation of a new force design is a long-term process and, considering that the strategic environment is driving the Navy to consider several new platforms, is likely to be a generational program. Initial adjustments to deployment plans, assignment of forces such as home port changes, and validation of concepts of operation like EABO and DMO can take one to three years from approval to execution.

The first, *reorient* phase would focus on minor adjustments to force allocations occurring from 2020–2023; a surge of as many as three reactivated reserve ships would bolster fleet numbers, validate reactivation assumptions, and implement a reserve experimentation or training and aggressor fleet. Following this would be a *buildup* phase (2023–2028) focused on bringing new classes of ships into the fleet (MUSV, LAW, etc.) and refining concepts of operation based on experience gained with these new platforms. During the third, or *implement*, phase (2028–2035), increasing numbers of unmanned vessels would enter the fleet and the first-in-class CVNE, CVS, AR, and AR-L would be delivered.

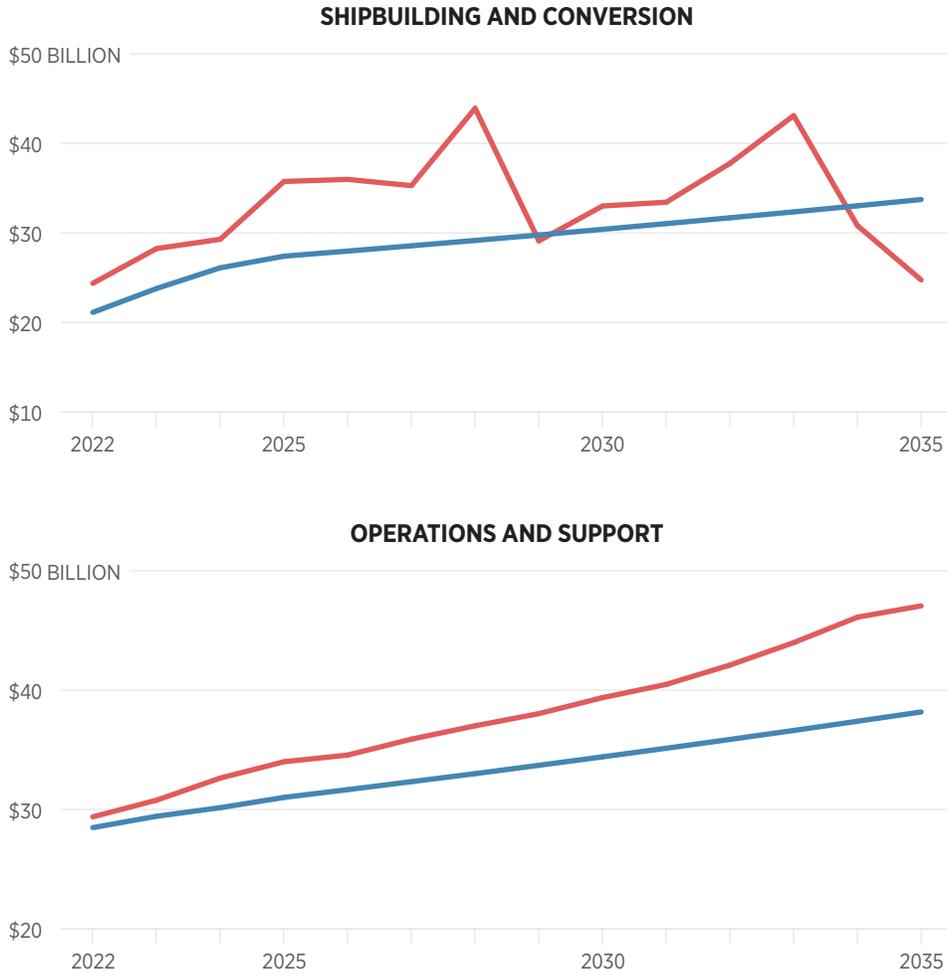
Finally, maritime regions were used as a guide instead of numbered fleet areas of operation to define the allocation of forces. Along with the principal mission focus expected for each over this 2020–2035 timeline, they include:

- *South China Sea*: Actualize proactive great-power competition activities and effective counter-gray zone operations.
- *North Pacific and Northeast Asia*: Conduct maritime and submarine patrol, missile defense operations, and episodic shows of force.

CHART 5

Costs for Navy Procurement, Operations and Support

- Actual FY 2021 figure, then adjusted for inflation
- Author's revised plan



NOTE: Figures are by fiscal year.

