Strategic Readiness Review
2017

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From: The Honorable Michael Bayer
Admiral Gary Roughead, U.S. Navy (Retired)

To: Secretary of the Navy

Mr. Secretary:

This report responds to your direction to conduct a Strategic Readiness Review following the recent tragic incidents involving U.S. 7th Fleet ships that resulted in significant loss of life and injury. The attached report contains specific recommendations for your consideration as you determine the way ahead for our nation's Navy.

We assembled a team of senior civilian executives and former senior military officers to conduct the review. The team examined issues of governance, accountability, operations, organizational structure, and manning and training over the past three plus decades to identify trends and contributing factors that have compromised performance and readiness of the fleet. We considered stresses on the force over time, significant changes to training, risk management processes, and how Navy culture has evolved. Our team reviewed past incidents and accidents and conducted numerous interviews with subject matter experts from across the government and with relevant leaders from the private sector in our areas of interest. The team specifically sought experts who have dealt with and responded to similar operational circumstances and events.

Our Strategic Review examined the findings of the CNO's Comprehensive Review and we largely concur with its recommendations, however our assessments, judgments and recommendations are independent of that work.

MICHAEL BAYER

GARY ROUGHEAD

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Executive Summary

The U.S. Navy is without question the most capable in the world but its primacy is being challenged as it sails into a security environment not seen since before the collapse of the Soviet Union. Another era of sustained peer-on-peer competition has arrived and failing to recognize and prepare for its very different challenges will have severe consequences. Even in a non-peer-on-peer environment, the Navy and the nation can ill afford the readiness deficiencies revealed in the recent ship-handling incidents in the Pacific. These deficiencies are of profound consequence. While the shipboard causes that led to those tragic events have been identified, this Strategic Review finds there are institutional deficiencies that have developed over decades that must now be addressed.

Many of these deficiencies have been observed and authoritatively documented for years, however the naval capacity that had been built up for the Cold War masked their impact. That past margin in ships, aircraft, and sailors enabled the Navy to make mitigating adjustments in fleet operations, training, maintenance, and funding to accomplish assigned missions. Today, those margins are long gone. A smaller fleet with fewer sailors is straining to meet the operational demands placed upon it. This Strategic Review examines the long degradation of readiness and recognizes that improvements in readiness will not happen overnight – they will require sustained focus, commitment, and funding. This Strategic Review also recognizes that necessary improvements can only occur with the concerted leadership of the Secretary of the Navy, the Chief of Naval Operations and the support of the Secretary of Defense, Congress, and the American public.

The Navy assesses capability and capacity in the context of the number of capital assets, manning and training, equipping and maintaining, command and control, and operations. Those factors that drive readiness are all interrelated in a complex system-of-systems governed by regulations, policies, and processes that play out and act upon each other over time.

This Strategic Review examined the systemic conditions of the last 30 years. The readiness consequences identified in this report are not traceable to any single policy or leadership decision. However, the cumulative effects of well-meaning decisions designed to achieve short-term operational effectiveness and efficiencies have often produced unintended negative consequences which, in turn, degraded necessary long-term operational capability. Simultaneously, Navy leaders accumulated greater and greater risk in order to accomplish the missions at hand, which unintentionally altered the Navy's culture and, at levels above the Navy, distorted perceptions of the readiness of the fleet.

Over the past three decades the Navy has maintained a fairly consistent number of ships on deployment despite a large decrease in the total number of ships available. This resulted in roughly doubling the percentage of the fleet deployed. The net result has been a dramatic increase in the operating tempo of individual ships, and accompanying reductions in the time available to perform maintenance, training, and readiness certification. The growing mismatch between the supply and demand of ships taxed fleet personnel and consumed material readiness at unsustainable rates.

To accomplish operational demands with a decreasing number of ships, the Navy sought to find more efficient ways to operate its forces and get more out of its resources and people. Within the fleet, often the only option to meet those demands were short-term tradeoffs to training, manning, and maintenance. Accepting those trades and increasing risk across the force was seen as necessary to get the job done. Over time, the Navy's "must do" wartime culture was adopted for peacetime as long-term readiness and capability were sacrificed for immediate mission accomplishment.

Gradually the Navy shifted more responsibility for certifications and readiness to the operating fleet, enabling further readiness tradeoffs. Training initiatives and time to conduct training were traded away to meet pressing short-term operational needs, which further contributed to the overall readiness decline and increased stress on the crews. With fewer resources available, ship crew workloads grew significantly, expanding their work days and weeks to unsustainable levels.

Fleet level processes and procedures designed for safe and effective operations were increasingly relaxed due to time and fiscal constraints, and the "normalization-of-deviation" began to take root in the culture of the fleet. Leaders and organizations began to lose sight of what "right" looked like, and to accept these altered conditions and reduced readiness standards as the new normal.

This was exacerbated by the rapid increase in new overhead governance structures created in response to the Goldwater-Nichols Department of Defense Reorganization Act. Well-intended implementation decisions by the Navy did not adequately preserve and prioritize critical service operational skills development and training. Staffs became distracted and inattentive to readiness and did not apply preventative measures to anticipate or address the increasing operational risk.

The cumulative effect of these behaviors, with a much smaller fleet operating in crowded and sometimes contested environments, further strained the Navy and cultivated even greater reliance on operating beyond the boundaries of established standards. Reinforcing these aberrant behaviors was the feedback that implied the risk being taken had little or no consequence – if the operation was a success, then the risk assumed must have been appropriate. The departure from a questioning culture prevented operators, leaders, and resource managers from stepping back and assessing accumulated risk and reinforced a mistaken confidence that operations remained within risk boundaries.

This period also saw frequent reorganizations within the Navy, which altered time-tested processes for force generation and employment. These replaced tightly aligned responsibility, authority, and accountability with redundancies, overlapping responsibilities, inconsistencies, and ambiguities. These reorganizations led to a growth in headquarters structures with misaligned authorities, complicated command and control responsibilities, and diffuse accountability structures. With the growth of headquarters, and staff centric promotion parameters, staff service began displacing service at sea as a significant driver of officer career paths, assignments, and promotions. The

growth in new compliance requirements, generated by additional staffs and headquarters, competed with enduring core readiness requirements and activities. Additionally, congressional direction grew exponentially in breadth and detail, diverting attention of senior leaders away from vital responsibilities for readiness.

In 2017, four surface ship accidents in the 7th Fleet, two of which resulted in loss of life, revealed the Navy was off course. The time to chart a new course is now. Failure to address the compounding factors identified in this Strategic Review will have serious implications on the effectiveness of the Navy in the peer-on-peer operational era it is entering. Key among them are the damaging fiscal constraints resulting from the Budget Control Act of 2011 and the failure of the Congress to produce predictable, consistent, and sustainable funding. Additional funding to increase capacity and maintenance can improve many aspects of readiness, but more money will not address the structural, organizational, training, and cultural facets that contribute just as significantly.

The Navy's emphasis on readiness as the primary enabler of warfighting capability and capacity must be re-energized, embedded, and continuously monitored in the culture of every community within the Navy. The Navy must also make clear what fully ready, capable, and certified Navy assets will be available for operations. Additionally, the Navy must effectively and accurately communicate to directing, supporting, and requesting organizations the limits on fleet availability that will result from this restored emphasis on readiness.

The Navy must fully embrace a learning culture based upon data and critical analysis to facilitate rapid, informed decisions. Fundamental to the concept of a learning culture is a system of accountability. Accountability must always fall primarily on commanders, but accountability must also be sought and assessed in a systemic way, at institutional levels, in the policy decisions and processes that can set the conditions for aberrant behavior and negative outcomes.

There are many specific recommendations in this report, however four broad strategic recommendations must be addressed to arrest the erosion of readiness and reverse the "normalization-of-deviation" that has taken hold.

- ***Re-establish Readiness as a Priority:*** The creation of combat ready forces must take equal footing with meeting the immediate demands of Combatant Commanders. Sufficient time for training crews and maintaining ships is critical for restoring and monitoring readiness.

- ***Match Supply and Demand***: There must be a greater appreciation for the reality that only so many ships and sailors can be made available in a given operational cycle. The Navy must establish realistic limits regarding the number of ready ships and sailors and, short of combat, not acquiesce to emergent requirements with assets that are not fully ready.

- ***Establish clear Command and Control Relationships:*** The Navy must realign and streamline its command and control structures to tightly align responsibility, authority, and accountability.

- ***Become a True Learning Organization:*** Navy history is replete with reports and investigations that contain like findings regarding past collisions, groundings, and other operational incidents. The repeated recommendations and calls for change belie the belief that the Navy always learns from its mistakes. Navy leadership at all levels must foster a culture of learning and create the structures and processes that fully embrace this commitment.

The voyage to restore readiness will take time and resources, neither of which is abundant. Accordingly, leadership is the most important element in this journey. Leaders at every level in the Navy, and above, must take ownership of the problems, challenge evolved standards, behaviors, and thinking, and embrace the changes required for success. It will take leadership across the fleet to attend to the everyday actions that prepare the fleet to meet, and if necessary, defeat the emerging threats that are on the horizon to ensure the Navy remains the most capable, combat ready force on the seas.

Scope of the Strategic Review

The Secretary of the Navy directed this strategic review to examine the conditions and decisions that resulted in the inadequate performance and lack of readiness manifested in the recent accidents in the Pacific. Beyond those accidents, this Strategic Review is driven by the certainty that the Navy must adjust to the challenge of an enduring near-peer competition. Therefore, the Strategic Review examines the evolution of the Navy over the period since the service last faced a peer competitor – the Soviet Union.

The Strategic Review focused beyond the particulars of individual ship and crew performance to examine the state of major generators of readiness - governance, operations, command and control, organizational structure, personnel management, and the fiscal environment during and since the end of the Cold War. To that end, this Strategic Review specifically examines stress on the force, operational culture, budgetary tradeoffs, accountability structures, and risk management. Additionally, the Strategic Review analyzed career patterns, manning trends, training architectures, operational tempo, and the infusion of new technologies into the fleet. Finally, these elements are evaluated and accessed for their cumulative effect on the Navy's operational readiness against shifts in U.S. strategy and evolving peer-on-peer threats.

This Strategic Review complements the Chief of Naval Operations' (CNO) Comprehensive Review[1], which examined surface fleet operations and incidents at sea with emphasis on 7th Fleet operations. While this Strategic Review considers that report, its assessments and judgments are independent of the CNO's review. Moreover, the Strategic Review significantly extended the time horizon of its examination to enable a comparison of stress and tempo changes over a period of significant military and geopolitical change that shaped the readiness of the fleet. The lengthy time period also allowed for an analysis of the macro drivers of change that can only be observed, understood, and appreciated in a more expanded context.

[1] Comprehensive Review of Recent Surface Force Incidents, 26 October 2017 (referred hereinafter as the Comprehensive Review).

This Strategic Review is not an investigation or a reinvestigation of the specific facts and circumstances surrounding the recent incidents. The Navy separately conducted administrative investigations to address those issues. Nevertheless, those tragic events served as a departure point for this assessment which looks beyond them to the conditions and environment that have contributed to a long and precipitous decline in Navy readiness.

Methodology

This report encompasses a review of current and historical records to identify significant changes in policy and operations that had an impact on readiness over the period of examination. The team reviewed relevant data, investigations, studies, audits, previous reports, and incidents to identify patterns, trends, unintended consequences, and lessons learned.

Military readiness is complex and embodies many interrelated functions. The Strategic Review examined how major functions such as operations, command and control, manning, training, equipping, and maintaining contribute to and consume readiness. Use of a systems-of-systems approach permitted an examination of how these functions interact and respond in a dynamic system affected by fiscal constraints, governance requirements, and cultural expectations. This system-of-systems approach highlighted the interdependence of each function and how they collectively affect readiness and performance.

To better understand the many factors that drove past decisions affecting fleet readiness and posture, the Strategic Review team interviewed current and past senior military officers and civilians from across the Department and other government agencies. Also, best practices in the private sector were examined with industry leaders and subject matter experts to obtain insight into their observations when confronted with analogous situations and the strategies they employed in the aftermath of significant events or in high stress environments.

The Long Road to Degraded Readiness (1985-2017)

The Navy's mission to recruit, train, and equip forces capable of winning wars, deterring aggression, and maintaining freedom of the seas has remained unchanged since its inception on October 13, 1775. However, the threats confronted and the operating environments have constantly evolved. The ebb and flow of those factors since the mid-1980s, when the U.S. last had a peer competitor, are part of that pattern. Since then, the current global environment has increased the demand on the Navy while the number of ships, aircraft, and sailors has declined. The combination of a high tempo of operations; fewer, aging, and more heavily used ships and aircraft; fewer Sailors; declining and unpredictable budgets; and the current governance system have strained the fleet and consequently diminished operational readiness.

The Peace Dividend

In the mid-1980s peak of the Cold War, the U.S. Navy was operating at full capacity, deployments were extensive and the operations were demanding. Subsequently thereafter, the Berlin Wall fell, the Soviet Navy disappeared as a peer competitor and the nation put decades of tension and the high cost of a large military behind. The Navy's Cold War strategy and the forces to manage conflict across the broad spectrum of crisis response and war were adjusted to meet demands of an anticipated more peaceful era that focused on presence and confronting civil wars and restraining rogue regimes.

The 1986 Goldwater-Nichols Act[2] was enacted to address the perceived shortcomings in inter-service coordination and effectiveness apparent in hostage rescue operations in Iran (1980) and operations in Grenada (1983) and Lebanon (1983), and recast the nation's military command structure to engender greater cooperation across the services.

The Goldwater-Nichols Act significantly altered the Department of Defense's governance and command structures. Combatant Commanders, not the Army, the Air Force, or the Navy would now direct the operations of forces. Navy

[2] *Public Law 99-433, 4 October 1986.*

Component Commanders (Fleet Commanders) would henceforth report to assigned Geographic Combatant Commanders on operational matters rather than to the CNO. However, the administrative chain of command, which has oversight of manning, training, and equipping the fleet, remained intact, reporting to the CNO.

Concurrently, the Goldwater-Nichols Act, the Defense Officer Personnel Management Act (DOPMA),[3] and the manner in which they were implemented, changed the governance of the Navy's career officer corps by adding joint duty requirements and establishing common career paths, promotion, separation, and retirement rules for all the services.

These changes were implemented concurrently with the shift to peacetime operations. The resulting layers of governance, the explosion of overhead and staffs, and the additional operational processes that evolved were never stress tested against a sustained global peer threat and were never assessed for their collective impact.

As the Goldwater-Nichols Act was beginning to reshape the organization and culture of the military, the Secretary of Defense decided on a leaner post-Cold War force with a 25% reduction in personnel from the 1989 baseline. The result, the "Base Force," was a smaller military that deemphasized peer-on-peer capability as the principal force-sizing factor, and refocused the fleet on contingency operations and wars against regional powers. That 1991 Base Force reduced the Navy to a target fleet size of 451 ships.

The 1990s

The first major conflict of the post-Cold War era, Desert Shield/Storm in 1990-91, seemingly validated a military optimized for non-peer-on-peer conflicts. Saddam Hussein's invasion of Kuwait and the U.S. response refocused the nation from the global stage of conflict to the narrower Middle East. The fast and violent destruction of Iraq's army and small coastal navy convinced many that the nation had more military capacity and capability than would be needed in the

[3] *Public Law 96–513, 12 December 1980.*

foreseeable future and led to declarations that traditional warfare and force mass were obsolete. Expecting to benefit from a "Peace Dividend," defense expenditures were reduced in real terms which resulted in a decade-long decline in manning and capital assets.

In 1992, in the aftermath of Desert Storm, the Navy published a joint United States Navy and United States Marine Corps strategic document . . . *From the Sea*[4]. Breaking from traditional Navy thinking, *From the Sea* sought to better align with the Department of Defense goals of shifting from peer-on-peer capabilities to providing forward naval forces tailored to support Combatant Commanders' presence and littoral combat needs. To address those needs, the Navy developed the Global Naval Force Presence Policy which enabled the Joint Staff to integrate Combatant Commanders' naval requirements and prioritize forward presence in the Central, Pacific, and European Command theaters. The 1993 Bottom-Up Review confirmed the Navy's new focus on presence, projection, and crisis response, while further reducing the target fleet size to 346 ships.

With the focus on presence and crisis management and a greater emphasis on the Middle East (exemplified by the activation of the 5th Fleet for operations in Southwest Asia), the 1990s' Navy operated more globally than during the prior decade. The 1990s' more global, but smaller-scale, missions ranged from Balkans combat, to enforcing Iraqi no-fly zones, to West African non-combatant evacuations. While the scope of these missions was relatively small, the numbers of operations were greater. By one count, the 1990s' Navy conducted 85 named operations, up from 49 in the 1980s.[5] These demands forced the Navy to lengthen deployments to provide forces in more geographic areas. The increased operational tempo stretched a fleet that shrank from 529 ships in 1991 to 318 in 2000, which in turn more rapidly consumed those ships' service life.

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[4] *Navy and Marine Corps White Paper, "From the Sea, Preparing the Naval Service for the 21st Century," September 1992*.

[5] *Dr. Ryan Peeks & Dr. Richard Hulver, USNS Historical Overview, Oct 6, 2017, p.4*

From 1993 to 2000, Congress authorized acquisition of ships at an average of five per year, compared to 17 per year in the 1980s, a two-thirds reduction for a fleet half as large, thus setting the stage for significant procurement challenges in the next decade. In addition to slowing new construction, the acceptance by policymakers of the illusion of the 1990s "Peace Dividend" accelerated warship retirements and shut naval facilities. Among the warships decommissioned before their scheduled service lives in the 1990s were four *Forrestal*-class aircraft carriers, six *California*- and *Virginia*-class nuclear cruisers, and all 46 *Knox*-class frigates.

Between 1991 and 2000, the Navy's budget was reduced by approximately 25%. These reductions translated into significant maintenance backlogs, manning shortfalls, reduced parts availability, and diminished training – all of which increased the strain on the remaining fleet in its ability to meet mission requirements and operational demands. Increasingly, maintenance costs required the Navy to look for cost savings measures to offsets its funding shortfalls. Most significantly, the trades made to reduce manpower costs and the retention challenges imposed by the robust U.S. economy ultimately contributed to a shortage of manpower for at-sea billets by mid-1998. Additionally, the Navy's operational tempo created significant challenges for the 24-month training, maintenance, and deployment cycle for ships and aircraft squadrons.

2001-2011

A new rising wave of terrorism emerged with the Kobar Tower bombing in 1996, followed by the 1998 East Africa embassy attacks, the 2000 attack on COLE, and culminating with the September 11, 2001, attacks on the homeland. On the eve of 9/11, the U.S. Navy had shrunk to 316 ships, and as a result, its end-strength had fallen by nearly 200,000 to 377,810 Sailors. In 2001, the Navy established U.S. Fleet Forces Command, assigning it responsibility for ensuring the fleet was organized, trained, equipped, and ready for assignment to Geographic Combatant Commands. Fleet Forces Command absorbed and eventually disestablished the U.S. Atlantic Fleet in 2006.

