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THE HOUSE ARMED SERVICES COMMITTEE  
SUBCOMMITTEE ON SEAPOWER AND  
EXPEDITIONARY FORCES

STATEMENT OF  
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BEFORE THE  
SUBCOMMITTEE ON SEAPOWER AND EXPEDITIONARY FORCES  
OF THE  
HOUSE ARMED SERVICES COMMITTEE

ON  
NAVY'S 30-YEAR PLAN IMPACT ON THE INDUSTRIAL BASE

MARCH 3, 2010

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Chairman Taylor, Ranking Member Akin, distinguished members of the Seapower and Expeditionary Forces Subcommittee, thank you for inviting me to appear before you to discuss my views on the aspects of the Navy's long-range shipbuilding plan and what I believe are key issues faced by the shipbuilding industry as a whole.

### **Introduction**

I appreciate and thank you for the opportunity to discuss shipbuilding with you today. It is a personal honor for me to represent the industry in general, but also, and more specifically, to represent 40,000 proud American Shipbuilders in Northrop Grumman - men and women whose heritage of building great ships for the Navy dates back to 1895. As shipbuilders, we take great pride in our relationship with the Navy and in our responsibility of providing the ships they need to defend the nation and to defend freedom around the globe.

Northrop Grumman Shipbuilding designs, builds, refuels, repairs, and maintains nearly every class of ship for the Navy and specific ships for the Coast Guard in our four shipyards and three other industrial sites in the United States. In addition to being the nation's sole designer, builder, and refueler of nuclear-powered aircraft carriers, Northrop Grumman Shipbuilding provides nuclear-powered submarines, surface combatant ships, and amphibious assault ships to the Navy and National Security Cutters for the U.S. Coast Guard. We are the largest industrial employer in Virginia and the largest private employer in both Mississippi and Louisiana.

### **Thirty-Year Shipbuilding Plan**

Now, let me turn to the specifics of the Navy's 30-year shipbuilding plan, and give you my impressions and elaborate on the factors impacting the shipbuilding industrial base.

I believe the Navy's 30-year shipbuilding plan is courageous, but perhaps optimistic. The plan is courageous in that it sets in motion solutions to many of the issues impacting the industrial base. It is optimistic in that resources will always be an issue in the out years of the plan. I commend the Chief of Naval Operations and the Secretary of the Navy for committing to a plan and staying with it through the budget development cycle. Though there are exceptions, I believe the

proposed plan goes a long way toward stabilizing a declining shipbuilding industrial base while providing our Sailors and Marines the ships they need to protect our national interests.

The 30-year shipbuilding program builds:

- Aircraft Carriers on five-year centers
- Large-Deck Amphibious Assault ships on five-year centers
- Two *Virginia*-class submarines per year
- *Ohio*-class Replacement SSBN(X) production starting FY 2019
- Three DDG-51s every two years
- LPD 17/LSD(X)'s on two-year centers starting in FY 2017
- 66 LCS's, 41 Joint High Speed Vessels and three Mobile Landing Platforms

There is much good news in this plan. To begin with, two nuclear submarines per year and aircraft carriers on five-year centers will go a long way to stabilize these two facets of the shipbuilding industrial base. Similarly, the industrial base for large-deck amphibious ships, also to be built on five-year centers, will be stabilized by this plan. Finally, the acceleration of the LCS and JHSV programs, as well as the restructuring of the Maritime Landing Platform (MLP) program to a less complex ship, will all have positive effects.

However, it is clear to me that the Navy's plan assumes an industrial base rationalization from its current state to a future state where ships are more affordable, and the industry can attract and retain skilled shipbuilders and obtain a solid return on investment for the shareholders who provide the capital. That is a bold assumption. In order to make that happen, the industry, the Navy, and Congress all would have a lot of work to do to make this transformation of the shipbuilding industrial base a success. Many challenges and hard choices would have to be made. We would need a creative partnership between industry, the Navy and Congress if rationalization were to happen.

