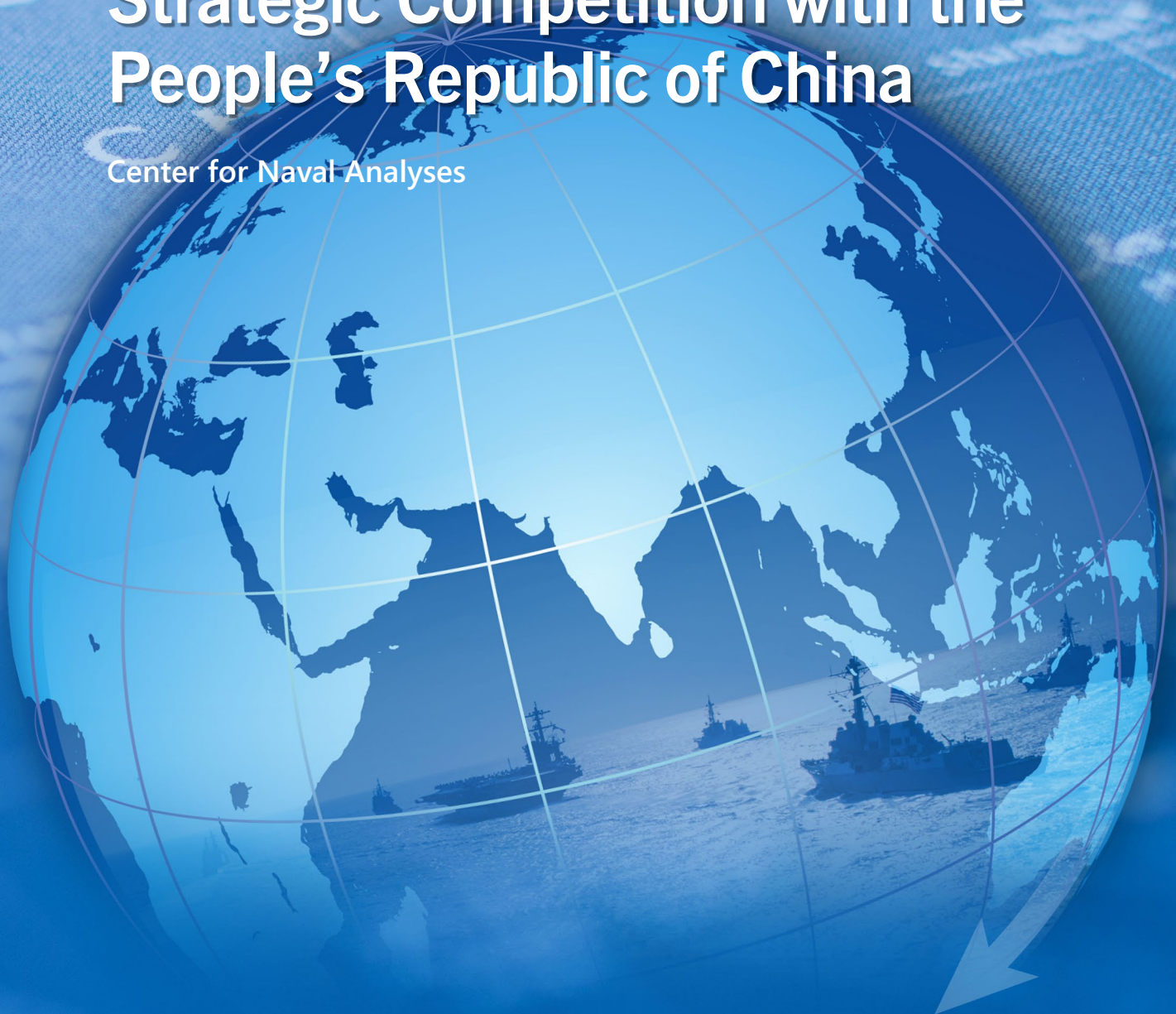


The Department of the Navy and Strategic Competition with the People's Republic of China

Center for Naval Analyses



Abstract

The FY 2023 National Defense Authorization Act (NDAA) Section 913 added new language on the responsibilities of the Department of the Navy (DON). In addition to its mission of preparing the naval services for conflict, DON is now charged with organizing, training, and equipping forces “for the peacetime promotion of the national security interests and prosperity of the United States.” Consequently, the Chief of Staff to the Secretary of the Navy asked the Center for Naval Analyses (CNA) for near-term recommendations for how DON can better position itself for such competition below the threshold of armed conflict. This paper provides a series of recommendations binned within the three priority areas for the DON established by the Secretary of the Navy: (1) strengthening maritime dominance; (2) building a culture of warfighting excellence; and (3) enhancing strategic partnerships. It also highlights some of the tensions and trade-offs the DON will confront going forward—decisions that will require the attention of DON’s senior leadership in coming years.

This document contains the best opinion of CNA at the time of issue. The views, opinions, and findings contained in this report should not be construed as representing the official position of the Department of the Navy.

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September 2023

This work was created in the performance of Federal Government Contract Number N00014-22-D-7001.

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EXECUTIVE SUMMARY

The FY 2023 National Defense Authorization Act (NDAA) Section 913 added new language on the responsibilities of the Department of the Navy (DON). In addition to its mission of preparing the naval services for conflict, DON is now charged with organizing, training, and equipping forces “for the peacetime promotion of the national security interests and prosperity of the United States.”

In essence, the FY 2023 NDAA language codifies and reinforces what the Navy does on a day-to-day basis. However, it also brings to the forefront questions about how a Navy that is designed to fight and win the nation's wars must become equally adept at peacetime competition with the People's Republic of China (PRC). The Chief of Staff to the Secretary of the Navy asked the Center for Naval Analyses (CNA) for near-term recommendations for how DON can better position itself for such competition in peacetime—that is, below the threshold of armed conflict.

On the next page, we summarize these recommendations, which span investments in new capabilities; highly trained sailors, marines, and civilians; and enhanced relations with allies and partners. If the Navy is to embrace fully its expanded peacetime and wartime roles as laid out in the FY 2023 NDAA, a large strategic investment in naval

capabilities is required. Absent such an investment, the Navy will need to make targeted divestments of today's capabilities to allow investment in the capabilities of the future. These will be painful choices that will reduce the capabilities and capacity that are promoting current national security goals during peacetime and wartime.

Up to now, the US has been unwilling to make such stark choices, instead making incremental investments in the future Navy while often delaying or reversing targeted divestments. That course of action will need to come to a close if the Navy is going to embrace and execute an expanded role in the peacetime promotion of national security in an environment of global competition. Following the recommendation summaries below, we also summarize our concluding thoughts for this paper on the specific choices the Navy faces in terms of capability trade-offs in an era of global competition with the PRC.

The broad nature of this paper's tasking required a whole-of-FFRDC approach. Consequently, every research division at CNA participated. Data for this project came from four sources: a review of key US government (USG), Department of Defense (DOD), and DON strategic documents; a series of

The FY 2023 NDAA language codifies and reinforces what the Navy does on a day-to-day basis. However, it also brings to the forefront questions about how a Navy that is designed to fight and win the nation's wars must become equally adept at peacetime competition with the People's Republic of China.

workshops conducted by CNA with US Navy (USN), US Marine Corps (USMC), and US Coast Guard (USCG) stakeholders; discussions with active and retired DON officials; and a review of a large body of pertinent CNA research.

As a Quick Response Project, this effort was required to be limited to 90 days. Consequently, the CNA project team had to be very selective in the issues covered and the recommendations offered. With that in mind, this paper is offered as a vehicle to generate discussion, stimulate ideas, and focus thinking on the way ahead in this era of remarkable strategic challenges in facing the PRC, which has become an increasingly competitive and assertive global maritime power.

Strengthening maritime dominance: recommendations

A fleet designed to engage in protracted competition while preparing to fight and win must be larger, more distributed, more lethal, and better able to operate both around the globe and within an ever-expanding weapon engagement zone (WEZ) in the Indo-Pacific theater. Although expanding ship construction and fielding new ships is likely to take a decade or more, near-term options can “grow” the fleet’s capacity and capability using nontraditional approaches to both force-multiply in the Indo-Pacific theater and “out-capacity” the PRC across the globe. Key recommendations to deliver such a fleet include the following:

- **Operationalize and scale the future of unmanned systems (UxS)** by increasing investments in UxS and the infrastructure, training, manpower, R&D, and procurement necessary to field larger systems.
- **Run up the score undersea** by maintaining DON’s significant advantage in this arena through additional munitions and enhancements across manned and unmanned undersea systems.
- **Increase operational availability and reinvigorate a “whole-of-government naval approach”** by improving maintenance planning processes and industrial capacity while expanding integration and interoperability with the USCG and the US Maritime Administration (MARAD).
- **Act now to realize strategic change** by working to develop new pathways for rapidly transitioning and fielding demonstrated capabilities while focusing on options to operationalize the future fleet.
- **Reprioritize and balance across portfolios absent a large strategic investment in the future of the Navy.** Transitioning to a fleet with the requisite capability and capacity for an increasingly competitive environment means either planning for a large Navy topline increase or facing difficult choices. If it is the latter, prioritize those areas that can provide enduring qualitative advantages or the means to offset the PRC’s inherent advantages in geography and capacity and reassess the size, shape, and capability of ship classes like carriers and amphibious ships.
- **Maximize the reach and capability of each surface unit** through expanded investments in current and future munitions, electronic attack capabilities, and organic intelligence, surveillance, and reconnaissance (ISR) options.

Building a culture of warfighting excellence: recommendations

The competition for capability advantage is not just about weapons, equipment, technologies, and platforms—personnel is a critical element. Highly capable, experienced, and motivated servicemembers and DON civilians are an advantage the US joint force and the US naval services must continue to maintain by recruiting, retaining, and developing high-quality military and civilian personnel. The DON force must also have a fundamental understanding of the nature of the strategic competition with the PRC and its armed forces.

- **Continue efforts to increase recruiting resources.** In light of recent recruiting shortfalls, increase the number of recruiters, recruiting stations, marketing and advertising budgets, and recruiting incentives until recruiting goals can be met.
- **Maintain recruiting resources even when the recruiting market improves.** Although recruiting resources can be cut quickly, it takes time to rebuild the recruiting apparatus and establish presence in the recruiting markets. Maintaining recruiting resources can hedge against market uncertainties and avoid costly recruiting shortfalls.
- **Pursue initiatives to leverage personal preferences to improve retention.** The services' talent management initiatives provide opportunities to leverage personal preferences and career aspirations in making initial military occupational assignments and managing naval careers.
- **Develop or expand nontraditional, non-monetary retention incentives.** Examples include offering duty station preference, school seat assignments, or off-base housing for single sailors and marines.

- **Conduct an assessment of current professional military education (PME) institutions and programs.** DON should assess whether its PME institutions are providing their students with an adequate understanding of the PRC, the People's Liberation Army (PLA), and the PLA Navy, along with the nature of the strategic competition.
- **Develop learning modules to improve understanding of both adversaries and allies.** Most DON personnel will not have the chance to attend PME institutions. Hence, DON should consider developing an unclassified, online, self-paced series of learning modules to improve knowledge of both potential adversaries as well as allies and partners and make these learning modules widely available to all sea-service personnel.