The Navy adopted the Fleet Response Plan in 2004 to make more forces available for deployment and increase the number of U.S.-based forces ready to "surge" if

necessary. The aim of the plan was to provide a well-trained force that was ready and prepared to deploy promptly, yet on a predictable schedule. It aligned the fleet maintenance, training and deployment cycles to fit into a standard 36-month rotational operating cycle. A new Fleet Readiness Training Program was integral to the Fleet Response Plan. While operational demands had increased time at sea, caused ship maintenance and training to be deferred, and reduced predictability of deployments, this new plan addressed the high continuous demands and attempted to better balance maintenance schedules and training while being mindful of the effects on personnel and families.

Following 9/11 and Operation Enduring Freedom, the Navy found that precision strike was a critical enabler for future conflicts and shifted its focus accordingly. Navy carriers reprised their Korean and Vietnam War combat air patrol roles during the initial stages of Operation Enduring Freedom. As time progressed, they shifted their efforts to more air-to-ground missions and away from air-to-air proficiency.

As the conflicts in Afghanistan and Iraq lengthened, the Navy drew further away from its peer-on-peer focus of the 1980s as it gained missions to support combat ashore in the Middle East. An additional personnel issue the Navy faced during Operation Enduring Freedom and Operation Iraqi Freedom was a demand for Individual Augmentees tasked with relieving overburdened Army and Marine Corps forces by substituting Navy personnel. From 2001-2006, approximately 60,000 Sailors of nearly every grade deployed as Individual Augmentees. Such deployments, which appropriately supported the war on terror, nevertheless depleted parent units and temporarily removed junior officers and sailors from their career specialties.

While engaged in combat in the Middle East the Navy continued operations globally. Among these missions were disaster response efforts and countering piracy in the waters off east Africa. By 2010, it was evident that, under the Fleet Response Plan, the force was being stressed with more frequent, longer deployments and reduced time in port during which maintenance and training

were expected to occur. A 2010 review of the surface fleet (Balisle Report)[6] warned that increased operational tempo and lower manning were threatening the long-term readiness of the surface Navy. Ships were being run harder with less maintenance which required the Navy to retire them after just 25, or even 20, years rather than the expected 35-year life for which they had been procured.

2011-Present

The lean fiscal environment, worsened by the 2011 Budget Control Act, coupled with a high operational demand for forces and reduced fleet levels, challenged the Navy even more, placing a heavy strain on the service. Coincidentally, as the Budget Control Act of 2011 further constrained the fleet, it became clear that China was emerging as a peer Navy competitor.

China's adoption of advanced technology, its increasingly dispersed operations, and its doctrinal writings make clear that it aspires to a more robust regional capacity and global reach. Moreover, North Korea's nuclear and ballistic missile threats, coupled with China's activities, further add to the growing demand on the Forward Deployed Naval Force in Japan and an increase in the operational tempo in the Western Pacific.

While Russia is not as consequential a peer competitor as China, Russia's invasion of Crimea in 2014, recent activity in the Baltic and Eastern Mediterranean, and resurgent submarine activity have also added to operational demands for the Navy. As all these global demands have increased, ships, personnel, and funding available for operations have not – all were being stretched. In 2014-2015, the Navy embarked on yet another effort to address the growing imbalance - the Optimized Fleet Response Plan. This plan was implemented to better respond to operational demand while endeavoring to provide greater predictability to the fleet.

Accordingly, a Forward Deployed Naval Force was established in Rota, Spain to meet ballistic missile defense requirements in the 6th Fleet area of operations. Similar to the Forward Deployed Naval Force in Japan, the Rota based ships were

[6] *Fleet Review Panel of Surface Force Readiness, VADM(ret) Balisle, 26 Feb 2010*

to provide European Command a dedicated ballistic missile defense presence with fewer ships than needed under a traditional rotational commitment plan. To date, the ships in Rota, Spain have been focused primarily on the ballistic missile defense mission, unlike the forward-based Japan fleet where ballistic missile defense was an added mission, but both are among the most heavily tasked ships in the Navy.

In January 2017, a new Surface Force Strategy was published in response to the Chief of Naval Operations' precept to "strengthen naval power at and from the sea." The strategy describes the return to sea control and implementation of "Distributed Lethality" as an operational and organizational principle for achieving and sustaining sea control. This new strategy is a return to the peer-on-peer fundamentals diluted in the previous 30-year shift in focus away from symmetrical warfare. Further, many of today's fundamental practices, processes, and organizations were exquisitely tuned for an environment that no longer exists. This transition of the Navy to meet more complex and sophisticated challenges will take time, training, and resources.

As this report will address, first and foremost, the Navy must recover its readiness and reestablish the standards that have historically ensured its preeminence. This is imperative for the Navy to adapt and prevail in peer-on-peer competition. This adaptation will require a fundamental understanding and appreciation of how much the Navy has changed over the last 30 years and how much those changes have impacted its ability to defeat peer threats and meet future challenges.

Introduction: Readiness as a Complex System

Readiness is a must for winning in combat. The four recent accidents involving U.S. Navy warships are direct consequences of eroded readiness and are a leading indicator of unsustainable operations. Building and sustaining operational and combat readiness is extremely complex. To best understand the complexities of developing and sustaining military readiness, a thorough examination of the systems that contribute to, and consume, readiness is necessary. Examining this in a system-of-systems approach highlights the interdependence of each function and how subtle interactions of those factors can affect readiness, as shown in Figure 1-1.

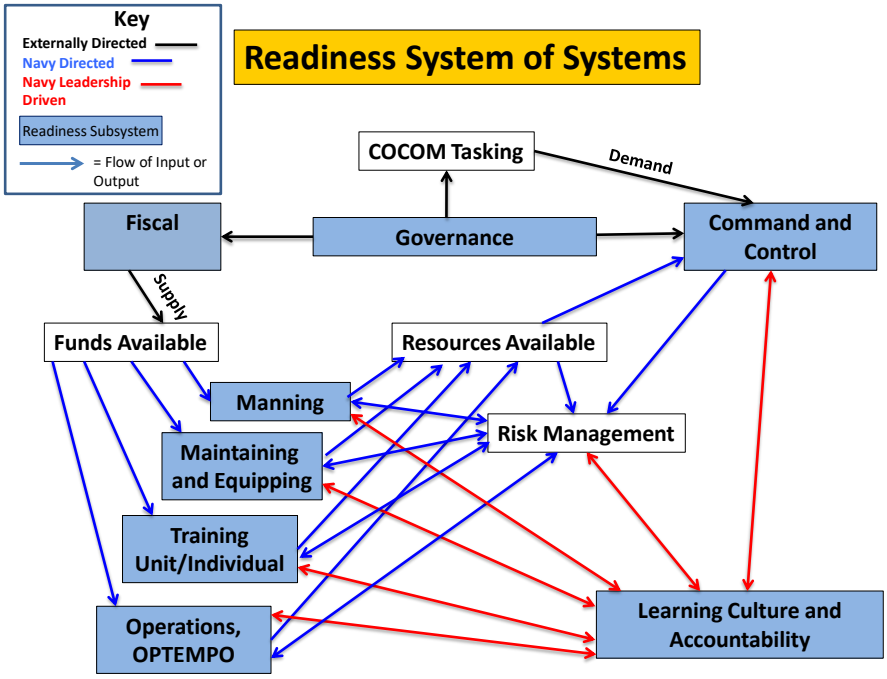

Figure 1-1 Readiness system-of-systems

The Navy assesses capability and capacity in the context of manning and training the fleet, equipping and maintaining the fleet, and the operations and command and control needed to deliver naval power. It is critical, however, to understand that these functional areas are a readiness system-of-systems interrelated through complex feedback mechanisms that impact leadership and organizational behavior. These sub-systems include operational tempo

(OPTEMPO), command and control, manning and training (unit/individual), maintaining and equipping, fiscal (the apportionment of money), governance (policies and constraints) and culture and accountability. Further, this readiness system is affected by supply and demand that are driven by two other key stakeholders: Congress (supply), and the Combatant Commanders (demand).

The complexity of this system-of-systems and the time horizon over which policies and processes play out cannot be ignored if the Navy is to effectively address changes needed to sustain the Force. An objective of this Strategic Review was to 1) better understand and make recommendations concerning what is required to improve and better sustain Navy readiness over time and 2) assess the efficacy and flexibility of the Navy's learning culture needed to adapt to rapidly changing strategic and operational dynamics based on leading indicators.[7]

This report recommends ways to improve each of these sub-systems and how they interact to achieve greater fleet readiness. These recommendations, whether executed individually or collectively, are intended to increase the visibility and assessment of fleet readiness to ensure leadership has a complete understanding of readiness and an accurate sense of the ability of the fleet to conduct sustained combat operations at sea – its principal mission.

[7] *Leading indicators are typically input oriented (precursors), hard to measure and easy to influence, while lagging indicators are typically "output" oriented (results), easy to measure but hard to improve or influence. See https://kpilibrary.com/topics/lagging-and-leading-indicators.*

CHAPTER 1: Operations

For the past 30 years, despite a large decrease in the size of the U.S. fleet, the Navy has maintained a consistent number of ships deployed worldwide. This resulted in an increasing percentage of the fleet deployed.[8] For most of those years the Navy could sustain credible global presence and meet the demands of Combatant Commanders for specific missions while maintaining fleet readiness. However, in recent years demands across a greater geographic expanse have increased substantially. Since 2013, the rapid rise in Combatant Commander demands has pushed the smaller fleet such that established readiness standards are increasingly unachievable. Despite this deterioration of readiness, the Navy accepted the missions and, at times, deviated from established standards and absorbed increased risk. Over time, this deviation from accepted standards increased, became normalized, and subsequently institutionalized. This sustained acceptance of risk fits a pattern consistent with the "normalization-of-deviation," whereby individuals and organizations accept ever lower standards of performance as the new normal. A well-recognized cultural pathology in the private sector, this phenomenon grew in the fleet, was accepted by Navy leadership, and became common practice. Nowhere was this normalization more apparent than in the 7th Fleet surface force where the Navy suffered the recent series of incidents. Changing this culture by restoring and sustaining readiness is vital. In turn, given the current congressional resourcing of the fleet, military and civilian leaders must accept less Navy presence worldwide.

1.1 A Different World: Global Trends and their Effects on Naval Operations

The global environment that affects U.S. interests has changed dramatically in the last three decades. Despite the peace dividend after the Cold War, technological advances accelerated global access to, and increased sea and air activity in, the global commons. Globalization of markets and ideas increased the competition for resources. Violent ideologies emerged, weapon and information technologies advanced and proliferated, and partner and adversary nations realigned.

[8] *Highlights of the Department of the Navy 2017 Budget, pg 1-2, Feb 2016.*

The Navy's operating environment also changed considerably. The respite from near-peer competition after the demise of the Soviet Union is over, as China expands its maritime reach and routinely contests international norms at sea and a resurgent Russia challenges Europe. These peer challenges, added with the existing regional threats from North Korea and Iran, and the prolonged conflict against violent extremist organizations stress the Navy across a wide geographic expanse.

Strategic national decisions have also impacted Navy operations, the most significant being the nation's acquiescence to a smaller U.S. Navy. As shown in Figure 1-1, over the last 25 years, the number of ships decreased by nearly half. Despite this decrease in capacity, the expectation remains for the Navy to maintain presence, project power worldwide, and defend national interests. In fact, almost twice the percentage of the fleet is deployed today, as compared to the height of the Cold War, again shown by Figure 1-1. To sustain this number of ships deployed and operating on any given day, the Navy must allocate scarce maintenance and training throughout the fleet. Though different for ships in the U.S. and those based overseas, every ship has a maintenance, training, and operational cycle that is tailored to optimize its availability for operational use.

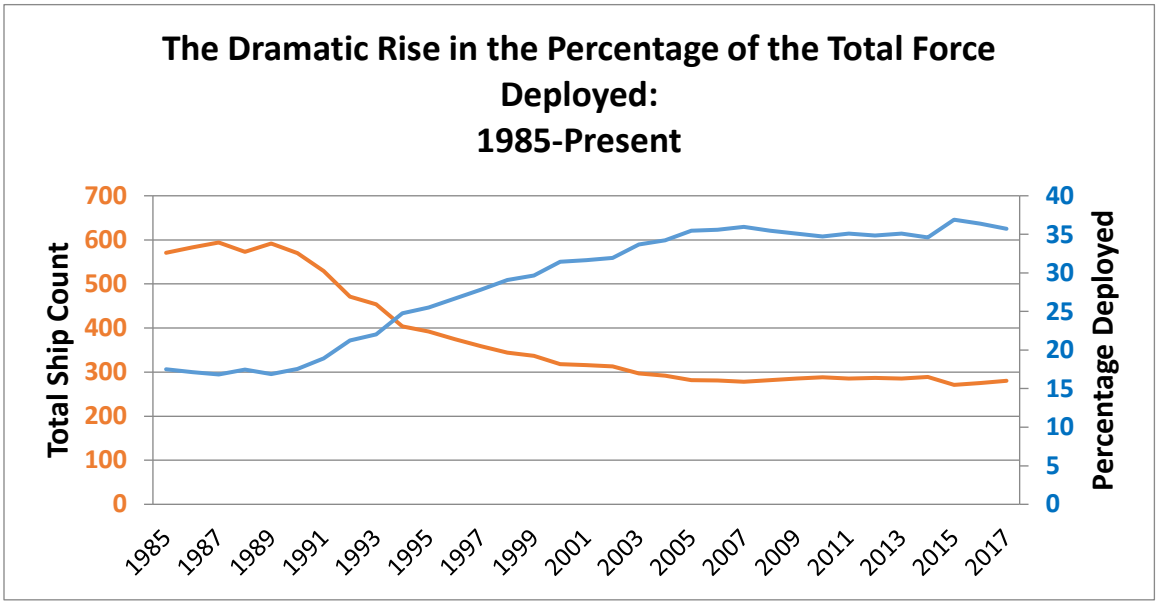

Figure 1-1: Depicts the overall ship count from 1985 to 2017 and the percentage of those ships that have maintained presence overseas, including forward deployed and rotational forces. As ship count decreased and the number of ships overseas stayed constant, the percentage of the Force deployed increased markedly over the past 30 years.

The proliferation of ballistic missiles in the Middle East and Northeast Asia place further demands on the Navy as surface combatants are the preferred, available, and politically unobtrusive option to provide ballistic missile defense in those regions. To generate this continuous and more robust presence with fewer ships and aircraft the Navy more than doubled its forward-based, or Forward Deployed Naval Forces.[9,10] Indeed, the combination of ballistic missile defense capability and the geographic advantages of forward basing were the impetus to forward deploy four ballistic missile defense capable ships in Europe. By forward basing ships, Combatant Commanders can be provided with continuous presence and the Navy avoids maintaining the inventory of ships necessary to sustain a rotational presence force, normally four or five ships at home to provide one forward.[11] Just as forward based ships count more in terms of presence, ballistic missile defense ships provide more capability.

Even with the advantage of forward deployed naval forces, the operational tempo in the current environment that insufficiently resources training and maintenance is unsustainable. This has created an "operations-first" mentality that was reinforced by the overall "must do" culture of the Navy. This, in turn, obscured current fleet readiness and incurred long-term risk in order to accomplish near-term missions. While an advantage in combat, this "must-do" attitude can have far-reaching and deleterious effects on overall long-term readiness. The Navy must restore readiness standards and the culture that enforces them, while informing civilian and military leadership of the consequential impact of less continuous Navy presence around the world.

1.2 Global Force Management: From a Demand Model to a Supply Model

The Navy's safeguarding of global interests and ability to confront threats away from home require a variety of naval assets and capabilities tailored to best achieve desired results. Apportioning supply to demand on a global basis is done

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[9] *The ships are based abroad, while the crews are rotated to the ship. Admiral Jonathan Greenert, U.S. Navy, Chief of Naval Operations, "FY 2016 Department of the Navy Posture," statement before the Subcommittee on Defense, Committee on Armed Services, U.S. Senate, March 4, 2015, p. 10.*

[10] *U.S. Government Accountability Office, "Actions Needed to Address Persistent Maintenance, Training, and Other Challenges Facing the Fleet," GAO 17-809T, September 7th, 2017.*

[11] *Ronald O'Rourke, "Navy Force Structure: A Bigger Fleet? Background and Issues for Congress" Congressional Research Service Report for Members and Committees of Congress, November 9th, 2016.*

in a process known as Global Force Management.[12] This process begins with the President who creates the Unified Command Plans. The Secretary of Defense then makes the force management decisions assigning forces to the Geographic Combatant Commanders for use consistent with theater plans.

To define what each service provides, the service chiefs and the joint staff review and validate force requests (the demand) from the geographic combatant commanders and prioritize them for consideration. The output of this process is a recommendation to the Secretary of Defense regarding which naval assets will be made available to each geographic combatant commander (the supply). This Global Force Management Allocation Plan is reviewed quarterly and when unplanned requirements arise.[13] These unplanned requirements can be in response to threat increases in theater, natural disasters, or changes in force availability. When one of these emergent requirements arises, a geographic combatant commander submits a Request for Forces.

Responding to requests for forces pressurizes the fleet, as it requires either diverting another ready unit that may be in line for another assignment or disrupting the maintenance and/or training phases of a unit not deemed ready in accordance with established Navy standards. Some Requests for Forces can be accommodated without disruption to near and long-term readiness by using only those units that are certified ready to deploy. However, the small fleet and the need for specific unit capabilities frequently limit the options to answer emergent mission requirements. For instance, in the case of hurricane relief, amphibious capability and helicopter capacity are likely to be the limiting functions; on the other hand, certain high end threats might require ballistic missile defense capable ships.

The urgency of emergent demands and the "must do" culture of our military often outweigh the imperative for individual ships to be "fully mission ready" prior to use. Accepting deficiencies in readiness, rather than a decreased Navy presence worldwide, normalizes a lower standard for our forces on the front lines. Indeed, provisions exist to purposefully and thoughtfully waive certifications and accept shortcomings in training and maintenance to respond to emergent demands when the supply is inadequate. When used sparingly and

[12] *DoD Instruction 8260.3, Global Force Management Data Initiative, 9 February 2014.*
[13] *DoD Instruction 8260.3, Global Force Management Data Initiative, 9 February 2014.*

prudently, waivers dampen the mismatch between supply and demand. When unchecked, the excessive use of waivers and an unbridled "must do" attitude compromise established Navy readiness standards, and cause senior commanders to inadequately appreciate the risks they are accepting. This defined a new normal, especially in the 7th Fleet.[14]

1.3 Culture and the "Normalization-of-Deviation"

The U.S. military has always put mission first. This attitude gives our forces a dominant edge and, in combat, must never be lost. Increasingly over the past decade, in response to growing worldwide security challenges, leaders asked the Navy to do much more with significantly less. As the Government Accountability Office reported, "The Navy has increased deployment lengths, shortened training periods, and reduced or deferred maintenance to meet high operational demands, which has resulted in declining ship conditions and a worsening trend in overall readiness."[15] This "normalization-of-deviation" began gradually without apparent effects, as lower operational tempo environments and a larger fleet masked its consequences. However, in the face of today's high operational tempo, especially in the 7th Fleet, failing to maintain standards and limit waivers to established standards produced tragic results.

