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AUTHOR: LCDR DANTE L. MACK, USN

AY 15-16

Mentor and Oral Defense Committee Member: Dr. Craig Swanson

Approved: _____

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Oral Defense Committee Member: CDR Russell Evans, USN

Approved: _____ CDR USN

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Executive Summary

Title: Health of the US Amphibious Fleet: What the Optimized Fleet Response Plan Means for the Amphibious Mission?

Author: Lieutenant Commander Dante L. Mack, United States Navy

Thesis: The Global Combatant Commanders and the Marine Corps should accept that the Optimized Fleet Response Plan is a necessary response to the material conditions of the amphibious fleet; the Joint Force needs to find ways to minimize the impact of O-FRP on the amphibious mission, and the Department of Defense and Congressional leaders needs to determine the correct type and number of amphibious ships needed to meet the National Security Strategy.

Discussion: The Assistant Secretary of the Navy, Sean Stackly, testified in 2014 in front of the Senate Subcommittee on Seapower that amphibious ships are "the workhorse of the fleet."[1] Since the end of the Cold War, the US amphibious fleet has seen increased activity, not less; however, the number of amphibious ships the Navy is required to maintain reflects neither current GCC requests nor *EF-21's* new vision. To the Navy's credit, its lack of additional amphibious vessels has not prevented them from attempting to meet demand; however, this dedication has come at the expense of the material condition of the ships and the morale of ships' crews. The Optimized Fleet Response Plan (O-FRP) is the Navy's attempt to correct this deficiency.

Conclusion: The process that the US Pacific Fleet and US Fleet Forces commanders approved—in O-FRP— is a long overdue recognition that doing more with less over an extended period of time has an enormously negative effect on the Navy's heavily capitalized ships; extended operations in that environment also negatively affects the morale of the sailors stationed aboard those ships and the ship's maintenance cycles.

The Joint Force and the Marine Corps should accept that the cost of repairing the amphibious fleet carries a cost and a part of that cost is a short term reduction in availability.

The Joint Force and Congress should align the amphibious fleet with the National Security and Defense Strategies with the aim of responding to today's realities. Additionally, the Navy has discovered that the success of their mission lies with the quantity and quality of its people and that there is no substitute for having the right Sailor, with the right training, on the right ship to both maintain and operate its ships.

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Introduction

The Assistant Secretary of the Navy, Sean Stackly, testified in 2014 in front of the Senate Subcommittee on Seapower that amphibious ships are "the workhorse of the fleet."[2] The demand for amphibious ships by the Global Combatant Commanders (GCCs) has steadily increased since 9/11, and given the Marine Corps' stated goal of returning to its amphibious roots in *Expeditionary Force 21* (*EF-21*), the US Navy's amphibious fleet will be required to sail more, not less; however, the number of amphibious ships the Navy is required to maintain reflects neither current GCC requests nor *EF-21's* new vision.

While many people hoped for a peace dividend after the collapse of the Soviet Union, this has not universally been the case. Some parts of the Department of Defense have experienced increased operational tempo to meet the demands of the post-Cold War international security environment. This has certainly been true for the US Navy's amphibious force. To the Navy's credit, its lack of additional amphibious vessels has not prevented them from attempting to meet demand; however, this dedication has come at the expense of the material condition of the ships and the morale of ships' crews. The Optimized Fleet Response Plan (O-FRP) is the Navy's attempt to correct this deficiency. At the heart of O-FRP is the decision to increase a ship's maintenance time by nine months without reducing the amount of time that ship would serve during a normal deployment. O-FRP would, theoretically, create a short term gap in the number of ships available for GCC employment and reduce Marine Corps training opportunities onboard amphibious ships. The GCCs and the Marine Corps should accept that the Optimized Fleet Response Plan is a necessary response to the material conditions of the amphibious fleet; the Joint Force needs to find ways to minimize the impact of O-FRP on the amphibious mission,

and the Department of Defense and Congressional leaders should determine the correct type and number of amphibious ships needed to meet the National Security Strategy.

The Current Amphibious Fleet

Amphibious operations have been part of the Navy's mission since the American Revolution. They were central to the Pacific War and turned the tide of the Korean War with the dramatic amphibious assault on Inchon. This capability remains critically important today to provide GCCs the flexibility to put ground forces ashore when and where necessary. The primary purpose of those ships in wartime is to carry Marine Corps units overseas and to support and sustain them as they deploy ashore. In peacetime, amphibious ships perform patrols overseas, reassure allies, responding to crises, and providing humanitarian relief.

The amphibious warfare ships are divided into two different categories: amphibious assault ships and amphibious transport ships. The amphibious assault ships, the second largest ships in the US Navy after the *Nimitz* class nuclear powered aircraft carriers, include the Landing Helicopter Dock (LHD) and the Landing Helicopter Assault (LHA) ships (see figure 1). These ships serve as the flagship (meaning they carry the senior leadership and their staffs for the ARG. They also have the command and control facilities to support this function) and were designed to carry landing craft, helicopters, vertical short takeoff and landing (V-STOL) aircraft, and a sizeable medical staff to support Marine combat operations.