SOURCES: Congressional Budget Office, "CBO's Interactive Force Structure Tool," <https://www.cbo.gov/publication/54351> (accessed December 2, 2020), and Bryan Clark, Timonty A. Walton, and Seth Cropsey, "American Sea Power at a Crossroads: A Plan to Restore the US Navy's Maritime Advantage," Hudson Institute, October 2020, https://s3.amazonaws.com/media.hudson.org/Clark%20Cropsey%20Walton_American%20Sea%20Power%20at%20a%20Crossroads.pdf (accessed December 3, 2020).

- *First Island Chain*: Actualize EABO, LOCE, and MDO operations and build regional familiarity.
- *Central and South Pacific*: Reconstitute antiquated or expand existing basing options for extended maritime patrol to secure sea and air lanes.
- *Eastern Mediterranean*: Actualize proactive great-power competition activities and posture for contingencies.
- *Northern Atlantic*: Conduct maritime and submarine patrol and episodic shows of force.
- *Caribbean and Gulf of Guinea Operating Area*: Conduct maritime patrol and counter-illicit activities.
- *Indian Ocean Region*: Conduct maritime and submarine patrol, strike operations, and operations against violent extremists.

VI. The Cost of Building a Strategy-Driven, Threat-Based Fleet

In determining where to put each new ship that is built, the above eight regions were assessed relative to the threat, principally from China and Russia. As the focus of presence is day-to-day great-power competition, that threat was not based on the typical capacity or total numbers of ships that a competitor has, but rather on what typically is seen or expected to be operating at sea. Additionally, weather and seasonal maritime activity (Maritime Militia, Coast Guard, border police, fishing fleets, etc.) were weighed to determine the times of the year when incidents or challenges are most likely to be encountered.

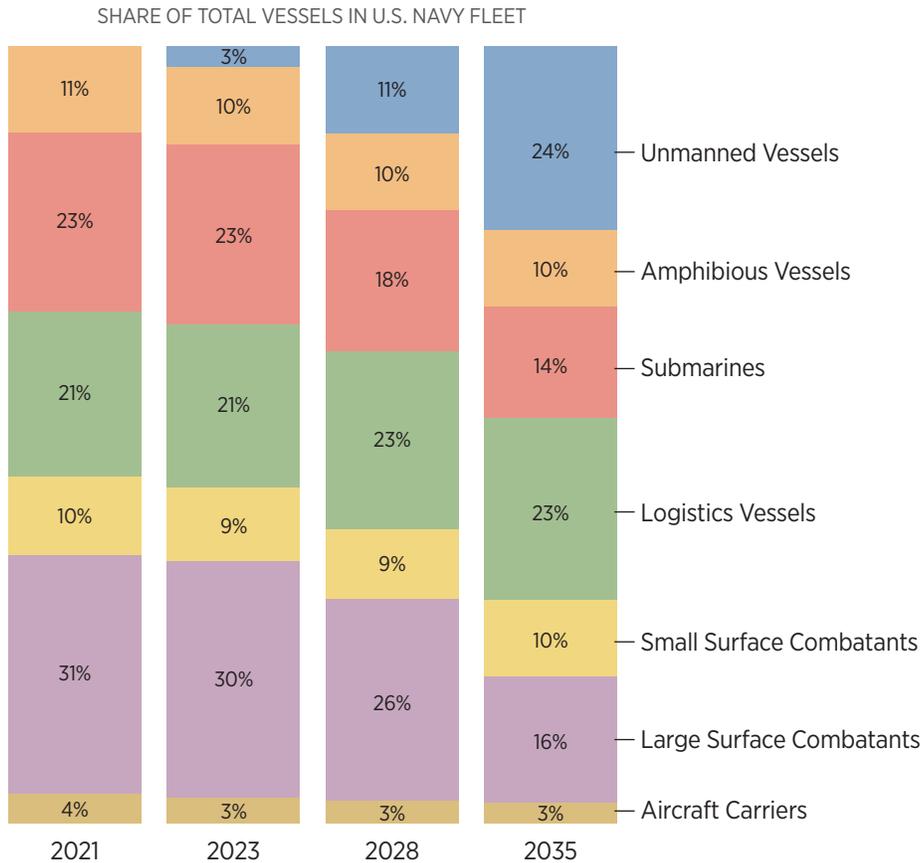
Considering such factors mitigated the total required fleet size as ships could be shifted across regions depending on seasonal threats. Not surprisingly, the greatest threat is in the South China Sea, peaking in April–May and August–September for the foreseeable future, and that is where the greatest investment in presence is recommended. Each of the maritime operational regions went through the same analysis. The following table illustrates this analysis:

The next step was to assess the cost of designing, building, and operating such a new fleet. Building on analysis conducted by Bryan Clark and Timothy Walton and utilizing the Congressional Budget Office's Interactive

CHART 6

Restructuring the Navy Fleet

The Navy fleet of the future will have a diminished reliance on large surface combat ships and an increased reliance on unmanned vessels.



