Rough Seas

AN AEI STUDY IN CRISIS RESPONSE FOR TOMORROW'S NAVY AND AN IMPROVED NAVY FOR THE FUTURE

John W. Miller, Thomas Donnelly, and Gary J. Schmitt

APRIL 2018

AMERICAN ENTERPRISE INSTITUTE

Rough Seas

AN AEI STUDY IN CRISIS RESPONSE FOR TOMORROW'S NAVY AND AN IMPROVED NAVY FOR THE FUTURE

John W. Miller, Thomas Donnelly, and Gary J. Schmitt

APRIL 2018

AMERICAN ENTERPRISE INSTITUTE

Cover image: USS *Carl Vinson* During Joint US–Republic of Korea Exercise. US Navy, Sean M. Castellano, May 3, 2017, https://www.flickr.com/photos/usnavy/34389374276/.

Contents

Executive Summary

In the winter of 2017, AEI conducted four tabletop exercises to evaluate the US Navy's ability to respond to a range of possible contingencies. The exercises were designed to stimulate discussion about the size of the US Navy, its basing, its equipment, and the fleet's readiness plans. The exercises brought together more than two dozen former Navy, Department of Defense, and national security officials.

The exercises were played with two navies: the Navy the US would field in 2022 as outlined in the last Obama administration defense plan and the iNavy, an alternative future Navy developed by an AEI-sponsored panel of experts that would be realistic to field within the same time frame. The Navy of the last Obama administration defense plan was the Navy "in play" during tabletop exercises one, two, and three; the iNavy was the Navy in play during tabletop exercise four.

The study identified four major issues with the planned US Navy.

First and most obviously, the Navy lacks sufficient funding to meet the stated requirement of a 355-ship fleet. The 355-ship Navy will take decades and billions of dollars not only to build but also to maintain. Neither the Obama administration nor the Trump administration has proposed defense budgets commensurate with reaching or sustaining this significantly expanded fleet.

Second, in the near term, the Navy does not have enough ships to complete assigned missions. Under current planning, the Navy of 2022 will lack the capacity to deal with simultaneous, low-level maritime threats around the globe—let alone simultaneous major contingencies. In other words, the future Navy will struggle to fulfill its primary missions of peacetime engagement, crisis response, and combat operations.

Third, the Navy is not maintained well enough to respond effectively to contingencies. Ships rarely complete their required maintenance on time or on budget. Protracted underinvestment in the operations and maintenance accounts has left ships unprepared to support surge deployments. In the scenarios, decision makers repeatedly had to choose between providing presence by altering the deployment plans of unready crews and ships and ceding the strategic initiative to adversaries.

Fourth, the Navy lacks the global presence and capabilities to deal decisively with the new great-power competitors, Russia and China. In particular, the Navy lacks sufficient presence in the Mediterranean, North Atlantic, and Indo-Pacific regions. As a result, scenario participants found themselves largely reacting to initiatives undertaken by Moscow and Beijing rather than shaping the strategic naval environment. Once the envy of the world, the US Navy can no longer deliver instantaneous and overwhelming force around the globe—once the sine qua non of American power projection.

The first three scenarios in this study illuminated the current US Navy's inability to meet the needs of US national security and military strategies. The fourth scenario shows how investments in the iNavy—such as readiness improvements, capability upgrades, and increased forward deployments—can ameliorate future strategic vulnerabilities and increase future strategic opportunities.

But while these improvements can help close a window of maritime vulnerability and assist in stabilizing critical regions, deterring increasingly aggressive adversaries, and reassuring increasingly skittish allies, they are not a substitute for the larger, overdue, and essential rebuilding that the Navy needs. Today's Navy is too small, insufficiently lethal, not well enough maintained, and, at its bases on the East and West Coasts of the United States, positioned too far away from crises and conflicts that might threaten American interests.

We do not believe the world will wait while we contemplate a leisurely naval modernization program that will take decades to fulfill.

I. The Study

In the winter of 2017, AEI conducted four tabletop exercises to evaluate naval requirements for meeting a range of possible crises. The exercises were designed to stimulate discussion about the size of the US Navy, its basing, its equipment, and the fleet's readiness plans. The exercises brought together more than two dozen former Navy, Department of Defense, and national security officials.

The scenarios used in the exercises take place in 2022. To ensure the report's credibility, the scenarios were consonant with the existing geopolitical environment. The Middle East would still be an arena of conflict, the war in Afghanistan would be ongoing, and relations with Iran and North Korea would remain strained. Relations with Russia and China, given existing trends, would grow increasingly competitive. In addition, the scenarios assume that the Navy's three major operational activities—peacetime engagement, crisis response, and wartime combat—would not change.

The tabletop exercises were conducted early in the Trump administration's first year. At the time, there was considerable uncertainty about what the administration's longer-term global strategy would be and, as such, what the role of the Navy might be going forward. But, as exemplified by events since then, it has been "steady as it goes" for the Navy.

In April 2017, for example, the administration faced simultaneous crises in Syria and North Korea. In Syria, the military forces of President Bashar al-Assad used chemical weapons against Syrian civilians in contravention of international law and agreements, while in North Korea the Kim regime test-fired a ballistic missile into the Sea of Japan.

In the Pacific area of operations the administration responded by diverting the USS *Carl Vinson* carrier strike group (CSG), then in Southeast Asia, to the waters of Northeast Asia to fill the gap caused by the scheduled maintenance of the USS *Ronald Reagan*, another carrier. Subsequently, the administration decided to extend the *Vinson*'s deployment to maintain a carrier presence in that region.

Meanwhile, in the Middle East, the administration responded to Assad's use of chemical weapons by launching 60 land-attack cruise missiles from Navy ships already deployed in the Mediterranean Sea. The ships were on station in the Mediterranean as part of a forward-deployed missile defense force. Participation in the Syrian strike required taking them off of their planned missile defense duty.

Likewise, in November 2017, the Navy responded to rising tensions with North Korea by simultaneously deploying three aircraft carriers—the *Reagan*, the USS *Nimitz*, and the USS *Theodore Roosevelt*—with air wings and strike groups to the Pacific theater. While a strong show of force, it is worth noting that the *Nimitz* was passing through the Pacific on its way back to its home port after a deployment to the Persian Gulf, while the *Roosevelt* was coming from San Diego, passing through the Pacific on its way to replace the *Nimitz*. In short, although it was a demonstration of how the Navy could construct a powerful strike force in theater, these forces were available only temporarily, and keeping them on station for an extended period would have substantially altered available and ready forces in the months ahead.

Combined with the recently released National Security Strategy (December 2017) and the National Defense Strategy (January 2018), the Trump administration's conduct in reacting to these events suggests that the administration will continue to use the Navy as previous White Houses and Pentagons have.[1] Although this strategic continuity is welcome, a spate of recent accidents indicates the extent of the stress that the pace of current operations has placed on the fleet. Indeed, renewed calls in Congress and the Pentagon

USS *Carl Vinson* During Joint US–Republic of Korea Exercise
Source: US Navy, Sean M. Castellano, May 3, 2017, https://www.flickr.com/photos/usnavy/34389374276/.

for a more ambitious shipbuilding program reflect a consensus that the current configuration of the Navy is insufficient to meet the peacetime demands of national security, let alone those of a major contingency. But expanding the fleet primarily through the acquisition of new ships will take time: The Congressional Budget Office estimates that the earliest the Navy could achieve all elements of a 355-ship fleet is 2035,[2] while the Navy's current shipbuilding plans call for growth in the fleet that will plateau at 342 ships in 2039.[3] In the meantime, a novel approach is needed to bridge the gap between today's Navy and the Navy of the future.

Two Navies

The exercises were played with two navies: the Navy outlined in the Fiscal Year 2017 Future Years Defense Program (FYDP) and the iNavy, a possible improved Navy for the future. The FYDP Navy is the US Navy as projected for FY2021 under the FY2017 budget submission, the last defense plan of the Obama administration.[4] The Obama FYDP Navy was the Navy "in play" during tabletop exercises one, two, and three.

The iNavy was developed by an AEI-sponsored panel of experts. They sought to maximize the potential of a future US Navy while accepting realistic constraints related to budgets, an FYDP time frame, available technology, and industrial capacity. Thus, the iNavy represents a possible improved Navy, but not an unattainable one. With shrewd planning and stable funding, the US Navy could bring an actual iNavy into the field by 2022. The iNavy was the Navy in play during tabletop exercise four.

The exercises begin in January 2022. By this time, the Navy, as planned under President Barack Obama's last FYDP, will have retired the USS *Enterprise*, its original nuclear aircraft carrier, but added the first of the new *Ford*-class carriers and the second *America*-class amphibious ship, the USS *Tripoli*. The USS *John F. Kennedy*, the second *Ford*-class carrier, is expected to join the fleet in 2023; the third of the class, a new USS *Enterprise*,

Table 1. 2022 Navy Battle Force Comparison: FYDP vs iNavy

Capability	Unit Type	FYDP Navy (306)	iNavy (311)
Fleet ballistic missile submarines	SSBN	14	14
Nuclear-powered aircraft carriers	CVN	11	11
Nuclear-powered attack submarines	SSN	51	51
Nuclear-powered cruise missile submarines	SSGN	4	4
Large, multi-mission, surface combatants	CG, DDG	95 (18/77)	99 (22/77)
Small, multi-role, surface combatants	LCS (FF)	34	34
Amphibious warfare ships	LHD/LHA, LPD, LSD	33 (9/12/12)	34 (10/12/12)
Combat logistics force ships	T-AKE, T-AO	30	30
Support vessels	T-AOT, EPF, ESD, ESB	34	34

Source: US Department of the Navy, Office of the Chief of Naval Operations, "Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2017," April 2016, https://news.usni.org/wp-content/uploads/2016/05/2017_30_year_plan.pdf. The April 2016 report to Congress omits the decommissioning of two *Ticonderoga*-class ships in 2020. See David B. Larter, "The US Navy Will Start Losing Its Largest Surface Combatants in 2020," *Defense News*, October 8, 2017, https://www.defensenews.com/naval/2017/10/09/the-us-navy-will-start-losing-its-largest-surface-combatants-in-2020/.

cannot be completed until 2026 at the earliest. A third *America*-class amphibious ship, the USS *Bougainville*, is scheduled to be completed by 2024. Meanwhile, the *Nimitz* is expected to decommission soon after the arrival of the *Kennedy*. The iNavy also conforms to this procurement schedule, with two major exceptions that game designers deemed realistic under the five-year FYDP time frame: The iNavy extends the service lives of all 11 *Ticonderoga*-class cruisers that are scheduled to begin decommissioning in 2020 (four of which would be out of service by 2022 under the Obama adminstration's planning) and accelerates delivery of the *Bougainville* to 2023. The iNavy comprises further changes to posture, readiness, and capability, which are explained in detail in Scenario Four.

The scenarios assumed that Navy deployment requirements would be unchanged. In the Pacific theater, the Navy would continue to regularly homeport a carrier strike group and one amphibious ready group (ARG) in Japan and homeport 0.6 of an ARG in Darwin, Australia. In the US Central Command (CENTCOM) region, both a constant CSG and ARG rotational presence would continue, while the European, African, and Southern Commands would be resourced on an as needed basis. Finally, the Navy would continue to maintain a CSG and an ARG in "sustainment"—meaning in training but available for deployment on short notice—on both the East and West Coasts of the continental United States.[5]

Table 2. Distribution of Naval Forces 2022

Location	Resource	Requirement
PACOM	CSG ARG	1.0 (FDNF Japan) 1.6 (FDNF Japan (1.0) and FDNF Darwin (0.6))
CENTCOM	CSG ARG	1.0 (rotational) 1.0 (rotational)
EUCOM	CSG ARG	As needed (rotational)
AFRICOM	CSG ARG	As needed (rotational)
SOUTHCOM	CSG ARG	As needed (rotational)
West Coast	CSG ARG	1.0 (sustainment) 1.0 (sustainment)
East Coast	CSG ARG	1.0 (sustainment) 1.0 (sustainment)

Source: Authors' research of standard Navy deployment and basing practices.