Enhancing strategic partnerships: recommendations

The need for DON to develop a wide range of partnerships to be effective in long-term strategic competition with the PRC is well established. Beyond these efforts, DON can work with industry to protect critical technologies, better prepare DON personnel to work with allies and partners, and work with US allies and partners to help them mitigate and adapt to climate change.

- **Incorporate technology protection into acquisitions decision-making.** This would require a shift in the culture surrounding technology protection, from a reactive "enforcement" approach to a more proactive "risk-mitigation" approach.

- **Provide greater support to industry and R&D** by way of demonstrating critical technologies that need to be protected, best practices, and required infrastructure.
- **Conduct an evaluation of the USN and USMC Foreign Area Officer (FAO) programs** to ensure the right mix and number of regional specialists so that the FAO pipeline is healthy, their utilization makes sense, and FAOs are competitive.
- **Encourage foreign immersion experiences with allies and partners for unrestricted line (URL) officers** to enhance the abilities of future warfighting commanders to engage effectively with their ally and partner operational counterparts.
- **Increase DON engagement** in the development and deployment of climate-adaptive practices, technologies, and innovations with strategic partners.
- **Work with allies and partners in the High North** as a hedge against PRC influence in the region as sea ice recedes and shipping routes become more navigable during the ice-free summer months.
- **Increase the scope of DON engagement and assistance** in the Pacific Island countries (PICs) on climate change issues to strengthen existing partnerships and create new relationships with regional agencies, including those in countries without a conventional military.

Concluding thoughts

Competition with the PRC will require a concerted effort across every aspect of the Navy: platforms, people, training, and infrastructure. The need for such a concerted effort is clear and present. The PRC has expanded what was once a brown-water, coastal defense force to a blue-water navy—the largest naval force in the world—capable of conducting operations farther and farther from PRC shores. Beijing has invested in a huge military industrial complex and a maritime industrial base that will enable continued growth of this navy and the expeditionary capabilities of the PRC's armed forces.

The recommendations summarized here begin to outline the near-term components of a coordinated approach to preparing the Navy for a globally competitive environment. Yet all of those actions will require additional resources. Absent a large strategic investment in naval capabilities, DON will need to make difficult choices about where to divest. This will require a hard look at platforms and capabilities that, while useful, are less suited for the challenges that the PRC presents. Moreover, the DON will not be able to manage this competition on its own. Just as Beijing leans on its civilian maritime assets and takes a whole-of-government and society approach to gain national advantage in an international milieu, the US will need to do much of the same. All of these factors highlight the need for an integrated national maritime strategy that considers key trade-offs internal to the DON while also identifying places areas in which USCG and MARAD can amplify and expand DON efforts.

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THE NAVAL DIMENSIONS OF COMPETITION WITH THE PEOPLE'S REPUBLIC OF CHINA

THE UNITED STATES OF AMERICA AND THE PEOPLE'S REPUBLIC OF CHINA (PRC) ARE ENGAGED IN A LONG-TERM STRATEGIC COMPETITION

At the highest level of strategic discourse, this competition is about systemic rivalry: contending institutions, processes, values, and governance philosophies. It is about pursuing national interests by seeking influence, advantage, and leverage in the international system to achieve national strategic ends. The 2022 National Security Strategy makes clear that what is at stake going forward is how the international system itself will evolve.

As stated in the Joint Staff's February 2023 *Joint Concept for Competing* (JCC):

Strategic competition is a persistent and long-term struggle that occurs between two or more adversaries seeking to pursue incompatible interests without necessarily engaging in armed conflict with each other.... Strategic competition is a condition to be managed, not a problem to be solved.... It requires long-term investments to strengthen US international relationships and partnerships, optimize US advantage in key areas, and avoid strategic overreach.¹

CURRENTLY, THE US-PRC COMPETITION IS TAKING PLACE BELOW THE THRESHOLD OF ARMED CONFLICT

Today, the US-PRC strategic competition is taking place across all the elements of national power—diplomatic, economic, informational, and military—and in multiple domains, from the maritime domain to cyberspace and outer space. Though the possibility

“The PRC...is the only competitor with both the intent to reshape the international order and, increasingly, the economic, diplomatic, military, and technological power to advance that objective.”

—*National Security Strategy, October 2022*

of conflict can never be discounted, neither should it be assumed to be inevitable.

The current US-PRC competition is decidedly different from the strategic competition the US experienced with the Soviet Union during the Cold War. Unlike the Cold War, US-PRC competition is taking place between two economies that are interconnected and with a PRC that is integrated into the larger world order, not isolated within its own “bloc” as was the Soviet Union. In addition, many US allies and partners have consequential relationships with both sides.

EVEN BELOW THE THRESHOLD OF ARMED CONFLICT, THIS COMPETITION HAS A SIGNIFICANT MILITARY COMPONENT

Both militaries are modernizing in the hope that significant operational advantages will serve as a deterrent, as well as a hedge should deterrence devolve into conflict. Both militaries are engaged in peacetime operations and activities aimed at

shaping the security environment to achieve larger national objectives. Both countries' militaries are working with respective "like-minded nations" across the globe to promote a shared view of the international system and to promote themselves as

"the partner of choice," and an ongoing strategic communications campaign is being waged as part of "the battle for the narrative" aimed at swaying international opinion, and cyberspace is a decided part of the campaign as a contested domain.

THE MILITARY'S ROLE IN STRATEGIC COMPETITION

The Joint Staff's *Joint Concept for Competing* offers four key roles that the military can play to tilt the competitive balance:²

1

DETERRING AGGRESSION

by promoting a perception that an adversary's undesirable action will not succeed or will be too costly

2

PREPARING FOR ARMED CONFLICT

if deterrence and competition fail to protect vital US national interests

3

COUNTERING AN ADVERSARY'S COMPETITIVE STRATEGIES

that threaten US national interests and denying an adversary's strategic objectives

4

SUPPORTING THE EFFORTS OF INTER-ORGANIZATIONAL PARTNERS,

which is fundamental to succeeding in strategic competition

THERE IS A SIGNIFICANT MARITIME DIMENSION TO US-PRC STRATEGIC COMPETITION

Of great importance to the DON and other US government (USG) stakeholders is the fact that the global maritime commons is a domain in which US and PRC interests are often at loggerheads. Competition in this domain has both nonmilitary and military components. Now in possession of significant commercial and military maritime capacity, Beijing is selectively attempting to shape the international maritime order in ways that are sometimes inimical to the interests of the United States, of US allies and partners, and of others in the international community.

On the nonmilitary side, PRC firms have come to dominate the commercial shipping industry,

establishing an ownership stake in 95 ports across 53 countries worldwide.³ Beijing also has significant commercial maritime capacity in terms of shipyards and shipbuilding. Beijing's Maritime Silk Road (the sea route component of its Belt and Road Initiative, or BRI) seeks to create connectivity across Southeast Asia, Oceania, the Indian Ocean, and the East African littoral through PRC construction projects.⁴ The PRC produces 96 percent of the world's shipping containers and more than 80 percent of the world's ship-to-shore cranes.⁵ According to the CIA World Factbook, the PRC possessed the world's third-largest merchant marine fleet as of 2022, with more than 7,000 ships, compared to the United States (ranked 70th), with 178.⁶ The PRC's global fishing fleet is the world's largest, estimated between 12,000 and 17,000 vessels.⁷ China's increasing strength

“The PLAN is numerically the largest navy in the world, with an overall battle force of approximately 340 ships and submarines.”

—Office of the Secretary of Defense, *Military and Security Developments Involving the People's Republic of China 2022*

in these areas is taking place at a time when the US shipbuilding industry has contracted; there is a shortage of US mariners, and it is highly unlikely that the US-flagged merchant fleet is going to see any significant increase in size any time soon.⁸

On the military side, the emergence of the People's Liberation Army Navy (PLAN) as a naval force of consequence is one of the most significant developments in the modernization of the PRC's armed forces. Over the course of four decades, the PLAN has transformed from a brown-water coastal defense force into a blue-water oceangoing navy that today is the world's largest by ship count (more than 300 vessels), comprising a variety of surface combatants that include aircraft carriers along with submarines and aviation assets. According to the US Department of Defense (DOD), the total PLAN battle force is projected to grow to 400 vessels by 2025 and to 440 by 2030.⁹

Beyond the number of its ships, today's PLAN provides China's other military services and components with the foundational capabilities necessary to fight as a joint force in the maritime domain. This is a critical contribution since an offshore

conflict within the First Island Chain remains Beijing's most important contingency-based driver for military modernization and operational planning.¹⁰

In this regard, Beijing's force-design decisions have focused on developing a suite of joint capabilities aimed at ensuring that no potentially hostile foreign military can operate in the Western Pacific with impunity and that no foreign military can engage the PRC's armed forces or intervene in its operations without confronting significant operational risk. To achieve this anti-access/area-denial (A2/AD) posture, PRC military modernization planners have for many years made substantial investments in expanding the offshore operational reach of China's armed forces and developing capabilities specifically aimed at degrading traditional US military advantages—especially those of the US Navy (USN).

NAVAL COMPETITION IS MOST INTENSE IN THE INDO-PACIFIC

Geostrategically, the US-PRC military competition is most intense in the Indo-Pacific region, where the PRC is employing gray-zone tactics and other forms of coercion short of conflict against US allies and partners, and where the PRC armed forces at times engage in unsafe encounters with US forces at sea and in the air.

The US Navy is in operational contact with the PLA on a regular basis as part of day-to-day campaigning in the Indo-Pacific, with increasingly aggressive behaviors on the part of the PLA during some air and surface encounters between the two forces.

The Indo-Pacific region is where long-standing US military superiority in the maritime and aerospace domains is intersecting with the PRC's fast-expanding offshore reach and rapidly growing military capabilities. It is primarily in the Indo-Pacific where the PRC's naval, coast guard, and paramilitary forces are challenging the international maritime

order through expansive claims of sovereignty, most notably in the South China Sea, and where the USN is challenging China's claims through freedom of navigation operations (FONOPs) and broader presence operations to support regional partners' sovereign rights under international law.

Deep Dive: "Battle for the Narrative"

One dimension of the US-PRC naval competition being waged right now and at a high level of intensity is the "battle for the narrative." The PRC and PLA are employing a large and finely honed propaganda apparatus to establish and disseminate malign narratives directed against DON interests. Several of these PRC narratives are designed to undermine US ally and partner confidence in the motives and capabilities of US naval forces. These PRC narratives include assertions that (1) US Navy operations are unsafe, unprofessional, and a danger to the Indo-Pacific region and countries near where it operates; (2) the US Navy is an "outsider force" whose operations are destabilizing the peace in the Indo-Pacific region; and (3) the US Navy and Marine Corps are going to force their allies and partners to act against their own national interests by making them choose between the US and the PRC. The ability of DON to counter these and other malign narratives effectively is an important component of the competition with the PRC.