NOTES: Aircraft Carriers—CVN, CVNE, CVS; Large Surface Combatant—CVN, CVNE, CVS, CG, DDG; Small Surface Combatant—FFG, LCS; Unmanned—XLUUV, LUSV, MUSC; Amphibious Vessels—LHA, LHD, LPD, LSD, LAW; Submarines—SSN, SSGN, SSBN; Logistics Vessels—AO, T-AKE, AS, AR, AR-L, T-AKM, LCC.

SOURCE: Author's analysis based on U.S. Navy's 2016 Integrated Naval Force Structure Assessment and the Office of Naval Intelligence.

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Force Structure Tool,¹⁶¹ an informed estimate was made. Perhaps the largest margin of error, and worthy of an update once results are available in about a year's time, is in the data to inform operation and support (O&S) costs of the future unmanned fleet.

During the process of analyzing the resourcing and employment of the future fleet, one question that arose was how best to manage two spikes in

the shipbuilding estimate arising from the design and procurement of two variants of new aircraft carriers. Recommendations made above as part of the seventh imperative—mechanisms for budget flexibility and enhanced design capacity—are meant to address this challenge. Also, the several new classes of ships detailed above need to move quickly to design and the setting of engineering requirements within the next year as this process will likely take more than three years to complete for the more complex ship designs (e.g., CVNE).

Two final points are important regarding future replacement ships:

First, a new submarine tender is urgently needed to replace the aging USS *Emory S. Land* and USS *Frank Cable*, both of which were commissioned in 1979 and both of which survived attempts at decommissioning in 1996. These tenders have been important for sustaining the nuclear Navy while forward deployed, and their value will increase markedly as larger numbers of submarines and unmanned submersibles are expected to be operating overseas.

Second, when the last guided missile submarines (the four repurposed *Ohio*-class SSGNs) are retired from service in 2027, it is assumed that their immense capacity to launch land-attack strikes with conventional cruise missiles will be replaced by large surface ships and a future DDC. To replace one of four SSGN's firepower of up to 154 tomahawk land-attack cruise missiles, will equate to one new DDG (96 available missile cells) and four new DDCs (estimated 32 missile cells) while allowing some capacity for self-defense weapons. Additionally, if the command cruiser concept is pursued, it too could mitigate this lost capacity for long-range strike.

When all is said and done, the above represents a best estimate of the cost of an optimum fleet design, assuming an inherent but manageable margin of error. Additionally, to build such a fleet requires tandem investment to increase shipyard maintenance capacities that conservatively, per the SIOP plan, will cost an additional \$1 billion–\$2 billion annually to implement—and most likely significantly more once shipyard optimization modeling is complete and more informed requirements are defined in 2022. Additional monies will be needed to recruit the mariners and skilled workers to man and maintain a larger merchant fleet through an expanded MSP and attract bright and imaginative naval architects to help the Navy become a smarter ship-buying customer. It is reasonable to assume that this would equate to an additional \$1 billion per year.

Taken together with a 10 percent margin of error, the cost of a national maritime program would range from \$150 billion to \$160 billion over 13

years. Biased to the higher estimate, the average annual cost would be \$12.3 billion in additional funds over inflation for shipbuilding (SCN) and operating and support (O&S), as well as additional funds to support shipyard capacity expansion and initiatives to address shortfalls in the merchant marine. In the context of historical and current budgets, such an increase (approximately 1.8 percent of the 2020 defense budget) should be achievable without poaching funds from other DOD accounts or services.

Even such modest increases, however, must come with commitments and safeguards to ensure that the money is used wisely and that each dollar has maximum strategic impact on our competitors—the real measure of success.

VII. Sailing Directions

Strategies by design involve long-term horizons that too often lead to strategic admiration but not needed action. To overcome this and execute the recommendations made in this paper through 2035, the Navy needs a plan for action: in naval parlance, sailing directions. Readily understood by mariners, sailing directions provide critical details not included on a map for a charted course.¹⁶²

To participate effectively in great-power competition, the Navy must accomplish two corporate objectives or ends: (1) retain public confidence while better competing in the peacetime day-to-day contest with China and Russia and (2) develop and build a fleet that can win wars and be reconstituted quickly in and between wars. To ensure the wisest use of its limited resources, the Navy must synchronize with and leverage disparate government activities in the ways needed: a naval statecraft approach.¹⁶³ And to remain competitive in an age of great-power competition, the Navy must invest in and deploy the means, such as military operations, shipyards, advanced technologies, and alliances.