The smaller, but still very capable, amphibious transport ships include the Amphibious Transport Dock (LPD) and the Landing Ship Dock (LSD) ships (see figure[s] 1 and 2). These ships are designed to carry more landing craft and other support materiel and have limited aviation capacity. The current LSDs do not have a hanger for aviation assets or maintenance

crews to support any aircraft, but they do have a hanger deck. This limitation relegates this class of ship to more a support role and limits their potential as single ship deployers. As of February 4, 2016, LSDs make up the bulk of the amphibious fleet with 12 ships in the Navy's inventory.[3] Unfortunately, LSDs are old and quickly reaching the end of their service lives.

The Department of Defense is moving forward with plans for producing the next class of LSD, currently called LX(R). The Navy plans to procure the first of 11 LX(R)s in FY2020. The current plan is to employ the successful hull design of the *San Antonio-class* as a basis for the new LX(R) in order to reduce costs and gain efficiencies. That decision was driven, partly, by estimates that leveraging an existing ship design would reduce cost and gain efficiencies.

LHD/LHA: The *Wasp* and *America* class amphibious ships are considered "large" deck amphibious assault ships. They contain the largest volume of aviation and surface assault capabilities of all US amphibious ships. They also have the largest communications, medical, and vehicle storage capabilities, which allows these class of ships to easily serve as flagship vessels.

Figure 1: LHD/LHA

LPD: The *San Antonio* class amphibious ships, launched in the 1990s, is the newest class amphibious ship. It was intended to replace four older class ships (the *Austin*-class, the *Newport*-class, the *Charleston*-class, and the *Harpers Ferry*-class ships). While it does not have the capacity of the *Wasp* and *America*-class ships, it still allows for aviation and surface assault capabilities. Additionally, the sophistication and sensor suite makes this platform an ideal candidate for independent operations.

Figure 2: LPD

LSD: The *Whidbey Island* class amphibious ships are designed to carry more landing craft than any other US amphibious ship. While they boast the largest equipment area of any amphibious ship they do so at the cost of having a hangar bay. As a result, they are not the ideal platform for independent operations.

Figure 3: LSD

The Navy's Fiscal Year (FY) 2016, 30-year, ship building plan submitted to Congress in March 2015 lists 34 amphibious ships as its objective.[4] Until the mid-2000s, the Navy was expected to maintain enough amphibious vessels to carry the assault echelons (AE) of 2.5 Marine Expeditionary Brigades (MEBs). As per Marine Corps doctrine, a MEB can range from 3,000 to 20,000 Marines.[5] The large variance in numbers for the MEB is due to the compositing ability of Marine forces. Once a Marine force goes above 20,000 soldiers the force is considered to represent a Marine Expeditionary Force (MEF). This number was reduced to 2.0 MEBs in 2006 which translates to the Navy maintaining 34 ships (17 ships per MEB AE). The Navy estimates that at any given time 10 percent of these ships will be in long term maintenance; therefore, the Navy must maintain an extra 4 ships for a total of 38 ships. This extra allowance is sometimes referred to as the "maintenance tax" by insiders. Due to fiscal realities, the Navy and Marine Corps agreed to accept additional risks in the amphibious mission and reduced this number to 33. The FY16 30-year ship building plan shows one additional ship, 34, vice the agreed upon number of 33. This additional ship provides for a 4-ship ARG for Forward Deployed Naval Forces (FDNF) without adding undue strain on non-FDNF ARGs. For this to work, the Navy has to have a thoughtful plan to maintain a high state of readiness for its amphibious ships.

The 30-year ship building plan shows the Navy purchasing 23 new amphibious vessels. As of February 12, 2016, the US Navy maintains 272 deployable battle force ships of which 30 are amphibious vessels.[6] The Navy still maintains 33 amphibious vessels; however, three LSDs are currently undergoing a Service Life Extension Program (SLEP) and are not reflected in the "deployable" category. While the 30-year ship building plan was intended to provide Congress and the Joint Force with the Navy's long term construction plans given the National Security

Strategy and fiscal realities, the plan often changes over the course of 30 years. The Navy has already outlined to Congressional leaders several construction projects that could alter the proposed FY16 30-year plan if additional funding is not received.