Beyond the Indo-Pacific region

Further afield, the PLAN is also taking on missions abroad, conducting presence operations to shape Beijing's external security environment in support of the PRC's global overseas political objectives, and positioning itself to be capable of defending Beijing's expansive overseas economic interests. As a nascent expeditionary force, the PLAN is operating increasingly beyond the Indo-Pacific region. These new missions abroad are captured in the name of the PLAN's service strategy: "Near-Seas Defense, Far-Seas Protection" (近海防御, 远海护卫). In 2017, the PLAN officially opened the PRC's first-ever overseas naval base in Djibouti, and Beijing is likely considering other locations around the world that can serve as logistics facilities, if not outright military bases, to service military forces—especially the PLAN. According to the DOD, there is an expansive list of possible locations under consideration, including Cambodia, Myanmar, Singapore, Indonesia, Pakistan, United Arab Emirates, Kenya, Equatorial Guinea, Seychelles, Tanzania, and Angola.¹¹ The PLAN has deployed to and conducted port calls in each hemisphere; conducted combined exercises in European and Middle Eastern waters with partners such as Russia and Iran; and is in the forefront of the PLA's efforts at global military diplomacy, including dispatching its hospital ship abroad to provide medical care to local populations.¹²

Given the breadth of maritime issues, DON has a significant role to play in the US-PRC peacetime competition

The maritime dimensions of this competition are beyond the capacity of any one US military branch or agency and will stress DON's resources, creating a fundamental tension between the need to compete now and for the foreseeable

future below the threshold of conflict and the need to create a future high-end force that can engage with the PRC if competition escalates into conflict—this fundamental tension is implicit in the new FY 2023 National Defense Authorization Act (NDAA) language. Consequently, the DON must engage with a whole-of-government approach as part of the joint force—that is, with defense industry leaders domestically and with allies/partners abroad.

The US will need naval forces prepared to carry out their core missions—forward presence, deterrence, sea control, power projection, maritime security, humanitarian assistance/disaster relief (HA/DR) operations, and naval diplomacy—not only in the Indo-Pacific but also globally.

In addition to today's requirements for presence and deterrence below the threshold of armed conflict, DON must also decide about the future. It must make investment decisions for a force that can fight and win in a future high-end conflict if deterrence fails. This will require a hard look at force design; the US defense industrial base (DIB); the agility of DON's technology innovation system; and the policies needed to attract, develop, and retain the personnel it will require.

These tensions and trade-offs, and the decisions they will require, will dominate the attention of DON's senior leadership in coming years.

To help inform the discussions that are undoubtedly already taking place, this paper provides some "wavetop" thoughts on competition below the threshold of conflict that are binned within the three priority areas for the DON established by the Secretary of the Navy: (1) strengthening maritime dominance, (2) building a culture of warfighting excellence, and (3) enhancing strategic partnerships.

STRENGTHENING MARITIME DOMINANCE

“As our central governing concept, the top priority for the Department of the Navy will be to develop concepts of operations and capabilities that bolster deterrence and expand our warfighting advantages vis-à-vis the People’s Republic of China.”

—Hon. Carlos Del Toro, One Navy–Marine Corps Team: Strategic Guidance from the Secretary of the Navy, October 2021

As part of his strategic vision for the DON, Secretary Carlos Del Toro has outlined the enduring priority of *Strengthening Maritime Dominance in Defense of Our Nation*. Implementing this priority requires an all-domain force with the right balance of capability and capacity to fulfill the Navy’s peacetime and wartime missions. This requirement is well-aligned with new guidance in the FY 2023 NDAA that codifies the Navy’s role in equipping the Navy for the peacetime promotion of national security. The future fleet will be confronted with an increasingly large and capable PLA, PLAN, and PLA Navy Marine Corps (PLANMC) supplemented by a variety of lower-end forces. Analysis has shown that a future US fleet that resembles the current fleet will not meet the USN’s needs below or above the threshold of conflict due to a reliance on a low number of capital ships, many of which are likely to face threats that will overwhelm their defenses.¹³ A fleet designed to both engage in protracted competition and also prepare to fight and win must be larger, more distributed, more lethal,

and better able to operate both around the globe and within an ever-expanding weapon engagement zone (WEZ) in the Indo-Pacific theater.

Options to improve the Navy’s ability to succeed against the PRC in both the competitive space and in the transition to wartime stem from two primary force-design principles:

Principle 1. Force-multiply in the primary theater

The “tyranny of distance” and the continuing rapid expansion of the PLA’s size and capability suggest that US forces will be outnumbered in the Western Pacific both in day-to-day presence below the threshold of armed conflict and in the event conflict breaks out. DON must instead force-multiply by maintaining a qualitative edge in key areas, generating capacity in new ways, and routinely demonstrating game-changing technologies that alter the adversary’s decision-making calculus.

Principle 2. Out-capacity across the globe

While USN forces may be outnumbered in the Western Pacific, competition is a *global* game. Outside the Western Pacific, DON should focus on novel approaches to enhance capacity and build a “home-field advantage” in other theaters around the world. Notably, unmanned assets could not only provide capabilities historically performed by lower density, higher cost manned platforms, but they could also be used to expand the range of current manned platforms.

The following section provides near-term options to further implement these force-design principles, including maximizing the capabilities of current platforms and the expansion of unmanned systems (UxS).

We recommend near-term actions in five key areas: enhancing surface-unit reach, lethality, and survivability; operationalizing and scaling UxS; expanding undersea capabilities; strategically leveraging current capacity and increasing operational availability; and reprioritizing and balancing across investments.

Crucial Choices: A Large, Strategic Investment in the Future Navy or Difficult Trade-Offs in Current Capabilities

The recommendations outlined here require significant simultaneous investment across platforms, weapons, sensors, maintenance, and personnel. Absent such an investment, the Navy will need to make targeted divestments of today’s capabilities to allow investment in capabilities of the future. Divestments will involve painful choices that will reduce capability and capacity that promote current peacetime and wartime national security goals. Up to now, the US has been unwilling to make such stark choices, instead making incremental investments in the future Navy while often delaying or reversing targeted divestments. That course of action will need to come to a close if the Navy is going to embrace and execute an expanded role in the peacetime promotion of national security in a globally competitive environment.

Enhancing surface-ship reach, lethality, and survivability

DON surface forces continually confront the capacity and capability challenge posed by PRC forces. The capacity picture grows worse by the day, as the PLAN builds not only high-end surface combatants but also destroyers, frigates, patrol boats, and a variety of air and undersea assets. These naval combatants are supplemented by coast guard ships and maritime militia vessels with lesser capabilities that can still engage in malign behavior such as conducting illegal fishing, restricting legal fishing by others, or asserting territorial claims. To overcome capacity disadvantages, DON should invest to ensure that each surface ship can cover more of the maritime domain for longer periods of time while providing a credible military threat within and outside the WEZ. Such investments would enable these forces to demonstrate commitment to ally/partner relationships, expose malign behavior, and conduct all missions short of war while also ensuring that they have the necessary capabilities to transition to conflict seamlessly if needed. These investments are also strategically aligned to a US Navy that is fully prepared to operate in a peacetime and wartime posture.

“In 2022 alone, the PLA added to its operational inventory 17 major warships, including four guided-missile cruisers, three destroyers, five frigates, two attack submarines, and a large amphibious assault ship, plus scores of support and specialty ships.”

—INDOPACOM Commander Admiral John C. Aquilino, *Testimony to the House Armed Services Committee, April 18, 2023*

POSITIVE STEPS

DON is already taking positive steps toward enhancing surface-ship survivability and lethality, particularly regarding weapons. The latest President's Budget (PB) asks Congress to maximize current production capacity for Standard Missile 6 (SM-6), the joint force's most capable anti-air missile that also provides formidable anti-surface capabilities, while also investing in the DIB to more than double production targets (from 125 missiles per year to 300 per year by FY 2028).¹⁴ Critically, DON also proposed using a multiyear procurement (MYP) strategy for the SM-6 and a few other key munitions, ensuring stability for suppliers and maximal numbers of what is perhaps DON's most important missile. Improvements in surface forces can also be seen broadly in robust funding for guided-missile destroyer (DDG) and guided-missile frigate (FFG) procurement, along with development and planned procurement of the large unmanned surface vessel (LUSV) and medium unmanned surface vessel (MUSV).

Recommendations

FIELD ORGANIC INTELLIGENCE, SURVEILLANCE, RECONNAISSANCE, AND TARGETING (ISRT) FOR DDGs AND FFGs

One way to enhance capacity is to expand the reach of individual units. Current DDGs have embarked MH-60 helicopter detachments, and FFGs will have similar capabilities. However, the MH-60's ISRT support is limited by pilot endurance and competing mission sets such as antisubmarine warfare (ASW). As such, DON should field an organic, unmanned ISRT asset for DDGs/FFGs—for example, by leveraging the work of the Unmanned Task Force. Such an investment would enable each DDG or FFG to patrol and provide capabilities over a larger area, maximizing the “presence envelope.”

MAXIMIZE SHIP-LAUNCHED MUNITIONS

The expanded and stable procurement strategies adopted for the SM-6 should be explored for a broader range of key munitions. Specifically, MYPs should be considered for the Evolved Sea Sparrow Missile (ESSM) Block II and Rolling Airframe Missile (RAM) Block II to enhance ship-based hard-kill defensive capabilities and ensure that ships deployed around the globe have a full complement of the most current and capable self-defense munitions. Similarly, DON should explore maximizing Maritime Strike Tomahawk (MST) missile procurement, as its fielding will extend ship-based anti-surface ranges out to 1,000 nautical miles (nm), automatically providing every guided-missile cruiser (CG), DDG, and FFG in the Navy with a missile with more than four times the range of the SM-6. Combined with enhancements in organic ISRT, the MST will allow each ship to both “see” and “touch” wide swaths of the maritime domain, providing a means to “grow” the fleet—and thereby expand capabilities below the threshold of armed conflict—without additional platforms.

MAXIMIZE ELECTRONIC WARFARE (EW) SOFT-KILL AND COUNTER-COMMAND, CONTROL, COMPUTING, COMMUNICATIONS, CYBER, AND ISRT (C-C5ISR) CAPABILITIES

Operationalizing distributed maritime operations (DMO) will require forces to operate at greater distances while being subjected to the adversary's extensive anti-surface warfare (ASUW) capabilities. In the missile exchange contest, defense cannot win indefinitely no matter how capable hard-kill defensive systems are. Future survivability requires USN units to improve high-capacity-magazine electronic attack (EA) capabilities while also enhancing the ability to remain undetected or untargeted. For EA, the Surface Electronic Warfare Improvement Program (SEWIP) Block III should be prioritized due to its potential to limit adversary missile effectiveness dramatically. The FY 2024 Unfunded Priorities List (UPL) includes a few requests for additional Block III installs, and DON should ensure that all ships that can have Block III do so.¹⁵ Another way to “bend the cost curve” in air and missile defense is to enhance capabilities designed to counter an adversary's ability to detect and target. A focus of recent budget cycles, C-C5ISR should remain a focus and be enhanced whenever possible. A Navy with robust EW and C-C5ISR capabilities can cast doubt in the minds of adversary nations about their ability to hold USN platforms at risk and provide a robust deterrent effect during competition.