To get the Navy underway on this comprehensive national maritime program, the following course is recommended:

A. DAY ONE: Issue a modern Trafalgar memorandum.

Specifically, the President should name a maritime czar to oversee and help to ensure coherent policy execution that would include robust congressional, industry, and local community engagement, and the Secretary of Defense should reform internal processes (e.g., GFM and Global Posture Executive Council (GPEC) to be timelier and provide required strategic results effectively.

TEXT BOX 5

The “Phony War”

The August 1939 signing of the Molotov–Ribbentrop Pact and Soviet success against Japan at Nomohan set the stage for war. When it came, for eight months following the September 1939 invasion of Poland, Britain and France refrained from directly engaging Germany in what came to be known as the “Phony War.” This Allied failure, which gave Hitler time to redeploy forces and defeat France, was the legacy of 20 years of political decisions and flawed assumptions.

Immediately following the Great War, the seeds of war were unknowingly planted by the optimistic belief that no rational nation would ever consider undertaking a major war. Lulled by this misplaced faith and eschewing their responsibility, interwar military planners failed to develop measures to counter a wide range of German fait accompli potentialities. They also failed to produce war plans with a view to this uncertainty or forcefully inform the electorate of the strategic consequences of their decisions. Meanwhile, hatred of the Versailles Treaty ending the Great War blossomed in revisionist Germany. In addition, so-called fifth columns like the Sudeten German Free Corps in 1938 Czechoslovakia sowed discord. Some groups also engaged in political assassinations, such as the 1937 killing of anti-Fascists during severe national strikes in France by right-wing terrorist group Cagoule at the behest of Mussolini’s Italy, with the aim of ushering in favorable governments.

In this environment of political coercion, wishful thinking, and rising revisionism, opportunities to head off a long war became fewer and fewer. Incrementally over the 20 interwar years, political decisions shaped the methods and means available for war planners and diplomats alike. At times, Germany’s true intentions were obscured by hopefulness or the willingness of a diplomat such as British Ambassador to Berlin Sir Nevile Meyrick Henderson to digest German propaganda.

By late 1938, the Poles realized that an invasion was imminent and looked for assurances of support from the French and British. The genesis of this assurance was Hitler’s annexation of Czechoslovakia. Subsequently, on March 31, 1939, Paris and London made commitments to Poland and Romania that their militaries were ill-positioned to deliver. Those commitments included a Saar offensive to relieve the pressure on Poland in the event that Germany invaded. The Saar offensive in the Rhine River Valley was to include upwards of 40 French divisions and associated armor and artillery to divert German forces engaged in Poland. In fact, only 11 divisions were committed from September 7–17, 1939, advancing a mere five miles into German territory.

The offensive stalled because French military Commander-in-Chief General Maurice Gamelin assessed that his advantage lay in fighting a defensive war on known ground, assumed to be in Belgium. French planning therefore centered on the Maginot Line and combined operations to bolster a defensive line in Belgium. However, Belgium’s steadfast neutrality and refusal to allow French forces entry assured failure. General Alfred Jodl, Chief of Germany’s Operations Staff, commented at his Nuremberg trial that “if we did not collapse already in the year 1939 that was due only to the fact that during the Polish campaign, the approximately 110 French and British divisions in the West were held completely inactive against the 23 German divisions.”

During the Phony War, the British global naval presence and German attacks on commerce on the high seas ensured that maritime forces were actively engaged. Despite this, like the weakly executed Saar offensive, such operations would not dictate the end of the war. That would come only when Allied forces entered Berlin in May 1945.

SOURCES: Martin Kitchen, *Europe Between the Wars* (London: Routledge, 2013); Mark Jacobsen, Robert Levine, and William Schwabe, *Contingency Plans for War in Western Europe, 1920–1940*, Rand Strategy Assessment Center, June 1985, <https://www.rand.org/content/dam/rand/pubs/reports/2006/R3281.pdf> (accessed December 23, 2020); Viktor Suvorov, *The Chief Culprit: Stalin’s Grand Design to Start World War II* (Annapolis, MD: Naval Institute Press, 2008); Winston S. Churchill, *The Gathering Storm: The Second World War, Volume I* (New York: RosettaBooks, 1948);

*Trial of the Major War Criminals Before the International Military Tribunal, Nuremberg, 14 November 1945–1 October 1946, Volume XV, Proceedings, 29 May 1946–10 June 1946 (Nuremberg, 1948), https://www.loc.gov/rr/frd/Military_Law/pdf/NT_Vol-XV.pdf (accessed December 23, 2020); Nick Smart, *British Strategy and Politics During the Phony War: Before the Balloon Went Up* (Westport, CN: Praeger, 2003); Steven Ross, “French New Assessment,” in *Calculations: Net Assessment and the Coming of World War II*, ed. Williamson Murray and Allan R. Millett (New York: The Free Press, 1992).*