Background

In the minds of many US citizens and military members, amphibious vessels bring to mind the amphibious assaults of World War II. Americans often think to the brutal and deadly island hoping campaigns of the European and Pacific Theater of Operations (i.e., Sicily, Normandy, Guam, Guadalcanal, Iwo Jima, etc.). Unfortunately, with only a few exceptions, Americans have not been educated as to the applicability of amphibious capabilities across the full Range of Military Operations (ROMO), but society's inability to make those connections is understandable. When Major Pete Ellis, USMC, wrote his 30,000-word document in 1921 on *Advanced Base Operations in Micronesia* it was for one purpose: the amphibious movement of US military troops against defended Japanese islands in the Pacific. This publication became the foundations upon which Marine Corps amphibious doctrine—Landing Operations Doctrine, F.T.P. 167, that the Navy issued in 1938. The Landing Operations Doctrine was later adopted by the US Army as well. After World War II, some military leaders believed that amphibious operations were no longer needed or even possible. In the years since, however, the Navy/Marine Corps team has repeatedly conducted amphibious operations ranging from high intensity combat (Inchon) to humanitarian relief.

Today's Joint Force has recognized the utility of US amphibious vessels above that of their initial creation. The *Wasp* and *San Antonio* class amphibious vessels boast sophisticated command and control capabilities, communication suites, long range aviation capability, and are

manned with the nation's premier expeditionary team in the US Marine Corps. The combination of capability and flexibility in the amphibious force has enabled GCCs the ability to use these assets as more than forces to conduct opposed landings to secure a beach head. Of all the amphibious operations since the end of World War II, the US has not conducted an opposed landing since landing at Inchon during the Korean conflict, yet amphibious vessels have been used in dozens of operations. Request for amphibious forces over the past ten years has increased tremendously; however, records show that the Navy and Marine Corps are providing less than 50 percent of the requested amphibious forces to GCCs (see appendix A).

Whether it is the 2010 operation in Haiti: Operation Unified Response or the 2011 operation in Japan: Operation Tomodachi, the Joint Force has used US amphibious forces way beyond their initial purpose of taking opposed beach heads. In 2010, *Los Angeles Times* reporters Tony Perry and Julian Barnes quoted Lt. General George J. Flynn, then Marine Corps' Deputy Commandant for Combat Development as saying, "When visualizing amphibious operations, some people default to Iwo Jima or Inchon, and those are not the operations we are contemplating in the future."[7]

Amphibious Material Conditions

A report commissioned in September 2009 by the US Fleet Forces Commander and the US Pacific Fleet Commander stated, "The material readiness of the surface force is well below acceptable levels to support reliable, sustained operations at sea and preserve ships to their full service life expectancy."[8] This report was led by retired Vice Admiral Phillip Balisle, USN. Admiral Balisle was directed to convene a Fleet Review Panel to assess surface force readiness

across the man, train, and equip domain areas; additionally, he was tasked with providing recommendations on corrective actions.

The report found that the readiness of the surface fleet had degraded over a ten-year period, not because of any one decision, but as a result of many independent actions. The report determined that the largest single issue affecting the material readiness of the US Surface fleet was the reduction of personnel aboard ships.[9] The report notes that from the end of the first Gulf War, the Navy reduced its number of ships from 574 to 283 and reduced its personnel from 500,000 to 330,000; as a result, surface personnel were unable to maintain the material condition of the fleet. The report highlighted the Chief of Naval Operations 2001 Optimum Manning (OM) initiative as having the most significant effect on current manning levels. In a drive to improve efficiency, this initiative ultimately cut 4,000 sailors from surface ships. Manning levels were determined almost exclusively by the number of watch standers needed to operate the ship and did not consider, heavily enough, the importance of additional persons for preservation and maintenance. Later efforts, looking for additional efficiencies, would reduce manning numbers further. One such example was the Pay and Personnel Afloat (PAPA) initiative in 2004. This program endeavored to move pay and personnel functions off-ship to shore based facilities. While this effort was successful in consolidating certain functions off-ship, it also reduced ship board personnel involved in routine maintenance. In addition to policy decisions that intentionally reduced the number of sailors aboard naval ships, the Global War on Terror (GWOT) reduced shipboard manning due to the loss of thousands of Sailors to Individual Augmentees (IAs) assignments. This program supported the ground wars in Iraq and Afghanistan by taking Navy personnel from both sea and shore billets and placed them in non-combat ground roles in support of the Army and Marine Corps forces. These personnel losses

combined with the normal losses due to medical, legal, schools, pregnancies, and various other Navy requirements served to reduce manning numbers to below OM targets.