INVEST NOW IN THE NEXT GENERATION OF MUNITIONS

Maximizing the current generation of munitions and continuing to invest in soft-kill capabilities like EW are necessary steps, but not sufficient. The PRC's multiyear campaign to extend munition ranges, capabilities, and capacities from land, air, and sea has been successful, resulting in an ever-expanding, overlapping WEZ. As such, DON must not just maximize assets currently in the fleet but also invest now to ensure that upgrades deliver at the speed of relevance—otherwise, munitions

could already be outdated when reaching the fleet. DON should prioritize the next long-range antiship and anti-air missile to follow SM-6 to improve its surface force capabilities, and it should prioritize future heavyweight torpedoes to maintain undersea dominance. In parallel, options to maximize soft-kill such as high-powered microwaves should be a focus as DON explores ways to develop high-capacity-magazine options due to limited vertical launching system (VLS) space. A robust program of future investment sends a clear signal that the United States is not willing to cede the maritime domain now or in the future and forces US adversaries to plan against a larger number and wider variety of future capabilities. This creates a “wicked problem” for adversary planning for both peacetime and conflict operations.

OPERATIONALIZE AND FIELD VLS REARM AT SEA

The demonstration of VLS rearm at sea in October 2022 was a useful first step, proving that a crane on an auxiliary ship can reload a DDG’s missile tubes in low sea states.¹⁶ However, the future expansion of VLS rearming to protected anchorage or the open water would signal a significant leap in logistical agility and resilience by dramatically extending reload locations beyond the piers in locations such as Japan, Guam, Hawaii, and California. It would also bolster deterrence by increasing capacity and combat power: ships would be able to stay forward instead of transiting for days or weeks for reload following ordnance launch. Rapid, at-sea rearming in the full range of sea states and operational environments would complicate an adversary’s decision calculus, as they would know USN forces are less reliant on a single wave of ships and that US munitions supply lines are no longer linked to vulnerable piers at fixed sites. It would also provide a near-term increase in combat power by maximizing the current fleet. DON should prioritize R&D toward a full operational capability (FOC) at-sea

rearm capability compatible with current underway replenishment (UNREP) interfaces; relevant tactics, techniques, and procedures (TTP); and various sea-state tolerances (particularly sea-state 5). DON should demonstrate this capability to allies as a timely, cost-effective way to increase their surface fleet lethality and the lethality of combined maritime forces. Adoption of this capability by allies that have participated in USN connected replenishments (CONREPs), such as Australia, Japan, the Republic of Korea (ROK), and potentially others, would allow USN support ships to rearm allied combatants and also allow USN combatants to be rearmed by allied support/logistics vessels, significantly increasing the combined strike capacity in the region.

PROCURE CRITICAL SUSTAINMENT CAPABILITIES AND CAPACITIES

Navy ships at sea require the routine delivery of fuel, stores, and ordnance to maintain their forward positions over extended periods. Timely acquisition and/or leasing of commercial cargo ships and tankers with specialized rigging equipment allows the Navy to conduct consolidation operations (CONSOL) at sea with Combat Logistics Force (CLF) oilers. This allows the oilers to stay at sea longer without having to return to port for fuel, thereby making the entire logistics process potentially more efficient and resilient. Such a capability would also prove valuable to partners and allies to increase fuel supply and resilience. Recapitalizing a sufficient number of John Lewis-class (T-AO-205) oilers adds additional capability for combatants to receive fuel while underway at sea. There are likely other logistics assets necessary to develop fully the integrated, resilient logistics force capabilities necessary to operationalize DON’s overall force design, including a mix of next-generation logistics ships (NGLS) and offshore support vessels (OSVs) necessary to carry both fuel and other critical supplies to forward-positioned forces that may be beyond the reach of fleet oilers and commercial tankers.

Operationalizing and scaling the UxS future

A future fleet dominated by low-density capital ships cannot compete globally and will be vulnerable if competition turns to conflict. Operationalizing and scaling UxS in all domains is a promising, nontraditional approach to expand capacity and capability.¹⁷ Such options could be a way to “out-capacity” the PRC globally, providing key—and inexpensive—capabilities that are particularly effective below the threshold of armed conflict.

POSITIVE STEPS

Over the past few years, DON has invested heavily in developing a suite of unmanned capabilities across mission areas and sizes, from a full family of unmanned underwater vehicles (UUVs) to multiple surface options (MUSV/LUSV) to air options—from the 27-inch submarine-launched Blackwing unmanned aerial vehicle (UAV) to the 48-foot MQ-4 Triton unmanned aircraft system (UAS).¹⁸ Progress has also been made testing and fielding UxS such as the UUV work being conducted at Submarine Development Squadron Five¹⁹ and the efforts of Task Force 59 (TF-59) in US Fifth Fleet.²⁰ Despite this progress, more could be done to operationalize and appropriately scale unmanned assets, as they offer the promise to expand maritime domain awareness (MDA) in ways that manned assets cannot.

Recommendations

EXPAND INVESTMENTS IN COMMERCIAL-OFF-THE-SHELF (COTS) OR COMMERCIALY MODIFIED UNMANNED SYSTEMS FOR MDA

Mature commercial solutions, such as those being leveraged by TF-59, can help address fleet challenges without lengthy R&D and procurement timelines. Leveraging such capabilities would enable DON to enhance options to shine a spotlight on the PRC's illegal exploitation of other countries' exclusive economic zones (especially regarding illegal, unreported, and unregulated fishing²¹), expand presence in theaters that currently receive limited support, provide a lower threat testing ground outside the primary theater of interest, and enhance partnership opportunities (since they leverage

unclassified data and capabilities). Upcoming plans to employ such assets in the US Fourth Fleet/US Southern Command area of responsibility (AOR) will provide opportunities to operationalize UxS in day-to-day fleet activities. Given the proliferation of commercial solutions, DON will need to ensure that it scales only those systems that provide the most operational value.

INVEST NOW ACROSS THE DOTMLPF-P SPECTRUM TO MAXIMIZE PROCUREMENT ONCE TECHNOLOGY HAS MATURED

DON must avoid the “sprint to nowhere,” whereby high-tech investments are rapidly made without a doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy (DOTMLPF-P) underpinning, resulting in

ineffective or inefficient fielding. This is particularly the case for unmanned assets, for which DOTMLPF-P implications are likely to be significantly different than those for current forces. For example, as UxS proliferate throughout the fleet, additional support infrastructure afloat and ashore may be needed. DON should ensure that sufficient investments have been made for larger key unmanned platforms like the extra-large UUV (XLUUV), MUSV/LUSV, and MQ-25 Stingray UAV such that the fleet is ready to make best use of these assets when they deliver. These early bedrock investments will also ensure that when technology has matured, DON will be able to expand production so that sufficient assets can be placed in the hands of the warfighter.

DEVELOP AN ACQUISITION AND EMPLOYMENT APPROACH TO OPTIMALLY MAN LUSV

The future threat environment will demand offensive unmanned assets that can provide persistence and lethality in areas where manned assets cannot.²² Minimal manning options for first-generation LUSVs could enable more rapid fielding and operationalization. It could enhance ally and partner relationships through combined exercises and training with a vessel similar in size to many ally/partner assets while also providing DON a training ground with the hulls that would eventually be unmanned, thus providing risk mitigation in the event that technological maturity for unmanned operations slows or is delayed.

Running up the score undersea

Part of deterrence is ensuring qualitative advantages in key areas as both a backstop if deterrence fails and as a signal to allies and partners. Doubling down on the US undersea advantage ensures that this crucial edge is maintained.

POSITIVE STEPS

The historic AUKUS agreement will provide immense benefits, with the Royal Australian Navy (RAN) set to procure three to five Virginia-class SSNs, receive US help in designing the future SSN-AUKUS, and accept the rotational presence of up to four US SSNs near Perth, Australia (known as Submarine Rotational Force–West).²³ This agreement will provide significant force-multiplying impacts as a key partner dramatically expands its own capabilities, and due to the rotational agreement, US SSNs will be able to operate forward more regularly.

In terms of maintaining DON's comparative advantage undersea, although shipyard problems at both the new-build and maintenance yards will continue to limit the SSN fleet size far into the future, DON has for several years provided robust funding for SSN construction, related DIB outlays,²⁴ and now MK-48 heavyweight torpedoes (HWT, the joint force's most lethal anti-surface weapon), with the latest budget request almost doubling undersea funding from FY 2023 to FY 2024.²⁵

Recommendations

MAXIMIZE SUBMARINE CAPABILITY AND DIB INVESTMENTS

Although DIB constraints offer limited room for additional near-term action, DON should pursue every avenue to create overmatch undersea, including pursuing production capacity increases for torpedoes and torpedo upgrades, along with working with industry for on-time delivery of key unmanned undersea platforms.

EXPLORE ADDITIONAL NONTRADITIONAL CONSTRUCTION OPTIONS

Delivery delays in submarine construction are impacting fleet capacity and raising the question of when the Australian submarines as part of AUKUS can be built. DON should explore additional opportunities like recent efforts to enable the Austal shipyard to construct SSN and SSBN modules, providing benefits to that yard and potentially lessening backlogs at the SSN yards.

WORK TO TRANSFER MISSIONS AWAY FROM MANNED SSNS

DON should take steps to transfer missions off SSNs as the joint force's most lethal and survivable assets. Doing so provides a force-multiplying effect by allowing SSNs to focus on conducting higher-end missions and enhancing joint force lethality while transitioning from mission sets below the threshold of armed conflict.

EXPLORE ADDITIONAL ALLY AND PARTNER BASING OR ROTATIONAL OPTIONS

Once executed, the rotational presence of up to four SSNs in Australia would enhance DON's ability to keep additional SSNs forward. At the same time, DON should explore other options to enhance the US undersea warfare posture in concert with allies/partners such as additional land-basing of maritime patrol and reconnaissance aircraft (MPRA).

Measuring Performance-to-Plan

DON has made tremendous strides in implementing the “Get Real, Get Better” paradigm in applying Navy-proven leadership and problem-solving methods to achieve exceptional performance. Performance-to-Plan (P2P) is a driver-based method that places data behind ship maintenance issues and focuses attention on the highest leverage points at the highest levels of leadership. This focus has led to data-driven investments in maintenance that have the potential to reduce significantly maintenance overruns in the future.

Leveraging current capacity and increasing operational availability ■

Even the largest and most modern navy can be rendered impotent if its vessels are in disrepair, tied to the pier, or in dry-dock. DON needs a fleet that is available to conduct operations across the globe in numbers that support both competition and conflict. In the past decade, maintenance has been the major driver of lost operational availability (i.e., for training, sustainment, and deployment). Submarines alone have lost almost 8,000 operational days in the past 10 years due to maintenance delays. These delays have essentially taken out more than two whole submarines from the inventory. Improving maintenance planning processes, DIB capacity, and execution through a reinvigorated whole-of-government approach could shorten the Navy's maintenance delays, thereby "growing" the size of the operational fleet.

POSITIVE STEPS

DON has made tremendous strides in placing data behind ship maintenance issues and focusing attention on the issue at the highest leadership levels. This focus has led to data-driven investments in maintenance that have the potential to reduce significantly maintenance overruns in the future. As just one example, analysis has shown that almost half of the delays for attack submarines are driven by material availability delays, and DON has made significant investments in procuring long-lead time material. Improvements to the maintenance planning process are also underway, including efforts to stabilize work packages ahead of time, creating a more deliberate maintenance execution process that could significantly reduce maintenance delays.