Game Design

AEI organized game players into four "tables" reflecting the different authorities involved in the Navy's force allocation decision-making process: the "National" table, comprising the secretary of defense, undersecretary of defense for policy, and US ambassador to NATO; the "Joint" table, made up of the chairman of the Joint Chiefs of Staff and the fleet forces commander; the "Fleet" table, which included the commanders of the 3rd, 4th, 5th, 6th, and 7th Fleets; and the "Theater" table, which was made up of the combatant commands and the US Department of State foreign policy adviser. During game play, the game players, or "participants," sought to faithfully represent the equities of their assigned role.

Overall, AEI led the participants through four scenarios designed to test the Navy's ability to meet various but predictable national security challenges. Each scenario was punctuated by "injects," events that might require some response by the US Navy. After each inject, participants evaluated how to respond to the various dilemmas and, after discussing with other game players, presented their recommendations to the secretary of defense, who made the final decision on how the Navy would act. Each inject marked the passage of one month. As such, the first scenario, which consisted of four injects, began in January 2022 and ended in May 2022.

To simulate the trade-offs that the Navy faces when choosing how to allocate forces in response to contingencies, the game adhered to the Navy's Optimized Fleet Response Plan (OFRP).[6] The OFRP is the 36-month maintenance, training, and deployment cycle that US naval assets follow. Thus, when choosing how to manage the forces at the Navy's disposal, game players had to weigh the national security requirements of each inject against the longer-term costs to the readiness, presence, and sustainability of the fleet.

Study Objectives

The study's objective was to assess whether existing plans for the size and posture of the US Navy would enable it to fulfill its traditional national security objectives in 2022. The following key questions guided the study:

1. Will the Navy be capable of meeting its primary missions of peacetime engagement, crisis response, and combat operations under current procurement and budget plans for 2022?

2. Are planned deployment schedules sustainable under current procurement and budget plans?

3. How will the Navy's response to a serious, but limited military operation in one theater impact its steady-state operations around the rest of the globe? Is fleet resiliency sufficient to maintain steady-state mission capabilities when resetting the force after responding to extended crises?

4. How will the enhanced capacities and more assertive practices of the Russian and Chinese naval forces impact the future strategic landscape for the Navy?

5. Is the Pacific naval theater really a two-theater region, with substantial fleet requirements for both Northeast Asia and the seas of Southeast Asia and the Indian Ocean?

6. What changes in force structure, readiness, or planning are required to address possible Russian efforts to disrupt freedom of action in the Mediterranean Sea or the North Atlantic? What naval force posture is required to deter Russian coercion or aggression against allies in the Baltic Sea region?

II. Core Findings

Five major issues constrain the US Navy's ability to carry out its assigned missions.

Issue One: Insufficient Funding

The US Navy has approximately 274 ships, substantially fewer than the stated requirement of 355 ships.[7] In March 2018, the Congressional Budget Office (CBO) released *Comparing a 355-Ship Fleet with Smaller Naval Forces*. According to the CBO, to meet the goal of 355 ships by 2047, the Navy would need to purchase 330 ships over the next 30 years at a rate of $26.7 billion per year if the fleet is grown through new-ship construction alone or $27.5 billion if service life extension programs are included as well.[8] In either scenario, the average annual cost of shipbuilding would amount to at least 158 percent of the average shipbuilding funding the Navy has received in decades past.[9] In short, the 355-ship Navy will take decades and billions of dollars not only to build but also to maintain. Neither the Obama administration nor the Trump administration has proposed defense budgets commensurate with reaching or sustaining this significantly expanded fleet.

Issue Two: Not Enough Ships

The US Navy does not have enough ships to complete assigned missions. Today, the US Navy cannot complete its primary missions of peacetime engagement, crisis response, and combat operations. Under current planning the Navy will not meet the 355-ship requirement at any point in the future.[10] To maximize the necessary expansion of the active force, the Navy will need to consider service life extension programs and the rehabilitation of mothballed ships. However, if an expansion is to happen in a timely manner, ramping up shipbuilding over the next five years is essential.[11] Regrettably, President Trump's 2019 budget request calls for an average of $20.8 billion a year for shipbuilding over the next five years—an amount that will not even maintain the current fleet according to the CBO.[12]

The MITRE study commissioned by the US Navy found that "the current Navy force structure and capabilities would not be sufficient to meet the defense strategic guidance given the current world situation—and that undoubtedly remains the case under the Trump Pentagon's new national defense strategy."[13] While our study recommends adopting the Navy's internal study recommendation for 12 aircraft carriers and three LHA(H) as a baseline for shipbuilding, more needs to occur than merely building more ships.[14]

Issue Three: Maintenance Shortfalls

The Navy is not maintained well enough to complete assigned missions. Ships rarely complete their required maintenance on time or on budget. For example, from 2011 to 2014, the Navy completed just 28 percent of scheduled maintenance on time and just 11 percent for carriers, deferring the remainder.[15] More recently, Deputy Defense Secretary Patrick Shanahan told reporters after a visit to Naval Station San Diego that maintenance times there ranged anywhere from 40 to 600 days.[16] Over time, deferred maintenance reduces readiness, increases overall maintenance costs, disrupts operational schedules, and reduces the service life of ships.

Protracted underinvestment in operations and maintenance accounts has left ships unprepared to support surge deployments. Complicating matters

Admiral Kuznetsov Transiting the English Channel After Deployment in the Mediterranean
Source: Royal Navy, Dave Jenkins, January 24, 2017, https://www.flickr.com/photos/77258709@N06/32477590666/in/photostream/.

further, most ships wait to receive their "combat" load of weapons until arrival in theater, which undercuts both training and operational flexibility.

If we fail to fix our maintenance cycles, we will move toward a hollow Navy, regardless of possible growth in the fleet size. Recovering from accrued maintenance shortfalls does not just entail meeting all maintenance requirements for one or two years. It will demand significant investments over the long term.

Issue Four: Capabilities Deficiencies

The Navy is deficient in the capabilities it needs to overpower modern, great-power competitors.

To enhance capabilities in the existing fleet, the Navy should continue plans to operationalize the concept of distributed lethality—a concept that entails dispersing rather than concentrating forces and depends on enhanced networking, advanced sensors, emerging weapon systems, and the development of new tactics to increase the capability of individual ships and platforms.

This study calls for building on those plans by installing vertical launch systems and Navy Integrated Fire Control-Counter Air (NIFC-CA) architecture on selected amphibious and logistical Navy platforms. In addition, it recommends arming expeditionary fast transport (EPF) ships with Harpoon anti-ship missiles, *Ticonderoga*-class cruisers with heavyweight torpedoes, and Littoral Combat Ships with Naval Strike Missiles. It became clear during the course of the exercises that the Navy would benefit greatly from the ability to disaggregate CSGs and ARGs while maintaining networked connectivity.

Issue Five: Posture

The Navy is stretched thin, and it strains to meet simultaneous, geographically diverse challenges.

During the Cold War, the US Navy routinely deployed to the Mediterranean Sea while maintaining a substantial maritime presence throughout the European theater. After the Cold War, however, the retrenchment of Russian forces was met with the drawdown of US forces in the European theater, including in the maritime domain. For at least the past decade, the Mediterranean has been little more than a transit corridor for the US Navy on its way to the Central Command area of responsibility. But the return of a Russian naval threat in the Mediterranean via the Black Sea and the North Atlantic presents significant new challenges to a Navy already constrained by insufficient size and flagging readiness.

Being where it matters, when it matters, matters. And the best way to do so is to forward deploy more ships and aircraft to more locations. While establishing and maintaining forward-deployed naval forces presents political and diplomatic challenges, basing forces in proximity to potential hot spots—Northeast Asia, Southeast Asia, the Persian Gulf, and the North Atlantic—would mitigate strains on an undersized and overstretched fleet and better position the Navy to respond in a timely way to contingencies.

III. Scenario Summaries

The game participants explored four scenarios:

- Scenario One: Do Steady-State Operations Stress the FYDP Navy?
- Scenario Two: Is the FYDP Navy Capable of Responding to Multiple Crises in the Pacific Theater?
- Scenario Three: Is the FYDP Navy Capable of Responding to Multiple Crises in the Eastern Mediterranean and Europe?
- Scenario Four: Is the iNavy Capable of Responding to Multiple Crises in the Eastern Mediterranean and Europe?

Scenario One: Do Steady-State Operations Stress the FYDP Navy?

The purpose of this scenario was to understand the Navy's ability to respond in a timely way to everyday international events. To begin the exercise, the secretary of defense was asked to define the strategic framework that would guide the decision-making of participants throughout each of the scenarios. Given assumptions about the global role of the United States in 2022, the secretary of defense issued the following guidance to the Navy, which remained constant through all the scenarios:

- Maintain a traditional strategy toward Eurasia by dominating the waters at both ends of the Eurasian landmass.
- Assure freedom of navigation and the observance of customary maritime law in the Pacific.
- Deter North Korea.
- Implement strategies that will require the Russian leadership to respond to US military operations, stressing and complicating their own military plans.
- Build alliances to buttress the maritime order in the Pacific.
- Encourage increased NATO presence in the Persian Gulf region.
- Help build a strategic partnership with India.

Preliminary Discussion. Following an initial discussion of the disposition of the fleet and the national security guidance, the game was punctuated by a preliminary inject—the complication that, due to unforeseen problems, the USS *George H. W. Bush* might require an extra six months' maintenance before it could return to fleet operations.

Given the priorities as defined in the secretary of defense's guidance, game participants expressed concern that the Navy's posture was already problematic. It was argued that the service was "overinvested" in CENTCOM and "underinvested" in the US Pacific Command (PACOM) region, and game participants discussed alternatives to the constant CENTCOM requirements. With the prospect of a *Bush* maintenance delay, participants entertained the idea of reducing those commitments by half, perhaps in conjunction with a diplomatic effort to enable French and British carrier deployments to the Gulf. At the same time, participants were concerned that a dramatic change in a volatile region would increase both strategic and operational risk. In particular, reducing

the Navy presence carried with it the risk of shaking the confidence of Gulf Cooperation Council states, including Saudi Arabia and Bahrain, where the US Navy's 5th Fleet is headquartered.

Separately, participants emphasized the need to increase multilateral presence patrols across the PACOM region. The competing demands of the two theaters sparked a lively debate touching on several questions: Is Iran a maritime threat requiring more immediate attention than Russia or China? Can the GCC states carry more of the burden of securing nearby waterways? Participants disagreed; the secretary of defense and chairman of the Joint Chiefs of Staff wound up on opposite sides.

Inject One: *Bush* Maintenance Delay. In February 2022, it becomes clear that the *Bush* will need another six months of maintenance work, not returning to the fleet until July. The *Bush* was slated to relieve the USS *Dwight D. Eisenhower* in the Persian Gulf. If it were to do so, it would receive only four of its originally planned 10 months of training. The Navy has two choices: extend the *Eisenhower* or deploy the *Bush* despite the truncated training window.

For the game participants, this development demonstrated how fragile the structure of Navy maritime presence is even under normal conditions. They accepted that such maintenance delays were "normal"—not exceptional perturbations. Yet the Navy's formal fleet response plans made no accommodation for them. In other words, the Navy's fleet plans were unrealistic at their inception. One experienced participant remarked, "It's been a long time since any [carrier] came out of maintenance on time. . . . If we are never on time, what is the point of having a schedule in the first place?"