A reduction in training also played a destructive role in material readiness of the surface fleet. The report found that near simultaneous actions in various training areas culminated to under prepare ship's personnel to properly maintain the fleet. Examples included: (1) The 1995 elimination of Readiness Squadrons (READRONs). These units provided both professional development and material readiness training for shipboard sailors; additionally, they were another line of accountability for the material readiness of the surface force. (2) The 1997 elimination of the Senior Officer Ship Material Readiness Course (SOSMRC) in Newport, Rhode Island. This program's focus was to give additional instruction to Prospective Commanding Officers (PCOs) on how to preserve the material condition of their ships. (3) In 1998, the Tactical Training Commands in both the Atlantic and the Pacific were disestablished. These commands provided the fleet with invaluable ship-to-shore professional experiences that aided in maintaining surface ships. These actions, and several others, were directed at the same time commands were expected to self-assess the condition of their ships. The Bilal report states, "Eliminating the course of instruction that taught commanding officers how to assess and manage the material readiness of their ship at the same time ships were expected to self-assess their material readiness contributed to the downward glideslope surface force readiness is on today."[10]

In addition to manning and training reductions, the Navy disestablished engineering planning commands, reduced preventative maintenance programs, and reduced inspections meant to detect declining ship material readiness. The report highlighted: in 1995 the Planning and Engineering for Repairs and Alterations (PERA) organization was disbanded. This

organization was responsible for executing and planning class maintenance plans (CMP); PERMA's ultimate goal was to help crews meet or exceed the service life of their ships. PERMA was replaced by SUPSHIP, an organization that was not staffed to provide the services provided by PERMA. In 2001 the Material Maintenance and Management (3M) program was adjusted downwards to allow for reduced requirements. The 3M program's downward adjustment was due solely to the reduction in shipboard personnel. The report found that in 1996, the Navy reduced its Chief of Naval Operations (CNO) availabilities from 15 to 9 weeks.[11] CNO availabilities are pre-planned scheduled maintenance periods, normally conducted in a ship yard, to address a host of shipboard needs. This reduction effectively reduced scheduled maintenance by 50 percent. To add, the Navy reduced visits from its Board of Inspection and Survey (INSURV) team from every 44 months in 1992 to over 60 months by 2009—a 36 percent reduction. INSURV is an organization that inspects and assesses the material condition of all Navy vessels. According to data from INSURV, US amphibious ships consistently scored below US Cruisers and Destroyers (CRUDES) on Material Inspections (MI) from 2009 until 2014.[12]

A report commissioned in 2014 by the Navy Supply (NAVSUP) Fleet Logistics Center in Norfolk looked for possible causes of amphibious ships scoring lower than cruisers and destroyers on Material Inspections. The report, prepared by Valkyrie Enterprises, analyzed data covering nine key categories (ship schedules, manning, supply support, maintenance training, modernization records, maintenance planning, maintenance budgets, personnel culture, and new construction) that could affect material inspections to determine if they influence, or correlate with, the lower scores amphibious ships received on their inspections. Of the nine areas researched, the researchers found correlations between ships' manning, supply support, and personnel culture that was consistent with lower average scores on material inspections.

Under Manning the report found:

- Average AMPHIB Navy Enlisted Classification (NEC) fill percentages from 2012-2014 were 4.3 percent lower than CRUDES. This difference is consistent with lower average AMPHIB figure of merit scores.

- Average AMPHIB NEC fit percentages from 2012-2014 were 3.4 percent lower than CRUDES. This difference is consistent with lower average AMPHIB figure of merit.

- Lower percentages of Critical Course Identification Number (CIN), Non-NEC onboard count for AMPHIBS compared to CRUDES is consistent with lower AMPHIB figure of merit average scores from 2009 to 2014. [13]

Note: NEC fill measures the percentage of sailors that hold a given NEC in their record plus sailors that hold NEC in rate inventory against total NEC requirements at a given command. NEC fit measures the percentage of sailors that hold the NEC in their record against total NEC requirements at a given command. These three observations suggest that the Navy is not putting the right sailors with the right skills in the right numbers onboard amphibious ships.

Under Supply Support:

- The report found that AMHIBS experience an average delay in receipt of off-ship Category 1 parts approximately 30 percent (27 days) longer than CRUDES. This disparity strongly correlates with lower average AMPHIB figure of merit scores.[14]

This observation suggests that amphibious ships are waiting approximately 27 days longer for certain ship replacement parts.

Under Maintenance Training the report found:

- The average journeyman training pipeline for main propulsion engineers on AMPHIBS is 39 percent shorter than those on CRUDES ships, which is consistent with lower average AMPHIB figure of merit scores.

- The “C” school utilization rate for amphibious journeyman is less than gas turbine system technicians, which is consistent with lower average AMPHIB figure of merit scores.[15]

These observations suggest to the Navy that journeyman main propulsion engineers on amphibious ships receive considerably less training than those on CRUDES ships. Also, Navy Engineman (EN) "C" school participation is less than that of those onboard CRUDES ships.

Under Personnel Culture:

- The report found that a lower selection rate for post O-5 commanding officers to Flag Officers positively correlates with lower average AMPHIB figure of merit scores.[16]

This suggests that amphibious post command O-5s are not valued as much as CRUDES post command O-5s.

The report submitted four recommendations for consideration for the observations noted above:

1. Manning: For AMPHIBS, conduct a comprehensive, configuration-based ship class work center capacity analysis to determine whether the current ship class billets authorized is sufficient to adequately perform organizational-level maintenance. Investigate means to improve school utilization and thereby increase the AMPHIB NEC fit/fill and percentage of Critical CIN/non-NEC Onboard Count.