Recommendations

ENHANCE RIGOR AND STANDARDIZATION IN MAINTENANCE PLANNING

Poor understanding of ship condition, late additions of modernization packages, materiel shortages, and even contracting processes can all drive schedule delays for ship maintenance. This reinforces the need to plan rigorously and systematically for the variables that are under DON's control. Near-term actions should include adding high-probability/high-impact unplanned work to directed maintenance, investing in integrated IT systems to document ships' material condition properly, and ensuring that work discovery has been completed on time and in full. Combined with increased emphasis on material availability and

improved contracting processes, these actions can begin to "grow" the size of the operational fleet, providing additional assets for both competition and conflict.

INCREASE INTEGRATION WITH THE US COAST GUARD (USCG) AND THE DEPARTMENT OF TRANSPORTATION'S MARITIME ADMINISTRATION (MARAD) TO ENHANCE INTEROPERABILITY AND LEVERAGE EACH SERVICE'S COMPARATIVE ADVANTAGE

Such an approach, perhaps driven by a new National Maritime Strategy, could be a novel means to expand US forces and enable the idea of building "home-field advantage" throughout the globe. Reinvigoration of USCG and MARAD fleets could

also provide DIB benefits, as the same US shipyards that can or do construct DON's fleet also build USCG and MARAD ships. For example, Huntington Ingalls Industries currently builds DDGs, the LHA-6 class, and the LPD-17 Flight II class for DON while also constructing USCG National Security Cutters.

IMPROVE CAPACITY AND EXECUTION OF THE SHIPYARD DIB.

Both the size and shape of the shipyard workforce and the processes used in executing maintenance actions need improvement. In the past 10 years, the experience level in the Navy's public shipyard workforce has declined significantly. Coupled with internal attrition caused by the workforce moving out of direct work and into support roles, this contributes to lower maintenance throughput. DON needs to continue to stimulate the labor market by partnering with trade and vocational-technical schools and removing hiring barriers. Beyond the labor supply, execution practices at the shipyards can be improved. Inefficiencies in processes and stacking of requirements lead to an increased need for support

"Increasing demand for the Coast Guard's unique authorities, partnerships, and capabilities will stretch our organizational capacity and require clearer alignment between strategy, resource allocation, and mission execution to address the most consequential risks facing our nation."

—United States Coast Guard Strategy,
October 2022

services and a decrease in the amount of direct labor that can be executed. Currently, much of the work performed at the Navy's public shipyards is not direct production labor. Maximizing the direct-labor work will require work standardization, expedited

A National Maritime Strategy

Given the importance of the maritime domain to the economic well-being and security of the United States, the decline of US maritime capacity, and the concerns about the rise of the PRC as a global maritime power, the FY 2023 NDAA has called for a study to identify the key elements of a national maritime strategy to ensure "a capable, commercially viable, militarily useful" merchant fleet; "a robust United States mariner workforce"; and a "strong United States domestic shipbuilding infrastructure." The FY 2023 NDAA's proposed study also calls for addressing other critical issues such as the status of the Navy Fleet Auxiliary Force, the National Defense Reserve Fleet, the Military Sealift Command, and the Maritime Security Program.

problem resolution by empowering mechanics, and the development of direct pathways for escalating the resolution of critical issues. To improve execution in the private-sector shipyards, the Navy has been

working on improving both the predictability and stability of the workload to ensure that private shipyards can efficiently manage their workforce and make sufficient infrastructure investments.

Making hard choices: reprioritizing and balancing across investments

Although the options outlined would better posture DON for competition and conflict with the PRC, they will all require time, manpower, and funding. Assuming anything besides a sizable strategic investment in DON funding, additional investments and new focus areas will require reprioritization, balancing across investments, and making hard choices and trade-offs, as all DON platforms and capabilities provide value. However, DON must prioritize those areas that can provide either enduring qualitative advantages or the means to offset the PRC's inherent advantages in geography and capacity.

In addition, strengthening maritime dominance and building a force with the right mix of platforms, capabilities, and capacity to fulfill all of DON's peacetime and wartime missions will take many years. As such, near-term actions must seek to balance near-term results with those that will take years or decades to come to fruition. This latter category is no less important, as altering fleet design must begin now due to the timelines involved in strategic change. This section outlines the positive and sometimes difficult steps DON has taken toward an enhanced future force while also providing recommendations for additional steps that could accelerate realization of such a force.

“Building the naval expeditionary force of the future will require an honest assessment about the relevance of both current and planned capabilities, organizations, and equipment. Initial findings from our force design-related wargames are sharpening our understanding of the investments and divestments required to align the force with the National Defense Strategy. It is increasingly clear that the Marine Corps is over-invested in capabilities and capacities purpose-built for traditional sustained operations ashore....At the same time, we are under-invested in naval expeditionary capabilities and capacities that support fleet operations.”

—General David H. Berger, Commandant,
United States Marine Corps,
Marine Corps Gazette, June 2020

POSITIVE STEPS

DON has taken steps in recent budget cycles to move toward an enhanced future fleet through a robust modernization program, unmanned investments, divestments of some legacy ships, and reduced procurement of other ships. For unmanned investments, the most recent budget submission notes that the Navy “released the Unmanned Campaign Framework and chartered the Unmanned Task Force to innovate and adapt new technologies with which to build a more lethal distributed naval force”²⁶ and that the Navy will operate up to seven USV prototypes by the end of FY 2024 and five XLUUV prototypes by the end of the Future Years Defense Program (FYDP).²⁷

DON has also generated and sustained momentum in the US Marine Corps’ (USMC) Force Design 2030 through efforts such as the creation of Marine Littoral Regiments (MLR), divestment of force structure not as well suited for the new force design, and development of the landing ship medium (LSM). Ideally, these new, smaller, less-expensive, and lighter footprint capabilities could enhance DON options to respond to PRC malign activities below the threshold of armed conflict in cases where larger platforms like a DDG or a carrier strike group (CSG) may not be appropriate.

Yet these critical investments come with a cost. DON has made painful but necessary divestments, such as the recent decision to decommission 10 ships in FY 2024—five CGs, two littoral combat ships (LCSs), and three dock landing ships (LSDs)—and 62 over the next five years (including 13 CGs, 7 LCSs, and 6 LSDs), noting that difficult choices must be made to ensure the Navy best meets joint force operational requirements. These choices include divesting ships that are expensive to repair and maintain and provide less relevant capability to pacing warfighting requirements. It also requires prioritizing promising technologies that need to be fielded quickly and at scale to be operationally relevant in the coming years.²⁸

Recommendations

INNOVATE AND FIELD AT THE PACE OF RELEVANCE

DON must not decelerate when promising technology is demonstrated, as it is only by transitioning and scaling new capabilities that actual enhancements are realized.

- **Develop new adoption pathways.** The current programming and budgeting process is deliberate, as it should be for large multibillion-dollar decisions. However, speed and agility are needed in selected areas—particularly when trying to transition and field a demonstrated new capability. DON should work with DOD and Congress to develop such pathways through efforts such as expanded reprogramming authorities and broader program element codes, both of which would provide added flexibility to move funds. DON should also maintain close ties between experimentation offices and program offices, to ensure that successful experimentation does more than deepen the “valley of death” by testing new systems without a transition path. One promising development is DON’s pilot capability portfolio-based Program Executive Office, designed to have the requisite oversight and control across a suite of related acquisition programs. Such a move could provide enhanced flexibility in key areas.
- **Invest heavily once technology has matured.** As outlined above, DON must avoid the “sprint to nowhere,” whereby high-tech investments are rapidly made without a DOTMLPF-P underpinning. Aligned with that, however, is the need to ensure that when technology has matured—for example, in the case of some smaller

and medium-size UUVs—DON is ready and willing to expand production so that sufficient assets can be placed in the hands of the warfighter.

COMMIT TO AND FUND THE ENHANCED FUTURE FLEET

Previous and current analysis shows that a future fleet that resembles the current fleet will not meet the needs of DON and the nation due to its reliance on a low number of capital ships, many of which have survivability challenges. A fleet designed to both engage in a prolonged competition and prepare to fight and win a high-end conflict must be larger, more distributed, more lethal, and better able to operate and provide a full suite of capabilities within an ever-expanding WEZ. Transitioning to that fleet means that there are only two choices: vastly increase funding for DON or make the difficult decision to lessen procurement of some ship classes. If hard choices are required, two options should be considered:

- **Reassess the size, shape, and cost of the carrier force.** The PB24 shipbuilding plan notes that “a decision on CVN 82/83 two-ship buy is needed no later than FY 2025.”²⁹ Although two-ship and other block buys provide some cost savings, those savings come at a price. They lock in multiple procurements, leading to an inability to make future trade-off decisions. In addition, the long timelines associated with ship construction, particularly carrier construction, mean that a block buy decided on today makes an assumption on operational environments 10 to 60 years in the future. Current uncertainty as to how well suited an 11-carrier fleet is to future force-design goals and high-end conflict, combined with pressure on DON’s topline and investments, suggests that

near-term decisions that tie up large sums of investments for multiple years may not be strategically prudent. As such, DON should reassess the size and shape of the carrier force before making decisions on a block buy or the timing of future carrier procurement.

- **Reassess the size, shape, and cost of the amphibious force.** Congress has stated a clear desire for a fleet of 31 traditional amphibious ships, codifying that number into statute, as it has with 11 carriers and a battle force of 355 ships. In order to meet this guidance and pursue the congressionally directed role in peacetime competition, the Navy will need the commensurate funding or will need to pursue an amphibious fleet comprised of significantly lower cost vessels. The “shape” of this amphibious force will require deliberate attention to both the cost and capabilities of the ships in the future amphibious fleet.

Such choices will not be easy, nor will they be met with universal agreement. The USMC’s Force Design 2030 offers a case study in the promise and peril of such choices. Its vision to divest force structure that is not as well suited for the future operating environment offers the promise of an enhanced future force across the spectrum of competition and conflict. However, its vision has been met with stiff opposition in some quarters. Similarly, PB20 plans to decommission USS *Harry S. Truman* (CVN-75) early to provide additional resources for investments in advanced weapons, unmanned technologies, and other capabilities were met with stiff opposition.³⁰ However, given the challenges posed by an increasingly capable PLAN, DON will need to consider these types of bold actions absent a substantial increase in funding.

Deep Dive: USMC Experience Redesigning Its Force

The 2018 National Defense Strategy (NDS) and National Military Strategy (NMS) directed the services to focus on high-end warfighting in the Pacific. Acknowledging that it was out of alignment with the new guidance, the Marine Corps began a comprehensive effort to redesign its force in its Force Design 2030 (FD2030) initiative.

FD2030 includes new units and new/updated systems capable of surviving and attacking from within reach of advanced A2/AD weapons, a more mature force able to operate in smaller and more-distributed formations, and training to hone skills necessary for fighting in contested maritime environments. These initial changes were to be cost-neutral.

This “divest to invest” approach involved eliminating or reducing capabilities deemed less suitable for peer conflict (such as tanks and cannon artillery) while retaining global crisis-response capabilities at reduced capacity. It has also deliberately increased the service’s interdependence with the rest of the joint force.