The Navy's readiness standards for training opportunities, certifications, maintenance availabilities, and manning quality and levels, have been thoughtfully established. However, the Navy allowed these standards to erode to the point that they are nearly ineffective, especially in the case of Forward Deployed Naval Forces in Japan. As an example, the number of expired certifications in Japan skyrocketed from 6% in 2015 to nearly 40% in 2017.[16] Additionally, in 2016, a ballistic missile defense ship in Japan was underway for 235 of 366 days, and has been underway for 231 days of 2017.[17] Finally, and contrary to established standards, Forward Deployed Naval Forces in Japan are manned at levels well below the established fleet average.[18] These deviations

[14] *Comprehensive Review, pg 65.*
[15] *U.S. Government Accountability Office. "Actions Needed to Address Persistent Maintenance, Training, and Other Challenges Facing the Fleet," GAO 17-809T, September 7th, 2017.*
[16] *U.S. Government Accountability Office. "Actions Needed to Address Persistent Maintenance, Training, and Other Challenges Facing the Fleet," GAO 17-809T, September 7th, 2017.*
[17] *Comprehensive Review, ANNEX.*
[18] *Comprehensive Review, pgs. 69-71.*

from the standard where ships were employed, ready or not, became accepted and normalized. The erosion of standards and good practices exemplified by the widespread lapse of certifications, unsustainable operational tempo, and insufficient manning levels, marginalized the training necessary to meet operational requirements and subsequently inculcated a culture that undervalues adherence to standards, safety, and readiness.

In an environment where this "normalization-of-deviation" has taken hold, ships and their crews perceive the certification process as merely a burden to their success, rather than the key to achieving individual, ship, and fleet readiness. This culture ultimately bleeds over into every facet of ship training, operations, and maintenance. Unfortunately, the tragic incidents in the forward deployed naval forces are but one symptom that this larger problem has manifested in the fleet. Military and civilian leaders must accept less presence around the globe as a primary pillar to restoring readiness in the fleet. The Navy must eliminate the "normalization-of-deviation" and, in doing so, reduce the probability of more tragedies.

1.4 Recommendations

1. Condition congressional and executive branch leaders to accept that the higher cost and time to achieve established readiness standards will mean less Navy presence worldwide.

2. Instill a culture that recognizes and rejects the "normalization-of-deviation" by not defaulting to consuming readiness in favor of operations. To do this, Navy must:
    a. Set a "Readiness Standard" for operating forces that is achievable and strictly enforce it.
    b. Ensure Navy leaders are fully aware of the consequences of their decisions regarding near and long-term readiness and operations.

3. Establish the Global Force Management availability as the maximum supportable peacetime force and limit additional demands for forces to the redeployment of existing Navy assets among theaters rather than using non-deployed, unready forces.

a. Alternatively, withhold a greater number of ready forces from the force allocation process to be used to respond to emergent requirements.

CHAPTER 2: Command and Control

In the decades since the end of peer-on-peer competition the number of Navy ships, aircraft, and sailors has decreased and the number of installations and shipyards has declined, but the number of Navy headquarters and their staffing increased. These now very large headquarters that administratively control and manage Navy forces are mired in an ambiguous system of authority, accountability, and responsibility for readiness. This Strategic Review recommends a resizing of these Navy headquarters and a revised organizational construct for the administrative control of Navy forces.

The Comprehensive Review also recommended changes to Navy organizational structures. This Strategic Review concurs with those findings but differs in its approach to addressing two of the recommendations identified in the Comprehensive Review.

2.1 Organizational Structures

In recent years the Department of Defense and the Navy adjusted to changing geo-political and fiscal environments and external governance direction with repeated changes in organization and processes. Some of these reorganizations made interactions with external organizations easier, however they often diluted and confused Navy command relationships and readiness management.

The Navy has two hierarchical structures that exercise the functions of command and control – one that oversees administrative tasks and another for operational functions.[19] The Secretary of the Navy exercises authority and direction over the administration of subordinate Navy organizations through the Chief of Naval Operations. This authority is known as Administrative Control (ADCON).[20] The operational chain of command flows around them from one of several geographic or functional Combatant Commanders to assigned subordinate forces. Operational Control (OPCON) is the command authority for organizing and employing commands and forces, assigning tasks, designating objectives, and

[19] *DoD Instruction 8260.03, Global Force Management Data Initiative, 19 February 2014.*
[20] *Joint Pub 1, Doctrine of the Armed Forces of the United States, with Change 1 through 12 July 2017.*

giving authoritative direction over all aspects of military operations and joint training necessary to accomplish an assigned mission.[21]

These two reporting chains, ADCON and OPCON (reflected in Figure 2-1), create tension in readiness risk management. "Supply-side" readiness is led by the Chief of Naval Operations (administrative control), who is responsible for generating forces ready for tasking. As a result of the Goldwater-Nichols Act, the Combatant Commander leads the "demand-side" employing the joint force in operations. Therefore, the Combatant Commanders are the consumers of readiness of the forces they commit to execute missions. The process for balancing these organizational objectives is the Global Force Management process, described earlier in section 1.2.

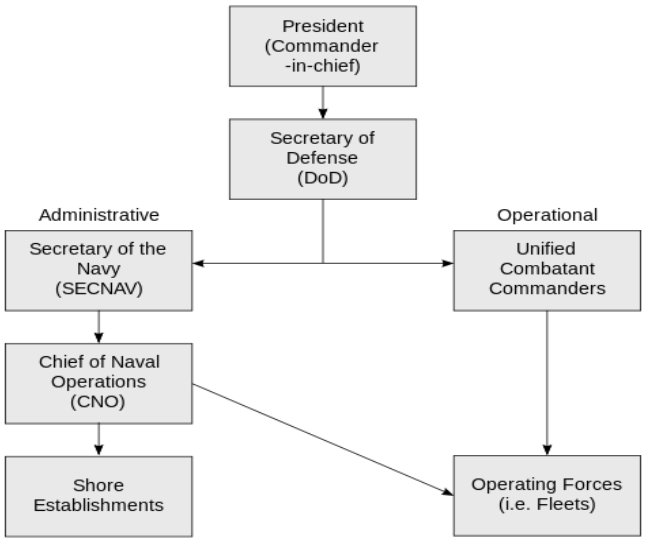

Figure 2-1: Administrative and Operational Chains of Command in the US Navy

Each of the Combatant Commands has an assigned Navy Component Command to support operational control functions and tasking for Navy forces for joint missions, as shown in Figure 2-2.

[21] *Joint Pub 1, Doctrine of the Armed Forces of the United States, with Change 1 through 12 July 2017.*

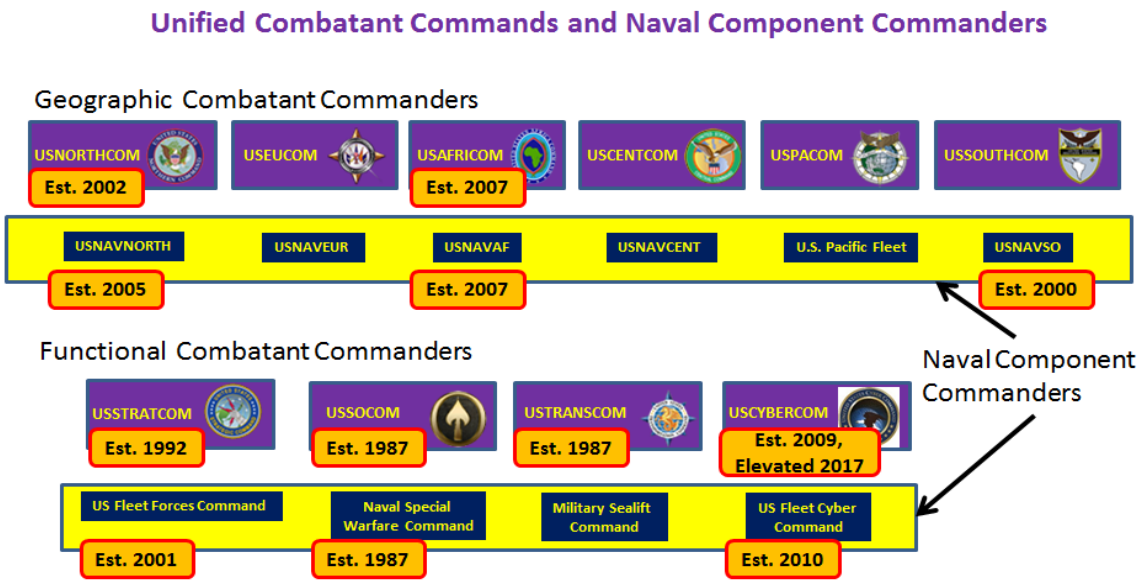

Figure 2-2. Combatant Commands and Naval Components

In 1986, the Navy supported the five then extant Geographic Combatant Commanders with three regional Navy Component Commanders,[22] under which four numbered fleet commanders operated a fleet of 556 ships. [23] The numbered fleet staffs were size-limited to operate afloat from command ships. Alignment of responsibility, authority, and accountability was clear.

In Fiscal Year 2018, the Navy is comprised of 279 ships,[24] about 55% of the 1987 Navy. Despite a reduction in operating units, there are now ten combatant commanders (six geographic and four functional commands) and six Navy Component Commanders under which five numbered fleet commands operate naval forces[25]. In the Pacific, U.S. Pacific Command is the Geographic Combatant Commander with U.S. Pacific Fleet as the assigned Navy Component Commander.

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[22] *1986 Numbered Fleet Commanders: 2nd Fleet, 6th Fleet, 3rd Fleet, 7th Fleet; 1986 Naval Component Commanders: U.S. Atlantic Fleet, U.S. Pacific Fleet, U.S. Navy Europe; 1986 Unified and Specified Commands: Atlantic Command, Pacific Command, European Command, Central Command, and Southern Command; Functional Combatant Commander was Strategic Air Command .*

[23] *Ronald O'Rourke, Navy Force Structure and Shipbuilding Plans*, Congressional Research Service Report RL32665, 20 September 2017. This number excludes mine warfare ships and patrol craft.

[24] *Navy Fact File: Status of the Navy, http://www.navy.mil/navydata/nav_legacy.asp?id=146%E2%80%9D, accessed 16 November 2017.*

[25] *2017 Unified Combatant Commands: Northern Command, Southern Command, European Command, Africa Command, Central Command, Pacific Command; Functional Combatant Commanders: Strategic Command, Special Operations Command, Transportation Command, and Cyber Command. 2017 Numbered Fleet Commanders: 3rd Fleet, 4th Fleet, 5th Fleet, 6th Fleet, 7th Fleet; 2017 Naval Component Commanders: Pacific Fleet, Fleet Forces Command, Naval Forces Europe/Naval Forces Africa, Naval Forces Southern Command, and Naval Forces Central Command.*

There are also sub-Unified Commanders operating as U.S. Forces Korea and U.S. Forces Japan, each with its own Navy component staff.

While headquarters staff manning at all levels has grown, this has not been the case for ships. The Navy reduced crew manning based on expected efficiencies that would be gained by substituting technology for manpower and reducing maintenance requirements. These efforts were aimed at bringing the costs of manning the Navy's fleet in alignment with the resources available. A portion of the manpower savings was retained to meet the increasing staff manning necessary to support coordination and integration at the joint and strategic level.

Many of the additional Navy headquarters staffs were established in response to the changing Combatant Commander structure. These Navy staffs respond to joint force demands and, with the smaller fleet, seek to synchronize planning and execution of assigned missions across organizational "seams." In their efforts to meet the demands of the many commanders who value Navy response and presence, these headquarters are themselves additional seams, which further blur and compromise readiness responsibilities.

Over the last 30 years the Office of the Chief of Naval Operations has expanded its staff positions and their seniority. The staff in 1986 was organized around the platforms the Navy operates: ships, aircraft, submarines, with each senior platform sponsor being a Vice Admiral who reported directly to the Chief of Naval Operations for management of the current and future readiness of the platforms for which he was responsible. In the early 1990s, the Chief of Naval Operations' staff was expanded and reorganized along functional lines that paralleled the organizational structures of the Army, Air Force, and Joint Staffs. As a result, the principal advisors to the Chief of Naval Operations, the Deputy Chiefs of Naval Operations, were assigned exclusively to functional responsibilities (Manpower, Policy and Plans, Resource Integration, Logistics, etc.) rather than platforms. This structure provided greater clarity and commonality between the Navy and Joint/Unified Commanders facilitating increased interoperability and delineation of authorities. However, it also reduced the visibility, at the most senior Navy staff, into the readiness conditions of the platforms the Navy operates.

Simultaneous with the growth in the Chief of Naval Operations' staff, staffs expanded dramatically in the Office of the Secretary of the Navy, the Fleets, the Combatant Commanders, the Joint Staff and the Office of the Secretary of Defense. While ship count no longer has a direct relationship to the number of staffs or their relative size, the smaller fleet responds to the requirements and tasks of these staffs. The overall effect is ships having to do more in response to more staff demands, which reduces the time available for crews to tend to the operational needs of the ship such as training, readiness, and certifications.

To manage the expansion of headquarters and staff organizations, many senior Flag Officers have been tasked with multi-hatted authorities, including multi-service, multi-national, and service-specific roles to meet both operational and administrative control responsibilities and manage both current and future readiness. As pointed out in the Comprehensive Review, these many "hats" compete for the commanders' time and divert attention away from ensuring a ready and sustainable force is available to meet the needs of Combatant Commanders.

As part of a Secretary of Defense effort to reduce staffs, U.S. Joint Forces Command, which provided clear lines of authority and accountability, was disestablished in 2011 and its functions were absorbed by the Joint Staff in Washington, DC. Therefore, the Chief of Naval Operations' staff, as well as other service staffs, became more involved in the Global Force Management process within the Pentagon. This had the effect of further increasing the number of organizations involved in both force generation and force employment responsibilities. Specifically, force employment decisions are now resident in the Pentagon and are increasingly focused on satisfying current and emergent contingencies for employment. This high-level focus on the current demand obscures long-term fleet sustainability.

In addition, the 2nd Fleet headquarters was disestablished splitting the training and fleet experimentation responsibilities among the Commander Fleet Forces staff and that of the Chief of Naval Operations. Unlike the west coast fleets, which retained the pre-deployment training and certification responsibilities in 3rd Fleet, the east coast's only numbered fleet, 4th Fleet, has no such

responsibilities. The lack of an accountable commander responsible for training and certification is another facet of staff reorganizations that has obscured the focus on fleet readiness and contributed to the normalization of deviation in the Navy.

The growth of the entire staff enterprise has caused a shift from a command-centric to a staff-centric culture in the Navy and, more broadly, the military officer corps. This is exacerbated by the joint duty imperative that draws many experienced officers away from Navy critical operational, maintenance, and training assignments necessary to enhance mastery of the naval profession and readiness of the fleet.

2.2 Blurring of Administrative Control and Operational Control

Many commanders have both administrative control and operational control responsibilities. Some of this comingling was an outgrowth of ensuring joint interoperability and coordination for global force management, and some from an evolutionary attempt to improve readiness generation. Managing both "supply-side" force generation and "demand-side" force employment in a single organization can lead to a loss of an independent assessment of readiness and an erosion of the standards that define whether a ship is available for tasking. This duality conflates administrative and operational responsibilities comingling training and certification authorities with those for operational employment. This is facilitated by existing instructions that do not clearly delineate command relationships and often define “support” roles without adequately defining accountability.

There are several organizational layers that have administrative and operational control of individual ships or aircraft squadrons. These are organizations to generate and monitor individual sailor readiness, unit level training, and pre-deployment readiness as well as organizations to develop operational warfighting readiness and sustain deployed forces while executing peacetime missions. The Commanding Officer of a destroyer, over the course of a normal deployment cycle, might easily have to interact with administrative and operational control

chains of command with direct or indirect reporting lines to more than a dozen higher headquarters.[26] Although this staff overhead less directly affects operations on a ship's bridge, it does challenge that ship's leadership team to meet all the information demands, or compliance regimes, of these oversight organizations. It can also delay or dilute the picture of readiness seen by the type commander and fleet commander.

With the surface fleet as small as it is today, replicating the process the Navy Nuclear Propulsion Program employs for direct and regular communication from Commanding Officers of nuclear ships to the Director, Naval Reactors, is worth considering. In the Naval Reactors model, Commanding Officers communicate via letter with the Director on a quarterly basis (monthly while in an extended maintenance period), discussing manning issues, training requirements/ assessments, overall readiness status, and any major deficiencies in equipment or performance. This model has proven valuable in providing the Director with clarity concerning the readiness and training status of nuclear powered ships. An analogous model could be employed in the surface force to transparently communicate manning, training, and readiness conditions to the respective type commander beyond what is currently provided in the Defense Readiness Reporting System, Navy (DRRSN).

2.3 Type Commander Organizational Structures

The primary authority for managing the current readiness of each warfare community's forces is the type commander. When the surface, aviation, and submarine type commander relationships were revised, some of the authorities of the platform sponsors moved from the Office of the Chief of Naval Operations to these type commander staffs. Coincident with the establishment of Fleet Forces Command in 2001, the Navy further refined the type commander relationships establishing a "lead-follow"[27] arrangement for each surface,

[26] *The total of layered headquarters in the chains of command may include a Squadron Commodore, a Group Commander, one Type Commander, between one to four Numbered Fleet Commanders, at least one, and perhaps up to four Navy Component Commanders; two or three Geographic Combatant Commanders, and the Office of the Chief of Naval Operations, Office of the Secretary of the Navy, and Office of the Secretary of Defense.*

[27] *Lead Type Commander responsibilities are currently assigned to: Commander Naval Surfaces Forces (San Diego), Commander Naval Air Forces (San Diego), and Commander Naval Submarine Forces (Norfolk); Follow assignments are: Commander Naval Surface Forces Atlantic (Norfolk), Commander Naval Air Forces Atlantic (Norfolk) and Commander Submarine Forcer Pacific (San Diego)*

submarine, and aviation community, whereby one type commander, either Atlantic or Pacific, is designated as the senior commander, or lead, who assumed responsibility for overall platform community health.

In 2010, the Pacific Fleet and Fleet Forces commanders, with dual-hatted responsibility for force generation and force employment, grew concerned over blurred authorities and responsibilities, to include those of type commanders and Warfare Community (business enterprise) Leaders. As a result, they issued clarifying guidance in an attempt to return to core principles for command and control.[28] This guidance established the "litmus test" framework for defining command relationships and avoiding ambiguity.

1. Two Commanders may not exercise the same command authority over the same force at the same time (Unity of Command)
2. Operational and Administrative Authority must be commensurate with responsibility.
3. Command relationships must be:
    a. Effective – Facilitate mission accomplishment
    b. Unambiguous – Emphasize clarity and simplicity
    c. Hierarchical – Reinforce Unity of Command
    d. Documented – allow verification

This was an attempt to overcome the detractors to readiness through organizational change. Nonetheless, the number of stakeholders and complexity of the readiness system has continued to grow. The accumulation of these changes to organizational structures, command relationships, and multiple attempts to clarify command authorities suggests that a clean-sheet review is needed to identify the optimal administrative organization.