2. Supply Support: Investigate details associated with greater delays in off-ship Category 1 (Failures) part support for AMPHIBS.

3. Maintenance Planning: Apply the Total Ship Readiness Assessment (TSRA) process equally between AMPHIBS and CRUDES to facilitate a consistent focus on material readiness documentation through the FRP. Conduct a validation effort concerning AMPHIB Ship Current Ship's Maintenance Plan (CSMP) backlog and the corresponding processes for AMPHIB work identification.

4. Maintenance Training: Conduct a follow on study to better understand the differences in training pipeline curriculum and length for journeyman main propulsion engineers on AMPHIBS vs. CRUDES and the impact on material readiness. Improve the "C" school utilization rate for main propulsion journeyman engineers in AMPHIBS.[17]

The results from this study center around two themes: 1. Amphibious ships do not have the correct number of properly trained shipboard personnel to maintain the ship. 2. Amphibious ships do not have access to replacement parts in a timely manner. Taken as a whole, the

reduction in inspections, shipboard manning, training on maintaining the material condition of the ship (at senior and junior pay grades), CNO availabilities, and professional development from off-ship organizations has served to create a fleet in material disrepair. The corrections needed to address these challenges will not be easy or inexpensive.

Amphibious Demand

Sam Fellman, a writer for *The Military Times*, in 2013, quoted then Chief of Naval Operations Admiral Johnathan Greenert as saying, "Today we have 286 ships. About a 100 ships are forward-deployed. Twenty years ago, we had 450 ships, and we had 100 ships forward-deployed. And 10 years ago, we had almost 300 ships and still 100 ships deployed."[18] The CNO's point was clear, the US Navy has provided the GCCs the same level of support with 286 ships as they did with 450 ships; however, this has come at a price to the material condition of US ships and the morale of the US fleet.

As stated previously, the supply of amphibious ships was set to 33 based on a wartime need to lift 2.0 MEB assault echelons, plus accepted reductions due to fiscal realities. This number of ships, 33, includes a maintenance tax and accepts a degree of risk in responding to national emergencies. What is less clear is if this number was intended to provide enough amphibious ships for a series of wars lasting more than 15 years; additionally, there is no acquisition strategy built on the number of amphibious ships needed for day-to-day peacetime operations. Furthermore, since the end of the Cold War, the United States and its coalition partners, have participated in numerous military interventions that placed increased emphasis on the amphibious fleet. From Operation Uphold Democracy in Haiti in September 1994, to Operation Joint Endeavor in Bosnia and Herzegovina in December 1995, to Operation

Tomodachi in Japan in March 2011, the US amphibious fleet has experienced an operational tempo that was not encountered during the height of the Cold War. The task of sourcing amphibious forces for these events falls to the US Fleet Forces Command in Norfolk, Virginia.

The US Fleet Forces Command has the responsibility of scheduling naval assets in response to GCC requests for forces. The request for amphibious warships has seen a steady increase since 2008.[19] It should be mentioned that prior to 2007 the GCCs restricted their request for amphibious ships recognizing the limitations of the current surface fleet. After 2007, the Department of Defense directed the GCCs to request forces based on mission need and not how many ships the Navy maintained; hence, an unrestricted request. The figure in Appendix A documents the over-all requests for amphibious forces from FY08 through June 2015. Note that while the request for ARGs and independent amphibious warship requests has increased over the years depicted, the percent sourced has steadily decreased in both categories.

The FY-16 30-year ship building plan submitted by the Navy shows the projected number of amphibious ships through FY 2045. The plan shows a force with as many as 38 amphibious ships in FY 2028 and as low as 32 in FY 2044. The plan also reveals that the Navy will build 23 new amphibious vessels over this time—see Naval Battle Force Inventory and the Long-Range Naval Battle Force Construction plan in Appendix B. In short, the Navy plans to replace nearly 77 percent of its current fleet by FY 2045. While the addition of these new ships will provide relief from repairing and maintaining the current fleet of ships, it will not solve the capacity shortages caused by a strategy that only focuses on war time lift requirements while attempting to source GCC requirements based on real world realities.

Costs of Doing More with Less

As stated earlier by the former Chief of Naval Operations Jonathan Greenert, the US Navy is providing the same level of service to the GCCs with 280 ships as it did with 450. The effects of doing more with less is clear; over time, doing more with less, hinders needed maintenance and encourages good sailors to leave the Navy. Retired Master Chief Joe Barnes is quoted as saying, "There's a definite mismatch between operational commitments, deployment requirements and the number of personnel that are needed to sustain those commitments…I think, over time, you're wearing out the force."[20] Both official and unofficial sources point to a vicious cycle of budget cuts, delays in scheduled maintenance, which then cause deployed forces to extend on-station, which delays or truncates other ships' scheduled maintenance, thereby starting the cycle all over again. When added to the heightened operational tempo (OPTEMPO) since 9/11 this cycle is destroying the morale of US Sailors and wreaking havoc on maintenance schedules and the material condition of the Navy's ships.