The changes have received pushback from some senior members of the retired Marine Corps community, who have been unusually vocal and public in their criticism and have focused on the side effects of the Commandant of the Marine Corps’ (CMC) prescriptions (for example, certain divestments and unit reorganizations) as well as the trade-off between preparing for the future and satisfying current demands of geographic combatant commands (GCCs).

BUILDING A CULTURE OF WARFIGHTING EXCELLENCE

At a strategic level, the US-PRC naval competition is about the ability to sustain institutional investments, the creation of capability, force modernization decisions, technological innovation, doctrinal creativity, and the development of human capital.

The competition for capability advantage is not just about weapons, equipment, technologies, and platforms—personnel is a critical element. Highly capable and motivated servicemembers and DOD civilians are an advantage the US joint force and the US naval services have over the PRC armed forces.³¹

Attracting, developing, and retaining high-quality USN and USMC military and civilian personnel will be a key element to succeeding in strategic competition

with the PRC. Consequently, DON must ensure that it maintains this traditional advantage going forward. This section describes three dimensions at play: recruiting, retention, and personnel development—particularly the need to develop personnel better able to understand both adversaries and US allies and partners.

Recruiting

Manning the force at adequate levels is the first step toward ensuring that the sea services maintain their competitive edge over the PLA. All the services face a recruitment challenge: the US recruiting environment has become more difficult in recent years and is anticipated to remain challenging even if the economy weakens.³² The USN and USMC met their active component (AC) enlisted recruiting goals in FY 2022, but only by significantly drawing down their pools of previously contracted recruits (i.e., the delayed entry-program pool). The USN missed its AC officer goals and both reserve component goals in FY 2022.³³ Both services continue to struggle. In April 2023, the Vice Chief of Naval Operations stated in testimony that the USN should expect to fall short by 6,000 AC recruits at the end of FY 2023.³⁴

POSITIVE STEPS

To counter these trends, the sea services have taken steps to increase eligibility for service. For example, the USN recently launched a preparatory course to provide recruits who do not initially meet fitness standards a chance to improve before boot camp; a similar course for academic standards is expected this summer.³⁵

The USN also raised the age limit for new recruits at the end of last year and initiated a pilot program that allows those scoring between the 10th and 30th percentiles of the Armed Forces Qualification Test (AFQT) to join the service in some cases.³⁶

Recommendations

TO ENSURE THAT THEY CAN CONTINUE TO MEET THE STRATEGIC CHALLENGES PRESENTED BY THE PRC, PLA, AND PLAN, THE SEA SERVICES MUST CONTINUE TO TAKE STEPS TO SHORE UP THEIR ABILITY TO RECRUIT A CAPABLE FORCE

This includes opening the aperture to target those in nontraditional recruiting markets. For example, those attending community colleges/technical schools may be good recruiting prospects.³⁷

IT ALSO MEANS MAINTAINING OR INCREASING RECRUITING RESOURCES AND VALIDATING STANDARDS AND REQUIRED PROFICIENCY LEVELS

CNA has been central to the validation of Armed Services Vocational Aptitude Battery (ASVAB) qualification standards in the past.³⁸

THE SEA SERVICES SHOULD CONTINUE THEIR ONGOING EFFORTS TO INCREASE THE NUMBER OF RECRUITERS, RECRUITING STATIONS, AND RECRUITING RESOURCES

Analysis has suggested that physical presence is central to recruiting success.³⁹

MAINTAIN RECRUITING RESOURCES, EVEN WHEN THE RECRUITING MARKET IMPROVES

Although recruiting resources can be cut quickly, it takes time to rebuild the recruiting apparatus and establish presence in the youth market.⁴⁰ During our workshops for this Quick Response Project, it was suggested that recruiters should always be thinking of new ways to better leverage social media in their efforts.

THE SEA SERVICES SHOULD CONTINUE EFFORTS TO IMPROVE THE SPEED OF CIVILIAN HIRING

This will include proper staffing levels in operations centers to improve processing times.⁴¹

Retention

In the current competition with the PRC, retaining the best sailors and marines is critical to readiness. The sea services have made an investment in sailors and marines' training and development that they must work to retain.

POSITIVE STEPS

The USN and USMC made a strong retention push in FY 2022 and met or exceeded their aggregate retention goals.⁴² This required the use of selective retention bonuses and continuation bonuses, supplemented by other measures. For example, the USN has suspended high-year tenure until December 2024.⁴³

The USMC gave commanders retention missions in FY 2022 and also created the Commandant's Retention Program, which simplifies re-enlistment for the Marine Corps' top-performing marines.⁴⁴ However, meeting aggregate retention goals does not mean that retention goals by occupation or paygrade were met, particularly in high-demand/low-density occupations.

To shore up FY 2023 retention proactively, the USMC doubled the Blended Retirement System's continuation-pay multiplier for all active and reserve marines in January 2023.⁴⁵ The USMC is also moving from a "recruit to replace" to a "recruit to retain" paradigm as it tries to mature the force to better meet future warfighting requirements.⁴⁶

Furthermore, both the USN and USMC are taking steps to improve their personnel IT systems.⁴⁷ And both services have implemented policies that emphasize co-locating "mil-mil" spouses.⁴⁸

These steps are helpful but may not be enough. To maintain a strong retention posture, the services must explore the viability of other measures to meet the needs of both the service and the servicemembers.

Recommendations

PURSUE INITIATIVES TO LEVERAGE PERSONAL PREFERENCES

As the services' talent management initiatives mature, there will be more opportunities to leverage personal preferences and career aspirations in making initial military occupational assignments and managing naval careers. For example, the USN is developing a billet-based advancement system that will strive to reduce gaps at sea and increase sailors' choices.⁴⁹ The USMC has developed Talent Management 2030, which will fundamentally redesign its personnel system. For instance, it is developing a tool that will better align enlisted marines' interests and talents with service needs.⁵⁰ The sea services should continue to pursue these initiatives.

DEVELOP NONTRADITIONAL INCENTIVES

Nontraditional, non-monetary retention incentives, such as offering duty station preference, school seat assignments, or off-base housing for single sailors

and marines, also should be considered.⁵¹ In this regard, the intention to offer career-long learning and education opportunities for officers, enlisted, and civilian personnel, as outlined in the new (June 2023) *Naval Education Strategy 2023* (NES-23) holds the potential of assisting with retention issues if it is actually pursued.⁵²

LEVERAGE LONGER CONTRACTS

Longer contracts for marines, particularly for those trained in highly technical skills, also could be exploited more frequently.⁵³

THE USN AND USMC SHOULD IMPLEMENT POLICIES TO ACCOMMODATE TWO-INCOME HOUSEHOLDS

Continue developing and implementing policies that address the reality of two working spouses and associated child-care requirements. Further study is needed to ensure that the most effective policies are advanced.

Naval Education Strategy 2023: Learning About the Adversary

The [Naval Education Strategy 2023](#), released on June 23, 2023, specifically calls for the Navy Education Enterprise (NEE) to encourage personnel “to gain deep expertise not only about key technologies, but also about our competitors and the future of warfare.”

Understanding the nature of the challenge

Given the centrality of the PRC as the major security challenge for the US, basic knowledge of the PRC, PLA, and PLAN should be part of personnel development. Not every sailor, marine, and DON civilian needs to be a China expert, but all personnel—not just those serving in the Indo-Pacific—should know *something* about the PRC armed forces and the geography and geopolitics of the US-PRC competition. DOD policy guidance has described the need for a greater China-related focus in the professional military education (PME) system.

During the Cold War, knowledge of the Soviet Union and its armed forces was disseminated across all command echelons. For its part, the PLA today is

busy disseminating knowledge about the US joint force, the USN, and the USMC in its professional journals and service newspapers. The US Navy and Marine Corps should do no less.

Nor should this educational process ignore US allies and partners as a key advantage and critical component in this competition. Fostering a foundation of knowledge of key allies and partners among the USN and USMC personnel who will be tasked with deepening and expanding those relationships will make them more effective and contribute to the success of combined endeavors.

POSITIVE STEPS

The need to push knowledge about the PLA and PLAN throughout DON was a common theme in all four CNA workshops in support of this project. There are some positive developments to report, although there is more that could be done.

First, the Office of Naval Intelligence (ONI) has a robust program of adversary education that it is using internally and pushing out to other DON and DOD audiences. For example, ONI is executing a series of efforts to build on PRC, PLA, and PLAN knowledge for uniformed and civilian personnel through computer-based modules, TED Talk-style presentations, gamification, professional readings, and specially curated portals for improved user access to specialized publications and critical intelligence.

Also, DON has centers of excellence for the study and analysis of the PRC, PLA, and PLAN that have significant resident expertise. These include ONI, the Marine Corps Intelligence Activity (MCIA), the China Maritime Studies Institute (CMSI) at the Naval War College, the China Studies Program at CNA, and the Naval Postgraduate School (NPS).

Recommendations

CONDUCT AN ASSESSMENT OF CURRENT PME INSTITUTIONS AND PROGRAMS

Per the broader guidelines in NES-23, DON should assess whether its PME institutions are providing their students with an adequate understanding of the PRC, the PLA, and the PLAN, along with the nature of the strategic competition. DON should also consult with the Office of the Secretary of Defense for Personnel and Readiness, which has the lead for this issue within DOD.

INTEGRATE CURRENT EFFORTS AND MAKE THEM MORE ACCESSIBLE

DON should consider integrating some of ONI's efforts into a larger professional development training and education curriculum accessible by Navy and Marine Corps personnel ashore and afloat. ONI's TED Talk-style presentations are recorded and easily posted (within current classification and bandwidth constraints), and ONI's professional reading list on the PRC could be included in broader DON reading lists and associated e-book and audiobook libraries, such as the DOD MWR Libraries (formerly the Navy MWR Digital Library).

DEVELOP LEARNING MODULES TO IMPROVE UNDERSTANDING OF BOTH ADVERSARIES AND ALLIES

Most DON personnel will not have the chance to attend PME institutions. Hence, DON should consider developing an unclassified, online, and self-paced series of learning modules to improve knowledge of both potential adversaries as well as allies and partners. Such training materials should be made widely available to USN and USMC trainers and trainees, civilian and military. CNA has extensive experience creating such learning materials across the DOD and DON enterprises.

STREAMLINE AND CENTRALIZE INFORMATION

DON's various centers of excellence on PRC security and military affairs mentioned previously (ONI, MCIA, CMSI, CNA, and NPS) are producing significant amounts of knowledge, analyses, and insights about the PRC, the PLA, and the PLAN. Accessing all that knowledge is not easy because it does not reside in a single place. Finding a way to centralize that knowledge in a secure but accessible venue is worth exploring.

ENSURE THAT KNOWLEDGE AND EXPERTISE OF THE PRC AND PLA IS INSTITUTIONALIZED AND INCENTIVIZED IN THE DON WORKFORCE

This requires defining what knowledge and expertise on the PRC encompasses and how the DON workforce can demonstrate it in practice. Then, DON must integrate benchmarks of this knowledge and expertise into the accession/hiring, assignment, and promotion processes for both the military and civilian DON workforce. For example, for military personnel, DON should ensure that administrative and promotion board precepts encourage selection of servicemembers with demonstrated knowledge of the PRC for both advancement and key assignments (e.g., for consideration of selection of commanding officers of forward-deployed naval forces in INDOPACOM).