Specifically, the Fleet Commanders wanted to standardize the type commander roles in the area of readiness governance. As a result, the type commanders on

[28] *Commander U.S. Fleet Forces Command naval message 131600Z January 2010, Subject: Core Command and Control Principles; Commander U.S. Fleet Forces Command naval message 291313Z March 2012, Subject: Scope of Authority of Warfare Enterprise Leads; and Commander U.S. Fleet Forces Command naval message 051200Z October 2010, Subject: Revision to COMPACFLT and USFLTFORCOM Missions, Functions, and Tasks; Commander U.S. Fleet Forces Command and Commander U.S. Pacific Fleet joint letter, Subject: Direction to Address Deviations from Command and Control Guidance, 4 May 2012.*

each coast establish policies and standards that can be different due to the disparate demands for routine peacetime and potential wartime requirements and for training and operations tuned to their respective areas of operation. With the evolution of the lead-follow type commander construct,[29] there remain cultural and administrative differences between east-coast and west-cost organizational structures, policies, and authorities. There have been several studies aimed at refining the lead-follow relationship. These studies have run the gamut from restoring both commands to the Vice Admiral level and doing away with the lead-follow relationship to combining each into a single command and retiring the "follow" organizational construct.

None of the studies has been able to fully address all of the concerns associated with the current type commander construct. Each has identified a specific challenge of the existing structure and attempted to find ways to address that challenge without adversely affecting other functions of the type commander relationships. Rather than continuing to study this effort, and consistent with the intent of the Comprehensive Review recommendations to consolidate authority for readiness under Commander U.S. Fleet Forces Command, the Strategic Review finds that the realignment of the type commanders may be the more effective path. Specifically, aligning all the "follow" type commanders to the Pacific would permit them to focus exclusively on the readiness of assigned forces without the distraction of community management. Further, co-locating all the type commander leads with the Commander, U.S. Fleet Forces Command would enable greater involvement in the development of standardized policy and consistent readiness requirements across the fleets while still permitting operational commanders to tailor their assigned forces to the unique needs of their respective theaters of operations.

An additional change that is hindering the Pacific Fleet Commander's ability to achieve readiness standards is the unique structure in which control of Pacific Fleet forces are maintained and allocated. Within the global force management process, ships and aircraft based in the Pacific area of operations are assigned to the Commander, Pacific Command rather than to the Pacific Fleet Commander.

[29] *COMUSFLTFORCOM/COMPACFLT letter, Subject: Memorandum of Agreement Regarding Supporting/Supported Relationships of Type Commands, 11 October 2012.*

This prevents the fleet commander from making decisions about fleet availability during training or maintenance cycles. As in the Atlantic Fleet, the Navy should give the type commanders and the Commander Pacific Fleet more ability to manage readiness and availability of forces. This would permit the fleet commander to better control when forces can be assigned to U.S. Pacific Command.

The three senior platform type commanders are also their warfare communities' primary advocates, business enterprise leaders, and visionaries for the future force and its enabling concepts. Their influence, advice, and leadership would have the most impact on decisions affecting current and near-term readiness by being co-located with U.S. Fleet Forces Command, and asserting their authority on community readiness as the global force management process is carried out. Furthermore, having these senior type commanders execute their community leadership roles in closer proximity to the Chief of Naval Operations provides a readily accessible and value-added ability to influence a number of ship, aircraft, and sailor resourcing decisions shaping the requirements and procurement of the future fleet.

2.4 Significant Divergence from the Comprehensive Review

The Comprehensive Review concluded that the Japan-based force generation model was stressed beyond the capacity to satisfy demand without the *pro forma* acceptance of waivers. This Strategic Review concurs with the Comprehensive Review and recommends that accountability for force generation and force employment must be separated. However, this Strategic Review does not concur with the Comprehensive Review recommendation to "Establish a single Echelon II higher headquarters responsible for the readiness generation of all Navy forces".[30] This Strategic Review makes alternative recommendations that would meet the same objective, while retaining separate fleet responsibilities and authorities for managing readiness in the east and west coast fleets.

[30] *Comprehensive Review, Section 6.3.2, Recommendation #3.*

An additional recommendation from the Comprehensive Review[31] was to introduce greater independence in readiness assessments and improve the clarity of command relationships by permanently establishing Naval Surface Group Western Pacific.[32] The Pacific Fleet Commander completed this action on 31 October, to "address an organizational gap in Forward Deployed Naval Forces – Japan that allowed a culture to grow myopically focused on operations to the detriment of readiness." This Strategic Review concurred with the Comprehensive Review's finding that there has been ambiguity in command relationships, duties, responsibilities, and authorities, as found in instructions governing the missions, functions, and tasks of those commands exercising administrative or operational control. However, the Strategic Review does not concur with establishment of Naval Surface Group Western Pacific. Standing up an additional oversight layer provides another headquarters staff and administrative control function that is likely to perpetuate ambiguous and conflicting authorities. Organizational structures already exist within the type commander staff at Commander Naval Surface Forces Pacific, and its subordinate Afloat Training Group organizations for appropriate responsibility.[33] The manpower used to establish Naval Surface Group Western Pacific, is better applied to fully and competently staffing the existing training commands and squadron staffs in the Western Pacific.

2.5 Recommendations:

1. SECNAV direct a "clean sheet" review of the administrative chain of command in the Navy to best and most efficiently organize and man headquarters to generate sustainable readiness. In addition to holding to the command and control core principles, specifically:

    a. Provide type commanders with clear responsibility and accountability for force generation, especially for training and developing and certifying mission readiness for tasking.

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[31] *Comprehensive Review Section 6.3.1, Recommendation #3.*

[32] *Commander Naval Surface Force, U.S. Pacific Fleet Public Affairs article, Accessed at: http://www.public.navy.mil/surfor/Pages/Organization-to-Oversee-Readiness-in-the-Western-Pacific-Established.aspx; last accessed on 31 October 2017.*

[33] *COMNAVSURFPAC/COMNAVSURFLANT Instruction 5450.2B, Missions, Functions, and Tasks of Afloat Training Groups, Pacific, and Afloat Training Groups, Atlantic, 9 November 2011.*

b. Relocate the three "Lead" platform type commander positions under U.S. Fleet Forces Command, to provide better focus on overall fleet readiness generation.
c. Consolidate the three subordinate "Follow" platform type commanders under the U.S. Pacific Fleet, to focus solely on readiness management and enforcing established standards.

2. Reduce the number of staff headquarter layers and manning to improve "bottom up" situational awareness of readiness through shortened chains-of-command and reduced infrastructure for management oversight and compliance regimes. Specifically, disestablish Commander Pacific Fleet Detachment Commander Naval Surface Group Western Pacific. Realign these billets to Afloat Training Groups or Destroyer Squadrons, in order to focus talent on fundamentals and developing mastery of the naval profession.

3. Reestablish Commander U.S. 2nd Fleet as the operational and training fleet commander, under U.S. Fleet Forces Command, and symmetric to U.S. 3rd Fleet, to reduce overlap between administrative and operational responsibilities, and better respond to the changing security environment.

4. Disestablish and absorb U.S. 4th Fleet functions into a reestablished U.S. 2nd Fleet, similar to the U.S. 6th Fleet construct. Establish task forces as needed to execute operations for U.S. Naval Forces Southern Command, when Navy forces are temporarily allocated or assigned.

5. Create a simplified means for surface ship Commanding Officers to have direct access to their respective fleet's type commander in a way that gives the type commanders adequate visibility into the facets of readiness generation that matter most. The goal should be to provide the type commanders with a thorough understanding of the actual material, manning, training, and logistic readiness of the ships for which they are responsible. This should be informed by the process used by Naval Reactors for aircraft carrier and submarine Commanding Officers.

CHAPTER 3: Manning & Training

The Comprehensive Review examined manpower and training primarily at the individual ship level, examining, for example, which billets were filled and which were gapped on the ships involved in collisions. This review takes a more strategic examination, exploring whether the Navy has the right mix of sailors with the right training and experiences for their assignments.

Since the peak of the Cold War in the mid-1980s the number and mix of sailors needed to operate and maintain the fleet has changed considerably. Today's fleet is comprised of fewer, more complex ships spending a greater portion of their time at sea with smaller crews. The growing technical complexity of the equipment, systems, and ships and their reduced manning increased the Navy's need for more capable and experienced sailors who are serving at higher grades and are more expensive to recruit and retain. This, in turn, drives up the average cost per sailor.

In response to decreasing budgets, the Navy made a series of decisions that increased operating tempo, reduced manning levels, and changed career progression patterns resulting in significantly diminished opportunities for Navy officers and enlisted sailors to master operational and maintenance skills. Other well-intended personnel management decisions resulted in higher workloads placed upon more junior personnel led by officers with less service experience and expertise. This review finds that tangible negative consequences remain as a result of not correctly anticipating and monitoring the effects of reducing manning and training in the fleet.

3.1 Diminished Opportunity for Officers to Master Naval Skills

Automation and technological advances can reduce the number of sailors required to operate a ship but they do not reduce the need for deep naval mastery, in fact, quite the opposite. Smaller crew sizes increase the need for officers who are incentivized to invest in careers at sea. Over time, however, Navy choices in response to the combined effects of the Defense Officer Personnel Management Act, the Goldwater-Nichols Act, and Department of Defense guidance shifted the focus of officers' careers toward more joint and

broader experience at the expense of honing deep maritime operating skills. Navy policy and practice account for much of the shift in priority among junior officers, while external requirements and regulations account for most of the shift among officers at the rank of Commander and above.

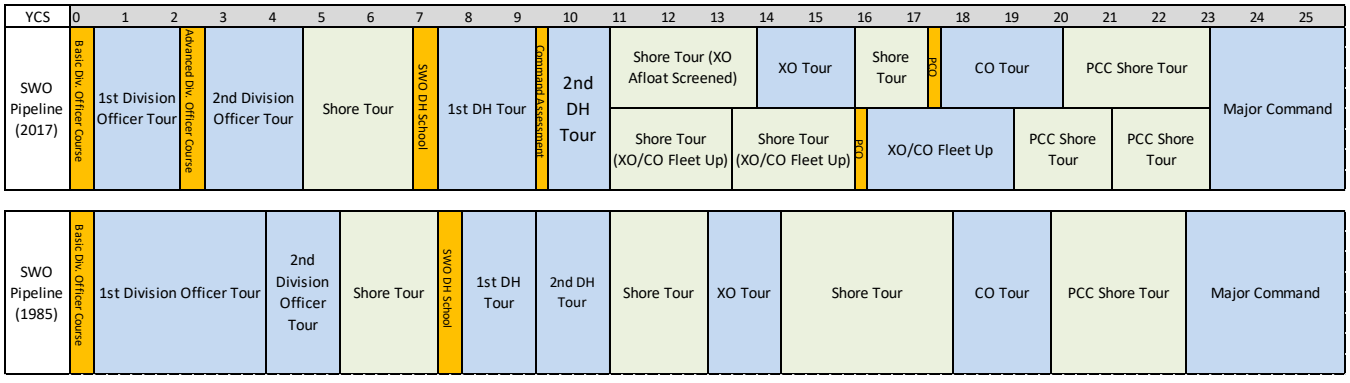
The Defense Officer Personnel Management Act was an attempt, in part, to standardize military career progression throughout the Department of Defense. Its actual legal constraints on officer career management are minimal but, as implemented by all the services, the effects on officers' careers have been profound. The up-or-out requirements of mid-grade promotions create enormous pressure to achieve each career milestone on time, without deviation from the standard path. The Goldwater-Nichols Act, known for its effect on high-level command and control and the relationships among the military services, the Joint Staff, and the Office of the Secretary of Defense (discussed elsewhere in this report) also profoundly affected career progression, education, and training of mid-grade and senior officers. The Act allows certain exceptions and waivers, but basically requires that officers with qualifying joint experience be promoted to the ranks of Commander and Captain at rates at least equal to those of officers without joint experience and that all officers promoted to flag rank have such experience. The intent of these Goldwater Nichols provisions was to ensure that Flag Officers had joint experience and that lower ranking officers with joint experience remained competitive for promotions. However, the implementation of the Act resulted in each of the services making an unnecessarily large number of their officers joint qualified.

The Defense Officer Personnel Management Act and Department of Defense policies created the standard timeline for promotion and retirement, while the Navy's implementation of Goldwater-Nichols added specific requirements to each career path. As early as 1989, a Naval Postgraduate School study warned the Navy that joint duty and education requirements could lead to significant deterioration of Navy warfighting skills or personnel shortages in operational fields,[34] yet the Navy reacted to Goldwater-Nichols Act requirements by assigning as many promising officers as possible to joint duty so that they would be eligible

[34] *Joseph L. Johnson, Jr., Analysis of the Joint Reorganization Act's Impact on Personnel Flow in the Surface Warfare Community, March 1989.*

for promotion to Commander and above without the need to request joint duty waivers. While waivers are allowed by the Act, the Navy has not sought a waiver to promote any non-joint qualified officer since 2010.[35] The effect is more officers being diverted from assignments of fleet mastery to joint training and joint duty assignments necessary for flag careers. The Navy was able to accommodate this diversion in the time and focus of many of its officers during a period with moderate operational tempo, more ships, aircraft, and sailors, and no near-peer competitor. Today's more frequent deployments performed by a smaller number of ships have largely eliminated any flexibility and redundancy in the fleet. Diverting fewer officers from tours within the Navy would allow more of them to develop the deep experience and talent needed to meet the Navy's emergent operational needs and to instruct and mentor those who follow. The Navy could then identify and appropriately train the smaller number of officers needed to lead joint and interagency operations later in their careers. A relaxation of Goldwater-Nichols Act provisions, combined with a reduction in joint headquarters' billets, would enable the Navy and the other services to be more selective in grooming officers for leadership of both service and joint forces.

A comparison of the nominal surface, submarine, and aviation community career paths between 1985 and today (Figure 3-1, Figure 3-2, and Figure 3-3) shows that, while aviation and submarine paths have changed little in 30 years, the surface warfare career path has been less stable. For all three major warfare communities, however, the nature of their assignments ashore changed.



[35] *Based on data received from the Secretary of Defense's General and Flag office.*

Figure 3-1 – Nominal Career Paths for Surface Warfare Officer Community

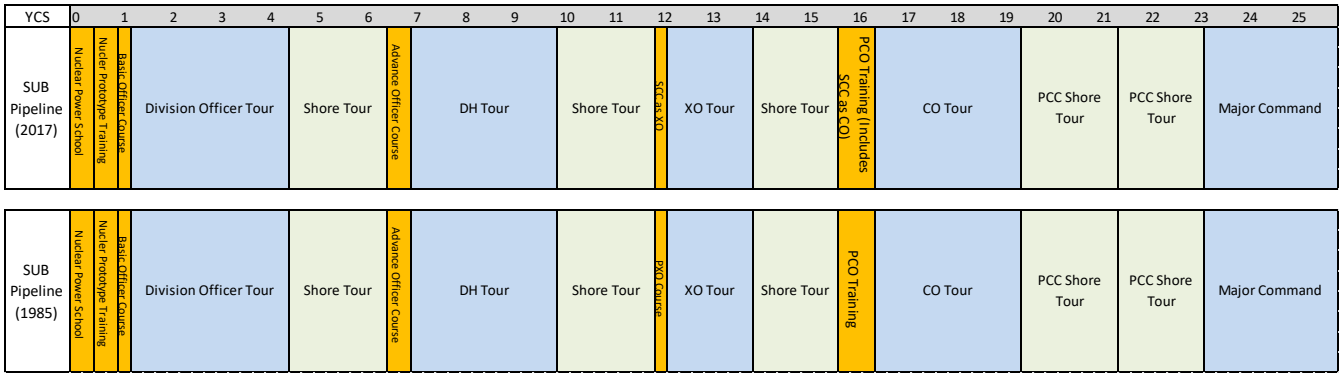


Figure 3-2 – Nominal Career Paths for Submarine Officer Community

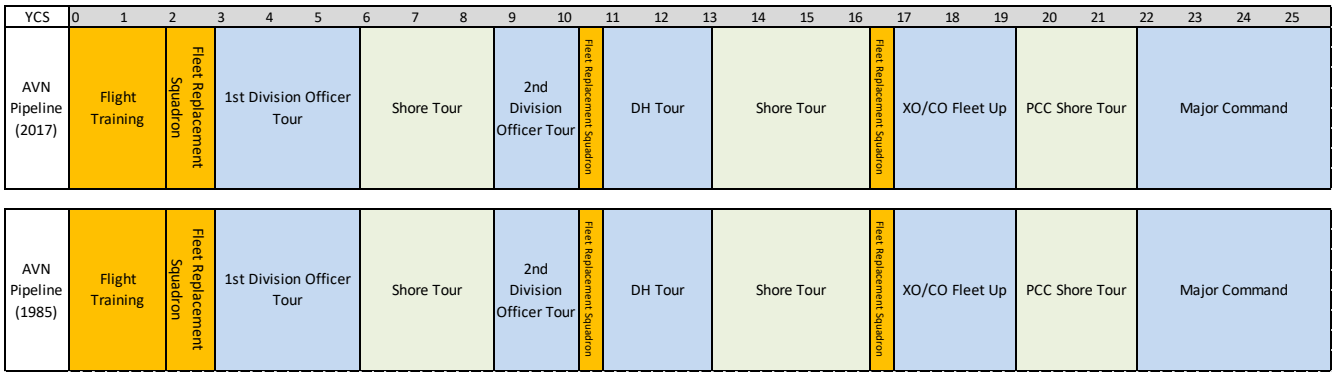


Figure 3-3 – Nominal Career Path for Aviation Officer Community

Since 1985, each community has adjusted its career path by repurposing one or more shore tours to accommodate joint tours. Officers now spend less time in Navy commands that address training, maintenance, and oversight where they would develop skills useful in subsequent sea tours.

Joint staffs are disproportionately comprised of senior personnel, therefore the diversion of unrestricted line officers to tours outside the Department of the Navy is more pronounced in higher grades. The percentage of the Navy's unrestricted line Flag Officers serving outside Department of Navy roughly doubled between 1985 and 2016, and the effect was greatest among surface warfare officers. In 1985, only 7.3% of surface warfare Flag Officers were serving

outside Navy, and by 2016 it had more than tripled to 25.5%.[36] This does not mean the Navy has a shortage of admirals to fill its service billets, but the increasing focus on joint assignments pulls away some of the Navy's best officers and further incentivizes the pursuit of staff vs maritime mastery. Also, largely because of the Goldwater-Nichols Act, virtually all unrestricted line officers promoted to the rank of Captain, whether or not they are flag bound or assigned to joint duty, will have spent several years in joint billets and joint education programs. The optimization of career paths for all to flag rank by each community incentivizes joint experience for many more officers than are needed in joint assignments to the detriment of other technical and operational warfighting skills.

An increased focus on graduate education further decreases opportunity for officers to gain proficiency working with the fleet. Graduate education provides great benefit to the services by providing a cadre of officers with broadened critical thinking skills and knowledge such as financial management, operations analysis, and geo-political expertise and may help with officer retention. Often, however, these graduate degrees do not directly contribute to a deepening naval or tactical mastery and for many officers a master's degree requires an additional tour away from operational assignments. While some officers, particularly Flag Officers, make use of the skills acquired in graduate school, obtaining a graduate degree is now perceived by the officer corps as necessary for promotion beyond the grade of Commander. In 2015, 85% of the commanding officers in the unrestricted line communities had at least one master's degree. Of those who had master's degrees, approximately half received their degrees while attending an in-residence program during a shore tour.