In my experience, the 30-year plan usually provides a “best case” scenario. And I do not see this plan to be any different. I see three challenges to the plan: two near-term and one longer-term. The first near-term challenge is the number of major surface combatants. In years past, the Navy has procured three destroyers per year, which allowed it to maintain dual sources for destroyers, which in terms of numbers represents almost 30 percent of the fleet. However, the current plan cuts this rate in half. The Navy knows the number of ships it needs to procure to satisfy its mission; however, in this procurement process, the Congress should be aware that the plan for destroyers has implications. Will one and a half ships be enough to keep two yards in competition, will it be enough to attract and retain the skills needed to cost-efficiently build these ships, and will it be enough for the shareholders so that they put their capital in our shipyards? Especially in the future, when not just price but technological innovation will be required?

A second near-term challenge is the lack of a bridge to LSD(X). Industry has worked very hard with the Navy to create an affordability bridge between LPD 27 and LSD(X). Taking the Navy’s own strategy to promote commonality, NGSB, the Marine Corps and Congress promoted the construction of LPD 26 and 27, as well as LCC(R) 1 and 2 as common platforms that would be a bridge to a common LSD(X). The strategy’s virtue was that it met both war fighting and industrial base needs. However, LCC(R) 1 and 2 both now have been removed from the plan, producing a five-year gap between start of LPD 27 and start of the LSD(X). My sense is that the efficiency of the shipyards will be affected and that the Navy will incur non-recurring engineering costs for a new class of ships that might otherwise been avoided.

The final challenge is more long-term. I am concerned about the looming bill for the Ohio Replacement Program in the mid-term of the plan. While the 30-year shipbuilding plan addresses this challenge, it is also clear that many of the later years in the plan will require SCN budget of approximately \$20B (FY10\$). If that goal is not attained, there will not be enough money to continue building all classes of ships. The surface combatant and amphibious assault challenges cited above will be greatly exacerbated, which could lead to conditions resulting in shipyard closures. As a result, the ability of Congress to uphold its constitutional mandate to “maintain a Navy” will be significantly diminished. I strongly encourage this committee to consider alternate funding plans for Ohio Replacement Program, taking it off budget, and fund it in addition to normal SCN.

In summary, the plan implicitly assumes a rationalization of the industrial base, which includes craftsmen, engineers, facilities, and the entire supply chain that extends across the 50 states. When any industry goes through this kind of rationalization, the transition will be turbulent with turmoil and uncertainty. However, the Navy's plan does not address these issues. It is in the national interest that the resulting shipbuilding industry be healthy and stable. It is also in our best interests that the transition from the current state to the future state is conducted in a responsible manner. Promoting a real dialogue between industry, the Navy, and Congress would be an important start. We will not agree about everything. However, a dialogue will produce mutual understanding about the opportunities and constraints that each institution lives with daily. This can only be positive. In that dialogue, we should talk about how to leverage the good practices in today's programs and how to create enablers to obtaining appropriately sized work force, facilities, and supply chain that support the Navy's plan.

Now, I would like to highlight the positive elements in the Virginia-class as a model for us to leverage in executing the Navy's plan.

### **Virginia-class as the model program**

The *Virginia*-class submarine program raises the bar for all Navy programs in procurement and production. Since the signing of the teaming agreement by both Northrop Grumman Shipbuilding and General Dynamics Electric Boat in 1997, this highly successful program has become a model in how we can reduce costs, improve construction schedules, and leverage operational efficiencies repeatedly from ship-to-ship through multi-year, multi-ship procurements.

Under the teaming agreement, each ship of the class is built by both Northrop Grumman Shipbuilding in Newport News, Virginia, and General Dynamics Electric Boat in Groton, Connecticut. Ships are co-manufactured whereby the ship's major modules have been assigned to each respective yard, and the delivery of the ship is alternated between each yard. Today with a completed class design, both yards continuously collaborate on process improvements to reduce the number of modules, optimize the construction sequence, and further drive down cost and schedule. While challenging, the team has been able to deliver on its commitments.

The multi-year, multi-ship procurement for the Block III in the Navy's 30-year plan demonstrates the Navy's confidence in this program. The quest to continue to improve on the *Virginia* class will proceed as we enter production rates of two ships per year. Let me give a few examples of other positive benefits derived from multi-year, multi-ship procurement.

#### Serial Production results in efficiency

With the multi-year, multi-ship contract, we can embrace a serial production approach to our project management and resource planning. A skilled, dedicated workforce, who knows the science of modern shipbuilding and the art of building great ships, is the heart of the shipbuilding industry. On the *Virginia* class, the learning, ship-over-ship, improved as our craftsmen became more proficient through serial production. While we employ a great amount of automation, much of the assembly, outfitting, and testing needed to bring the ship to life requires "hands-on" labor and deck plate knowledge. In craft production, the stability of volume in serial production directly translates to labor cost efficiency. The repeatability in serial production provides the management the ability to assign workers to the same job on each ship thus gaining proficiency, reducing variability, and fully optimizing process efficiencies.