ENHANCING STRATEGIC PARTNERSHIPS

The need for DON to develop partnerships to meet the multiple challenges posed by the PRC is manifested in various DOD and DON strategic documents as well as in the speeches and congressional testimony of their key leaders. This section describes how enhancing partnerships within industry as well as with other nations is, and will continue to be, particularly crucial.

Protecting technologies and supply chains

Industry partners will be vital to the myriad tasks associated with maintaining maritime dominance—shipyards and shipbuilding, repair and maintenance, and technological innovation must all be accomplished with industry partners. Addressing all these issues properly would require its own study.

One dimension of the DON-industry partnership that is highlighted here is the need to work together to protect critical technologies and supply chains. The competition for technological superiority is being waged right now, and the PRC is attempting to target and acquire US defense technologies through both legal and extralegal means.

Since the intellectual property, manufacturing capacity, and associated expertise for important technologies and capabilities are typically found in the private sector, DON must ensure that technology-protection best practices are adopted across the acquisitions life cycle to mitigate technology loss or the erosion of capability advantage.

Technology protection is a whole-of-government effort, and DON must play a role in ensuring US capability advantage in naval technology.

POSITIVE STEPS

Several steps have already been taken to establish and strengthen processes to protect US defense technology and the resilience of supply chains.

DON took steps toward the protection of future innovation by establishing a Director for Innovation Protection Policy. That office recently hosted a February 2023 wargame at the Naval Postgraduate School examining intellectual property protection that included participation by industry representatives.

In addition, DOD has implemented the legal requirements of the FY 2019 NDAA by creating a single, unified list of critical technologies programs and conducted the requisite analysis to prioritize USN inputs to that consolidated list.⁵⁴

POSITIVE STEPS

In order to improve communication and education efforts, DON's Office of Commercial and Economic Analysis–Navy (OCEA-N) is coordinating across the intelligence and acquisitions communities to ensure that technology-protection efforts are conveyed to industry.

Within the US interagency, ONI provides relevant intelligence to USG partners charged with investment screening and enforcement of US export control laws.

The DON Foreign Investment Review office (DON FIR), under the Assistant Secretary of the Navy for Research, Development, and Acquisition (ASN RD&A), also protects USN programs and technology equities by strategically addressing foreign investment issues as they relate to the industrial base and economic security.

DON's Microelectronics Strategy Team is developing a department-wide strategy to identify and reduce USN dependencies in the microelectronics supply chain.

Recommendations

CNA research and recent workshops with DON stakeholders identified several areas for improvement in technology protection that require strengthened collaboration with industry.

INCORPORATING TECHNOLOGY PROTECTION INTO ACQUISITIONS DECISION-MAKING

Preventing technology loss to foreign countries of concern is currently not a formal criterion for evaluating and selecting acquisitions. During a recent workshop on naval technology protection, a recurrent theme was the need to place technology protection at the same level of priority as program cost, schedule, and performance in the acquisitions process.⁵⁵

SHIFT THE CULTURE SURROUNDING TECHNOLOGY PROTECTION FROM A REACTIVE "ENFORCEMENT" APPROACH TO A MORE PROACTIVE "RISK-MITIGATION" APPROACH

Current technology-protection protocols rely primarily on a reactive (after-the-fact punishment) approach derived from law enforcement. Although this approach punishes violators, it does not prevent or mitigate technology loss.

PROVIDE GREATER SUPPORT TO INDUSTRY AND R&D FOR EXPORT CONTROL COMPLIANCE AND TECHNOLOGY LOSS PREVENTION BEST PRACTICES

To prevent unauthorized technology access, industry partners must understand what to protect, why, and how to protect it. Industry partners are not always familiar with critical technology lists nor up to date on best practices for ensuring technology

protection. Notably, some nontraditional technology partners may not have the infrastructure or familiarity with DOD processes to compete for DOD work and implement protection measures. Hence, DON will need to work to ensure that it can still tap into these technology providers while also protecting critical information and technology.

EVALUATE THE IMPACT OF SHORTFALLS IN SUPPLY CHAIN RESILIENCE

Consistent with ongoing microelectronics analysis, DON should consider how supply chain shortfalls in critical minerals or other inputs, such as rare earth metals, could affect DON's expanded Title 10 responsibilities to compete with the PRC below the threshold of armed conflict. Specific elements of that analysis could include the following:

- **Reviewing existing proposals to overcome US critical supply chain reliance** on overseas production currently circulating within the USG to determine which

proposals are suitable to address USN needs (e.g., USN reliance on legacy systems with older generation microelectronics)

- **Prioritizing potential vulnerabilities in the USN supply chain** to create US-based alternatives or devise alternate suppliers among allies and partners

EVALUATE DUE-DILIGENCE REQUIREMENTS FOR TECHNOLOGY PROTECTION

In order to maintain capability advantages, DON should consider evaluating current technology protection due-diligence requirements to

- assess protection success;
- evaluate resource allocations; and
- make organizational or resource changes to prevent technology loss in critical acquisitions programs.

Understanding how to work with allies and partners

"The US Navy is operating in collaboration with dozens of navies around the world to ensure that the maritime commons remain free and open for all nations."

—Admiral Mike Gilday, Chief of Naval Operations, *60 Minutes*, March 19, 2023

The need for the USN, USMC, and USCG to work alongside US allies and partners has never been greater. The tri-service maritime strategy, *Advantage at Sea: Prevailing with All-Domain Naval Power* (December 2020) described allies and partners as "our key strategic advantage in this long-term strategic competition" with the PRC. Without question, the roles of third countries are at play in the US-PRC competition below the threshold of armed conflict.⁵⁶ The PRC has its own robust programs of foreign military relations and foreign military assistance. Beijing is constantly probing for daylight between the US and its treaty allies and is offering both incentives and disincentives to non-allied partners in the hope

that they do not swing too far to the US side. As such, the US sea services will need leaders who have the education and experiences necessary to operate and work effectively with US partners—USN and USMC leaders who understand partners' unique national strategic perspectives, their military-organizational cultures, and their operational strengths and weaknesses.

POSITIVE STEPS

Established in 1997 as an officer sub-specialty, the USN's Foreign Area Officer (FAO) program has transformed over the past two-plus decades from an initiative that initially awarded unrestricted line (URL) officers an additional qualification designator (AQD) based on specialized background and experience. The program was restructured in 2005 to create a community of restricted line officers who would receive extensive specialized training.

A 2014 CNA study of the USN FAO community found that most respondents to a survey at the time claimed that FAOs contributed either "a great deal" or "a fair amount" to command and agency missions.⁵⁷ As the need to work with allies and partners increases, the roles of USN and USMC FAOs and Regional Area Officers (RAOs) will become more important.

Despite the importance of these skills in the current strategic environment, the perception has been that FAOs face career progression and promotion challenges in both services. The USN's single-track approach to training and developing FAOs has resulted in some dissatisfaction with how FAOs are trained and utilized.⁵⁸ Furthermore, subject matter experts (SMEs) consulted for the CNA study noted that USN FAOs lacked clear promotion milestones or career paths. The USN produces annual career progression paths for all USN line communities, including FAOs, but it is an open question as to how well FAOs are able to follow these paths and whether it affects their promotion opportunities.⁵⁹ In the USMC, those with an FAO designation may not be able to pursue opportunities to serve in FAO-relevant billets while still hitting promotion milestones required in their military occupational specialty (MOS).

Recommendations

CONDUCT AN EVALUATION OF THE USN AND USMC FAO PROGRAMS

The health of the FAO programs should be re-examined to see if they are serving the sea services' needs in a time of intensified competition with the PRC and a greater focus on allies and partners. CNA last reviewed the program in 2014.⁶⁰ Questions that should be asked include: Do we have the right number and mix of FAOs? Is the pipeline healthy? Is their training adequate? Are FAOs leveraged appropriately or serving in the correct billets? Is

DON getting a return on its investment in FAO utilization? Are FAOs competitive with their peers? And, per NES-23, does DON have personnel "fluency in critical languages," not only in the FAO program, but across the force?⁶¹

DEVELOP INNOVATIVE APPROACHES TO TRAINING AND EDUCATION

On the issue of FAO training, previous CNA analysis recommended that the Navy consider flexible approaches to training and educating its FAOs, who periodically take advantage of opportunities outside of the traditional training routes within the DOD

system to broaden their perspectives. Examples included attending a civilian university versus NPS to gain specific expertise. It also recommended that USN FAO assignments be sequenced to encourage broad functional and deep regional expertise, including periodic assignments to fleet staffs.

CONSIDER ALLY/PARTNER OPPORTUNITIES AND EXPERIENCES FOR URL OFFICERS

Beyond FAOs and RAOs, providing foreign immersion experiences to USMC and USN line officers could be helpful in enhancing the abilities of future warfighting commanders to engage operationally with their ally and partner counterparts. For example, selecting highly competitive URL officers for attendance at foreign war colleges, assignments as liaison officers (LNOs) with allied staffs, or fellowships at foreign defense-related think tanks could provide invaluable experiences as these officers return to the fleet in positions of increasing responsibility.

RAISE THE PROFILE AND POSITIVE PERCEPTION OF EXPERIENCE WITH PROMOTION OUTCOMES

At the CNA workshops conducted in support of this project, many participants conveyed the perception that DON does not value such opportunities. Offering precepts to USN and USMC promotion boards that provide guidance on the skills and experiences desired within the FAO and RAO communities could help to improve FAOs and RAOs' promotion outcomes. The same would be the case for URL officers who have had nontraditional foreign immersion experiences with allies and partners.

LEVERAGE FOREIGN MILITARY OFFICER TRAINING AND EDUCATION OPPORTUNITIES

NES-23 recognizes that the Navy Education Enterprise is an important resource "to further develop international partnerships through increased PME opportunities."⁶² In this regard, DON should

continue to work with the State Department, which administers the International Military Education and Training (IMET) program, to ensure that foreign naval officers from key countries are afforded the opportunity to participate in DON's PME institutions.

COUNTER PRC DISINFORMATION

As the PRC continues its efforts to shape the information domain, the USN needs the tools to respond to PRC propaganda and disinformation activities that seek to manage perceptions and drive a wedge between the US and its allies/partners. FAOs and DON public affairs specialists have a role to play in "the battle for the narrative" along with other USN, joint force, and interagency partners.