An unofficial online poll of nearly 6000 Navy personnel—including both officers and enlisted—conducted in 2014, on Naval Retention efforts, was led by CDR Guy Snodgrass, USN.[21] The study, documented in *Stars and Stripes*, suggests that when the national economy improves the Navy could face a manpower crisis if current conditions are not changed. CDR Snodgrass stated that he led the study to find out why US Sailors chose to leave the Navy after serving their minimum service requirements. His results pointed to lengthy deployments and a risk averse service culture. Responding to the *Stars and Stripes* article, CDR Chris Servello, a spokesman from the Navy's personnel office, stated the findings in CDR Snodgrass's report mirrored their own research; however, the Navy, in some cases, drew different conclusions.

CDR Servello also stated that the Navy continues to compensate sailors for conducting longer deployments.

While doing more with less may prompt too many good sailors to leave early, the largest expense may be the increase in maintenance costs. The longer a ship stays on deployment the more things break; the more things break, the more time a ship will need in the ship yards at greater expense. On September 15, 2015, Rear Admiral Jeffery A. Harley, Assistant Deputy Chief of Naval Operations for Operations, Plans and Strategy (N3/N5) testified before The Subcommittee on Readiness, House Armed Services Committee that "[m]aintenance is a key factor in the health of the force. To meet national tasking, we extended deployment length, which increased the wear on our ships, and resulted in additional maintenance and repairs that lengthened planned maintenance availabilities. Operational schedule changes, funding shortfalls, shipyard loading constraints, late modernization adds, and other factors led to inefficient maintenance and modernization planning, contracting, and completion."[22] Admiral Harley went on to state that the Navy was paying the price for prolonged deployments and a high operational tempo. As a means to begin addressing these challenges, he explained that the Navy would be implementing a program called the Optimized Fleet Response Plan (O-FRP).

Optimized Fleet Response Plan (O-FRP)

By 2014, it was clear that the US Navy's leadership realized that doing more with less could not be sustained. A quote from a 2014 speech to The National Ship Repair Industry by Admiral Bill Gortney, then Commander, US Fleet Forces report states, "We developed the Optimized Fleet Response Plan to establish a more manning-balanced and sustainable cycle."[23] The US Fleet Forces Command defines O-FRP as process or program that will:

- Enhance the predictability and stability for US Sailors and their families by aligning carrier strike group assets to a 36-month training and deployment cycle versus a 27-month cycle.
- Starting in FY 2015, require all maintenance, training, and evaluations to fit within a 36-month cycle that includes a single 8-month deployment. This schedule is intended to drive down costs and increase fleet wide readiness.
- Streamline inspections and evaluations thereby allowing an ability to surge if needed.
- Reduce time at sea and increase home port tempo from 49 to 68 percent, over a 36-month period.
- Be used to align all US Naval forces to a 36-month cycle.[24]

Fleet Forces defined the problems that O-FRP is designed to address as:

- Lost predictability for sailors, their families, and the industrial base.
- Current cycle length does not accommodate maintenance, training, or maximize operational availability.
- Chain of commands are misaligned.
- Manning levels do not support the various training cycles.
- Unconstrained inspection processes.
- Underfunded spare parts accounts.
- Lack of standardized operational training.
- CNO availabilities not executed on time or on budget.[25]

O-FRP is broken into four major phases: (1) maintenance phase, (2) basic phase, (3) integrated or advanced phase, and (4) sustainment phase, which includes the pre-deployment, deployment, and post-deployment sustainment periods. A complete O-FRP cycle runs from the beginning of a maintenance phase to the beginning of the next maintenance phase. Cycle lengths are intended to be long enough to complete required maintenance and training and still provide the operational availability needed by CCDRs. The goal is to realize a more stable long range production plan after three complete O-FRP cycles.

O-FRP is defined as being "comprehensive and transformational spanning the entire Navy's industrial planning and production efforts," which requires the alignment and optimization of the following critical outputs:

- Force structure and force acquisition

- Manning and resourcing levels
- Existing and forecasted industrial base
- Maintenance and modernization output
- Individual and fleet training[26]

O-FRP will operate across nine lines of effort: Operational and tactical headquarters, advanced training, unit training, inspections, parts, maintenance modernization, manning, CSG or ARG alignment and O-FRP length.