In addition to the changes in career patterns created by the Navy's implementation of the Goldwater-Nichols Act, several changes to the surface warfare officer training pipeline in the early 2000's created a generation of surface warfare officers without "the correct baseline knowledge of surface warfare fundamentals."[37] Navy's 1995 elimination of Readiness Squadrons, the organizations responsible for material readiness training and oversight, removed

[36] *Center for Naval Analyses Master Personnel Files.*
[37] *Fleet Review Panel of Surface Force Readiness, VADM(ret) Balisle, 26 Feb 2010.*

a key training and experience pathway for junior officers. In 1996, the Surface Warfare Community discontinued the Senior Officer Material Readiness Course, which provided prospective Commanding Officers with the skills needed to understand and effectively manage their material and equipment. The loss of the Readiness Squadron billets combined with the loss of the Senior Officer Material Readiness Course led to fewer officers with a thorough understanding of how to maintain increasingly complex warships.

The surface fleet aggravated experience loss by eliminating the sixteen-week Surface Warfare Officer School basic course in 2003. The basic course was removed in favor of on-the-job and computer-based training, colloquially known as "SWOS-in-a-Box," for new surface warfare officers. The elimination of the course and its instructor billets meant fewer officers returned to sea with the enhanced in-depth knowledge derived from that teaching experience. Accordingly, junior personnel with minimal training and experience were expected to provide on-the-job training to those who entered the fleet after them. Formal training for surface warfare division officers has been restored to fourteen weeks[38] but the generation most affected by the lack of formal training is now serving as executive and commanding officers.

A second issue contributing to declining surface warfare officer naval operational expertise is the long-term Navy practice of over accessing junior officers. For more than 20 years the number of junior officers commissioned into the surface warfare community has exceeded the number of ensigns required in afloat billets.[39] This helps ensure an adequate number of surface warfare officers are available later for department head tours at sea. The Comprehensive Review recommended aligning "the number of SWO [surface warfare officer] candidates assigned to ships with the billet requirements." While the Strategic Review concurs with the intent of that recommendation, it would have to be implemented in a way that ensures it would result in a sufficient number of officers progressing to department head.

[38] *14 week course length is 12.5% shorter than 2003 Surface Warfare Officer School curriculum.*
[39] *August 2017 Officer Inventory /Authorization (Tricolor).*

Uniquely, the excess junior officers in the surface community serve as the primary source of new officers for restricted line communities such as intelligence and information professionals. While assigned to ships, these junior officers, many of whom are designated at commissioning to convert to another community, are given equal access to limited underway watch standing opportunities and training evolutions, experience they may never need in their later careers. This limits the opportunities for career surface warfare officers to develop these formative skills. The surface warfare community also absorbs many of the officers who fail to complete the training programs of the Unrestricted Line community.[40] These practices represent an institutional devaluing of the surface warfare specialty.

A third compounding factor for the surface warfare community is the practice of using junior officers to fill staff positions during one of their early sea tours. Junior officers who have completed their surface warfare qualifications can request assignment to an embarked staff in lieu of a ship's company assignment for either their second division officer tours or their second department head tours. Particularly in the case of division officers, this practice significantly reduces their opportunity to hone their seamanship skills.

The Navy's 2008 decision to adopt the Executive Officer to Commanding Officer fleet-up model for surface warfare officers may also be impacting surface warfare officer proficiency development. This model, in which an officer moves directly from Executive Officer to Commanding Officer of a particular ship, was intended to provide greater leadership continuity and, in turn, improved readiness. While this fleet-up model has long been used successfully in the aviation community, opinions regarding the success of the program in surface warfare are mixed.[41]

Of particular concern in the fleet-up model is the lengthy gap it creates between surface warfare officers' second department head tours and their executive officer tours (See Figure 3-1). In most cases, a new executive officer following the

[40] *The lateral transfer rate out of the SWO community has not changed significantly from 1985 (2.4%) to 2017 (2.1%). The loss is largely counteracted by the significant number of officers who transfer into the SWO community each year from other communities.*

[41] *A 2014 Center for Naval Analyses review found the model had some secondary positive effects, but no measurable effect on material readiness, while some recent command climate surveys suggest potential problems.*

standard career path will not have been on sea duty for about five years.[42] That long period of shore duty, at a crucial stage in their careers, may enhance surface warfare officer retention but it comes at the expense of currency in operations at sea. By selecting officers for command prior to their commencing executive officer tours, the fleet-up model also reduces flexibility and quality control because it becomes highly disruptive to pull an executive officer out of the path to command.

The Navy's choices with regard to implementation of the Goldwater-Nichols Act, combined with multiple surface warfare officer community changes over time, resulted in an officer development cycle that is creating ever decreasing surface warfare officer mastery at a time of increasing complexity in naval warfare. Repurposing shore tours and elimination of readiness schools and commands in favor of joint duty removed a means for developing deeper Navy expertise. At the same time, removal of the Surface Warfare officer Basic School forced more reliance upon on-the-job-training and further decremented opportunities to build naval expertise. Meanwhile, over accession of junior officers limited the practical experiences available to each officer. Over time, officers with less experience were promoted into leadership positions where they were training the Navy's newest junior officers. The result was a decline in surface warfare officer skills. The pendulum has swung too far and a lower level of training and experience was normalized. A rebalancing is needed to ensure the Navy has an officer cadre comprised of officers with deep naval expertise and a more appropriate number of joint-qualified officers with the breadth of experience needed to succeed in joint operations.

3.2 Reduced Training and Increased Workload for Sailors

At the time of the 9/11 attacks, Navy personnel end strength had been declining steadily for more than a decade.[43] Response to those attacks halted strength reductions for a few years, but combat operations required sailors who might otherwise have been given regular fleet assignments be assigned to unrelated functions supporting Operation Iraqi Freedom and Operation Enduring Freedom.

[42] *In the aviation community the standard gap between department head and Executive Officer is significantly shorter.*
[43] *The reductions stemmed from both a reduced number of ships and the closure of multiple maintenance facilities*.

These cumulative reductions in sailors available for fleet duty were accommodated by the adoption of the 2002 Optimum Manning initiative, which reduced destroyer and cruiser manning by 18% and 12% respectively. The reductions were rationalized primarily by basing manning only on the watch standing and operational requirements of each ship.[44] Time needed for routine maintenance, divisional responsibilities, in port requirements, and personal and unit training was not included resulting in increasing individual crew member workloads. In its May 2017 Navy Readiness assessment, the Government Accountability Office found that reductions to crew sizes made in the early 2000s were not analytically supported and in congressional testimony stated the reductions "may now be creating safety risks." The Government Accountability Office went on to say, "With fewer sailors operating and maintaining surface ships, the material condition of the ships declines, and we found that this decline ultimately contributed to an increase in operating and support costs that outweighed any savings on personnel." The Strategic Review agrees.

Fleet experience levels decreased as fewer personnel spent shore tours gaining additional technical mastery from work in maintenance billets. In the end, the surface fleet was conducting more maintenance with fewer personnel who were trained and supervised by leaders with less relevant experience. The Navy has since reassessed and restored a portion of fleet manning but continues to use a model that does not reflect the actual time sailors spend working nor does it account for shipboard work while in port,[45] both of which may be leading to sailors being overworked. The acceptance of these deviations from normal, masked deeper problems while allowing the Navy to meet its manning and training requirements.

The combined effects of Optimum Manning and the Navy's implementation of the 2001 Revolution in Training significantly degraded enlisted expertise. Revolution in Training was intended to overhaul the Navy's schoolhouse-centric individual training system by transitioning to a lifelong-learning continuum reliant on computer-based and on-the-job training. However, before computer-based

[44] *Fleet Review Panel of Surface Force Readiness, VADM(ret) Balisle, 26 Feb 2010.*
[45] *U.S. GAO Accounting Office, "Actions Needed to Ensure Proper Size and Composition of Ship Crews," GAO-17-413 Navy Force Structure, Government Accountability Office, pg 20.*

training was fully implemented Revolution in Training development and improvement funds were redirected to other programs. This led to a 21% decrease in schoolhouse instructor funding.[46] Further cuts were taken in schoolhouse instructors to fund emergent issues.[47] The loss of instructor billets led to fewer sailors with instructor experience returning to the fleet while more on-the-job-training was imposed on operational units. In the long-term, this reduced the level of technical knowledge at the senior enlisted level.

The Navy recently embarked on a new training modernization effort titled Ready Relevant Learning. Similar to the vision that drove Revolution in Training, Ready Relevant Learning recognizes that Navy's training still does not take full advantage of technology and the science of learning. It is another attempt to establish a career-long learning continuum of delivered integrated content. Ready Relevant Learning is also intended to shift portions of initial accession training to later in a sailor's career when it is more relevant thereby minimizing knowledge decay. If fully funded, Ready Relevant Learning has the potential to markedly improve training Navy-wide. However, it is important to emphasize, as described in the *Vision and Guidance for Ready Relevant Learning*, this "will require significant effort over a sustained period of time by multiple stakeholders, so it is important that we are clear about the reasons why we are doing this, and we must keep these operational imperatives continually in mind as we work through the challenges of execution."[48] As in the previous training reform, the Navy has already reduced the number of instructors based on the planned shift in training delivery. Further, while the *Vision and Guidance* articulates a need for commitment, the funds made available by those instructor reductions are not being protected for reinvestment into Ready Relevant Learning. The Navy removed $70M from Ready Relevant Learning's Fiscal Year 2018 budget in a re-phasing that will slow the program. The Office of the Secretary of Defense and Congress recently proposed additional cuts to the initiative totaling approximately $400M over six years.[49] Failure to preserve the resources required to implement and sustain Ready Relevant Learning will

[46] *VADM J.K. Moran, Commander, NETC, State of Training Memorandum, 01Feb 2007.*
[47] *VADM J.K. Moran, Commander, NETC, State of Training Memorandum, 01 Feb 2007.*
[48] *Vision and Guidance for Ready Relevant Learning.*
[49] *Ready Relevant Learning Funding Profile, PB 19.*

inevitably recreate and exacerbate the shortcomings experienced with Revolution in Training.

As a complement to Ready Relevant Learning, the Navy could make greater use of training simulators, particularly for the surface warfare community. Modern simulators provide operators with realistic training experiences while their ships are in port. To take full advantage of this technology, performance must be measured and action taken when deficiencies are noted. The Comprehensive Review came to a similar conclusion. High quality simulators must not be used just for training. The Surface Warfare Community should use them as a "go, no go" assessment for officers assigned ship control responsibilities.

The decisions made during the acquisition and fielding of new ships and equipment also limited the fleet's ability to develop deep expertise. The annual cost per sailor has increased by more than 25% since 1998, making manpower reductions a tempting way to reduce costs in the long-term. However, use of technology to reduce manpower is effective only if the technology operates as planned. History shows the potential for technology-enabled manpower savings were routinely overestimated. Three of the last four ship classes required increases to crew size after fleet delivery. These ship designs focused on reducing manpower through new technology, shifting maintenance requirements to shore facilities, or a combination of both. Both versions of the Littoral Combat Ship required significant increases in personnel beyond original estimates, and the *Zumwalt*-class guided missile destroyer already experienced a crew size increase of 11% with the full extent of needed manpower increases unknown until its systems are fully tested and operational. The *Gerald R. Ford*-class nuclear aircraft carrier may well follow a similar pattern. In short, reducing manpower during the design process to save money is not effective unless the models are built on valid assumptions. Overly optimistic workload assessments create a cycle of unbalanced manpower allocations, unachievable individual ship workloads, and eventual increases in ships' crew size. Sailors being overworked, or perceiving themselves to be overworked, also effects retention, leading to a fleet with less average experience and requiring increased recruiting expense. To guard against the continued pressure to add one more rock to the pack, and not normalize deviation, Navy manpower models must be detailed enough to

account for all requirements levied on sailors. The models must further include a process that deliberately and accurately accounts for any additional hours and compensates by requiring either elimination of other requirements or increases in manning. Failure to establish and maintain such guardrails at the highest levels of the Navy will invariably lead to untenable increases in sailor workload.

Due to the complex mix of pressures and constraints on the personnel system over the last few decades there is no single area of personnel development, manning, or training where isolated action is likely to create lasting improvements or compensate for previous shortfalls. Personnel assignments, career paths, and training of Navy personnel changed over time to accommodate varying requirements and constraints. Some of the changes were successful and others, such as the elimination of Surface Warfare Officer School for newly commissioned officers, proved to be ill advised and were reversed. Others, such as overly optimistic assumptions about the ability to reduce crew sizes and lack of institutional commitment to long-term training reform, appear likely to be repeated if systemic change is not undertaken.

Achieving and sustaining an acceptable level of readiness in the fleet requires personnel who have training and experience adequate for mastering their assignments. It requires manning levels adequate to operate and maintain ships and other equipment and must allow for a balance between sea duty and time ashore with assignments that enhance seagoing experience and competence. Efforts to save money by reducing training time or crew sizes have been counter-productive in the long-term. Nearly universal efforts to provide unrestricted line officers with joint training and experience and with civilian education beyond that utilized in subsequent assignments, take them away from the fleet and reduce the opportunities to develop deep naval mastery and maritime acumen. Overall, the opportunities to, and the emphasis on, developing deep naval expertise have diminished over the last 30 years. Protracted reductions in instructor and maintenance billets hinder enlisted personnel and officers from gaining additional service-relevant experience during shore tours. Clearly, the Navy's focus on overly broad joint qualification reduced the time officers spent focusing on maritime expertise.

Changes in the area of personnel policy are difficult and can take many years to implement. Policy changes must be considered in terms of their effects on retention, morale, cost, and on generating the appropriate number of sailors with the right mix of skills and experience. A thorough examination of the Navy's human capital strategy to the meet current demands, particularly peer-on-peer competition, is beyond the scope of this Strategic Review, but such an undertaking is needed to ensure the Navy meets the demands of the current and future security environments with what could be a smaller Navy in the near term.

3.3 Recommendations:

1. Restructure officer career paths, particularly for surface warfare officers, to refocus on mastering skills crucial to the Navy.
    a. Seek legislation to relax Goldwater-Nichols Act promotion requirements by lowering the required percentage of joint qualified officers. In the absence of relaxed legislation, take maximum advantage of the waiver provisions in the Goldwater-Nichols Act. Simultaneously, work with the Office of the Secretary of Defense and the Joint Staff to reduce the number of staff tour billets, particularly officer billets, outside the Department of the Navy.
    b. Amend Defense Officer Personnel Management Act related statutes and policies to allow the Secretary of the Navy to retain a modest number of qualified Lieutenants and Lieutenant Commanders to serve extended careers without convening boards for their selection and annual retention.
    c. Amend Defense Officer Personnel Management Act related statutes and policies to remove Limited Duty Officers from control grade table strengths (O4 to O6) and allow the Navy to build more deep naval expertise.
    d. Discontinue the fleet-up model for surface ships and place a shore tour between Executive Officer and Commanding Officer tours, except in exceptional cases mandated by unusual career paths or needs of the Navy. The Strategic Review recognizes that there are likely costs associated with such a change, including the potential for lower retention, greater permanent change of station costs, and the need for longer or additional screening boards each year.

e. Restrict the practice of surface warfare officers serving their second division officer tours on embarked staffs to those who were preselected to convert to a restricted line community.
f. Review the number/length of department head tours and the number of department heads required per ship.

2. Establish a process to measure the true workload of ships' crews, both periodically and after upgrades and modernizations, to determine if manpower models adequately predict personnel requirements at sea and in port. This should include identification and quantification of added demands and additional work that affect readiness and technical qualifications.
    a. Adjust ship manning levels to allow for adequate crew rest, performance of extraneous and collateral duties, training (routine, on-the-job, and new hardware/software) that occurs while aboard ship, and should include some excess capacity.

3. Require officers to maintain a career record of watch-standing hours and specific operational evolutions for surface ship watch standers, similar to naval aviator flight hour logs and separate from current deck logs.

4. Establish minimum hour and evolution requirements to become/remain a qualified Officer of the Deck, Combat Information Center Watch Officer and Tactical Action Officer.

5. Require successful completion of relevant simulator training scenarios to maintain watch-standing qualifications.

CHAPTER 4: Fiscal Disconnect

The Comprehensive Review was not tasked to delve into the impact the Navy's budget had on the recent spate of operational incidents. This Strategic Review considered the ramifications of resourcing decisions on readiness, particularly those affecting manning, maintenance, and operations of the fleet. Ultimately, the funds appropriated for the Navy enable all the Navy does. There is no specific or direct tie between the Navy's funding levels, the Budget Control Act, or the recurring use of Continuing Resolutions and the incidents in the Pacific , but there is a correlation between resourcing levels and the priority the Navy places on various operating, manpower, and recapitalization accounts that make up the Navy's Budget.

4.1 The Mirage of the Peace Dividend

In the late 1980s, the Berlin Wall fell and the Soviet Union imploded resulting in a unipolar world with the U.S. as the sole remaining superpower. Desert Storm seemingly validated the idea that there were no militaries in the world capable of competing with the U.S. on any front or in any domain. The conviction that the resources required for Cold War-level peer-on-peer competition was a costly anachronism was the basis for the national decision to pursue a "Peace Dividend" that would reduce spending on the military.

Between 1990 and 2000, spending on Defense was reduced from $299.3B to $294.5B (baseline Fiscal Year 1990$). Adjusted for inflation, this is a real decline of between 20 and 25 percent (depending on the standard used to measure inflation over this period).[50] This budget reduction resulted in a significant downsizing from 570 ships in 1990 to 318 ships in 2000.[51] This reduction in force structure had significant negative impact as the number of deployed ships remained constant at pre-Peace Dividend levels of about 100 ships worldwide, increasing the percentage of the fleet that was deployed.[52]

[50] *David R. Henderson, US Federal Budget Restraint in the 1990s: A Success Story, Mercatus Research Center, George Mason, University, Jun 2015.*
[51] *Department of the Navy, Ship Annual Supplemental Data Tables (SASDT), dated 7 Jul 2017.*
[52] *Highlights of the Department of the Navy 2017 Budget, pg 1-2, Feb 2016.*

This fiscal reset caused the smaller Navy to pursue a number of models for conducting maintenance, training, modernization, and manning of its fleet in order to sustain the high operational tempo that continues today. Consequently, the Navy shifted from long-duration periodic maintenance overhauls to a concept of a "Continuous Maintenance Plan" where maintenance was performed in shorter duration, more frequent, higher intensity periods. Additionally, the Navy increased the number of forward deployed forces to generate greater presence from the smaller fleet. Finally, the Navy expanded the number of rotationally crewed ships and introduced the concept of Optimal Manning to reduce the cost of sustaining the ships in the fleet.