The Secretary of the Navy should seek Congress’s commitment in law to a larger fleet of 575 ships and build a political consensus to sustain a 15-year national maritime program. During the 1980s naval buildup, the Navy consumed an average of 34.3 percent of a defense budget that averaged 5.8 percent of the nation’s gross domestic product (GDP). Today, despite efforts to grow to 355 ships over the past few years, the Navy averages only 29 percent of a defense budget that accounts for but 3.2 percent of GDP. Had the Navy maintained a flat budget and not been squeezed for a peace dividend, its budget today would be \$49 billion larger, and if its budget had only grown with inflation since 1989 compared to the money actually provided, the Navy has lost over \$1.2 trillion in buying power.¹⁶⁴ The case must be made that to reverse trends and grow the Navy, a larger topline budget is required that must also grow the workforce and naval infrastructure recapitalization.

The Chief of Naval Operations should issue a clear vision of the competition and articulate what to expect and how to respond as events unfold. Such a statement should take the Trafalgar memorandum as a model.

Congress should establish a Regain Maritime Leadership Commission consisting of military, industry, and community leaders charged with assessing and recommending actions to regain global maritime competitiveness. Such gospels as the Jones Act, Tariff Act of 1930, Goldwater–Nichols Act, and U.S. Code Title 10 should all be scrutinized with an eye to replacement by a new framework for great-power competition.

B. WAYPOINT ONE: Within six months, demonstrate resolve in an invigorated forward strategy.

It is critical that actions follow words to bolster U.S. credibility overseas and assure Congress that investment in a national maritime program will be effective. The clearest way to do this, as Secretary of the Navy Lehman realized in the 1980s, is a demonstration of force. The Soviets then, as the Chinese did during the first year of President Obama’s 2012 Rebalance to Asia and the Pacific, did not believe in the sustainability of the newly invigorated policy. However, within eight months of Reagan’s inauguration, the

Sixth Fleet sailed into the North Atlantic in operation Ocean Venture '81. The exercise got the attention of the Soviets, NATO, and Washington.

The Secretary of Defense should establish standing South China Sea and Eastern Mediterranean task forces in consultation with the Secretary of the Navy. This is intended to ensure a minimum allocation of forces to effect an invigorated competitive strategy with China and Russia. A large joint exercise should be held in the Western Pacific to demonstrate expeditionary sea-denial operations enshrined in such concepts as Army's Multi Domain Operations and the Marine Corps' Expeditionary Advanced Base Operations concepts. Coordinated with longer-duration Army Pacific Pathways deployments, such demonstrations could encourage partner nations like Malaysia, the Philippines, and Indonesia to invite U.S. forces to train and operate in meaningful ways across the first island chain.

In consultation with industry, the Secretary of the Navy should surge shipbuilding capacity and accelerate the design of several new classes of ships mentioned in this paper. This effect could also be achieved by expanding the merchant marine fleet by purchasing and repurposing commercial ships, as the inactive fleet of seven ships has been assessed as being of marginal operational value to the Navy.¹⁶⁵

The Chief of Naval Operations should execute a large-scale exercise in the Western Pacific in order to test operational concepts and signal commitment to a forward strategy. The CNO should also conduct a field test of a manned-unmanned task force and invite key congressional leaders to observe. Congressional support will be critical to the development of unmanned platforms that will play a critical role in future force design and grow the fleet cost-effectively.

C. WAYPOINT TWO: Within two years, shift institutional thinking and prioritize growth in capacity.

As the effort enters its second year, the Navy should shift to institutionalizing reforms and operations that have proved to be effective. Top of the list is ensuing continuity of annual large-scale exercises, fleet experiments, and new joint exercises in the first island chain.

To support this effort, the National Security Advisor should establish a new operationally focused maritime great-power competition coordinating body within the National Security Council. This body would be needed to coordinate proactive strategic activities of forward naval forces while also seizing on opportunities such as the Republic of Palau's and Papua New Guinea's Manus Island invitation to U.S. forces.

The Secretary of the Navy and the Chief of Naval Operations should:

- Resist efforts to rotate effective military captains of change and keep key leaders in place. At the same time, they should expect China and Russia to have made attempts at operational countermeasures and a sharpening regional influence campaign. This will necessitate a broad, energetic, and sustained response that these captains of change will be critical in delivering.
- Invite other service secretaries and service chiefs to conduct campaign analysis and war games jointly to assess the efficacy of the department's approach and needed adjustments to the national maritime program. Findings regarding the industrial base should be shared with Congress to inform and foster an active relationship with key Members of Congress (another Secretary Lehman lesson from the Reagan buildup).
- Advocate for Coast Guard force structure increases (i.e., more National Security Cutters) while incorporating Coast Guard capacities into strategic and operational planning. Partnered with the Navy, a larger Coast Guard presence in the central Pacific and Mid-Atlantic can address Chinese illegal fishing and prevent encroachment on our nation's exclusive economic zones in the Pacific. Joint Interagency Task Force South provides an example of what such a joint force can accomplish and how it can complicate illicit Chinese and Russian activities.¹⁶⁶ An expanded Coast Guard presence, based in American Samoa, to deter illegal fishing activities should also begin a recapitalization of ports and airfields across the South Pacific and Central Pacific that will be important in securing critical sea-lanes and protecting U.S. exclusive economic zones.