The ten guiding principles that determine O-FRP's focus are 1. Cycle lengths will support the time needed for maintenance and training while providing the operational availability needed. 2. Command and control will be aligned and maintained during the O-FRP cycle. 3. Units will receive the right Sailor at the right time during the cycle. 4. Modern and capable ships and aircraft will be delivered to support pre-deployment and deployment needs. 5. Logistics information systems will support O-FRP phase activities. 6. Military Sealift Command will maintain the correct number of vessels to support peacetime and wartime needs. 7. Inspections will be consolidated and streamlined and aligned to O-FRP phases. 8. Staffs and units will be trained to single high-end near-peer standard. 9. Tactical level headquarters will be aligned with associated Maritime Operations Centers (MOC). 10. Applies to all units under fleet response plan construct.

The Optimized Fleet Response Plan (O-FRP) is a much needed whole-of-Navy approach that seeks to "reset" the fleet after 24 years of the Navy seeking efficiencies over effectiveness while attempting to fight two wars under the concept of doing more with less. O-FRP seeks to reduce time at sea and increase home port tempo from 49 percent to 68 percent over a 36-month period. The goal is to align training and readiness goals while returning predictability and stability to Sailors and their families. While O-FRP is a much needed process to help correct

years of outdated or unproven concepts, the process of implementing O-FRP will not be easy, quick, or inexpensive. Given the shear scope of O-FRP and its attempt to align many levels of effort across the Naval Enterprise, commands will be required to change long held practices and in some cases entrenched dogma. The attempt to align maintenance periods with ships in the same deploying units, in addition to, adding an extra eight to nine months onto a maintenance cycle may be needed, but will initially challenge schedule writers and place additional strain on limited ship yard facilities. In some cases, the Navy will have to reorganize—or reconstruct eliminated commands like PERA—to assist ships in preparing for yard periods. This effort will require the Navy to find the correct personnel with the right skill set to maximize maintenance availabilities. Ultimately, Congress will need to provide additional funding to accomplish these tasks and help O-FRP come to fruition.

Conclusion

The process that the US Pacific Fleet and US Fleet Forces commanders approved—in O-FRP— is a long overdue recognition that doing more with less over an extended period of time has an enormously negative effect on the Navy's ships; extended operations in that environment also negatively affects the morale of the sailors stationed aboard those ships and the ship's maintenance cycles. Unfortunately, O-FRP will create some short term gaps in operations to get the additional time needed in the ship yards, but these gaps can be minimized by the schedulers at the US Fleet Forces command.

The Joint Force and the Marine Corps should accept that the cost of repairing the amphibious fleet carries a cost and a part of that cost is a short term reduction in availability. What should be recognized is that without O-FRP, or some similar process, these ships would

not reach their planned service lives resulting in a greater loss to the amphibious mission, increased cost to US taxpayers, and place additional pressures on the 30-year ship building plan.

Since the end of the Cold War, the US amphibious fleet has participated in more, not less, missions. The Joint Force and Congress should align the amphibious fleet with the National Security and Defense Strategies with the aim of responding to today's realities. Additionally, the Navy should accept that the success of their mission lies with the quantity and quality of its people and that there is no substitute for having the right Sailor, with the right training, on the right ship to both maintain and operate its ships; the Navy should also recognize that sacrificing effectiveness in an attempt to gain efficiencies, largely by reducing shipboard personnel, accomplishes neither efficiencies or effectiveness.

Recommendations

The Joint Force and Congress should decide what part the US amphibious fleet plays in the National Security Strategy and we need to recognize that amphibious ships do more than carry Marine Assault Echelons into combat. As documented in this report and reported to Congress, amphibious ships are the workhorse of the fleet, and yet, they are in short supply. This shortage results from a disconnect at the strategic level that fails to accept that amphibious ships provide more to the Joint Force than just carrying 2.0 MEBs into combat. In order to have the correct number of amphibious vessels, the US Congress and top military leaders should stop thinking of these ships just in terms of their warfighting demands from the Cold War and start thinking of them in terms of their peacetime functions and warfighting demands of today. This *updated* number of amphibious ships must begin with an accurate description of the amphibious mission as reflected in the National Security and National Defense Strategies. This would allow

the Department of the Navy to maintain the appropriate level of amphibious ships needed for today's mission.

The Joint Force and Congress should then ensure that an amphibious ship acquisition strategy matches the mandates of the National and Defense Security Strategies. This acquisition strategy must build the correct number and type of ships needed to operate in the expected threat environment. The number of ships built must include enough to cover both peacetime (i.e., national and international exercises, HA/DR operations, routine training, etc.) and kinetic operations. As documented in this report, the amphibious fleet is under great duress. A reduction in the number of amphibious vessels combined with a reduction in ship's personnel has contributed to a fleet of ships that are over utilized and under maintained. Having an acquisition strategy designed to meet today's realties would begin to reduce the stresses on the naval forces to an acceptable level.