The participants then turned to examining the consequences of a looming "carrier gap," weighing the strategic and operational risks of leaving key regions without coverage or accepting the readiness risk of lessened maintenance or training. Indeed, the strategic challenges posed by the maintenance delay of a single carrier underscored the lack of resiliency and capacity in the planned Navy force structure. Ultimately, participants elected to send the *Eisenhower* home on schedule and deploy an air expeditionary force to CENTCOM to fill the gap. In addition, participants agreed to cut the *Bush*'s training short by a month and deploy it a month ahead of the delayed schedule if possible.

Inject Two: PLAN Fleet Exercise. In March 2022 the Chinese People's Liberation Army Navy (PLAN) prepares a major fleet exercise. Intelligence analysts expect a composite of ships, including submarines and major surface combatants from China's North Sea, East Sea, and South Sea Fleets, to sail through the Miyako Strait between Taiwan and Okinawa and into the Philippine Sea to conduct live-fire exercises. Then, analysts anticipate, the fleet will sail south of Taiwan and reenter the South China Sea via the Luzon Strait, transiting the South China Sea, passing through the Malacca Strait, and entering the Indian Ocean. In sum, this is a major show of force across the Indo-Pacific area. The maneuvers themselves are sophisticated, multiservice exercises, including long-range Chinese air force aircraft. From north to south, East Asian governments and US treaty allies express concern, and the Indian prime minister requests increased US naval presence in the Indian Ocean.

Although this development did not surprise the participants, it had a certain paralyzing effect. Some participants noted that China had achieved local maritime superiority in the Indian Ocean, a feat no country but the United States had achieved in 40 years. All understood the geopolitical, strategic, and operational challenges the Chinese exercise represented and that it demanded a substantial US and allied response. However, the discussion quickly shifted from the immediate need to respond to the longer-term implications of the show of PLAN capabilities. There was consensus about the need to compete with the PLAN fleet, as well as acknowledgment of the increasing size, duration, and assertiveness of Chinese maritime power projection.

Responding to the exercise as an individual crisis was seen as reactive and no substitute for a long-term strategic approach toward the Western Pacific and the Indian Ocean. The participants debated many naval responses, including drawing together an ad hoc surface action group from several sources, but they

Chinese Carrier *Liaoning* Sails into Hong Kong
Source: Reuters, Bobby Yip, July 7, 2017.

were frustrated by the difficulty of keeping up such an operational tempo, especially as the Chinese warships passed into the Indian Ocean. Participants also felt that the success of the response would be measured mainly by the amount of coalition partnership that might be generated as a result: that a message of alliance solidarity was as essential as the need to match the power of the Chinese flotilla. With respect to the US Navy response, participants elected to split two *Arleigh Burke*–class destroyers from both the 5th and the 7th Fleets to help track the Chinese fleet into and out of the Strait.

Inject Three: PLAN Blockade. Upon returning to the South China Sea from the Indian Ocean in April, Chinese warships blockade two small Philippine military outposts in the Spratly chain, Second Thomas Shoal and Pasaga Island. Several Southeast Asian nations contest the sovereignty of the islands, but their location—a little over 120 miles from Palawan—makes them vitally important to the Filipinos. Pasaga is also home to 200 or so civilians, and the Chinese ships prevent any resupply. The government in Manila requests US assistance under the terms of the 1951 US-Philippines Mutual Defense treaty.

Despite the PACOM commander warning that failure to support the Philippines would jeopardize future basing and access of US forces in the Philippines, there were disagreements among game participants concerning the strength and nature of the required response and how American policy and strategy should be coordinated across the government. All agreed that the blockade struck at the heart of US credibility across the region and speculated that such a problem would not have arisen if adequate Navy forces had been present at the outset. This sparked another conversation about the Navy being "underinvested" in the Pacific, with the

resulting episodic presence as an invitation to Chinese mischief-making. As with the previous move, participants were hamstrung between the pressing geopolitical need to respond and both the limited availability of naval assets and the uncertainty about the effect a response might produce. Notably, while some participants expressed interest in drawing CONUS-based naval assets to head off the Chinse threat, they recognized that doing so could be perceived as escalatory—a catch-22 that would have been averted if the Navy had a stronger forward presence. In any case, participants expressed reservations about responding in such a way that would "break" the OFRP given the localized nature of the crisis. Ultimately, participants determined that the best available solution was to keep the *Reagan* at sea an additional month, deferring its two-month maintenance availability and to surge the *Nimitz* carrier strike group from Bremerton, Washington, and an ARG from the West Coast.

Inject Four: Increased Russian Submarine Patrols. In May 2022, increased Russian submarine activity is detected in the North Atlantic. Two groups of two attack submarines (SSNs) and one ballistic missile submarine (SSBN) reach the open ocean. Intelligence assessments portray this as an exercise intended to test Western navies' ability to respond. The NATO Military Committee has requested American participation in response. Concurrently, North Korea detonates another nuclear device and is planning a range of medium- and long-range missile tests. Japan requests additional American aid to increase its missile defense capacity and capability.

Participants acknowledged that despite the political solidarity of the NATO response to the Russian submarine probe, its military credibility would depend on the United States' ability to organize and lead the effort. At the same time, it appeared that the strategic nature of the Chinese assertion of power in Asia was an even more compelling strategic priority and that the combination of large-scale exercises and blockade represented a serious test of stability, something beyond a mere probe. Taken together, the developments exposed a critical vulnerability even if each adversary were acting individually.

Given Russia's actions, any Navy response commensurate to the threat would create a serious disruption in the Navy's readiness and force-generation cycles. It would require overextending deployed forces and the early deployment of unready ships and crews. Nonetheless, the secretary of defense believed a firm response was crucial. Hence, he elected to send all five SSNs available on the East Coast and Marine Patrol aircraft from the United Kingdom and Iceland to track the Russian submarines, move a destroyer out of EUCOM and into the Atlantic, and lean heavily on NATO allies to support two surface action groups comprised of US and allied surface combatants and SSNs. While the secretary of defense did not recommend any changes to the Pacific area of operations, he acknowledged that it was becoming difficult for the fleet to sustain those responsibilities on top of responding to the Russian naval deployments. Even though none of the incidents in the scenario involved actual hostilities, the Navy was struggling to meet additional commitments of forces in the medium and long term.

Summary Discussion. By the conclusion of Scenario One, participants came to a consensus view that the currently programmed US Navy is not large enough or properly postured to adequately respond to the demands of its core national security objectives. The first measure of this deficiency was the lack of a CSG presence in the Indo-Pacific region. Moreover, many felt that the lack of assets reinforced a tendency to react to the events of the scenario rather than in accord with the original strategic guidance. Additionally, there was a range of opinions about the geopolitical importance of each particular development, although the severity of the Chinese challenge was reckoned to be weightier as the exercise progressed. In hindsight, several participants thought it warranted more decisive action. Finally, participants found it hard to assess the relative merits of a timely and forceful response with the delayed cost to Navy readiness and resiliency over the longer term. The conclusion from the day's scenario was that the Navy "broke the camel's back" even though its adjustments to events were restrained—that the force was

"overstretched" even in steady-state operations and "one step away from collapsing."

Scenario Two: Is the FYDP Navy Capable of Responding to Multiple Crises in the Pacific Theater?

In November 2011, speaking to the Australian Parliament, President Barack Obama announced "a deliberate and strategic decision" to shift the focus of US armed forces to the Asia-Pacific theater:

> As we plan and budget for the future, we will allocate the resources necessary to maintain our strong military presence in this region. We will preserve our unique ability to project power and deter threats to peace. We will keep our commitments, including our treaty obligations to allies like Australia. And we will constantly strengthen our capabilities to meet the needs of the 21st century. Our enduring interests in the region demand our enduring presence in the region. The United States is a Pacific power, and we are here to stay.[17]

The purpose of this scenario was to test whether the programmed Navy has indeed allocated sufficient resources to protect its enduring Pacific interests. The exercise picks up where Scenario One concluded, at the end of May 2022. The force available remains the FYDP Navy, the strategic guidance has not changed, and the positioning of assets around the globe is the same as it was at the end of Scenario One. The game evolved through five injects.

Inject One: Japan and China Face Off. In late June 2022, a Japanese coast guard vessel blocks a Chinese fishing boat approaching one of the Senkaku Islands, a chain of small, uninhabited islands in the East China Sea. The islands are controlled by Japan, whose administrative control is formally recognized by the United States, but claimed by China as the Diaoyus. The ships maneuver aggressively, prompting an exchange of fire that leaves one Japanese sailor and two Chinese fishermen dead. The Japanese take the remaining crew into custody as the fishing boat capsizes and sinks. During the encounter, ships of both navies take up "overwatch" positions about 20 nautical miles distant, but no further hostilities ensue. Beijing demands the return of the surviving fishermen, compensation for the sunk fishing boat, and the criminal prosecution of the Japanese coast guard commander and his crew. Tokyo refuses China's demands and deploys an amphibious regiment with supporting air and maritime mobility assets to Yonaguni and Taketomi Islands, about 90 nautical miles to the south of the Senkakus. The Japanese navy also deploys mine warfare units to Ishigaki Island, just east of Taketomi.

The scenario immediately reignited the debate from the previous exercise about the lack of resources for presence missions in US Pacific Command. Although there was a broad consensus on the need for additional assets, there was disagreement on the amount of force needed, where any additional forces would come from (for it was obvious that the most timely response would involve a shift in currently deployed ships), and what kind of long-term effects on the force-generation process this scenario would generate. The limited availability of forces increased the tendency toward strategic caution. Decision makers would have preferred to get ahead of what they described as a "crisis-to-crisis" approach by increasing the tempo of operations across the theater, but they were equally concerned that the Navy lacked the sustainment capacity for such a move. So constrained, the participants agreed to send B-2s to Diego Garcia and B-52s to Guam. They also elected to issue a limited diplomatic response, urging restraint to the Japanese government.

Inject Two: Escalation. The number of vessels involved in the Senkakus standoff rises and now includes both Japanese and Chinese coast guard ships, as well as a flotilla of Chinese "maritime militia" vessels, operating under the command of the Chinese military. Ships from both sides are shadowing one another and jockeying for position close to the largest of the Senkaku formations. In addition, warships of the Chinese and Japanese navies lurk just over the horizon, capable of responding to any incident. The

Chinese military also has moved amphibious assault ships and two marine regiments to Sandu naval base, just opposite Taiwan and well within the operational range of the Senkakus. In the early hours of July 31, Chinese Maritime Militia units conduct a "swarm" attack on Japanese coast guard ships, allowing two other Chinese ships to land crews on the main Senkaku Island. Seamen on both sides sustain injuries in the tussle at sea.

This inject paralyzed the participants. It was immediately apparent that events in East Asia had reached a point where diplomacy alone would not suffice but providing "maritime overwatch" at widely spread locations was beyond the capacity of the forces available to the Navy. The only way to provide a meaningful response was to pull the *Eisenhower* out of the Persian Gulf area and deploy it in East Asia—a move that would require weeks. But further extending the deployment of the *Eisenhower* would seriously disrupt the Navy's force-generation arithmetic. In addition, having been at sea so long, the carrier, its crews, and its aircraft were wasting assets. As a result, participants looked to the US Air Force for more reinforcements, moving an air expeditionary force forward into Japan. These moves were regarded as of minimal military value but important diplomatically.

After considering the full range of actions possible using ready or near-ready naval forces, the participants began an extended discussion about how to generate more readiness from the current force. The consensus was that, at this stage, naval forces were being depleted from EUCOM and growing increasingly vulnerable. Overall, the Navy does not have enough capacity and force structure to simultaneously deter China and reassure allies, even in East Asia.

Inject Three: A New Normal? In late August, Japanese coast guard forces attempt to land on the main Senkaku island to arrest the Chinese. However, gunfire from the Chinese Maritime Militia foils the advance. The Japanese retreat but retain a maritime perimeter around the island. At the same time, the Chinese resume dredging activities in the South China Sea at Scarborough Shoal, drawing protests from the Philippine government; Tokyo and Manilla, both US treaty allies, request US assistance. In addition, the governments of Vietnam, Singapore, Malaysia, and Indonesia express concerns to the United States about "Chinese territorial aggrandizement."