Even with these changes, the Navy was unable to address the mismatch in its resources and missions. On the eve of the terrorist attacks of 9/11, the Navy had reached a tipping point and could no longer continue to provide ready forces forward within the existing funding. The morning of 9/11, the Chief of Naval Operations was considering retirement of an entire Carrier Battle Group to rebalance the size of the fleet with the resources available.[53]

OCO Funding By Military Department
(FY2014)

$M OCO Budget	FY2014 Enacted	FY2015 Request
Army	45,917.73	25,832.62
Department of the Navy (Navy + USMC)	13,947.67	8,485.16
Air Force	16,627.93	12,831.22
Defense-Wide	8,851.28	6,616.75
Counterterrorism Partnership Fund (CTPF)		4,000.00
European Reassurance Initiative (ERI)		925.00
Total OCO	***85,344.62***	***58,690.75***
Prior-Year Cancellation		117.00
Total OCO Adjusted	***85,344.62***	***58,573.76***

Figure 4-1: Overseas Contingency Operations Distribution in the Department of Defense

While the events of 9/11 changed the trajectory of the nation's military and increased the resources available to support the global effort that followed, there were two significant impacts on the Navy different from the other services. First, because Operation Enduring Freedom and Operation Iraqi Freedom were both principally land wars, the additional supplemental funding, and later the Overseas Contingency Operations funding,

[53] *Admiral Vern Clark remarks, "Meeting the Homeland Defense Challenge: Maritime and Other Critical Dimensions", Institute for Foreign Policy Analysis and the Fletcher School of Law and Diplomacy, March 26, 2002.*

were rationally, yet disproportionally, aligned to the land components of the warfighting effort – Figure 4-1 is germane.[54]

Second was the impact of increased tempo of Navy operations supporting Operation Iraqi Freedom and Operation Enduring Freedom. What funds the Navy did receive through Overseas Contingency Operations only paid the operating bills for ships and aircraft when in theater doing something that was war related.[55] As the basic deployments to these areas were "included in the cost of the Navy," the only costs that were reimbursed were those that could be delineated as being more than the normal cost of deployed operations for the fleet. As reflected in the results of the February 2010 "Balisle Report,[56]" the overall material condition of the fleet suffered as readiness and training levels fell to unacceptable levels.

The impact of post 9/11 increased service-life consumption of ships and aircraft was unaddressed; as was the throughput of the repair industrial base that was inadequate to account for the accelerated rate at which the ships and aircraft were aging from high utilization rates. While the Navy sought budgetary "reset" relief from Overseas Contingency Operations, it received it for only those repairs that represented combat zone losses or deferred/delayed surface ship maintenance. The remaining reset needs were not funded.

Though the 9/11 surge was 16 years ago, ships are still deploying for seven months or more in each cycle; deployed aircraft are still operating at approximately 120% of planned levels, and operational demands remain above those provided in the Global Force Management process.[57] The constrained repair industrial base, resized during the Base Realignment and Closure actions incident to the Peace Dividend, is still inadequate to meet the current maintenance throughput demand.

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[54] *US Government Accounting Office, "Overseas Contingency Operations: OMB and DoD Should Revise the Criteria for Determining Eligible Costs and Identify the Costs Likely to Endure Long Term," GAO-17-68: Published: Jan 18, 2017; UNITED STATES DEPARTMENT OF DEFENSE FISCAL YEAR 2015 BUDGET AMENDMENT, UNDER SECRETARY OF DEFENSE (COMPTROLLER), JUNE 2014.*

[55] *US Government Accounting Office, "Overseas Contingency Operations: OMB and DoD Should Revise the Criteria for Determining Eligible Costs and Identify the Costs Likely to Endure Long Term," GAO-17-68: Published: Jan 18, 2017*

[56] *Fleet Review Panel of Surface Force readiness, VADM(ret) Balisle, 26 Feb 2010.*

[57] *Chief of Naval Operations, ADM John Richardson, Oral Statement to Senate Armed Services Committee, US Navy Posture Hearings, 15 Jun 2017.*

The mismatch in requirements and throughput capacity is most evident in the inability of the Navy's Aviation Depot Repair facilities to meet the maintenance demand. It has resulted in a backlog of almost 300 F/A-18C/D Hornet aircraft, about half the inventory of these aircraft, awaiting induction into repair.[58] Additionally, the F/A-18 E/F Super Hornet aircraft, procured at a rate of 48 per year, are projected to enter the maintenance pipeline at ~60 aircraft per year. That pipeline is also inadequately sized for what will be required.

In addition to these aircraft challenges, the attack submarine force is experiencing an equivalent mismatch between capacity and required throughput. A maintenance backlog has idled 15 nuclear-powered attack submarines for a total of 177 months, which amounts to about 15 lost submarine-years. The approximate 18-month delay of BOISE[59] is the most visible instance of this backlog. While the Navy could outsource more of this work, the capacity of the ship maintenance sector has been reduced by consolidations and changes in the Navy's maintenance philosophy over the years.[60,] Driven by limited funding, a smaller Navy, and changes in the way the Navy maintains its ships and airplanes, many of the private-sector repair activities that supported Navy maintenance in the 1990s are no longer in business. Those that remain have limited capacity to absorb new production work without impacting planned work. Even if the Navy could shift work to them, and people could be hired to do the work, there would still be a lag in the time it takes to recover the maintenance backlog.

[58] *VADM William Moran Testimony and Remarks, House Committee on the Armed Services, State of the Military Hearings, 7 Feb 2017.*

[59] *Statement Of VADM Grosklags, Commander, Naval Air Systems Command, And VADM Moore, Commander, Naval Sea Systems Command, Subcommittee On Readiness And Management Support, Senate Armed Services Committee, On Depots, Shipyards, Arsenals And Ammo Plants, March 29, 2017.*

[60] *Opening Statement by Ranking Member Reed at Senate Armed Services Committee Hearing on US Navy Posture, 15 Jun 2017 ; Chief of Naval Operations, ADM John Richardson; Oral Statement to Senate Armed Services Committee, US Navy Posture Hearings, 15 Jun 2017; VADM William Moran Testimony and Remarks, House Committee on the Armed Services, State of the Military Hearings, 7 Feb 2017; US Government Accounting Office, "Naval Shipyards, Actions Needed to improve Poor Conditions that Affect Operations," GAO-17-548, Sep 2017, pages 20-21.*

As indicated in the graph at Figure 4-2, the discussion and actions by Congress have been focused on where the Department of Defense, and by inference the Navy budget, has gone since the inception of the Budget Control Act. As noted earlier in this report, the Navy has become inculcated with the "normalization-of-deviation." That is also how leadership has come to view the Navy's funding

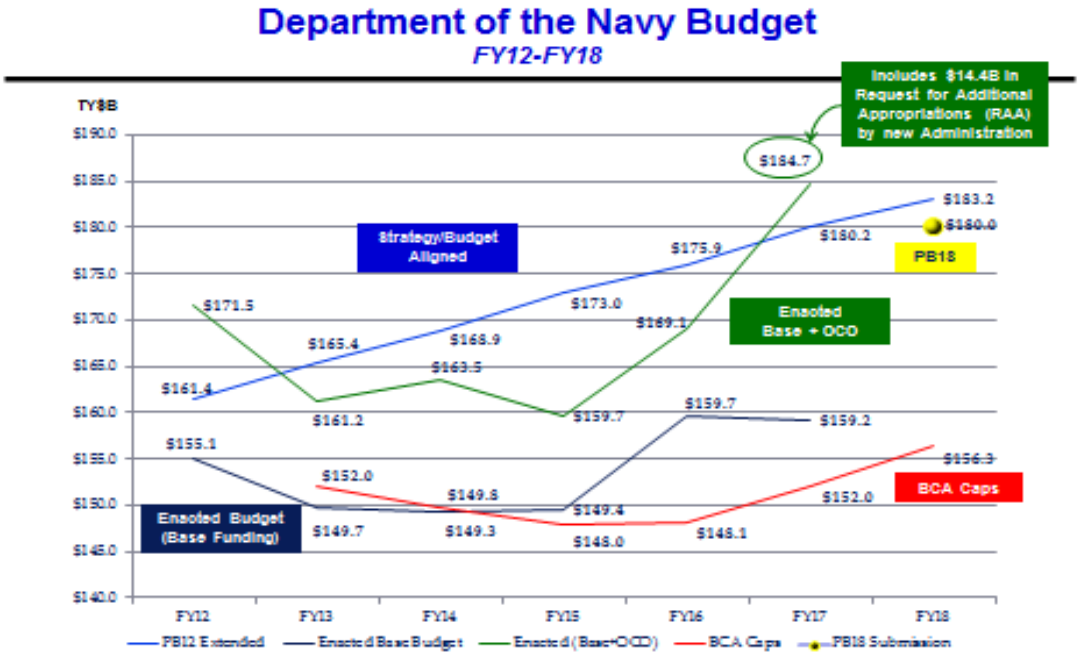

Figure 4-2: Department of Navy Budget Fiscal Year 2012-Fiscal Year 2018

level. The last budget submitted by the Navy prior to the Budget Control Act was the President's Fiscal Year 2012 Budget Submission. This was also the last time the Navy had sufficient resources to operate at its present levels without having to markedly decrease funding for ships, weapons and aircraft procurement, equipment modernization, shore infrastructure, and the maintenance backlog.[61] Since then the Navy has accumulated an approximately $102B shortfall between the enacted base budgets and what the budgets projected in Fiscal Year 2012 would have been.

The Budget Control Act impacted every Navy appropriation. However, its greatest impact occurred in the Operations and Maintenance, Navy account, which has a one-year service life and is the primary readiness account supporting

[61] *Statement of Vice Admiral Joseph P. Mulloy (et al) before the House Armed Services Subcommittee on Readiness, 16 Mar 2017.*

maintenance, steaming days, flight hours, spares replenishment, and unit training. The long-term effect of budget shortfalls, sequestration implications, risk mitigation strategies, and trades-offs made to finance deployed fleet readiness levels was the Navy's battle-force ship inventory continuing to fall until it reached a low of 271 ships in 2015.[62]

Nevertheless, the Navy continues to operate at or above the levels required in Fiscal Year 2012, thereby accumulating a readiness debt associated with the lack of maintenance availability and inadequate training time.[63] More resources can alleviate this problem, however, until the Navy's budget is increased by the Congress, it is imperative the Navy's operational tempo be lowered to bring it into line with the level of funding appropriated.

4.2 Impact of Continuing Resolutions

The ingrained expectation of a Continuing Resolution continues to push the Navy toward increasingly inefficient decisions in the way it operates.[64] Today the Navy is at the minimum sustaining rate in almost all weapons procurement programs, which has resulted in companies being required to shrink and consolidate since they cannot remain fiscally viable at the low procurement levels extant in today's environment. Even though the Navy is expending ordnance at higher rates than planned, the Navy is unable to easily address the problem as the precision weapons in highest demand are production limited, not appropriations limited.

Navy's modernization efforts are yet another example of the impact of unpredictable funding and timing. The low rate at which the Navy installs crucial ballistic missile defense system upgrades and its inability to procure and install efficient quantities of Consolidated Afloat Networks and Enterprise Services are indicative of the limitations on the Navy's ability to make sufficient numbers of ships available for extended modifications and the lack of sufficient resources necessary to support these needed warfighting upgrades. The most significant limitation is the lack of ship availability for upgrades, which derives from those

[62] *Ship Annual Supplemental Data Tables (SASDT) of July 2017.*
[63] *Statement of Vice Admiral Joseph P. Mulloy (et al) before the House Armed Services Subcommittee on Readiness, 16 Mar 2017.*
[64] *Statement of ADM Jonathan Greenert before the Senate Committee on Appropriations, Subcommittee on Defense, 4 Mar 2015.*

ships being needed to support planned and emergent operational requirements. These delayed upgrade installations cause the overall modernization effort to be drawn out resulting in multiple configurations, more unique training, inadequate supply and maintenance support, and, in some cases, obsolescence upon installation.

The Navy has been able to meet the requirement for "forces forward," but it has come at a significant cost. There have been reductions in, or suspension of, operations not considered necessary to fulfill on-going missions assigned to deployed forces supporting Combatant Commanders. If a unit is not on deployment or in a "next-to-deploy" status, its stock orders have been put on hold, some training opportunities deferred, and its maintenance delayed until the Navy was certain funding would be made available. Most significantly, the Navy's Facilities Sustainment, Restoration, and Modernization accounts were used as the perennial "bill payers" to meet the needs of forces forward. The net result is that these accounts are at the lowest level they have been in many years.[65] At some point, the decline in readiness of facilities will manifest itself as another example of "normalization-of-deviation."

While the standard for facilities sustainment should be in the range of 85% of the sustainment model funding levels, the Navy is only reaching the 70% level.[66] Since the facilities that directly impact ship and aircraft operations (e.g. piers, runways, aprons) are fully funded within this account, this means the remaining infrastructure (e.g. barracks, family service centers, training facilities) is limited to funding at about half the prescribed level. As a result, these accounts can no longer be raided to pay the bills for the operating forces forward. The material condition of the shore infrastructure must now be addressed as well.[67]

[65] *House Committee on the Armed Services, State of the Military Hearings, 7 Feb 2017, VADM William Moran Testimony and Remarks.*
[66] *Statement of Vice Admiral Joseph P. Mulloy (et al) before the House Armed Services Subcommittee on Readiness, 16 Mar 2017.*
[67] *Statement Of VADM Grosklags, Commander, Naval Air Systems Command, and VADM Moore, Commander, Naval Sea Systems Command, Subcommittee On Readiness And Management Support, Senate Armed Services Committee, On Depots, Shipyards, Arsenals And Ammo Plants, March 29, 2017.*

4.3 Unintended Consequences

Sequestration and the Budget Control Act: While the Budget Control Act and Sequestration are the most visible examples of recent budget actions that have affected the Navy's ability to meet its mission demands, the core issue is the imbalance between the level of funding made available to the Navy and the operating tempo it is being required to support.[68] Without additional long-term funding, the Navy must balance the fleet size, manning levels, readiness, and training needs with the resources being made available and the missions it is being assigned. Ultimately, the capacity of the Navy is a function of the money appropriated by Congress. The Navy cannot reasonably be expected to continue to "do the same with less."

Continuing Resolutions: The Navy relies on Congress to pass budgets, which it has repeatedly failed to do in a timely manner in spite of the arguments of some Senators to return to timely Appropriations Bills and away from continuing resolutions.[69] Continuing resolutions are not new. In fact, the Department of Defense has operated under a continuing resolution for 33 of the last 42 years.[70]

A continuing resolution is particularly problematic for the Department of Defense. As a highly capitalized department, a continuing resolution frequently results in funding being in the wrong appropriation account or not permitting ramp-ups in procurement quantity or program new-starts as planned for in upcoming budgets. This inability to align funding to the correct area presents a particular challenge for the Navy since many of its programs are supported by line-item appropriations, depriving the Navy of flexibility in addressing continuing resolution shortfalls. Additionally, since it cannot plan for ramp-ups, or take advantage of savings opportunities, the Navy is limited to executing contracts that may not be a "best value" to the Department of Defense.[71]

[68] *Statement of ADM Jonathan Greenert before the Senate Committee on Appropriations, Subcommittee on Defense, 4 Mar 2015.*
[69] *John McCain slams Congress for "failure" of another continuing resolution, Washington Examiner, Pete Kasperowicz, Sep 7 2017.*
[70] *What the Continuing Resolution Means for Defense Spending in Fiscal Year 2018, Center For Strategic and International Studies, 27 Sep 2017.*
[71] *Statement of ADM John Richardson before the Senate Committee on Armed Services, 15 Sep 2016.*

The limitations of continuing resolutions have created a culture that behaves in ways that are not aligned with achieving "best value" for the government since the combination of the delays from the continuing resolution and the limitations on appropriation life do not afford the Navy adequate time to engage in "best value" practices. As appropriations have "life limits," contracting officers must reach a negotiated agreement before funding expires - even if the negotiated position is not a "best value." Since the continuing resolution cuts into the available life of the Operations and Maintenance, Navy appropriations, it is a major contributing factor in this unintended "normalization-of-deviation".

Surface Ship Steaming Days: Steaming Days is a fiscal calculation that is used to budget for ship fuel expenditure rates. This fuel computation has always been burdened with all the ancillary costs associated with sustaining a ship, such as consumables, utility payments when in port, and spare parts. As the funding is only tangentially related to the actual number of days a specific ship is underway, it is only a partial indicator of the level of operations and training provided to that ship. Furthermore, Steaming Days has come to be accepted as the standard by which ships are assessed for readiness even though it actually has very little direct correlation to that readiness. The failure to recognize this difference has resulted in a misunderstanding of what it really takes to make a ship ready for deployed operations. Compounding this misunderstanding is the aggregation of data resident in Steaming Days, hampering senior leadership's ability to differentiate the individual readiness levels of the forces assigned to them while simultaneously providing a false sense of overall fleet readiness.

Ship Depot Maintenance: Funding enables the Navy's ability to conduct maintenance. However, it is what maintenance is performed that is most important. The Navy must address the accelerated consumption of service life that is occurring while simultaneously meeting the operating demands on its smaller fleet. Just like any other equipment, the more a ship is used, the more cycles placed on it, the greater the likelihood it will fail - and fail earlier than planned. Unlike aircraft that have very well-defined end-of-life criteria (total number of catapult assisted takes-offs, arrested landing limits, and flight hour end-of life criteria) or submarines that have an engineering limit (reactor operations or hull submerge/surface cycles) with which the Navy sets safety

limits for continued operations, surface ships are built with redundancies to degrade gracefully. It is this very characteristic that makes them survivable in combat – there are almost no single-point failures. However, the resiliency of surface ships is a double-edged sword. The Navy has a long established standard that surface ships can get underway if they meet "minimum operational equipment" standards. As long as they are certified in the mission area upon which the Navy is sending them, the Navy can waive the remainder of the certifications. It is this permitted alteration of standards that is at the very core of "normalization-of-deviation".

Since 2009, the actual execution of funds in the ship maintenance account has exceeded the requested amount by a cumulative $4.63B[72] (Figure 4-3 is germane). While some of this difference is attributable to collisions, groundings and other casualties (fire/flooding), it is indicative of the inaccuracy of the models in their ability to predict actual maintenance requirements when the Navy is operating the fleet continuously at higher than expected levels.