The Joint Force and naval planners should allow the amphibious ships to receive an appropriate amount of maintenance to ensure these ships reach their intended service lives and are ready to perform their missions when needed. Congress should provide the correct amount of funding at the appropriate time to conduct the maintenance needed. Additionally, the Naval Services and Congress should work together to ensure these ships have the correct number of personnel, with the right training, at the right time, to both operate and maintain these ships over the expected ships' service life. As this report documents, ships operate in conditions that are deleterious to the ship's hull and the many expensive electronic systems located inside of them. As such, these ships require constant upkeep to prevent serious degradation, else they will require costly, and unplanned, repairs when they finally reach a repair facility. While the US Navy, in search of gaining efficiencies, has experimented with providing routine maintenance

from off-ship personnel, it seems clear that the work of maintaining these ships is best performed by properly trained US Sailors who are attached to these ships.

Finally, the Congress and naval leaders should determine the correct number and placement of repair facilities (i.e., shipyards) to properly maintain the US Navy's fleet. Without the correct number of facilities, the Navy cannot get the throughput needed to repair its ships in a reasonable time. These delays increase repairs costs, could reduce training times, cause unnecessary delays in ship's schedules and ultimately negatively affect the ability of Joint Force Commanders to accomplish their missions.

Appendix A

Steady State Combantant Commander (CCMD) Warship Demand Versus Sourcing (FY08 - FY16)		
FY	CCMD ARG/MEU Requirment (Demand/Sourced (%))	CCMD Independent Amphibious Warship Requirment (Demand/Sourced (%))
2008	3.40/2.62 (77%)	3.50/1.88 (54%)
2009	3.40/2.28 (67%)	2.58/0.99 (38%)
2010	4.57/2.60 (58%)	3.89/1.47 (38%)
2011	4.60/3.10 (67%)	3.83/1.40 (37%)
2012*	4.44/2.29 (52%)	5.41/1.57 (29%)
2013**	4.60/2.35 (51%)	4.50/0.54 (12%)
2014***	5.60/2.14 (38%)	3.50/0.18 (5%)
2015***	4.90/2.10 (43%)	1.33/0.31 (23%)
2016****	4.50/2.19 (49%)	1.83/0.00 (0%)
** As of May 2012		
** As of Dec 2012		
*** Projections as of June 2015		
**** Projections as of June 2015		

Based on data provided by the Marine Corps Combat Development Command, Feb 2016.
***=Estimated May 2012, **=estimated December 2012, ***=estimated April 2014.**

Appendix B

Naval Battle Force Inventory (FY16-FY45)

Fiscal Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Aircraft Carrier	11	11	11	11	11	11	12	12	12	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	10	10	10	10	10
Large Surface Combatant	87	90	91	94	95	96	97	98	98	98	97	99	100	98	95	91	89	88	86	88	86	85	84	85	85	85	83	83	82	82
Small Surface Combatant	22	26	30	33	33	34	37	36	40	43	46	49	52	52	52	52	52	52	52	52	53	53	54	56	56	54	54	54	54	57
Attack Submarines	53	50	52	50	51	51	48	49	48	47	45	44	42	41	42	43	43	44	45	46	47	48	47	47	47	47	49	49	50	50
Cruise Missile Submarines	4	4	4	4	4	4	4	4	4	4	2	1																		
Ballistic Missile Submarines	14	14	14	14	14	14	14	14	14	14	14	13	13	12	11	11	10	10	10	10	10	10	10	10	10	11	12	12	12	12
Amphibious Warfare Ships	31	32	33	33	33	33	34	34	35	35	37	37	38	37	36	36	36	37	37	36	35	35	34	34	33	34	33	32	32	33
Combat Logistics Force	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
Support Vessels	31	28	30	32	34	34	34	34	35	36	36	36	36	36	36	35	36	36	36	37	37	36	35	32	32	32	32	32	32	32
Total Naval Force Inventory	282	284	294	300	304	306	309	310	315	317	317	319	321	316	312	308	306	307	306	309	308	307	304	304	302	302	302	301	301	305

Based on data from the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2016

Long-Range Naval Battle Force Construction Plan (FY16-FY45)

Fiscal Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Aircraft Carrier			1					1					1					1					1					1		
Large Surface Combatant	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	2	3	2	3	2
Small Surface Combatant	3	3	3	2	3	3	3	3	3	3					1		1	1	1	2	2	2	3	4	4	4	4	4	2	3
Attack Submarines	2	2	2	2	2	1	2	2	1	2	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	2	1	2	1	2
Ballistic Missile Submarines						1			1		1	1	1	1	1	1	1	1	1	1										
Amphibious Warfare Ships	1	1			1		1	1	2	1	1	1	2	1	1	1	1				1				2		1		2	1
Combat Logistics Force	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1										1		2
Support Vessels		2	1	2	1	1	2	3	2	1			1	1	2	2	2	2	1											
Total New Construction Plan	9	10	10	9	10	9	11	13	12	10	6	6	9	7	9	8	9	9	6	6	7	6	9	9	10	8	9	10	8	10

Based on data from the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2016

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