The participants agreed that the situation made it necessary for the United States to substantially increase naval forces in the western Pacific, in the hopes of deescalating the conflict but also in case military hostilities begin. Subsequent conversations yielded three important conclusions. First, the advantages of proximity and military capacity meant that China could apply pressure whenever and wherever it chooses. Second, such a state of affairs could signal a "new normal" in East Asia. Third, the distances between the South China Sea and hotspots in Northeast Asia made the region, in effect, a "two-theater" area of operations. Thus, participants were at last willing to entertain the idea of pulling the carrier and ARGs from CENTCOM and adding them to PACOM in order to sustain two CSG-equivalents in that theater. The persistence of Chinese island-dredging in the South China Sea also sparked discussion about maintaining a rotational air-ground task force in the Philippines and perhaps leasing commercial transport ships to give the Marines based in Darwin, Australia, who lack dedicated military amphibious ships, greater mobility and operational and strategic relevance.

In the end, the participants decided to move SSNs from Guam and Hawaii in theater and to stand up a Joint Task Force to manage the escalating crisis. The limited and ad hoc nature of these crisis-response measures again sparked an extended conversation about the need for a more comprehensive and longer-term adjustment to the shifting military balance in East Asia. The current fleet, the participants felt, was poorly postured for the "new normal" of East Asia and lacked the size, overall readiness, and lethality that the situation demanded.

Inject Four: Militarizing the Standoff. In September, after a period of escalating nationalistic rhetoric on both sides, the Chinese begin to move substantial naval forces—as opposed to Maritime Militia and

coast guard—into the East China Sea near the Senkakus. One surface action group is positioned west of the main island, just outside the 12-nautical-mile zone in international waters, and is followed the next day by a second group of surface combatants about 20 nautical miles north. The Chinese air force also steps up reconnaissance and combat aircraft patrols over the East China Sea. In response, the Japanese navy sorties a second surface combatant group. The standoff continues, but the level of force and firepower in the region escalates to a new level.

The game participants believe they lack resources to respond to these moves and that the US ability to "keep a lid" on the situation is slipping away. The only timely move would be to shift both US carrier groups to the East China Sea, thus uncovering the South China Sea. The participants noted that, at two carriers, PACOM was already at a "surge" level of activity and was not prepared to rapidly generate additional forces; in addition, they noted that naval forces on the US West Coast were not in a sufficient state of readiness to be of timely utility. The exercise thus raised questions about the Navy's ability to meet its full mission set when responding to an unanticipated crisis requiring a sustained response.

The participants ultimately elected to accelerate the training and maintenance cycles of the *Vinson* and the *Bush* to get these CSGs in position to deploy, but they felt that any additional requests for forces would begin to break the service's force-generation model in a way that would create substantial shortages within a few months. This amounted, in the eyes of the participants, to a strategic weakness: With the Navy lacking any excess capacity and its lowered force readiness, America's adversaries can whittle away the Navy's power simply by applying pressure over time.

Inject Five: Two Theaters into Three. In October 2022, attack submarines of China's East Sea Fleet prepare to put to sea after loading weapons and supplies. These are older but quieter diesel-electric models. In short order, more than eight Chinese subs may be underway in the region, operating under land-based air cover and air defenses and in relatively shallow waters. In addition, the People's Liberation Army mobilizes additional missile batteries and amphibious units opposite Taiwan. The threat to Taiwan adds a third element to the escalating crisis.

In response, Japanese Self-Defense Forces prepare to flush their attack submarines. However, the game participants acknowledged that there was little additional power the US Navy could bring to bear. After six months of a carrier "surge," the readiness and effectiveness of deployed ships had declined noticeably, while the *Roosevelt* could not be pulled out of its "sustainment" phase before critical refurbishments to its flight deck. Deploying an air wing with the full complement of capabilities would also be difficult given the pace of previous operations and existing issues in readiness. The participants suggested surging available SSNs into theater and applying economic pressure on China and were prepared to permit, if not assist, a Japanese special operation to retake the island.

Summary Discussion. Throughout the scenario, and with increasing urgency through each inject, game participants acknowledged that the US Navy was neither sized nor postured to respond to the crisis—a major standoff but one with actual limited hostilities. In particular, the scenario revealed that the distance to the Pacific Ocean coupled with the limited surge capacity of the Navy translated into the Navy's inability to seize the tactical initiative when stressed in the Pacific, as well as an inability to regain an effective operational position thereafter. Moreover, participants concluded, the current Navy force-generation model is less than optimal for responding to extended crises. Due to the lack of personnel, parts, aircraft, and munitions, the service is operating near its limits simply to meet day-to-day presence missions. Many participants criticized the Navy for being overstructured, having sacrificed readiness and personnel accounts to maximize shipbuilding; some also predicted that this dilemma was likely to get worse, given the costs of new *Ford*-class carriers and the F-35C and the need to replace the *Ohio*-class ballistic missile submarine.

Scenario Three: Is the FYDP Navy Capable of Responding to Multiple Crises in the Eastern Mediterranean and Europe?

Much of Vladimir Putin's success as a politician has come from his bold and provocative testing of American and Western resolve along the borderlands—in the Baltic States, in Southeast Europe, and most brazenly in Ukraine. Putin has parlayed small military investments into substantial strategic influence. Russia has had no more than several thousand troops and several dozen aircraft operating in Syria, yet Putin's intervention helped save the Assad regime and once again made Russia an influential player in the Middle East.

Scenario Three, which begins after the first "steady-state" scenario, investigates Russia's ability to prod and provoke, directly and indirectly, US allies and interests at multiple points simultaneously. While the Kremlin's navy was never a true match for the US Navy, its submarine fleet—both attack and ballistic missile boats—was and remains a serious subsurface threat. As the game players learned, targeted investments in land-based strike systems have created a local imbalance at NATO's eastern edge that has important consequences for the Navy's role in providing fire support to a joint or coalition force operating inland.

Inject One: Into the North Sea. In May 2022, the *Admiral Kuznetsov*, Russia's sole "aircraft carrier" (its displacement is only marginally greater than the Marine Corps' *America*-class amphibious ships), and its escorts depart the Eastern Mediterranean Sea ahead of schedule. By early June, it becomes apparent that the flotilla will not return directly to its home port of Severomorsk on the Barents Sea. Instead, it begins to conduct surface-warfare exercises in the North Sea, west of the Skagerrak, the strait that separates Denmark and Norway at the entrance to the Baltic. These moves cause concern across NATO, especially among allies in Northern Europe.

While there was strong incentive to make a visible response in the Baltics and to reassure the northern NATO and Nordic countries, participants felt constrained in their ability to respond or closely monitor the Russian moves by the limited capabilities, capacity, and readiness of the fleet.[18] The *Bush* will not emerge from the shipyard until August, and even with abbreviated training it will not be on station until December, when it is slated to cruise in the CENTCOM region. Meanwhile, the *Eisenhower* has deployed and is currently passing through the Mediterranean on its way to duty in the Persian Gulf in July.

With few forces available to "surge," the participants considered holding an amphibious ready group in EUCOM, pushing a surface action group or submarines out from the East Coast, or simply repositioning submarines already at sea farther forward in the Barents Sea. A further option was to move one of the *Ohio*-class submarines refitted to carry a large magazine of Tomahawks from CENTCOM to EUCOM. Ultimately, the lack of readily available maritime assets turned the participants toward joint and coalition force options: The participants chose to stage a Marine Corps training exercise in the Baltics and not to alter the Navy's force-generation system or delay the passage of the *Eisenhower* and its accompanying Marine amphibious group to its CENTCOM station. In sum, it was apparent that, intentionally or otherwise, the Russians had successfully exploited a "gap" in both the Navy's readiness cycle and its deployment patterns.

Inject Two: Russia Doubles Down. In late July, a second Russian flotilla sails out of Severomorsk to link up with the *Kuznetsov* and its escorts, which are still underway in the North Sea. The combined Russian fleet far outweighs the NATO capacity in the region, and the alliance appeals to the United States for reinforcements, lest the Russians engage in further provocations. At the same time, Russian fighters buzz a US Navy destroyer in the Black Sea on a daily basis.

For the game participants, these moves sparked an extended discussion about the basic strategic guidance to "stress the Russians" at points of opportunity, concluding with an agreement that it was the Russians who were stressing the United States rather

than vice versa. That, in turn, provoked a conversation about the unintended consequences of "jointness." Mainly, participants feared that jointness had become "dependence": that each service is limited in its ability to operate without support from other services. For example, only the Air Force can provide air supremacy in contested air defense environments, while the Army has divested itself of longer-range fires and short-range air defenses.

Participants were stymied, recognizing the loss of operational and strategic initiative. Although the naval force could not immediately influence events outside the Mediterranean, they were in a position to reinforce multiple locations if needed—albeit with some delay. At the same time, it was recognized that the Russians, with "internal lines of communication," could maneuver more rapidly than US forces and, even more worrying, could extend the crises by waiting out the inevitable rotation of maritime forces or "wearing out" the Navy before acting more aggressively. For the Navy, the combination of current deployments and OFRP's inflexibility means that any decision would require an unpleasant set of trade-offs.

Game participants feared that the Russians had seized the initiative and stressed the US Navy, and they, in turn, considered what options there might be to stress the Russian fleet. The first option participants considered involved redirecting a CSG from the Mediterranean up to the North Sea to do a Vigilant Shield–like exercise, while moving an Amphibious Ready Group/Marine Expeditionary Unit (ARG/MEU) to the Mediterranean to stay there or to backfill US Central Command. Separately, participants contemplated pulling forward a CSG from sustainment even though it would necessitate mid-transit maintenance, a clear shortcoming. After deliberations, the secretary of defense elected to increase Air Force assets in the Baltics and hold the *Eisenhower* in the Mediterranean, despite splitting the CSG's accompanying ARG and allowing it to continue through to CENTCOM.

Inject Three: Russia Flushes Its Submarine Fleet. In August, Russian submarine activity sharply increases in the North Atlantic. Naval intelligence assesses that the Russian submarine effort includes two nuclear attack submarines, a ballistic missile submarine, and two *Kilo*-class diesel-electric boats from Severomorsk and St. Petersburg, two widely separated ports. They are expected to pass into the open Atlantic, stressing US and NATO anti-submarine capabilities.

Simultaneously, in a snap drill, the Russian Black Sea Fleet sorties from Sevastopol. A cruiser, a destroyer, and two frigates skirt the Romanian coast; three *Kilo*-class subs make for the Bosporus, and the fleet's six guided missile corvettes operate in the southern part of the Black Sea. The total surge of naval actions presents NATO with the challenge of monitoring multiple, powerful, and dispersed Russian flotillas. No one flotilla presents a crisis in and of itself, but the combination stretches US and allied maritime assets to their limits.

The overall dearth of maritime assets pushed game players to search for both joint and allied solutions, particularly in the North Sea, the Black Sea, and the Mediterranean, where land-based assets could be brought to bear, while concentrating large and highly capable US Navy oceangoing ships and submarines only where absolutely necessary, such as in the North Atlantic and CENTCOM's area of responsibility. However, there were doubts about the ability to quickly deploy additional capabilities and whether, for example, the US Air Force had sufficient fifth-generation air superiority aircraft to cover multiple, dispersed areas of operation. Again, regional commanders and the "force providers" in the Navy and Joint Chiefs sharply disagreed as to whether to surge the Navy to a higher rate of deployment, thereby truncating ship maintenance and crew training and disrupting long-term readiness.