D. WAYPOINT THREE: Within three years, begin posture changes and realize industry adjustments.

Within the first three years, it is likely that China and Russia will have conducted aggressive military challenges to test U.S. resolve or cause an embarrassment to undercut the overarching approach. Anticipating this, the Secretary of the Navy and the Secretary of Transportation should coordinate efforts to develop a merchant marine force that is able to meet the Navy's needs in wartime. Key to this effort will be the Navy's input in

developing the Department of Transportation's implementation plan for a national maritime strategy, due in 2021.

The Secretary of the Navy and the Chief of Naval Operations should:

- Expand in-house ship design capacity to Cold War levels to grow the Navy to 575 ships.
- Break ground on a fifth public shipyard, ideally on the West Coast, to expand the industrial capacity needed to sustain and repair a larger fleet.
- Implement and sustain "gray zone" training and deploy non-lethal equipment on ships operating in proximity to Chinese and Russian maritime forces. Success in this regard can condition partner nations, as well as China and Russia, to a renewed U.S. presence as a fact of life, ushering in a "new normal" that is favorable to U.S. interests.

E. WAYPOINT FOUR: Within four years, institutionalize great-power competitive processes.

To sustain a decade-plus national maritime program will require the institutionalizing of a great-power competition mindset and associated institutional frameworks. The Secretary of the Navy should therefore review and submit proposals that would improve the Navy's ability to participate in great-power competition (e.g., revision of U.S. Code Title 10 and associated national security laws) to the Secretary of Defense for consideration by Congress.

The Secretary, in concert with the wider intelligence community, should also establish a strategic communications task force to coordinate actions to thwart Chinese and Russian influence campaigns aimed at undermining a national maritime program. This would include countermeasures to protect policymakers, industry leaders, and military personnel, as well as educating the public about and exposing such campaigns before they can have negative impacts.

VIII. Conclusion: Theory of Victory

Since the end of the Cold War, assumptions based on U.S. preeminent military and economic power have encouraged generally passive or reactive national security policies. This must change, and making this change will

not be easy. It has been almost 30 years since the U.S. had to contend with the Soviet Union, our great-power competitor in the Cold War. A theory of victory in this era's great-power competition requires that the Navy be able both to field a war-winning fleet and to compete aggressively in the peace. As Elbridge Colby, who led the team that built the 2018 National Defense Strategy, stressed at a 2019 congressional hearing, our theory of victory must target our adversary's theory of victory and especially prevent his ability to win tactical victories by fiat.¹⁶⁷

As noted, the key to success in great-power competition will be the ability to seize the initiative in an energetic approach to a Free and Open Indo-Pacific strategy, and the naval statecraft concept provides a framework for the Navy's active role in this undertaking. To execute such an aspirational program over the next 15 years will require a unity of effort across the government, most especially including Congress. Otherwise, the effort to grow the Navy from today's 297 ships will falter in the headwinds of a questioning Congress, distracted leadership, and a confused electorate.

In the final analysis, chance aside, the outcome of war will be determined before the fighting actually starts: The better postured, better resourced, and better trained force is the force that wins. Ensuring that the Navy remains ready, vigilant, and postured forward is the best way to deter war and perpetuate the rules-based order that has safeguarded our prosperity and the prosperity of others for decades.

Appendix I: Important Lessons from Warship Design

A. LESSON #1: Do not change too much in a new class of ship; evolutionary change is cost-effective.

A successful example was the use of a common *Spruance*-class hull design in the *Ticonderoga* class and *Arleigh Burke* class, with adequate excess capacity built in for future enhancements (e.g., modifications for *Ticonderoga* to employ the Aegis radar and flight III *Arleigh Burke* to include space for two helicopter hangars).¹⁶⁸ Spurred by Secretary of Defense Donald Rumsfeld's early 2000s admonitions about the need for revolutionary capabilities, the *Ford*-class aircraft carrier attempted to incorporate too many novel technologies—the Electromagnetic Aircraft Launch System (EMALS); a new aircraft arresting system, the Advanced Arresting Gear (AAG); and the ship's primary radar, the Dual Band Radar (DBR)—with the result that there were significant delivery delays.