The Navy assesses and funds a ship's maintenance requirements two years prior

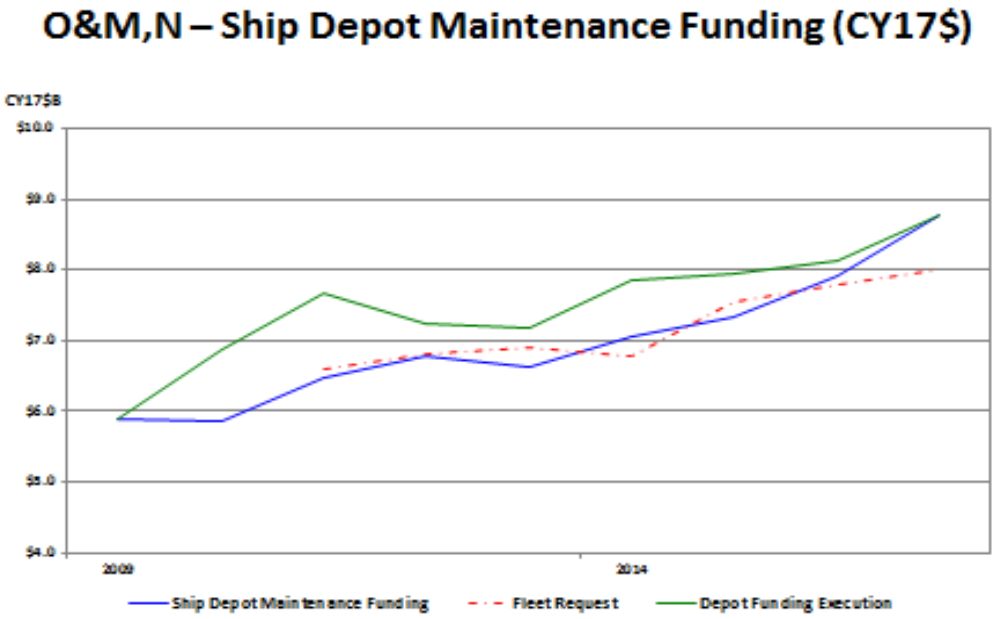

Figure 4-3: Ship Depot Maintenance Funding Fiscal Year 2009-Fiscal Year2017

[72] *Historical Readiness Funding Data Provided by Captain Kott, OPNAV N801, Branch Head, Navy Program Planning and Development, 12 Oct 2017*

to inducting the ship into its maintenance availability. When the ship is finally entered into the maintenance period the Navy invariably finds emergent problems not identified in the planning process. Since ship maintenance availabilities (as described in section 4.1 above) are now intentionally shorter, the capacity of facilities and personnel are limited by the system's ability to accept and adjust for these emergent issues. The emergent problems have not had planning and design work done to fix them; the parts have not been ordered; the job has not been efficiently sequenced into the scope of work nor has it been included in the overall production plan. Overcoming all of this ultimately makes the total bill higher than planned.

The reality is that today's smaller fleet, like its larger predecessor, is supporting a 100-ship deployed force worldwide, which has accelerated the consumption of ships' service lives. Moreover, it is taxing the crews of today's 279 ship[73] fleet to maintain these assets while working to keep up the pace of operations that the ~594 ships did in 1987.

4.4 Recommendations:

1. Establish a better fiscal balance among the requirements for the operating tempo of the existing fleet, maintenance and material reset, required training and manning, and the resources necessary to accomplish these functions.

2. Seek to extend the expiration date of the Operations and Maintenance, Navy appropriation from Congress - either by getting language that begins the 1-year appropriation life at enactment; or by proposing a 2-year Operations and Maintenance, Navy appropriation life to accommodate the habitual practice of continuing resolutions.

3. Adopt a Training & Readiness matrix (similar to the aviation Training and Readiness matrix) to define what each ship must accomplish in each phase of training, the number of times it has to be demonstrated, how many

[73] *Ship count effective 17 Nov 2017 as reflected in the Supplemental Ship and Aircraft Data tables.*

times it can be simulated, and what the external grading criteria are for meeting the requirements for each level of certification.

   a. Develop effective measures of overall ship readiness that accurately describe what is necessary to achieve and maintain certification in each warfare area.

4. Implement a maintenance standard that returns to longer depot maintenance periods rather than the current continuous maintenance philosophy to deal more efficiently with the impacts of emergent work and work delays.
   a. Create a means to articulate more comprehensive work packages.
   b. Reinstitute a ship-check validation process.

CHAPTER 5: Governance

Unlike the Comprehensive Review, the scope of this Strategic Review includes "stresses on the force and the overall culture of operational risk management, training and department organization."[74] This Strategic Review also considers governance structure and oversight external to the Navy.[75]

5.1 External Governance Structure

The Goldwater-Nichols Act, originated as a reform effort in the aftermath of the failed Iran hostage rescue (1980), the Beirut bombing (1983), and Grenada operations (1983). With bipartisan support, Congress passed the Goldwater-Nichols Act, fundamentally changing the Department of Defense. The congressional intent was straightforward -- the Goldwater-Nichols Act was intended to ". . . place clear responsibility on the commanders of the Unified and Specified Combatant Commands for the accomplishment of missions assigned to those commands, and to ensure that the authority of the commanders . . . is fully commensurate with the responsibility of those commanders for the accomplishment of missions assigned to their commands . . . "[76]

The effect of the Goldwater-Nichols Act was to augment command relationships, strengthen the role of the Chairman of the Joint Chiefs of Staff, enhance joint procurement, and redesign personnel incentives to prioritize "jointness" among the services. However, the Goldwater-Nichols Act did not expressly define responsibility for readiness, or whether readiness should be considered part of the mission. To be clear, this Strategic Review sees the balance between mission demands and mission readiness (short term vs long-term attributes) as vital and complementary.

A primary impact of the Goldwater-Nichols Act was to effectively remove the Military Department Secretaries and Service Chiefs from the operational military chain of command. The Service Chiefs were assigned an advisory role to the

[74] *Governance structure and oversight, internal and external to the Navy, was not within the scope of the Comprehensive Review.*
[75] *These conclusions and recommendations apply to external governance. Findings and recommendations relating to internal Navy command and control are explained in Chapter 2 of this report.*
[76] *Congressional Declaration of Policy, Public Law 99-433, Section 3; 10 U.S.C. § 111 Note.*

President and the Secretary of Defense and were given the responsibility, delegated from their Service Secretaries, for manning, training, and equipping units for use by the Combatant Commanders. However, while the assets are being operationally employed by the Combatant Commanders, the Secretary of the Navy and Chief of Naval Operations relinquished decisional authority over managing the continued readiness of those assets.

The first opportunity to test the effectiveness of the Goldwater-Nichols Act was Operation Desert Storm (1991) at the end of the Cold War. Since then, Congress and the Department of Defense have continued to refine the Goldwater-Nichols Act's relevance and implementation for post Desert Shield/Storm expected peacetime environment and the post 9/11 world of Counter-Terrorism campaigns that followed. At the same time, without the global pressures of the Cold War, full spectrum operational demand materially changed, masking any ambiguities of operations-readiness responsibilities against a peer competitor.

While appropriately correcting the operational deficiencies of the Department of Defense, the Goldwater-Nichols Act retained the basic organizational framework established by the National Security Act of 1947. The provisions of the Goldwater-Nichols Act legislation having a major impact on the Services include strengthening and expanding the "full operational command" authority of Combatant Commanders and specifying that the functions of the Military Departments (to recruit, organize, supply, equip, train, etc.) are undertaken to meet the operational requirements of those commands. This division of labor required Combatant Commanders to focus on warfighting while the Service Secretaries and Service Chiefs focused on preparing forces and apportioning resources. To coordinate these two distinct functions, the responsibility and authority of the Chairman of the Joint Chiefs of Staff was expanded.

The two areas that the Goldwater-Nichols Act profoundly impacted were officer career paths[77] and chains of command and associated authority. With respect to lines of authority, although military advice often comes through the Chairman of the Joint Chiefs of Staff, the operational chain of command runs from the

[77] *Findings and recommendations relating to manning and training are explained in Chapter 3 of this report*.

President to the Secretary of Defense to the regional Combatant Commanders. Service Chiefs, who best understand the capabilities and readiness of their forces and who are supported by the significant doctrine development and tactical expertise of their school houses, and the strategic insights from their staff and war colleges, are not part of that process.

The Goldwater-Nichols Act's concept of "jointness" has been effective in the areas of ongoing operations and contingency planning. It addresses the immediate issues, often in crisis situations, but has no stake in the balance of current needs against the need for sustained capability to defend or deter an agile peer by working the painstaking effort to sustain readiness. The Combatant Commanders are invested appropriately in deploying the most effective force now, rather than focused on what must be available for the future. As the Government Accountability Office has repeatedly pointed out, the Department of Defense has struggled with readiness. The Strategic Review found that this struggle is, in part, an outgrowth of an imbalance between operations and long-term readiness embedded in the Goldwater-Nichols Act authorities.

Specifically in the area of readiness, under the Goldwater-Nichols Act, there are confusing lines of authority and separation of, and competition between, readiness and operational responsibilities.[78] In the Navy, multiple organizations, such as the Naval Sea Systems Command, shipyards, U.S. Fleet Forces Command, Pacific Fleet, type commanders, and overlapping Office of the CNO and secretariat organizations (e.g., Assistant Secretary of the Navy for Manpower and Reserve Affairs and N1 for training; Assistant Secretary of the Navy for Research, Development, and Acquisition and N9 for procurement), bear some responsibility for readiness. When Combatant Commanders ask the Navy to assign forces there is a conditioned presumption that the ship or aircraft squadron will be ready for safe and effective operations in the manner the Combatant Commander requires during the entire time of its assignment. However, the current layers of authority and control on Navy forces removes the Chief of Naval Operations and Secretary of the Navy from the decisions made regarding extensions of ship on-station time, length of deployments , mission assignments, and training certification

[78] *"The Force We Have: Jointness hobbles the services in a decentralized fight," Armed Forces Journal, June 1, 2006.* http://armedforcesjournal.com/the-force-we-have/,

extensions. Unless the authority over these decisions can be restored, ships will continue to be operated when they are no longer fully certified in all their respective primary missions or have inadequately trained crews to meet the full range of operational assignments.

The Goldwater-Nichols Act was enacted in 1986, when the nation had a nearly 600-ship Navy. The number of ships has been declining since then and the Navy currently has only 279 deployable battle-force ships[79]. If a ship does not, or cannot, maintain readiness standards during its operational employment, there is no clear authority advocating for further readiness development before deployment or corrective action while employed. In a peer-on-peer environment there is no margin for error or delay and it is critical that warfighting readiness be established as a key parameter in considering mission requirements.[80]

While the Goldwater-Nichols Act has been effective in enhancing current joint force operations, after more than 30 years of existence it and its implementing details have not been substantially reviewed for its overall effectiveness for a return to peer-on-peer competition.

5.2 External Governance Oversight

While the size of the Navy and the number of personnel has steadily declined since 1985, the oversight and direction by external entities has significantly increased. External oversight and direction comes in the form of legislation (such as the annual National Defense Authorization Act), and major enduring legislation (such as the Defense Officer Personnel Management Act and the Goldwater-Nichols Act), regulations (such as regulating operations through State Coastal Commissions) and directives from the Department of Defense. Congress has become increasingly directive in National Defense Authorization Acts, managing Navy affairs to small details. Annual National Defense Authorization Acts grew progressively more complex and were frequently accompanied by House and Senate language that mandated additional reporting. The Navy is also

[79] *Ship count effective 17 Nov 2017 as reflected in the Supplemental Ship and Aircraft Data tables*

[80] *In contrast, in the nuclear Navy, Naval Reactors has the authority and responsibility to take decisive action for the ship's readiness, even if that means informing the Combatant Commanders the assigned asset is unavailable until it is ready for the specific mission needed.*

subject to complex regulatory regimes in the areas of personnel, acquisition, operations, and the environment.

With respect to congressional oversight and direction, the Navy is a compliance-based organization and dedicates whatever resources, including staffing, necessary to respond to oversight and direction. Such compliance is resource intensive and frequently distracts leadership's attention from its primary responsibilities. Responding to ever-increasing National Defense Authorization Act direction, environmental, safety, and acquisition requirements, as well as other legal obligations, requires significantly increasing involvement by the Secretary and the Chief of Naval Operations.[81]

The annual National Defense Authorization Acts have grown increasingly voluminous and complicated. As a frame of reference, the Fiscal Year 1985 National Defense Authorization Act[82] was 169 pages and contained 211 provisions. By contrast, the Fiscal Year 2017 National Defense Authorization Act[83] was 970 pages and contained 929 provisions.[84] The accompanying congressional reports for the Fiscal Year 2017 National Defense Authorization Act, which are also directive in nature, totaled nearly 3,100 pages.[85]

Similarly, reporting requirements to Congress have also grown significantly. In Fiscal Year 2015, Congress mandated 69 reports from the Navy. This number increased to 109 in Fiscal Year 2016, and to 135 in Fiscal Year 2017. In comparison, at the height of the Cold War, the Fiscal Year 1985 National Defense Authorization Act required submission of fewer than 25 reports to Congress from the entire Department of Defense.[86] In Fiscal Year 2016, the Navy responded to

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[81] *Statutory, regulatory and policy requirements addressing personnel (including training and the Defense Officer Personnel Management Act) and budget (including the Budget Control Act) are addressed in Chapters 3 and 4 of this report.*

[82] *Public Law 98-525.*

[83] *Public Law 114–328.*

[84] *While the growth has been steady since 1985, the increases in the complexity and volume of annual NDAA's have increased rapidly since Fiscal Year 2005, which consisted of 389 pages and 458 provisions, and Fiscal Year 2014, which consisted of 494 pages and 552 provisions. The accompanying reports for Fiscal Year 2014 about 1,000 pages. Senate Report 113-44; House Report 113-102. There was no conference report accompanying the Fiscal Year 2014 NDAA.*

[85] *Senate Report 114-255; House Report 114-537; House Report 114-840 (Conference Report).*

[86] *The Navy started maintaining records of reports submitted to Congress in Fiscal Year 2000. Between Fiscal Year 2000 and Fiscal Year 2015, the number of reports the Navy submitted to Congress each fiscal year were between 51 (in Fiscal Year2002) and 88 (in Fiscal Year2006). Since Fiscal Year 2015, there has been a significant spike in the number of reports submitted to Congress from the Navy.*

867 hearing-related taskers from Congress, and 1,656 Requests for Information, briefings, or visits. All of these took time and the attention of senior leadership.

In addition to direct congressional oversight, the Navy complies with a comprehensive set of external requirements relating to the environment and safety. The Navy must comply with at least 20 federal environmental and safety statutes, plus state statutes and policies directed by Executive Order or Departmental regulations. These statutes are complex and accompanied by comprehensive regulatory schemes established and enforced by multiple federal and state agencies. In addition to significant staffing to comply with these requirements, compliance with these statutes and regulations can require additional time, funding, and restructuring of programs and assets that can have a direct impact on readiness.

Similarly, the total number of provisions in Title VIII (Acquisition Policy, Acquisition Management, and Related Matters) of the National Defense Authorization Acts has risen significantly. The Fiscal Year 2016 and 2017 National Defense Authorization Acts contain nearly 200 acquisition provisions, each requiring compliance.[87] Those Acts include a general policy of increasing Service Chief authority and accountability for acquisition programs. The Fiscal Year 2016 National Defense Authorization Act (§§ 802, 825) mandates Service Chief involvement in decisions regarding resources, priorities, trade-offs, and milestones for major defense acquisition programs. The Fiscal Year 2017 National Defense Authorization Act (§ 925) emphasizes the Service Chiefs' responsibility for service-specific performance requirements.

Since the Goldwater-Nichols Act was enacted, Congress has continued to conduct detailed legislative oversight affecting the Department of Defense and the Navy leaderships' flexibility to organize. An amendment to the Fiscal Year 2006 Department Of Defense Appropriations Act[88] mandated separation of U.S. Fleet Forces Command and Pacific Fleet functions. That provision was repeated each

[87] *The Fiscal Year 2018 NDAA bill, H.R. 2810, contains 73 new acquisition provisions in Title VIII. Section 833 continues to increase the roles of the Service Chiefs in acquisition. Conference Report, H.R. 2810.*

[88] *Public Law 109-148, Section 8106.*

year, and required an act of Congress to change.[89] The Fiscal Year 2017 Consolidated Appropriations Act amended the provision:

> Sec. 8058. None of the funds available to the Department of Defense may be obligated to modify command and control relationships to give Fleet Forces Command operational and administrative control of United States Navy forces assigned to the Pacific fleet: *Provided*, That the command and control relationships which existed on October 1, 2004, shall remain in force until a written modification has been proposed to the House and Senate Appropriations Committees: *Provided further*, That the proposed modification may be implemented 30 days after the notification unless an objection is received from either the House or Senate Appropriations Committees: *Provided further*, That any proposed modification shall not preclude the ability of the commander of United States Pacific Command to meet operational requirements.[90]

Fundamental to any chief executive officer's authority is the ability to organize their enterprise to accomplish the selected vision and objectives. Similarly, in that capacity, the Secretary of the Navy needs such authority. So while this annual provision was well within the constitutional powers of the Congress, this Strategic Review finds such restrictions to be far removed from this fundamental. While in this case the Navy no longer is required to seek an act of Congress in the event it concludes change is warranted, congressional notification and acquiescence is still required.

These increasingly detailed taskings and requirements stand in contrast to the Senate Armed Services Committee leadership's recent return of acquisition responsibilities to the service chiefs and holding them accountable for improved acquisition performance. The Strategic Review concurs with this approach for

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[89] *This provision was repeated in the Fiscal Year 2007 Appropriations Act, Public Law 109-289, Section 8095; Fiscal Year 2008 Appropriations Act, Public Law 110-116, Section 8082; Fiscal Year 2009 Appropriations Act, Public Law 110-329, Section 8078; Fiscal Year 2010 Appropriations Act, Public Law 111-118, Section 8077; Fiscal Year 2011 Appropriations Act, Public Law 112-10, Section 8073; Fiscal Year 2012 Appropriations Act, Public Law 112-74, Section 8072; Fiscal Year 2013 Appropriations Act, Public Law 113-6, Section 8071; Fiscal Year 2014 Appropriations Act, Public Law 113-76, Section 8071; Fiscal Year 2015 Appropriations Act, Public Law 113-235, Section 8071; Fiscal Year 2016 Appropriations Act, Public Law 114-113, Section 8056.*

[90] *Section 8054 of the Fiscal Year 2018 Appropriations Bill, H.R. 3219, repeats the language in section 8058 of the Fiscal Year 2017 Appropriations Act.*

reducing the imposition of detailed direction beyond the specification of guidance, direction and objectives. This approach is more akin to the level of detail Congress used to guide the Department in the existential consequences of the peer-on-peer era of the Cold War. The level of authority and autonomy at that time drew some of the nation's finest to civil positions in the Department of Defense and, with their uniformed leaders, the country ultimately prevailed in the great contest of ideologies that animated the Cold War.

5.3 Recommendation:

1. Submit a tightly drawn legislative proposal to delineate clearly the responsibility, authority, and accountability of Service Chiefs to declare an asset unavailable due to readiness shortcomings. As warfighting capacity and readiness are complementary, this recommendation does not imply reducing warfighting capacity while placing greater attention on readiness. The proposed legislation should require the Secretary of Defense to adjudicate any disagreements between the Service Chiefs and Combatant Commanders.

2. Seek relief, in coordination with the Office of the Secretary of Defense, from excessively detailed external oversight and reporting requirements.

CHAPTER 6: Industry Best Practices and Learning Cultures

The Comprehensive Review was focused primarily on the individual mishaps in the Western Pacific and, therefore, did not explicitly consider higher level accountability. While it noted systemic problems associated with risk mitigation that precipitated the recent mishaps and identified a number of corrective actions that may allow for some short-term improvement in reporting and analysis, it did not consider or evaluate holistic solutions to risk management. The Strategic Review evaluated the issue from a more long term institutional basis, considering best practices from industry that can inform the Navy's approach to improving as a learning organization and addressing individual and institutional accountability in the context of readiness risk management.

Well-intentioned, dedicated Navy leaders, faced with complex, near-term problems, have made difficult decisions over many years using the best available information. There is no single policy or leadership decision that caused the degradation of Navy readiness. Rather, it was a combination of Navy decisions made over time, without a full appreciation of the interrelated nature of the readiness components that contributed to the operational mishaps of the last 12 months.