Ultimately, game players felt they could not change posture in the Black Sea, as it would signal weakness to Russia. Thus, participants asked that maritime aircraft and other patrols be stepped up, in both the North Atlantic and the Black Sea; demanded tracking of the ballistic missile and attack submarine threat as well as increased indications and warning of Russian provocations in the Black Sea; and decided to continue holding the CENTCOM-bound *Eisenhower* strike group in the Mediterranean. However,

this decision extended the carrier gap in the CENTCOM area, causing participants to worry about Iranian opportunism. There was also concern about the limited number of assets available in the Pacific, still regarded as the principal maritime theater, where the *Reagan* was conducting operations with the Japanese navy. In the sole effort to put some counterpressure on Russia, they decided to move a US guided missile submarine north to hold Russian Pacific fleet ports at risk.

Inject Four: "The Navy Is Like a Deer in the Headlights." Russia adds yet another naval deployment in September: The Baltic Sea fleet sorties from Kaliningrad to patrol the narrow waters just off Tallinn, Estonia. Using a flimsy legal pretext, the Russian flotilla intercepts and searches commercial shipping bound for Tallinn.

While the Russians continue to operate in many areas, Hezbollah launches two Russian-made Yakhont anti-ship cruise missiles at a French destroyer in the Eastern Mediterranean. While neither scores a hit, the US ambassador to NATO suggests the attack might result in an alliance-sponsored military response.

For the game players, the accumulation of actions taken by competitors had created a kind of strategic paralysis on the US side. One participant noted that the Navy has acted "like a deer in the headlights," unwilling—or unable—to respond in an effective and timely way; the Russians clearly have the whip hand in the scenario. Some steps have been taken to accelerate the deployment of assets and keep ships at sea for extended periods, but none of these half measures has seemed to make a geopolitical difference. The Russian surge in submarines created a potential threat to the American homeland. And most high-end Air Force aircraft are committed to CENTCOM to plug the gap resulting from no aircraft carriers being deployed there. Almost in desperation, it is decided to divide the carrier group in the Mediterranean, keeping the carrier in place while sending two destroyers to the North Atlantic, even though participants recognized that pulling two destroyers from the carrier group make it more vulnerable to Russian submarines in the event of an escalation. Finally, in response to the Hezbollah missile attack, participants decided that the provocations did not yet require any US or NATO military response.

At this point, game players also begin to worry that Russia's real focus is on intimidating and probing the Baltic and other Eastern European states. The Russian navy's widely dispersed operations individually pose lesser threats but serve to thin both the US and NATO abilities to respond to a crisis ashore. Moreover, given the relative lack of US and NATO strike assets in Eastern Europe and the huge inventory of Russian intermediate and short-range missiles and artillery, Tomahawk-armed ships and subs may be needed to balance the odds ashore. Given the limited ability of the Russian surface navy to sustain operations at sea for an extended period, the game players worried that they had perhaps missed a larger strategic picture.

Inject Five: A Belated Rush to the Baltic. In October, Germany and Sweden detect increased Russian submarine activity in the Baltic Sea, bringing the Baltic NATO states within cruise missile range. At the same time, three Russian armored divisions deploy to Pskov, immediately opposite southeastern Estonia and eastern Latvia, regions with concentrated Russian-speaking minorities. In announcing the exercises, Moscow says it is testing its ability to mobilize forces and suggests it wants to provide assurances that it can defend the interests of ethnic Russians living there.

Amid the flurry of Russian activity, the game participants regarded the threat to the Baltic States—and thus to the NATO alliance—as the gravest, provoking a long discussion about the difficulty of defending the region. The secretary of defense directed more naval and air assets to the region, including long-range aircraft and a fresh carrier group from the East Coast of the United States. However, there was heightened concern about the Russian "anti-access bubble" of air defenses and strike capabilities that would compromise the effectiveness of forward-deployed US and NATO forces. Additional Army heavy forces, in addition to those stationed in Europe and already present on rotation, were to be sent to rendezvous with their

S-400 SAM in Victory Day Parade
Source: Aleksey Toritsyn, May 9, 2010, https://commons.wikimedia.org/wiki/File:S-400_SAM_during_the_Victory_parade_2010.jpg.

prepositioned equipment and stocks. Even though the principal threat was on land, game players felt the need to rely on maritime assets due to the lack of long-range firepower otherwise available to the ground forces.

Inject Six: The Cupboard Is Bare. In the scenario's final move, the Navy loses track of the two Russian attack submarines, which are believed to be armed with land-attack cruise missiles, possibly nuclear tipped, in the open Atlantic. Tensions in the Middle East come to a boil as a Russian fighter buzzing a US airborne control aircraft collides with it near Syrian airspace, with crews of both aircraft lost. Russia declares the US is at fault, while Russian media report the Kremlin has prepared plans to close the borders with Estonia and Latvia.

By this point, game players came to understand that at a relatively low cost the Russians could continue to pull strings globally that would call for a US and allied response, eventually occupying not only the normally deployed level of maritime assets—and indeed joint and coalition assets of all sorts—but also the immediately available surge forces. In the end, the participants ordered the early deployment or extended deployment of three carriers and large-deck amphibious ships to mitigate the Russian threat. Hence, game players were forced to accept a five-month carrier gap in CENTCOM, a gap much longer than had been considered acceptable heretofore.

Summary Discussion. At the conclusion of Scenario Three, participants assessed that deploying three carriers and large-deck amphibious ships to meet immediate contingencies exceeded the strategic return. The decision entailed accepting a five-month carrier gap in US Central Command and mortgaged a year's worth of readiness, yet it failed to yield a decisive effect on the crisis. Participants thus began to realize that the very flexibility of naval

forces was both a strength and a longer-term weakness; crisis response necessarily created a longer and costlier "reset" cost. This was also true when the joint force was brought into play. Indeed, one of the most profound revelations of the scenario was that the United States had prioritized operational and strategic flexibility to a degree that diminished sustainability. Moreover, it was understood that the added forces were insufficient in and of themselves. In fine, there was a "capacity problem" as well as a distinct sustainability challenge.

In addition, participants decided that there is a "resiliency" challenge inherent to a rotational force-generation model. This has always been an issue for the sea services, but in the past it was balanced by the forward presence of sustainable air- and land-based forces. In conjunction with the consolidation of service postures into the continental United States over the past two decades, this model has exacerbated the difficulties of force projection. In fact, in the summary discussion game players assessed the desirability of a return to more forward-based naval forces, while acknowledging the diplomatic complexities that a forward posture presents. For example, Japan already requires that the US carrier based there be in port for no more than three consecutive months. Finally, participants concluded that the demands exposed by the scenario indicated that the Navy needed both a larger fleet and a more robust readiness model; both the base from which maritime forces can be generated and the pace at which they are generated must be improved to meet the demands from US leadership.

Scenario Four: Is the iNavy Capable of Responding to Multiple Crises in the Eastern Mediterranean and Europe?

After playing out the first three scenarios, participants recognized that the planned Navy would face significant challenges in meeting the most basic of its national security objectives in 2022 and feared that it did not have the capacity to handle major contingencies. They further agreed that just growing the size of the fleet, while necessary, would not be sufficient to close the cost-return gap in the framework of the current defense plan.

As described previously, the iNavy represents an effort to understand how changes attainable within the next five years—such as improved readiness, distributed lethality, and more forward basing—might improve the near-term effectiveness of the force and bridge the gap to the Navy of the future. The intent is to determine whether a set of near-term and cost-limited changes would substantially improve the Navy's ability to meet its core national security objectives.

The iNavy consisted of the following improvements over the currently programmed FYDP Navy:

- Fully fund operations and maintenance accounts and the Optimized Fleet Response Plan.
- Modernize and keep in service all 11 *Ticonderoga*-cruisers set to be retired.[19]
- Accelerate construction of the *Bougainville*, an *America*-class amphibious assault ship, to start Basic Phase in June 2022.
- Expand F-35B and F-35C aircraft production to offset Marine aviation shortfall.
- Provide lift for the Marines stationed in Darwin, Australia, through two large, medium-speed roll-on/roll-off (LMSR) ships and one dry cargo/ammunition ship (T-AKE), which can be procured via commercial leasing arrangement.
- Configure:
    - Two light carrier groups, comprised of an *America*-class amphibious ship, two destroyers, and a full squadron of F-35Bs;
    - Six T-AKEs and six amphibious transport docks with vertical launching system cells and NIFC-CA architecture;
    - All littoral combat ships (LCSs) with Norwegian naval strike missiles (NSM);

- All expeditionary fast transport (EPF) with Harpoon missiles; and
- All *Ticonderoga*-class cruisers with heavyweight torpedoes.

- Forward deploy:
  - Marine expeditionary unit (MEU) in Norway, with lift based in Faslane, Scotland;
  - ARG/MEU in Augusta Bay, Italy;
  - The two light carrier groups, detailed above, to Yokosuka, Japan, and La Spezia, Italy;
  - Two additional *Arleigh Burke*–class destroyers at Rota, Spain;
  - Four LCSs at Faslane, Scotland, at Bahrain, and at Duqm, Oman;
  - Two *Virginia*-class attack submarines (SSNs) at Guam; and
  - Four SSNs and a guided missile submarine (SSGN) at Holy Loch, UK.

- Position:
  - THAAD missile defense batteries on Guam and Diego Garcia;
  - Army and Marine Corps coastal defense cruise missile batteries on Okinawa; and
  - Aegis Ashore battery at Fukuoka, Japan.

Scenario Four involved a rerun of Scenario Three, but with this iNavy in place of the currently programmed Navy. Thus, the summary will record the differences in game player responses without reprising each inject in detail.

Injects One and Two. In these injects:

- The *Kuznetsov* conducts surface-warfare exercises in the North Sea,
- A second Russian fleet links up with the *Kuznetsov*, and
- Russian fighters buzz a US Navy destroyer in the Black Sea.

In response to the cruise by the *Kuznetsov* and the harassment of US ships in the Black Sea, game participants aimed to reposture NATO to meet the commitments made during the alliance enlargement of the 1990s to help reset NATO as a defendable construct. They also wished to demonstrate to the Iranians that Russia is weak and to the Chinese that the United States can respond adequately to events in Europe and the Middle East without taking assets away from US Pacific Command. This is to say that they wished to reestablish the Navy as a global or "three-theater" force. Thus, in this inject, the secretary of defense directed the iNavy's Italy-based light carrier to stay in the western Mediterranean, create a visible show of "Tomahawk shooters" in the form of cruisers and destroyers in the Eastern Mediterranean, and put an additional brigade combat team on prepare-to-deploy orders. Importantly, the central discussion was about matters of strategy rather than operations and tactics; given the constant presence provided by the iNavy's forward-deployed forces, it was already obvious that there was less strain on the force. These were the first moves in the entire exercise that did not involve any changes to the OFRP.

Inject Three. In this inject:

- Russia flushes its submarine fleet to the Atlantic and
- Its Black Sea Fleet sorties from Sevastopol throughout the southern parts of the Black Sea.

This pattern continued as the Russians escalated their naval activity in the next inject. The participants considered Black Sea activity to be a case of the Russians "calling our bluff" and decided that the United States should apply pressure to try to seize the local initiative. Further, rather than reacting defensively to Russian ballistic missile submarine patrol, there was discussion of deploying US Navy attack submarines in the Pacific fleet to conduct aggressive overwatch of the Russians' submarine bastion in Murmansk. In the event, the secretary of defense instead decided to allocate the anti-submarine warfare effort in the North Atlantic to P-8 surveillance aircraft, which would avoid committing US attack submarines; to organize increased NATO presence in Aegean; and to continue maneuvers in PACOM to keep pressure there. In sum, the participants clearly felt they could manage Russia's probes in the Atlantic, the Black Sea, and the Eastern Mediterranean. Furthermore, they did not feel like they had to strain the force or undercut the Navy's presence in the Pacific to do so. Already, the additional presence and capability provided by the iNavy was paying dividends. For the first time, the participants had even begun to think beyond simply reacting to the scenario. They were able to maneuver across multiple theaters without causing major disruptions to operational deployment cycles.