Delays in the *Ford* class and the Navy's emphasis on unmanned systems led Senators Jim Inhofe (R-OK) and Jack Reed (D-RI) to write in the Navy's premier professional journal, *Proceedings*, that critical subsystems must be successfully prototyped before being integrated into a ship's design as was done with the SPY-1 advanced radar system before it was initially integrated into the *Ticonderoga* class.¹⁶⁹ In ship design, three components generally make the ship: the hull, propulsion, and installed systems. Changing any one or two is manageable, but changing all three in a new design comes with elevated risk of cost overruns and production delays.

B. LESSON #2: Build ships with room to grow.

Allowance for excess tonnage for future growth actually has resulted in designs that are cheaper to build, operate, and maintain. This was a lesson learned from the Japanese *Kongo*-class destroyer. The Japanese allowed tonnage requirements to grow by 1,000 tons, providing the space needed for future upgrades, simplified maintenance, and eased fabrication.¹⁷⁰ The added space allowed by increased tonnage actually enabled cost-effective fabrication and eased lifetime maintenance. A good rule of thumb in shipyards regarding the ratio of time needed to manufacture a ship is a factor of one when built in an enclosed shop in modules, three times longer when fabricating unprotected from the environments, and five times longer when conducting fabrication in a hull that is completed. Bottom line: A little extra space in a surface ship can provide long-term cost savings.

C. LESSON #3: Enforce strict mission design requirements.

For the *Oliver Hazard Perry*-class frigates of the Reagan buildup, strict displacement and manning constraints ensured that cost stayed within the limits for large series production. This assumes a degree of mission design discipline that was lacking in the design of the Littoral Combat Ship, contributing to the class's series construction being reduced by 20 ships.¹⁷¹

Moreover, lessons of the Navy's 2001 Optimum Manning experiments and the *Fitzgerald* and *McCain* collisions in 2017 indicate that there is a balance between reduced manning and workloads that must be managed. In a 2010 review, it was found that the net effect of Optimum Manning was a lack of shipboard experienced technicians (only 61 percent of assigned sailors met rank and specialty training) compounded by a smaller crew.¹⁷² An August 2020 National Transportation Safety Board report reaffirmed the finding of a December 2017 internal investigation led by then-U.S. Fleet Forces Commander Admiral Philip Davidson that an overworked and underexperienced watch team was a significant contributor to the 2017 collisions.¹⁷³

In setting manning constraints for ship design, it appears to be imperative that crew size and experience be matched to the complexity of the systems to be carried on a future ship and the missions the ship will be expected to execute. If costs dictate a smaller crew, then ship design must likewise incorporate automation, simplified maintenance, and narrowly focused roles to ensure that crews can operate the ship safely. A legacy of Optimum Manning is that retrofitting a ship that is designed for larger crews can have disastrous effects.

D. LESSON #4: Industry–Navy collaboration beginning from initial design can ease the challenges of manufacturing a new class of ship.

Given only 15 months from mid-1985, the Navy succeeded in designing and procuring the first Small Waterplane Area Twin Hull (SWATH) ocean surveillance ship, the *Victorious* class. Because of the Navy's leadership in SWATH technologies, thanks to Naval Sea Systems Command's Continuing Concept Formulation (CONFORM) program, NAVSEA was able to convince the Secretary of the Navy that its engineers have an active role in the design but only with significant industry involvement. Because existing ships were mission incapable in rough winter seas at a time of heightened Cold War tensions, the program was given urgent priority. Based on their extensive experience in leading high-stress design projects and specific experience

with SWATH, a hand-selected ship design manager (SDM) and a design integration manager (DIM) proved critical in making design decisions on technical issues for which there was no validated or incomplete modeling available.¹⁷⁴ Partnering with industry early in the design phase contributed to delivering a design that could be built on a greatly compressed time line and with desired winter months capability (95 percent versus the mono-hull predecessor's 57 percent).