The Navy is not unique in operating in complex environments challenged by compressed timelines, budget and resourcing constraints, rapid technological evolution, complex governance structures, and the independent actions of competitors. The accumulated weight of these factors stresses many organizations and, unless checked, often results in ineffective short-term solutions with unforeseen long-term impacts. In many cases, the impacts of expedient solutions are not apparent until examined after a tragic event.

6.1 Industry

To better understand the dynamics of how large complex organizations, like the Navy, learned and adapted following a tragic event or series of safety mishaps, this Strategic Review included discussions with key leaders of leading global

companies in the aerospace, maritime, and medical industries.[91] They were selected because they are recognized global leaders in their respective fields and because of their records of learning and changing after tragic events. Each company official articulated that, in retrospect, their tolerance for, and accumulation of, multiple, seemingly minor, decisions made to "get the job done"[92] degraded recognition of unsafe daily operations. In every instance the consequences were the same – costly accidents, tragedies, and loss. Another recurring theme was the tendency of organizations to develop a zero-defect culture that precluded identification of errors, omissions, and safety violations since there would be adverse impacts on the careers and jobs of those involved in such events. This zero-defect mentality led to a lack of appreciation among corporate leaders concerning the number of near-misses that were occurring and might have proved useful as leading indicators of future potential problems.

These companies concluded that an expectation of perfection was not realistic, nor was it reflective of actual practice. Each sought to change the zero defect mentality that did not support a culture of learning, trust building, or teamwork. Each company realized that if it was going to be competitive in a fast-paced environment, highly reliant on technology, their organizational culture had to change. Central to that change had to be leadership's commitment to learning from near-mishaps in order to develop preventative measures that would avoid tragedy. This could only be achieved if leadership created the trust at the operational level necessary to report and learn from those near-misses. Additionally, each of the key company leaders recognized and appreciated a change was necessary. They took ownership of these problems, developed programs to address them, and then exercised direct oversight to initiate corrective action and created sustainable corrective action.

Standards, and the manner in which they are enforced, drive execution in industry, as in the Navy. Successfully transformed companies recognized that ineffective systemic risk management practices are always at the root of their safety failures. Although each company had risk management programs in place,

[91] *The members of industry were forthcoming and transparent with the Strategic Review, including sharing proprietary information when relevant. The Review benefitted from their candid assessments and insights. This report does not include any proprietary information, which remains protected. A list of those consulted is contained in Appendix A.*
[92] *This focus is similar to the "can do" or "mission first" focus noted by the Comprehensive Review.*

these proved unsuccessful, resulting in lost revenue, time, and, lives.[93] They became overly reliant on lagging indicators to manage their risk decisions. They also recognized they had to strengthen and refine their risk assessment and measurement processes, as well as accompanying safety practices, to be proactive vice reactive. That change required going beyond merely reporting incidents to consistently and aggressively searching for leading indicators to enable process changes that could prevent undesirable incidents from happening.

To survive, and thrive, attitudes regarding safety and risk management had to change at an individual level. For that to happen, employees had to trust that organizational leadership would focus on fixing the systemic contributors to mishaps or unsafe practices rather than searching for the personal failures that lead up to an accident or incident. Furthermore, company leaders had to convince their personnel that there was a culture of learning that embraced improvement rather than "indictment of the guilty."

They established procedures to allow early identification and course correction of management decisions to effect safe operations, ensure corporate survival, and promote progression. Further, they realized that those changes must be process-driven if they are to be enduring.

6.2 A Learning Culture

The Navy has a culture that currently prioritizes immediate mission accomplishment over long-term sustainable readiness. While the Navy espouses a learning culture — and there are pockets of excellence — a myriad of previous readiness reviews, when viewed holistically, indicate there is much work to be done. There have been similar, repeated, conclusions and recommendations made over the years for improving Navy's overall readiness.[94] A more structured, data-driven system for ensuring attention to, and learning from, the lessons of the past can only increase institutional attention to the core fundamentals of

[93] *The Comprehensive Review noted similar problems in its review and concluded the Navy does not have a comprehensive effort to track indicators of risk, trained people to assess that information, nor an effective mechanism to share lessons learned across the spectrum.*

[94] *Fleet Review Panel of Surface Force Readiness, VADM (ret) Balisle, 26 Feb 2010; See also the series of GAO Reports focused on Navy Readiness from 2010 to the present.*

safety, seamanship, and training. The Comprehensive Review echoes previous report findings and correctly identifies the Navy, in the aggregate, has not truly embraced a culture of learning.

A learning organization is an enterprise that encourages, and ultimately embraces, learning through systems thinking, personal mastery, mental models, shared vision, and team learning.[95] Faced with a dynamic environment, a learning culture is critical to ensuring adaptability of the organization. A culture that makes people eager to understand risk enables early identification of systemic risks and behaviors before problems occur. It is a culture that embraces a willingness to investigate, analyze, assess, and learn from mistakes.

Such a culture depends upon data and critical analyses to facilitate rapid, informed decisions. Leaders need objective, qualitative and quantitative data to identify potential risks. These are leading indicators, vice post-event trend analysis of lagging indicators the Navy uses now. Learning organizations anticipate human and system errors before they become critical. The Navy's Digital Warfare Office is an example of an organization transitioning from lagging to leading indicator data analysis. Pilot programs are demonstrating that problem solving based on lagging indicators and insufficient data, fail to expose complex, underlying problems. By expanding their data sets, the Digital Warfare Office was able to identify leading indicators that allowed it to systemically address causal factors and avoid specific problems from being repeated.

As previously stated, Navy readiness is a complex system-of-systems.[96] Inherent in that construct is an interrelationship among multiple internal organizations and operations.[97] Successfully achieving a culture of learning requires implementation of a comprehensive system with clear lines of authority, accountability, and responsibility.[98] With respect to risk management, the system must facilitate and engender the flow of information to the right people

[95] *P.M. Senge, The Fifth Discipline: The Art and Practice of the Learning Organization. New York, NY. Doubleday (2006).*
[96] *N. W. Porter, N. W., The effects of system dynamics modeling on systems thinking in the context of strategic planning. Calhoun, Dudley Knox Library, Defense Technical Information Center (2014).*
[97] *As this construct applies to the Navy and risk management, see the Figure I-1 on page 16.*
[98] *Sydney Dekker, Just Culture, Restoring Trust and Accountability in Your Organization, Third Edition, CRC Press, 2007; A Roadmap to Just Culture: Enhancing the Safety Environment, Global Aviation Information Network (GAIN), Working Group E, Flight Ops/ATC Ops Safety Information Sharing, September 2004.*

at the right time so the right actions can be taken. Further, a culture of learning will lead to a system that empowers, and incentivizes, people to maintain a questioning attitude, object to changes that adversely affect standards, or say no when conditions dictate. Designed and implemented correctly, a system with these characteristics would facilitate good decision-making that supports safety and effectiveness. Such a culture will improve more than risk management and safety, it will improve readiness, performance, and output at all levels.

At the core of the learning organization is a process that correctly allocates responsibility for events, or near misses, whether caused by the system's structure, or by individuals within that structure. If individuals are going to become a Team, and the Team's culture is to be aligned throughout the organization, the institution has to share accountability. Accountability for repeated mishaps must assess the role played by policy decisions and processes extending far back in time that have resulted in, or inadvertently incentivized, aberrant behavior and outcomes. Like the company leaders the Strategic Review Team spoke with, Navy leadership must now take ownership of the issues and lead the corrective action not only in the specific shortfalls identified in the various investigations, but by addressing the decisions, programs, policies, and systemic gaps that would have avoided and/or arrested them.

Principles of accountability should embody the awareness that people make mistakes. Like current military justice principles, a learning culture will hold people accountable, but will not automatically punish them for every mistake.[99] Individual accountability for human error, alone, is insufficient and hollow. Institutional accountability, which addresses the underlying systemic contributors to the event, is, in many cases equally culpable.[100] Findings from discussions with companies indicate a learning culture, with appropriate institutional and individual accountability, will lead to better decision making and improved performance. It will also engender individual trust in the institution leading to

[99] *Under the UCMJ, each commander and commanding officer has the authority to dispose of alleged offenses as he or she sees fit, and has authority to dispose of allegations at the lowest appropriate level, from "no action," to formal disciplinary action.*

[100] *Sydney Dekker, Just Culture, Restoring Trust and Accountability in Your Organization, Third Edition, CRC Press, 2007.*

increased reporting, sustained learning, and more effective readiness, safety, and risk management.[101]

As indicated in the Comprehensive Review, flaws have been identified in the underlying systems, organization, processes, regulations, and culture that diminish Navy readiness. A shift to a learning culture will not happen overnight or with the stroke of a pen. As this Strategic Review gleaned from industry, it requires strong, committed leadership at every level to sustain the drive to a cultural change throughout the organization. More importantly, this cannot be lost as the responsibilities of command pass from one leader to another. The Navy must invest adequate time and resources in identifying, analyzing, and addressing the leading indicators that can be a precursor to catastrophic events or unintended consequences. To become a learning organization, leadership's words and, more importantly, actions are critical to success. Leaders must not only direct cultural change, they must be unwavering advocates for change.

If the Navy becomes a true learning organization, it can avoid the systemic pitfalls that have accumulated and that have led to the "normalization-of-deviation" that has taken root in the Navy. To achieve this, the Secretary of the Navy and the Chief of Naval Operations need to drive the effort for the Navy to become a true learning organization and embrace a culture of institutional accountability.

6.3 Recommendations:

1. The Secretary of the Navy and Chief of Naval Operations, with the support of the Master Chief Petty Officer of the Navy, must personally lead the Navy to a forward-looking learning culture. The authorities required to lead this change are directly resident within the positions of the Secretary of Navy and the Chief of Naval Operations.

2. Create a forward-looking learning culture built upon systemic data analyses focused on leading indicators acquired throughout the Navy.

[101] *A Roadmap to Just Culture: Enhancing the Safety Environment, Global Aviation Information Network (GAIN), Working Group E, Flight Ops/ATC Ops Safety Information Sharing, September 2004.*

3. Employ system dynamics modeling and simulation, projected over a protracted time, to assess the potential systemic effects of policies and force planning that impact the system-of-systems identified in this Strategic Review.

4. Direct the Naval Safety Center to leverage and expand upon the work being done by the Digital Warfare Office to better identify leading indicators for use in predictive analysis.

Righting the Ship

The Navy is at its best when its institutional decision-making systems, its organizations, its ships, and its people work together as a team. Just as it takes teamwork and a well-functioning system to succeed, major failures or tragic events are most often attributable to the confluence of human error, teamwork failure, and larger systemic breakdowns.

Many of the problems noted throughout this report resulted from the "normalization-of-deviation." Repeated well-intentioned individual management and risk-tradeoff decisions accumulated over the years, have layered one-upon-another without leaders duly considering the combined effects and second order implications of those decisions in changing security, funding, and governance environments. Whether driven by operational urgency, the demands of the mission, or the needs of the Navy, these decisions culminated in a Navy culture replete with examples of accepting "good enough" for the moment rather than the imperative of what is vital for the future until the organization could no longer identify "what right looks like." This culture became the norm, and the leaders entrusted with defining the standards by which the fleet would operate came to see these manifested exceptions as the rule. As a result, safety and readiness eroded over time.

Righting the ship, to ensure the larger Navy deserves the trust of the officers and enlisted members who have put their trust in it, requires immediate, public, and sustained and committed leadership of the Secretary of the Navy and Chief of Naval Operations. Accountability must always fall primarily on commanders, but accountability must also be sought and assessed in a systemic way, at institutional levels, in the policy decisions and processes that can set the conditions for aberrant behavior and negative outcomes. Institutional accountability to reverse the multi-decade encroachment of the "normalization-of-deviation" is where the Secretary of the Navy, Chief of Naval Operations and Master Chief Petty Officer of the Navy must start.

Re-establish Readiness as a Priority: The ships, aircraft, and men and women of the Navy are finite resources. Those who man our ships are limited in the

amount of time they have to perform equipment maintenance and build their warfighting skills. Those tasks must be on equal footing with "answering the bell" to peacetime presence demands. There are only so many ships and sailors that can be made available in a given operational cycle. The in-stride reset of forward-deployed Navy forces needs a break in stride. Time must be set aside for crews to train on their equipment, to master its operation and maintain it, and to learn its, and their own, limitations. The core and primary competence of sailors must be mastery of naval warfighting skills. While there is no substitute for at-sea training for maintaining proficiency, some necessary building blocks require time in port to achieve and maintain. It takes time and repetition to master tasks such as navigation in heavily trafficked waters, alongside replenishment, anchoring, and making an approach to a pier. Failure to commit to readiness as a priority will inevitably reproduce the mistakes of the past.

Match Supply and Demand: A significant reduction in the number of ships available, combined with an increasing operational tempo, forced the Navy to make hard decisions regarding the balance between operations and readiness. In that environment, a culture evolved that normalized the deviance associated with prioritizing current operations at the expense of future readiness. Global Force Management practices further exacerbate this, as Navy leaders consistently acquiesce to meeting emergent requirements with assets that are, at times, not ready. Leaders, both civilian and military, must accept that to restore the readiness of the fleet and eliminate the culture that normalizes deviation, the Navy will sometimes have to say no, ultimately meaning less short-term presence worldwide.

Establish clear Command and Control Relationships: Reorganizations within and above the Navy have changed force generation and employment processes and procedures. Cumulative changes have created redundancies, overlapping responsibilities, inconsistencies, and ambiguities that undid tightly aligned responsibility, authority, and accountability standards. These reorganizations led to a growth in headquarters with misaligned authorities, complicated command and control responsibilities, and diffuse accountability structures. Headquarters staffs acquired more personnel and became a significant driver of career patterns, promotions, and assignments. A growth in compliance requirements,

accelerated by the growth in headquarters, competed with core readiness activities. The Strategic Review recommends a "clean sheet" review of Navy administrative organization and offers a revised organizational construct and authorities for managing Navy forces.

Become a True Learning Organization: Military operations are inherently risky. Human error will always exist; equipment will always fail; the strategic environment and adversaries will change. Organizational systems must be designed to anticipate and mitigate against these realities. Individual accountability for human error, alone, is insufficient and hollow. It rarely produces lasting organizational effects or betters the affected individuals in the absence of accompanying institutional accountability that addresses underlying systemic contributors to the event. Independent checks and balances must be in place and continually evaluated, thereby guarding against the "normalization-of-deviation" that has been the thread running throughout the Strategic Review.

Appendix A

List of Organizations Consulted

The Boeing Company

British Petroleum North America

Carnival Corporation & PLC

Center for Naval Analyses

Crowley Maritime Corporation

Delta Air Lines, Inc.

Maersk Line, Limited

Mayo Clinic

Naval Reactors

Naval Inspector General

Naval Safety Center

U.S. Government Accountability Office

Appendix B

List of Individuals Consulted

Hon. Richard J. Danzig, former Secretary of the Navy; Senior Advisor to the John Hopkins University Applied Physics Laboratory (JHU/APL)

Mr. Gene L. Dodaro, Comptroller General of the United States, and Head of the U.S. Government Accountability Office (GAO)

Admiral (ret.) Kirkland H. Donald, former Director of Naval Nuclear Propulsion and Chief Executive Officer and the President of Systems Planning And Analysis, Inc.

Hon. Michèle A. Flournoy, former Under Secretary of Defense for Policy; Chief Executive Officer for the Center for a New American Security (CNAS)

Admiral (ret.) Edmund P. Giambastiani Jr., former Commander U.S. Joint Forces Command (USJFCOM) and Vice Chairman of the Joint Chiefs of Staff (VCJCS); Board of Trustees at The MITRE Corporation

Dr. John J. Hamre, former Deputy Secretary of Defense; Chief Executive Officer and President of Center for Strategic and International Studies, Inc. (CSIS)

Admiral (ret.) John C. Harvey Jr., former Commander U.S. Fleet Forces Command; Institute for Defense Analyses (IDA)

Dr. Laura Junor, Institute for National Strategic Studies Director, National; Defense University, former Principal Deputy Undersecretary of Defense for Personnel & Readiness

RADM (ret.) Anthony M. Kurta, Office of the Under Secretary of Defense for Personnel & Readiness

Hon. John F. Lehman Jr., former Secretary of the Navy; Founder and Partner of J.F Lehman & Company

Mr. Troy J. Mueller, Naval Reactors

Hon. Sean C. O'Keefe, former Secretary of the Navy and Administrator of NASA; University Professor at Syracuse University Maxwell School of Citizenship and Public Affairs

Dr. Randy Papadopoulos, Historian, Department of the Navy

VADM Herman A. Shelanski, USN, Naval Inspector General

Appendix C

Strategic Readiness Review Team Members

Co-Leads

The Honorable Michael Bayer

Admiral Gary Roughead, USN (ret)

Team Members

Dr. Russell Beland
Ms. Juliet Beyler
LCDR Adam R. Bush, USN
LT Nicholas W. Grady, USN
YNC Gracie D. Mancini-Rosas, USN
CAPT James F. McCarthy, Jr., USN (ret)
Mr. Frank A. Putzu
Ms. Sharon H. Smoot
MCPON Rick West, USN (ret)
FLTCM Scott A. Benning, USN (ret)
VADM John T. Blake, USN (ret)
RDML Hal H. Dronberger, JAGC USN (ret)
YN2 Joshua E. Jenkins, USN
LCDR Damon M. Melidossian, USN
Dr. Wayne Porter, CAPT USN (ret)
CAPT Paul Schmitt, USN (ret)
CAPT Philip E. Sobeck, USN
Mr. Bryan Whitman

Appendix D

Acronyms

The following is a list of acronyms used in the report:

ADCON	Administrative Control
AOR	Area of Responsibility
ASN	Assistant Secretary of the Navy
ATG	Afloat Training Group
BCA	Budget Control Act
BMD	Ballistic Missile Defense
C2	Command and Control
CCDR	Combatant Commanders
CFFC	Commander Fleet Forces Command
CJCS	Chairman Joint Chiefs of Staff
CLASSRON	Class Squadron
CMC	Commandant of the Marine Corps
CNO	Chief of Naval Operations
CNSL	Commander Naval Surface Force Atlantic
CNSP	Commander Naval Surface Force Pacific
COMAIRFOR	Commander Air Forces
COMNAVSURPAC	Commander Naval Surface Force Pacific
COMPACFLT	Commander Pacific Fleet
COMSUBFOR	Commander Submarine Forces
CPF DET	COMPAC Fleet Detachment
CNSGWP	Commander Naval Surface Group Western Pacific
CR	Continuing Resolution
DoD	Department of Defense
DOPMA	Defense Officer Personnel Management Act
FDNF	Forward Deployed Naval Force
FFC	Fleet Forces Command
FRP	Fleet Response Plan
FY	Fiscal Year
GCC	Geographic Combatant Commander
NDAA	National Defense Authorization Act

O&MN	Operations and Maintenance, Navy
OCO	Oversea Contingency Operations
OEF	Operation Enduring Freedom
O-FRP	Optimized Fleet Response Plan
OIF	Operation Iraqi Freedom
OPCON	Operational Control
OPNAV	Office of the Chief of Naval Operations
OPTEMPO	Operational Tempo
SECNAV	Secretary of the Navy

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