Inject Four. In this inject:

- Russia's Baltic Fleet sorties to the waters off Tallinn, Estonia, where it intercepts commercial shipping bound for Tallinn; and
- Hezbollah launches anti-ship cruise missiles at a French destroyer.

Participants' forward-thinking response to the third inject paid dividends in the subsequent move. In fact, in the fourth inject—the sailing of the Russian Baltic Fleet, the interruption of shipping, and the Hezbollah cruise missile attack—the secretary of defense did not have to take any action at all. With what the secretary of defense felt to be sufficient assets in each theater—including the continued ability to deter and pressure China in the Pacific—he declared that no change in US maritime or joint operations was needed. The iNavy was providing decision makers with greater flexibility than the FYDP Navy. For the first time in the exercise, the maritime forces did not need to look for joint forces to fill gaps in capability or capacity.

Inject Five. In this inject, Russia:

- Flushes a larger submarine fleet into the Atlantic and
- Moves three armored divisions into Pskov, Russia, as part of a provocative military exercise.

The lightened load on the joint force materialized in the game players' response to the next inject, where the Russians flushed a larger submarine fleet and moved a large-scale ground force into Pskov to threaten the Baltics. Emboldened by the recognition that the iNavy had sufficient assets available to sustain extended missions in CENTCOM and PACOM without stripping assets from other theaters, the game players decided to take a much stronger deterrent response to these Russian provocations. Thus, the secretary of defense directed five brigade combat teams to the Baltics and northeast Europe and threatened to undertake geographically asymmetric responses in the event of overt Russian aggression. The laydown of naval forces already in place was more than adequate for such a plan; participants even felt that the Navy retained additional flexibility in the form of a "reserve" force built around the *America*-class amphibious group. The participants also wanted to move the *Reagan* to the North Atlantic. This was the first time in the entire game that the Navy had the capacity and flexibility to "surge" to create the operational initiative, and because the iNavy fully funded the operations and maintenance accounts, participants could divert the *Reagan* without hemorrhaging current or future readiness. Moreover, these ships were already at sea carrying full combat weapons loads, so they did not have to return to US ports to receive munitions, saving two weeks or more in deployment time.

The principal directions from the secretary of defense revolved around rules of engagement, strategic issues, and "be-prepared-to orders" based on the strategic situation, not on available maritime assets required to attain desired results. Due to the size and readiness of the iNavy, the secretary of defense also had the naval assets to satisfy all requests from fleet and component commanders in this scenario.

Inject Six. In this inject:

- The Navy loses track of two Russian nuclear attack submarines in the North Atlantic,
- A Russian fighter collides with a US control aircraft near Syrian airspace, and
- Russian media reports that the Kremlin has prepared plans to close the border with Estonia and Latvia.

All participants felt confident that they could concentrate on the most strategically important concern—the Russian threat to the Baltics—without running extreme risks in other theaters. Tactically, they also felt that the Navy had correctly focused on Russian nuclear attack submarines while contributing to the operational needs of the forces in the Mediterranean and the Pacific. Regarding the Russian threat to the Baltics, participants felt that having a rapidly deployable squadron of F-35s aboard a forward-deployed light carrier enabled the Navy to deter what was primarily a land-based threat to the Baltics—a valuable role that participants had found lacking with the FYDP Navy. Nevertheless, the scenario did begin to stress the force. The players asked to step up the pace of preparing an additional carrier battle group and to extend an F-35-equipped amphibious ready group to ensure "escalation dominance," but this stress was minor, and all participants felt the additional operational effort was well worth the strategic reward. All were satisfied that the United States had demonstrated the ability to keep the upper hand versus the Russians while reassuring allies in the Middle East and East Asia. This assessment, however, was tempered by the sense that the Russians could continue the game of tit for tat longer.

Summary Discussion. Overall, the many small improvements and upgrades to the iNavy allowed the participants to be flexible and creative, especially in thinking about how to conduct shaping operations. Participants agreed that the iNavy put the Navy in a better position to meet its core national security objectives in the near term, and they felt more confident about the fleet's ability to mitigate major contingencies. Still, the participants concluded that the iNavy was a "bridge" to a new and larger Navy, but not a substitute. The limits of fleet size and the capability of the basic platforms—especially in the surface fleet—could be ameliorated for perhaps as much as a decade, but not eliminated.

IV. Recommendations: The iNavy Is the Bridge to the Navy We Need

The first three scenarios in this study illuminated the current US Navy's inability to meet the needs of US national security and military strategies. Today's Navy is too small, insufficiently lethal, not well enough maintained, and, at its bases on the East and West Coasts of the United States, postured too far away from crises and conflicts that might threaten American interests.

The fourth scenario shows how investments in the iNavy—such as readiness improvements, capability upgrades, and increased forward deployments—can ameliorate future strategic vulnerabilities. These improvements are not a substitute for the larger, overdue, and essential rebuilding that the Navy needs. But they can help close a window of maritime vulnerability and assist in stabilizing critical regions, deterring increasingly aggressive adversaries, and reassuring increasingly skittish allies. We do not believe the world will wait while we contemplate a leisurely naval modernization program that will take decades to fulfill.

At the same time, we recognize that these iNavy proposals make a more thoroughgoing naval revival even more imperative; they represent a wager that assets that we recommend continuing to operate, such as upgraded versions of the *Ticonderoga*-class cruiser, which are scheduled to be retired for budgetary reasons, can be replaced as they hit obsolescence. We think this is a prudent wager—the current geopolitical risk, in our assessment, far outweighs the future budgetary and program risks.

Our proposals fall into four broad categories: naval posture, fleet readiness, increased firepower and lethality, and modest increases in fleet size.

Naval Posture

Our scenarios underscored the basic truth that being where it matters, when it matters, matters a lot; surging forces from the continental United States or transferring them from one theater to another squanders an alarming amount of US maritime power. Shifting the balance of the current fleet toward a more forward-deployed fleet capable of operating from a larger number of bases would bring maritime assets closer to potential points of conflict while reducing the strain on rotational forces based on the East and West Coasts.

We also believe the political benefits more than balance the political risks. Currently, uncertainty about the United States' willingness to stand by its allies is higher than it has been in decades. A return to a more forward-based naval posture would be a statement of American resolve and bolster deterrence.

We recommend that the US:

- **Expand forward presence in the North Atlantic, the Mediterranean, and the Pacific.**

The study illustrated the FYDP Navy's inability to manage distributed challenges around the globe. To provide greater presence with limited assets, the study recommends that the Navy augment its forward presence in all three major theaters: in Europe at Faslane and Holy Loch in Scotland, at Augusta Bay and La Spezia in Italy, and in Norway; in the Middle

USS *Nimitz* Arrives in Da Nang, Vietnam
Source: US Navy, Devin Monroe, March 5, 2018, https://media.defense.gov/2018/Mar/05/2001886472/-1/-1/0/180305-N-ZZ999-0039.JPG.

East at Bahrain and Oman; and in East Asia at Darwin, Australia, and Yokosuka, Japan.

In particular, the study found that the Navy lacks sufficient presence in both the Mediterranean and the Pacific. Since the end of the Cold War, the Navy, under the assumption that the Russian naval threat had dissipated, has drawn down in the Mediterranean, thinking of it as little more than a transit corridor to the Middle East. However, in the exercises participants repeatedly found themselves delaying CSGs or ARGs on their way to CENTCOM to respond to Russian provocations and get coverage in the Mediterranean. To mitigate this vulnerability, this study recommends forward deploying a light carrier and an ARG/MEU to Augusta Bay and La Spezia, Italy. Put simply, the return of Russia as a major geopolitical and military threat demands the repositioning of naval assets into the European theater. The Navy can no longer turn its gaze away from the Mediterranean. It must position itself, proactively, to mitigate the Russian misadventures it knows are coming.

Likewise, after struggling to deal with the even minor maritime threats originating in the Pacific, participants concluded that the Pacific Ocean effectively constitutes a two-theater area of operations. To turn what is now an extremely limited presence in that expansive theater (or two) into an operationally powerful outpost, this study recommends two major steps. The first step would be to provide Military Sealift Command with the lift capacity for the Darwin Marine Amphibious Ready Group and Expeditionary Unit by 2019. Our study found that the Marines stationed there now, absent any resident lift, added little value in any of our scenarios. They require two LMSRs ships and one T-AKE cargo ship. One way to provide this capacity quickly and at low cost could be a commercial leasing arrangement. A second recommendation for a more robust Pacific posture is

to permanently station an *America*-class amphibious ship, configured to carry a squadron of F-35B Joint Strike Fighters, at Yokosuka, Japan.[20] In our assessment, the Pacific is the theater where Marine capabilities—especially the F-35B—return the most value. In addition, the iNavy would position two additional destroyers or cruisers in Japan.

Readiness

Our study revealed that ships in sustainment need more and better maintenance to ensure higher states of readiness, better combat effectiveness, and longer service lives. From 2011 to 2016, for example, the Government Accountability Office found maintenance overruns on 86 percent of aircraft carriers, 63 percent of surface combatants, and 83 percent of submarines, which cost the Navy, cumulatively, 13,926 operational days.[21] Failing to complete maintenance on time puts strain on the rest of the fleet, and to make matters worse, the Navy has historically resourced only 80 percent of required maintenance for surface ships.[22] In part, this approach has been brought on by budget cuts and unrealistic service planning, but continuing down this road would be penny-wise and pound-foolish. Over the long run, deferring repairs will reduce readiness, disrupt deployments, age ships prematurely, and increase overall maintenance costs.

We recommend that the US:

- **Fully fund Navy operations and maintenance accounts.** It is necessary to take the Navy's Optimized Fleet Response Plan seriously—that is, the fleet readiness goals that Navy has adopted as essential to meet is missions. The correlation between funding and readiness is direct. However, this plan also needs a thorough evaluation to ensure it is realistic and conducive to effective maintenance.

- **Adopt "best maintenance" plans and practices from the private sector.** The study's authors were impressed in meetings with private shipping companies by their ability to efficiently operate globe-spanning fleets as large and every bit as busy as the US Navy. For example, maintenance teams for Maersk Lines meet their ships when they dock in ports around the world to conduct repairs for routine work; the teams go to the ships rather than the ships coming to the teams. Private firms also take greater advantage of automation; up-front investments in these areas potentially will pay off in greater availability of ships and lower operating costs down the road (see Appendixes C and D).

Increased Firepower

Another set of investments to get "more bang for the buck" from the current and planned Navy is for the service to more fully adopt and expand its concept of distributed lethality. Very simply, the idea is to put more weapons on a wider variety of ships. Given the high demand and limited number of hulls available, ensuring that each hull is as lethal as possible is essential, as well as relatively inexpensive. The distributed concept can be applied to fleet air and missile defense networks as well.

The study makes the following firepower recommendations:

- **Install vertical launch systems.** The Navy should install 16-cell VLS systems on at least six amphibious ships and six cargo ships by 2022.

- **Install integrated fire control and counter-air systems.** The Navy should install these systems on all VLS-equipped ships, including big-deck amphibious ships and replenishment ships.

- **Install Harpoon anti-ship missiles.** The Navy should equip all expeditionary fast transport ships with Harpoon anti-ship missiles.

F-35B Flight Deck Tests on the USS *Wasp* in the East China Sea
Source: US Navy, Michael Molina, March 5, 2018, http://www.navy.mil/management/photodb/photos/180305-N-VK310-0048.JPG.

- **Install heavyweight torpedoes.** The Navy should equip all *Ticonderoga*-class cruisers with heavyweight torpedoes.

Short-Term Solutions for Expanding the Fleet

Building naval combatants, especially in peacetime, is an expensive process that takes a long time. While many studies have demonstrated the need for a substantially larger Navy of approximately 355 ships built around 12 CSGs, there is no way to achieve such a goal in a timely way absent a World War II–like crash program; the CBO estimates the service cannot meet its goal of 355 ships before 2035.[23] Even that would require substantial investments in the shipbuilding industrial base and workforce. In sum, we cannot quickly get to the Navy that America needs.