APPENDIX TABLE 1

Naval Shipbuilding Proposal

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
CVN	11	11	11	11	12	12	11	11	10	10	10	10	10	10	10	10
CVNE									1	1	1	1	1	2	2	2
CVS								1	1	1	2	2	2	3	3	3
DDG-1000	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CG-47	22	18	16	16	14	12	10	10	8	3	1	0	0	0	0	0
DDG-51	72	76	81	84	87	90	94	97	100	100	96	92	88	82	82	79
DDG(X)											1	3	5	7	9	12
LCS	22	25	27	31	35	35	35	35	35	35	35	35	35	34	34	33
FFG							1	2	3	5	7	9	11	13	15	17
FFG(X)												1	2	3	4	6
MCM	8	8	5	1												
SSN	51	52	53	53	50	50	50	47	46	45	45	44	43	43	42	42
SSN(VPM)	2	3	5	7	9	11	13	15	17	19	21	23	25	27	27	27
SSN(X)											1	1	2	2	3	3
SSGN	4	4	4	4	4	4	4	2	1							
SSBN 726	14	14	14	14	14	14	14	13	12	11	10	9	9	8	7	6
SSBN 826									1	1	1	1	2	2	3	4
LHD/LHA	10	10	10	10	11	11	11	11	11	12	12	12	12	12	13	12
LSD/LPD/LPD(X)	23	24	24	24	25	26	25	26	25	26	25	24	24	24	25	25
LAW						1	2	4	6	8	10	12	14	16	18	20
LUSV/DDC		1	2	4	4	6	8	10	12	16	22	28	34	36	38	40
MUSV		2	2	4	6	9	12	15	21	27	35	43	51	57	61	63
XLUUV				1	2	4	7	11	15	19	23	25	27	29	31	33
AS	2	2	2	2	2	2	2	2								
AS(X)							1	1	2	2	3	3	3	3	3	3
AR							1	1	1	1	2	2	2	3	3	3
AR-L					1	2	3	4	5	6	7	8	9	10	11	12
LCC	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	
LCC(X)									1	1	1	2	2	2	3	3
T-AKM				1	1	2	2	2	3	4	5	6	7	8	9	9
T-AOL					1	1	2	4	6	8	10	13	14	16	18	20
Command & Support	25	27	30	34	37	40	41	43	47	46	46	49	51	52	52	51
Logistics	31	32	32	32	32	32	31	31	31	32	33	31	32	33	33	34
Total	302	314	323	338	352	369	385	403	426	444	470	493	521	541	563	575
2016 Navy FSA	301	305	311	314	314	313	314	316	322	325	331	337	343	351	355	355

SOURCE: Author’s proposal. Data for 2016 Navy Force Structure Assessment (FSA) comes from Office of the Chief of Naval Operations, “Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2020,” March 2019, p. 13, https://media.defense.gov/2020/May/18/2002302045/-1/-1/1/PB20_SHIPBUILDING_PLAN.PDF (accessed December 6, 2020).

APPENDIX TABLE 2

List of Abbreviations

Abbreviation	Description
AR	Repair ship
AR-L	Repair ship, light (multi-purpose)
AS	Submarine tender
AS(X)	Next-generation submarine tender
CG	Guided missile cruiser
CG-47	<i>Ticonderoga</i> -class guided missile cruiser
CLC	Tactical command ship
CLF	Combat logistics force
CSG	Carrier strike group
CVN	Nuclear-powered aircraft carrier
CVNE	Nuclear-powered escort aircraft carrier
CVS	Anti-submarine warfare support aircraft carrier
CVW	Carrier air wing
DDC	Corvette
DDG	Guided missile destroyer
DDG-1000	<i>Zumwalt</i> -class guided missile destroyer
DDG-51	<i>Arleigh Burke</i> -class guided missile destroyer
DDG(X)	Next-generation guided missile destroyer
EPF	Expeditionary fast transport
ESB	Expeditionary sea base
ESG	Expeditionary strike group
FAC	Fast attack craft
FFG	Guided missile frigate
FFG(X)	Next-generation guided missile frigate
LAW	Light amphibious warship
LCC	Amphibious command ship
LCC(X)	Next-generation amphibious command ship
LCS	Littoral combat ship

Abbreviation	Description
LHA	Amphibious assault ship, landing helicopter assault
LHA/LHD	Amphibious assault ship
LHD	Amphibious assault ship, landing helicopter dock
LPD	Amphibious transport dock
LPD(X)	Next-generation amphibious transport dock
LSD	Dock landing ship
LUSV	Large USV
MCM	Mine countermeasures ships
MUSV	Medium USV
OSV	Offshore support vessel
PC	Patrol craft
SSBN	Fleet ballistic missile submarine (nuclear powered)
SSBN-726	<i>Ohio</i> -class fleet ballistic missile submarine (nuclear powered)
SSBN-826	<i>Columbia</i> -class fleet ballistic missile submarine (nuclear powered)
SSGN	Guided missile submarine (nuclear powered)
SSN	Submarine (nuclear powered)
SSN(VPM)	Submarine (nuclear powered) with <i>Virginia</i> -class payload module
SSN(X)	Next-generation submarine (nuclear powered)
T-AH	Hospital ship
T-AKE	Dry cargo/ammunition ship
T-AKM	Missile reload ship
T-AO	Fleet replenishment oiler
T-AOE	Fast combat support ship
T-AOL	Light oiler
USV	Unmanned surface vessel
VLS	Vertical launch system
XLUUV	Extra-large unmanned undersea vehicle

Endnotes

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