STREAMLINE FOREIGN MILITARY SALES TO ALLIES AND PARTNERS

DON is a critical partner in the USG's Foreign Military Sales (FMS) program. It provides the training, education, and equipment needed by US allies and partners to improve their own defense and enhance interoperability with US forces. DON has limited ability to influence the larger processes involved in this interagency endeavor, which is overseen by the Department of State and administered by the DOD and often involves Congress. Participants in this project's workshops and discussions with current and former DON officials identified areas in which the USG could be doing better. A prevalent observation in this project's workshops was that the FMS system takes too long to deliver equipment and the use of Special Security Agreements can slow down the process. A positive development from which the DON security assistance community will hopefully benefit is the May 2023 promulgation by the State Department of "FMS 2023: Retooling Foreign Military Sales for an Age of Strategic Competition," which seeks to streamline processes and deliver materiel faster.⁶³

Mitigating and adapting to climate change with US allies and partners

Climate change poses a threat to every landmass and region, impacting all countries and militaries. This is particularly relevant for some of the US' most important allies and partners in key strategic areas where the US Navy and Marine Corps will have to operate. In other littoral and non-littoral countries, the cascade of effects will include the following:

- More requests for militaries to respond to natural disasters
- More resources directed to climate adaptation—including renewable and resilient energy supplies
- Economic disruptions cutting off supply chains and adversely affecting operational logistics
- More contention over all resources, including marine resources
- Increased potential for strategic competition in emerging maritime commons such as in the Arctic and Oceania
- Rising sea levels at military bases and facilities
- The potential for navies to be called upon to respond to the large-scale displacement of people following climate-related events, such as extended droughts.

At the same time, the challenges associated with climate change offer an opportunity for DON to deepen its connections and interoperability with foreign allies and partners as a genuine matter of shared national security concerns. Climate change also presents an opportunity to differentiate the US from the PRC by providing know-how and material assistance as well as modeling positive environmental

The Pacific Islands

The Pacific Islands region is at the frontline of climate change, as it is already experiencing dramatic sea-level rise, increased frequency and severity of extreme weather events, and damage to critical reefs and infrastructure that threaten some islands' very existence. The Pacific Islands region is also home to several key US military installations and access points, occupying a geopolitically important location between the United States and the PRC at the crossroads of the Pacific Ocean, the Indian Ocean, and the South China Sea. Leaders of Pacific Island countries (PICs) are emphatically expressing the dangers they face from climate change and requesting assistance from the United States and its partners to address them.

stewardship. DON can make investments in training, equipment, and construction projects to help our allies and partners increase their maritime domain security and mitigate some of the more devastating effects of climate change, providing critical types of assistance that the PRC does not. Such assistance

will be a two-way street: the Navy and Marine Corps will need the assistance of allies and partners in confronting some of the operational consequences of climate change, especially the implications for overseas US bases and facilities.

POSITIVE STEPS

DON strategic documents, such as “One Navy–Marine Corps Team: Strategic Guidance from the Secretary of the Navy” and DON’s *Climate Action 2030*, have identified the importance of working with foreign partners on the challenges of climate change. That guidance is evident in various programs and efforts:⁶⁴

- In a speech to PIC leaders, Secretary Del Toro emphasized the importance of fostering close partnerships with island nations and DON’s commitment to combating and mitigating the threats posed by climate change.⁶⁵
- The Office of Naval Research (ONR) is collaborating with Vietnamese scientists to study the Mekong Delta and climate-related phenomena such as the delta’s responses to rising sea levels, changes in mangrove environments, and reduced fresh-water flows from upstream.⁶⁶
- The Navy Entomology Center of Excellence has partnered with the Ghanaian armed forces, police, and Ministry of Health to provide training to build local capacity to combat vector-borne diseases that are exacerbated by climate change, such as malaria.⁶⁷
- The Navy is increasing connections with universities in small island nations to help with climate change research. This includes the partnership of the US Naval Postgraduate School and the University of the Bahamas against the effects of climate change announced in March 2023.⁶⁸
- The US Pacific Fleet–led Pacific Partnership exercises include HA/DR training for allies and partners in the Indo-Pacific, along with construction projects on critical infrastructure such as hospitals, schools, and disaster relief shelters. In 2022, host nations for these exercises included Vietnam, Palau, the Philippines, and the Solomon Islands.⁶⁹
- The Marshall Islands and ONR have partnered to develop the Kwajalein Atoll Sustainability Laboratory (KASL), which is now working to develop mitigation efforts to prevent the deterioration of the coral atolls in the Marshall Islands.⁷⁰

Recommendations

SHARING KNOW-HOW

Increase DON engagement in the development and employment of climate-adaptive practices, technologies, and innovations by US strategic partners. Share methods that DON has found to be effective, including methods for mitigating stress on water systems and improving infrastructure resilience.⁷¹ DON could share this know-how during combined training and exercises and cooperation on HA/DR.

ALLIES, PARTNERS, AND THE HIGH NORTH

Increase DON engagement with allies and partners in the High North as a hedge against PRC influence in the region as sea ice recedes and shipping routes become more navigable during the ice-free summer months.⁷² The benefits of these engagements would be enhanced with increased DON investment in logistics support options and training ranges for Arctic maritime presence operations.

ALLIES, PARTNERS, AND THE PICS

Increase the scope of DON engagement and assistance in the region to strengthen partnerships and create new relationships with regional organizations, including those for nations without a traditional military. Provide additional materiel, training, equipment, and technical assistance to improve MDA of potential threats and regional capacity to respond. An increased US Navy presence and stronger relationships in this geopolitically strategic area would be a significant benefit for DON in the globally competitive environment.

INDICATIONS AND WARNINGS

Develop a common foresight tool to help partners identify areas of emerging climate impacts, with a focus on the potential for domestic unrest and/or the outflux of climate change refugees. Although there are systems and processes in place at the US Agency for International Development (USAID) and other agencies to monitor and forecast climate stress and predict droughts, there is no standard that also addresses the potential for violence and conflict related to climate change.⁷³ To optimize such a tool, DON would need to improve data-sharing relationships with interagency and foreign partners, specifically regarding relevant metrics for hydrography and meteorology and ice forecasting, and their correlations with MDA in various regions affected by climate change.

PLANNING

Integrate climate impacts into strategic-level documents and guidance, campaign plans, conflict assessments, risk vulnerability, and regional planning.⁷⁴ At a minimum, planning should address the allocation of prepositioned relief supplies stockpiles and access to bases and other infrastructure with US strategic partners during HA/DR events.

ACADEMIC EXCHANGES

Encourage outreach and exchanges with ally and partner officials, academics, and counterpart institutions to help them mitigate the effects of climate change in their countries. For example, in December 2022, the Naval Postgraduate School signed an education partnership agreement with Stanford University's Doerr School of Sustainability. The partnership's purpose is to realize solutions the US Navy and the US can employ to mitigate and reduce the effects of a changing climate.⁷⁵

CONCLUDING THOUGHTS

To fully embrace the expanded peacetime and wartime roles of the Navy as laid out in the FY 2023 NDAA, a large strategic investment in naval capabilities is required.

The recommendations in this paper—spanning investments in new capabilities; highly trained sailors, marines, and civilians; and enhanced relations with allies and partners—should be seen as necessary first steps of targeted improvements designed to better position DON to compete in peacetime and to ensure that USN maritime dominance is sustained and improved.

These recommendations also bring to the forefront questions about how a Navy that is designed to fight and win the nation's wars must adapt to peacetime competition. A fleet designed to engage in protracted competition *and* prepare to fight and win must be larger, more distributed, more lethal, and better able to operate both around the globe and within an ever-expanding weapon engagement zone in the Indo-Pacific theater.

Yet to fully embrace the expanded peacetime and wartime roles of the Navy as laid out in the FY 2023 NDAA, a large strategic investment in naval capabilities is required. Absent that investment, the Navy will need to make targeted divestments of current capabilities to allow investment in the capabilities of the future. These will be painful choices that will involve reducing capability and capacity for current national security goals.

Up to now, the nation has been unwilling to make these choices, instead making incremental investments in the future Navy while often delaying or reversing targeted divestments. That pattern will need to come to a close if the Navy is going to embrace and execute an expanded role in a globally competitive environment.

As a closing thought, it should be emphasized here that long-term strategic competition with the PRC is not solely a military challenge. As such, DON—and the other military service departments for that matter—will need to work across the interagency, with the public and private sectors, and with allies and foreign partners to be effective in playing its role.

ABBREVIATIONS TABLE

A2/AD	anti-access/area denial
AC	active component
AFQT	Armed Forces Qualification Test
AQD	additional qualification designator
ASN RD&A	Assistant Secretary of the Navy for Research, Development, and Acquisition
ASUW	anti-surface warfare
ASVAB	Armed Services Vocational Aptitude Battery
ASW	antisubmarine warfare
AUKUS	Australia, the United Kingdom, the United States
C-C5ISR	counter-command, control, computing, communications, cyber, and intelligence, surveillance, reconnaissance, and targeting
CFIUS	Committee on Foreign Investment in the United States
CG	guided-missile cruiser
CLF	Combat Logistics Force
CMSI	China Maritime Studies Institute
CNA	Center for Naval Analyses
CONSOL	consolidation operations
COTS	commercial-off-the-shelf
CSG	carrier strike group
CVN	aircraft carrier, nuclear-powered
DDG	guided-missile destroyer
DIB	defense industrial base
DMO	distributed maritime operations
DOD	Department of Defense
DON	Department of the Navy
DON FIR	Department of the Navy Foreign Investment Review
DOTMLPF-P	doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy
EA	electronic attack
ESSM	Evolved Sea Sparrow Missile
EW	electronic warfare
FAO	Foreign Area Officer
FFG	guided-missile frigate
FFRDC	federally funded research and development center
FONOP	freedom of navigation operation
FYDP	Future Years Defense Program

Abbreviations Table (cont'd)

INDOPACOM	US Indo-Pacific Command
ISR	intelligence, surveillance, and reconnaissance
ISRT	intelligence, surveillance, reconnaissance, and targeting
IT	information technology
IUUF	illegal, unreported, and unregulated fishing
LCS	littoral combat ship
LHA	landing helicopter assault ship
LNO	liaison officer
LPD	landing platform dock ship
LSD	landing ship dock
LSM	landing ship medium
LUSV	large unmanned surface vessel
MARAD	Maritime Administration (Department of Transportation)
MCIA	Marine Corps Intelligence Activity
MDA	maritime domain awareness
MLR	Marine Littoral Regiment
MOS	military occupational specialty
MPRA	maritime patrol and reconnaissance aircraft
MST	Maritime Strike Tomahawk
MUSV	medium unmanned surface vessel
MWR	morale, welfare, and recreation
MYP	multiyear procurement
NDAA	National Defense Authorization Act
NES-23	Naval Education Strategy 2023
NGLS	next-generation logistics ship
NPS	Naval Postgraduate School
OCEA-N	Office of Commercial and Economic Analysis–Navy
ONI	Office of Naval Intelligence
ONR	Office of Naval Research
OSV	offshore support vessel
PB	President's Budget
PICs	Pacific Island countries
PLA	People's Liberation Army
PLAN	PLA Navy
PME	professional military education
PRC	People's Republic of China

Abbreviations Table (cont'd)

R&D	research and development
RAM	Rolling Airframe Missile
RAN	Royal Australian Navy
RAO	regional affairs officer
SME	subject matter expert
SSBN	ballistic-missile submarine, nuclear-powered
SSN	nuclear-powered general-purpose attack submarine
UAS	unmanned aircraft system
UAV	unmanned aerial vehicle
UNREP	underway replenishment
URL	unrestricted line
USCG	US Coast Guard
USG	US government
USMC	US Marine Corps
USN	US Navy
UUV	unmanned underwater vehicle
UxS	unmanned systems
VLS	vertical launching system
WEZ	weapon engagement zone
XLUUV	extra-large unmanned underwater vehicle

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