The iNavy represents a way to make the most of the Navy we have—or might have—in the near future. In particular, we recommend that the Navy:

- **Keep all 22 *Ticonderoga*-class cruisers.** With the termination of the *Zumwalt* program at just three ships, the Navy reorganized its large-surface-combatant plans around the *Arleigh Burke* destroyer and a reduced fleet of older *Ticonderoga*-class cruisers. Both designs have been updated, but the Navy remains unable to develop a plan for a new ship. Squeezed by tight budgets, the Navy has decided to begin retiring improved *Ticonderoga* cruisers in 2019, far before their retirement date. Even with improvements, the new destroyers will lack some of the capability of the larger, although older, *Ticonderoga* cruisers.

Extending their life would not only amortize the investment but also fulfill unmet needs for large surface ships.

- **Accelerate production and fielding of the *Bougainville*.** Participants found that the biggest difference maker in the iNavy was the presence of two additional *America*-class ships serving as light carriers. To provide that presence, the Navy should accelerate production and fielding of the *Bougainville*, which is currently scheduled to enter the fleet in 2024. Given the proliferation of anti-access and area denial (A2/AD) technologies among America's major geopolitical foes, the ability to rapidly deliver fifth-generation fighter jets capable of penetrating those defenses has become the sine qua non of American power projection.

- **Buy more F-35s.** The Navy originally wanted a unique stealth strike plane, the A-12, as a replacement for the A-6 Intruder. However, design troubles and skyrocketing costs moved then-Defense Secretary Dick Cheney to cancel the program in 1991. Since then, the Navy has clung to the F/A-18 Hornet as its principal carrier aircraft, both for air defense and strike missions. To be sure, the F-35, particularly the F-35C (the heavier, carrier-based variant of the F-35), has had development problems. But these have come a long way. Buying the F-35 at adequate rates would also reduce the cost per plane. More critically, the F/A-18 is increasingly vulnerable to modern adversary air defenses. Accelerating the fielding of F-35Cs and F-35Bs, the latter being particularly important for the iNavy's two additional light carriers, would increase the Navy's ability to operate in contested waters and increase its striking capacity.

V. Conclusion

The combination of the iNavy's attributes—a modest increase in the fleet, a fully funded fleet response plan, combat loaded magazines, more forward deployments, and distributed lethality—made it substantially more effective than the FYDP Navy.

The iNavy is populated with programs, systems, and weapons that are deployable in the next five years. The systems are already proven and will not prevent the US from building the Navy of the future. The future Navy will be better networked, have directed-energy weapons and complex unmanned systems, and employ other technologies currently under development. The iNavy improves the force from today to 2022 and opens the door to the naval force of the future.

To improve performance and efficiency in the shipyards, it is essential that budgeting for readiness and shipbuilding be consistent over time. It is also the case that buying in bulk—as was done twice in the 1980s with the carrier program—resulted in improved shipyard performance and saved money.[24] To expand significantly in size, it is imperative the Navy do so as smoothly as possible.

Fleet at High Tide by James D. Hornfischer chronicles what happened to the Navy in 1943–44, when an influx of money and new ships helped generate new ideas about how best to enlarge the fleet. And as this study revealed, even a marginal increase in forces will likely generate innovation among naval and defense strategists regarding how best to employ the fleet.

VI. Appendixes

Appendix A: Participants

Tabletop Exercise One (Days One and Two)

National
Secretary of Defense: The Honorable Rudy de Leon
Under Secretary of Defense for Policy: Carolyn Leddy
NATO Ambassador: Dr. Gary Schmitt

Joint
Chairman Joint Chiefs of Staff/NORTHCOM: Vice Admiral David Nichols (ret.)
Fleet Forces Command: Rear Admiral Dan Cloyd (ret.)
Adviser: Captain Arthur Barber (ret.)

Fleet
4th/5th/6th Fleet Commander: Rear Admiral Sinclair Harris (ret.)
3rd/7th Fleet Commander: Rear Admiral Raymond Spicer (ret.)
Adviser: Dr. Daniel Whiteneck

Theater
COCOM: Rear Admiral David Hart (ret.)
POLAD: Thomas Donnelly
Adviser: Dr. Toshi Yoshihara

Control
Vice Admiral John Miller (ret.)
Michael Mazza
Larry Johnson

Tabletop Exercise Two (Days Three and Four)

National
Secretary of Defense: The Honorable Rudy de Leon
Under Secretary of Defense for Policy: Thomas Donnelly
National Security Adviser: Dr. Kenneth Pollack
Adviser: Captain Robert Harris (ret.)

Joint
Chairman Joint Chiefs of Staff/NORTHCOM: Vice Admiral David Nichols (ret.)
Fleet Forces Command: Vice Admiral Richard Hunt (ret.)
Policy Adviser: Dr. Frederick W. Kagan
Adviser: Dr. Gary Schmitt

Fleet
3rd/4th/7th Fleet Commander: Rear Admiral Dan Cloyd (ret.)
6th Fleet Commander: Rear Admiral Sinclair Harris (ret.)
5th Fleet Commander: Rear Admiral Kelvin Dixon (ret.)
Adviser: Dr. Daniel Whiteneck

Theater
CENTCOM: Vice Admiral Mark Fox (ret.)
NAVEUR: Vice Admiral Marty Chanik (ret.)
PACOM: Rear Admiral Robert Girrier (ret.)
POLAD: Paul Giarra
Adviser: Vice Admiral Kevin Cosgriff (ret.)

Control
Vice Admiral John Miller (ret.)
Michael Mazza
Pete Pellegrino

Appendix B: Major Naval Formations

Carrier Strike Groups

Currently, the Navy has 11 carrier strike groups. The Navy surface fleet is largely carrier centric, so the size of the US Navy is driven by the number of aircraft carriers it has. To meet national security objectives, the United States typically requires that two CSGs are operational at any given time. In addition, there are normally at least two CSGs in sustainment and available for surge operations. A nuclear-powered aircraft carrier is the core of a CSG, which nominally consists of a carrier air wing, a cruiser, and four destroyers.

There are nuclear attack submarines associated with the CSG for support. The carrier air wing typically consists of four strike fighter squadrons, one electronic warfare squadron, one airborne early warning squadron, one helicopter maritime strike squadron, one helicopter sea combat squadron, and one fleet logistics support squadron detachment. Altogether, the carrier air wing consists of 74 total aircraft.

The CSG is commanded by a rear admiral and a strike group staff. In addition, there is an air wing staff responsible for strike warfare and a destroyer squadron staff responsible for surface and anti-submarine warfare.

Amphibious Ready Groups/Marine Expeditionary Units

ARGs are the nation's 911 force; they are forward deployed and ready to respond to a crisis. As such, they are key components to the promotion of US national security.

To meet national security requirements, the United States typically requires that 2.6 ARGs, with associated MEUs, be operational at any given time. In addition, there are at least two ARGs in sustainment, where they are available for surge operations.

An ARG is usually composed of three amphibious warfare ships: an amphibious assault ship, an amphibious transport dock, an amphibious landing dock, and an embarked MEU. The ARG/MEU is led by an amphibious squadron command staff.

Typically, each MEU is composed of an air combat element, a ground combat element, a logistics combat element, and a headquarters element. The air combat element is composed of strike fighters, assault lift, and rotary attack units. The ground combat element is composed of the battalion landing force, reinforced by an armored infantry battalion with a tank platoon and artillery battery. The logistics combat element provides a ground logistics battalion, and the headquarters element is a headquarters company in command of the MEU.

Appendix C: Maersk Maintenance Discussion Highlights

One of the core issues facing the Navy today is maintaining the fleet to perform the missions required. Maersk Lines operates a worldwide fleet of ships that rivals the size and operational tempo of the US Navy. During the discussion, Maersk representatives put forward a number of maintenance best practices that would be useful for the Navy to consider adopting.

Maersk demands a high degree of standardization in the ships they procure. Because of this, when they bring a new ship into service, it is only a matter of days from acceptance of the ship as part of its fleet to the ship being on task.

Maersk mans a 70,000-ton displacement ship with a crew of approximately 26—in part due to automation and in part due to the experience and training of the merchant marine crews. The Navy typically mans a 7,000-ton displacement ship with a crew of over 300. Some of the disparity in manning can be attributed to experience, a lack of automation in Navy ships, and damage control requirements tied to conflict scenarios. But much of it comes down to culture and tradition. The Navy has not learned to downsize in manpower in the same way as the merchant marine community has over the past several decades.

When a Maersk ships pulls into port, maintenance crews are already identified and standing by to perform required maintenance. Because the ships travel on fairly set routes, and the ships are highly standardized, repair contracts are established in advance, maintainers are more easily trained, and parts are readily available.

The US Coast Guard routinely trains at the Maersk training facility, and the company has indicated a willingness to allow the Navy to do so as well.

Appendix D: Huntington Ingalls Industries Roundtable Highlights

The single most important factor for the shipyards is predictability in their workload. This is true for ship maintenance and ship construction.

Procuring ships "in bulk" can result in significant cost savings. Sufficient infrastructure exists at the shipyard in Newport News to simultaneously construct two nuclear-powered *Ford*-class carriers. During the 1980s, the US procured two *Nimitz*-class carriers on two occasions, resulting in substantial cost savings and contributing to the effort to build toward a 600-ship Navy. The Navy should take advantage of economies of scale where possible.

The manpower pool at Newport News during the 1980 time frame was approximately 28,000–30,000. Today, it stands at about 21,000, but plans are in progress to add approximately 3,000 additional workers in anticipation of constructing additional *Virginia*-class SSNs and the planned construction of *Columbia*-class SSBNs.

Huntington Ingalls Industries (HII) has invested approximately $2 billion in infrastructure in the past decade and anticipates investing an additional $1.5 billion over the next five years. This enormous up-front investment in infrastructure and personnel drives the need for consistency in shipbuilding and maintenance budgets.

Newport News Shipbuilding is the largest private employer in Virginia, and Ingalls Shipbuilding is the largest private employer in Mississippi. These are companies of consequence, and their success or failure significantly affects the communities in which they are located. For example, in 1979 Newport News Shipbuilding saw an 18 percent reduction in manpower. Once those skilled technicians left the workforce, replacing them took years. HII President and CEO Mike Petters states:

> It takes three to five years to hire someone off the street then train and develop him or her into a journeyman-level employee. This can be significantly longer for someone to become qualified to perform nuclear work. For example, it takes an average of eight years to develop a fully certified nuclear pipefitter. Our apprentice schools at Newport News and Ingalls take four to five years to graduate a journeyman-level employee.[25]

Appendix E: Background Studies

Clark, Bryan, Peter Haynes, Bryan McGrath, Craig Hooper, Jesse Sloman, and Timothy A. Walton. *Restoring American Seapower: A New Fleet Architecture for the United States Navy*. Center for Strategic and Budgetary Assessments, January 23, 2017. http://csbaonline.org/uploads/documents/CSBA6224-Fleet_Architecture_Study_WEB.pdf.

Congressional Budget Office. *An Analysis of the Navy's Fiscal 2017 Shipbuilding Plan*. February 2017. https://www.cbo.gov/sites/default/files/115th-congress-2017-2018/reports/52324-shipbuildingreport.pdf.

———. *Comparing a 355-Ship Fleet with Smaller Naval Forces*. March 2018. https://www.cbo.gov/publication/53637.

———. *Costs of Building a 355-Ship Navy*. April 2017. https://www.cbo.gov/publication/52632.

Fiore, Eric. "A Promising Future for U.S. Navy: Vertical Launching Systems." *DSIAC Journal* 1, no. 2 (Fall 2014): 32–42. https://www.dsiac.org/sites/default/files/journals/dsiac-journal-fall-web.pdf.

Fleet Review Panel. *Fleet Review Panel of Surface Ship Readiness*. US Navy, February 26, 2010. http://www.sailorbob.com/files/foia/FRP%20of%20Surface%20Force%20Readiness%20(Balisle%20Report).pdf.

Mattis, Jim. "Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge." US Department of Defense, January 2018. https://www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf.

McCain, John. *Restoring American Power: Recommendations for the FY 2018–FY 2022 Defense Budget*. Office of Senator John McCain (R-AZ), January 2017. https://www.mccain.senate.gov/public/_cache/files/25bff0ec-481e-466a-843f-68ba5619e6d8/restoring-american-power-7.pdf.

MITRE Corporation. *Navy Future Fleet Platform Architecture Study*. US Department of Defense, July 1, 2016. https://www.mccain.senate.gov/public/_cache/files/1a3e3a4e-6c97-42fb-bec5-a482cf4d4d85/mintre-navy-future-fleet-platform-architecture-study.pdf.

Navy Project Team. "Alternative Future Fleet Platform Architecture Study." US Department of Defense, October 27, 2016. https://www.mccain.senate.gov/public/_cache/files/a98896a0-ebe7-4a44-9faf-3dbbb709f33d/navy-alternative-future-fleet-platform-architecture-study.pdf.

O'Rourke, Ronald. "Navy Force Structure: A Bigger Fleet? Background and Issues for Congress." Congressional Research Service, November 9, 2016. https://fas.org/sgp/crs/weapons/R44635.pdf.

———. "Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress." Congressional Research Service, December 22, 2017. https://fas.org/sgp/crs/weapons/RL32665.pdf.

Pendleton, John H. "Navy Readiness: Actions Needed to Address Persistent Maintenance, Training, and Other Challenges Facing the Fleet." Testimony before the Subcommittees on Readiness and Seapower and Projection Forces, Committee on Armed Services, US House of Representatives, September 7, 2017. https://www.gao.gov/assets/690/686995.pdf.

Schneider, William, Jr. "Financing the Reagan 600-Ship Naval Modernization Program, 1981–89." Testimony before the Subcommittee on Seapower, Committee on the Armed Services, US Senate, July 18, 2017. https://s3.amazonaws.com/media.hudson.org/files/publications/Schneider_07-18-17.pdf.

Swartz, Peter M. *American Naval Policy, Strategy, Plans and Operations in the Second Decade of the Twenty-First Century*. CNA, January 2017. https://www.cna.org/cna_files/pdf/DOP-2017-U-014741-Final.pdf.

US Department of the Navy, Office of the Chief of Naval Operations. "Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2019." February 2018. https://news.usni.org/2018/02/12/fy-2019-u-s-navy-30-year-shipbuilding-plan.

———. "2016 Navy Force Structure Assessment." Executive summary. December 14, 2016. https://news.usni.org/2016/12/16/document-summary-navys-new-force-structure-assessment.

US Government Accountability Office. *Department of Defense: Actions Needed to Address Five Key Mission Challenges*. https://www.gao.gov/products/GAO-17-369.

White House. *National Security Strategy of the United States of America*. December 2017. https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905-2.pdf.

Notes

1. For the Trump administration's National Security Strategy, see White House, *National Security Strategy of the United States of America*, December 2017, https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905-2.pdf. For its National Defense Strategy, see Jim Mattis, "Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge," US Department of Defense, January 2018, https://www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf.

2. Congressional Budget Office, *Costs of Building a 355-Ship Navy*, April 2017, https://www.cbo.gov/publication/52632.

3. US Department of the Navy, Office of the Chief of Naval Operations, "Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2019," February 2018, https://news.usni.org/2018/02/12/fy-2019-u-s-navy-30-year-shipbuilding-plan.

4. Under the Navy shipbuilding plan submitted with the Trump administration's FY2019 budget, the Navy would possess essentially the same fleet by January of FY 2022. Changes include one additional attack submarine (retained through a service life extension program), one destroyer, one amphibious vessel, and a variety of auxiliaries and small surface combatants. The impact of this additional force structure on the study's results is negligible.

5. A Carrier Strike Group consists of a nuclear-powered aircraft carrier, a carrier air wing, a cruiser, four destroyers, nuclear attack submarines, and associated aircraft. An Amphibious Readiness Group consists of three amphibious warfare ships, an amphibious assault ship, an amphibious transport dock, an amphibious landing dock, and an embarked Marine expeditionary unit, which includes air, ground, and logistics combat elements and a headquarters element. See Appendix B for more detail on major naval formations.

6. The Navy introduced the Optimized Fleet Response Plan on January 15, 2014, to mitigate the adverse effects that budgetary constraints were having on readiness. The OFRP was designed to enhance the stability and predictability of deployment schedules for sailors and families. To do so, it realigned the carrier fleet's maintenance, training, and deployment cycles on a standard 36-month rotation, consisting of an eight-month deployment period, 15-month sustainment period, nine-month maintenance and basic training period, three-month integrated training period, and one-month stand-down period.

7. US Department of the Navy, Office of the Chief of Naval Operations, "2016 Navy Force Structure Assessment," December 14, 2016, https://news.usni.org/2016/12/16/document-summary-navys-new-force-structure-assessment; and Senator John McCain, *Restoring American Power: Recommendations for the FY 2018–FY 2022 Defense Budget*, January 2017, 9, https://www.mccain.senate.gov/public/_cache/files/25bff0ec-481e-466a-843f-68ba5619e6d8/restoring-american-power-7.pdf.

8. Congressional Budget Office, *Comparing a 355-Ship Fleet with Smaller Naval Forces*, March 2018, https://www.cbo.gov/publication/53637.

9. Congressional Budget Office, *Comparing a 355-Ship Fleet with Smaller Naval Forces*.

10. US Department of the Navy, "Report to Congress on the Annual Long-Range Plan for Construction."

11. McCain, *Restoring American Power*.

12. Congressional Budget Office, *Comparing a 355-Ship Fleet with Smaller Naval Forces*.

13. MITRE Corporation, *Navy Future Fleet Platform Architecture Study*, July 1, 2016, 2, https://www.mccain.senate.gov/public/_cache/files/1a3e3a4e-6c97-42fb-bec5-a482cf4d4d85/mintre-navy-future-fleet-platform-architecture-study.pdf.

14. Navy Project Team, "Alternative Future Fleet Platform Architecture Study," October 27, 2016, 7, https://www.mccain.senate.gov/public/_cache/files/a98896a0-ebe7-4a44-9faf-3dbbb709f33d/navy-alternative-future-fleet-platform-architecture-study.pdf.

15. US Government Accountability Office, *Department of Defense: Actions Needed to Address Five Key Mission Challenges*, June, 2017, 9, https://www.gao.gov/products/GAO-17-369.

16. Gregory Hellman, "House Passes New Stopgap as Big Budget Deal Nears," *Politico*, February 7, 2018, https://www.politico.com/

newsletters/morning-defense/2018/02/07/house-passes-new-stopgap-as-as-big-budget-deal-nears-096354.

17. Barack Obama, "Remarks by President Obama to the Australian Parliament," speech before the Australian Parliament, Canberra, Australia, November 17, 2011, https://obamawhitehouse.archives.gov/the-press-office/2011/11/17/remarks-president-obama-australian-parliament.

18. In 2017, NATO agreed to establish a new regional headquarters, Atlantic Command, whose obligations are to increase NATO's naval capabilities in the North Atlantic and adjacent seas.

19. Under the FYDP Navy, four *Ticonderoga*-class cruisers would have been retired by the start of the exercises in January 2022: USS *Bunker Hill* (CG-52), USS *Mobile Bay* (CG-53), USS *Antietam* (CG-54), and USS *Leyte Gulf* (CG-55).

20. In January 2018, the Navy deployed the USS *Wasp* to the port of Sasebo, Japan. The *Wasp* received modifications to its flight deck, which enable it to operate F-35Bs, and is expected to operate with embarked F-35Bs. Franz-Stefan Gady, "US Warship Capable of Operating F-35B Arrives in Japan," *Diplomat*, January 17, 2018, https://thediplomat.com/2018/01/us-warship-capable-of-operating-f-35b-arrives-in-japan/.

21. John H. Pendleton, "Navy Readiness: Actions Needed to Address Persistent Maintenance, Training, and Other Challenges Facing the Fleet," testimony before the Subcommittees on Readiness and Seapower and Projection Forces, Committee on Armed Services, US House of Representatives, September 7, 2017, https://www.gao.gov/assets/690/686995.pdf.

22. Fleet Review Panel, *Fleet Review Panel of Surface Ship Readiness,* US Navy, February 26, 2010, http://www.sailorbob.com/files/foia/FRP%20of%20Surface%20Force%20Readiness%20(Balisle%20Report).pdf.

23. Congressional Budget Office, *Costs of Building a 355-Ship Navy*.

24. William Schneider Jr., "Financing the Reagan 600-Ship Naval Modernization Program, 1981–89," testimony before the Subcommittee on Seapower, Committee on the Armed Services, US Senate, July 18, 2017, https://s3.amazonaws.com/media.hudson.org/files/publications/Schneider_07-18-17.pdf.

25. Brian Cuccias, statement before Subcommittee on Seapower, Committee on Armed Services, US Senate, May 24, 2017, https://www.armed-services.senate.gov/hearings/17-05-24-industry-perspectives-on-options-and-considerations-for-achieving-a-355-ship-navy.

About the Authors

John W. "Fozzie" Miller, retired vice admiral in the US Navy, is a visiting fellow at the American Enterprise Institute, a senior mentor for the Naval War College, and founder of the Fozzie Miller Group LLC, a global national and maritime security consulting firm. In 2015, Miller retired from the US Navy after serving as the commander of the US Naval Forces Central Command, commander of the Combined Maritime Forces, and commander of the US 5th Fleet. After promotion to rear admiral, Miller spent considerable time focusing on the Middle East, serving as deputy commander to US Naval Forces Central Command/United States 5th Fleet; deputy director, strategy, plans, and policy (J5), and chief of staff, US Central Command; and commander of Carrier Strike Group 11. He served as a special assistant to the administrator of NASA as a White House fellow. He is a graduate of the US Naval Academy and a distinguished graduate of the Naval War College. He also holds a master's degree in international relations from Salve Regina University.

Thomas Donnelly, a defense and security policy analyst, is codirector of the Marilyn Ware Center for Security Studies at AEI. He is the coauthor with Frederick W. Kagan of *Lessons for a Long War: How America Can Win on New Battlefields* (2010). Among his recent books are *Ground Truth: The Future of U.S. Land Power* (2008), coauthored with Frederick W. Kagan; *Of Men and Materiel: The Crisis in Military Resources* (2007), coedited with Gary J. Schmitt; *The Military We Need* (2005); and *Operation Iraqi Freedom: A Strategic Assessment* (2004). From 1995 to 1999, he was policy group director and a professional staff member for the House Committee on Armed Services. He also served as a member of the U.S.-China Economic and Security Review Commission. He is a former editor of *Armed Forces Journal*, *Army Times*, and *Defense News*.

Gary J. Schmitt is resident scholar and codirector of the Marilyn Ware Center for Security Studies at the American Enterprise Institute. He is a former staff director for the Senate Select Committee on Intelligence, executive director of the President's Intelligence Advisory Board, and executive director of the Project for the New American Century. Among his most recent books in national security are *Rise of the Revisionists: Russia, China, and Iran* (2018), *A Hard Look at Hard Power: Assessing the Defense Capabilities of Key Allies and Security Partners* (2015), *Safety, Liberty and Islamist Terrorism: American and European Approaches to Domestic Counterterrorism* (2010), and *The Rise of China: Essays on the Future Competition* (2009). Schmitt has a B.A. in politics from the University of Dallas and an M.A. and Ph.D. in political science from the University of Chicago.