The *Virginia*-class block-buy approach provides predictability and stability in the industry's ability to capture and retain talent. The predictable volume and schedule in the multi-year, multi-ship contract enables reliable production plans with labor level-loaded across engineering, production and the supply base within the *Virginia*-class ships. The cost associated with efforts to respond to contract delays or cancellations as well as hiring and retaining costs of skilled workforce are all minimized.

#### Block-buy benefits cascade to suppliers

The benefits of multi-year procurement flow to our suppliers and their suppliers who are an essential part of the shipbuilding industrial base. At Northrop Grumman Shipbuilding, material represents over 30 percent of our cost profile. We typically spend between \$2 and \$2.5 billion annually across all the ships in our portfolio. The ability to bundle material procurement for

blocks of ships, as is the case routinely with the *Virginia* class, provides the economic order quantity necessary for better pricing. In return, our suppliers also benefit from operational efficiencies associated with sustained production. The sustained production is equally important and enables us to avoid costly supplier base restarts that we have seen in other programs with less predictable demands.

#### Successful capital incentive program

The *Virginia* class incentive structure for capital investment for an on-going program is a model to be replicated. The capital expenditure incentive structure in the *Virginia*-class program offers greater opportunity for both shipyards to make capital investments with higher rates of return if the improvements resulting from the investment are realized over the life of the 30-ship class. Both Northrop Grumman Shipbuilding and General Dynamics Electric Boat as teaming partners have submitted capital projects to the Navy, which have been approved and incentive fees have been shared equally.

While slightly different than the *Virginia*-class approach, on CVN78, the Navy provided incentive fee structure in the contract which supported our ability to meet the needed rate of return on investment to build new facilities with required capabilities for the next class of carriers. These capital incentive approaches enable the industry to show the expected returns on the investment to our parent corporations and shareholders. In return, shipbuilding capabilities can be strengthened and maintained to support the Navy's mission.

#### Impacts on Shipbuilding Workforce, Facilities, and Supplier Base

While the *Virginia* class practices can be a model for all other programs in the Navy's 30-year plan, the industry must find ways to get to the right level in capacity and capabilities to create a healthy industrial base that fits the plan. In doing so, industry would need to develop strategies to redeploy its workforce while maintaining the skill base, consolidate or close facilities to maximize utility and to reduce unnecessary investments, and deploy "smart-buy" procurement strategies to maintain key suppliers in the supply chain.

I believe industry in general has taken some steps to rationalize its workforce, facilities, and suppliers over the past decade as the defense production levels slowed down at the end of the Cold War. However, further rationalization is clearly assumed to create a healthy industrial base that aligns to the Navy's 30-year plan. Let me share my thoughts on the challenges shipbuilders still face in order to rationalize our workforce, facilities, and the supplier base.

### Workforce

Shipbuilding is complex. To build these great ships requires uniquely skilled craftsmen who marry science and technology with the art of shipbuilding. Many of our employees are third-, fourth-, and fifth-generation shipbuilders. However, the demographics have shifted to where a large portion of our workforce today is made up of new employees, with less than five years of work experience, coupled with a large population of seasoned shipbuilders with 25 plus years of experience who are nearing retirement age. Ships are not built overnight, nor are 25 plus years of experience in shipbuilding easily replaced. In past decades through downsizing and consolidation, this unfavorable workforce shift has grown while the workforce declined.

We have taken actions to address this challenge by making substantial investment in our people. We have focused on accelerating the learning and development of those with less than five years experience, placed extensive emphasis on strengthening the first line leadership, and fostered knowledge transfer from seasoned veterans to those who will replace them. Additionally, we have strengthened our relationships with local community colleges to provide craft and business curricula while formalizing and strengthening our on-the-job training.

In our flagship Apprentice Schools, we continue to train and develop the next generation of shipbuilders. In February, 161 apprentices at our Newport News yard graduated and joined our shipbuilding family, and another 159 will graduate from our Gulf Coast shipyards this April. We are also home to strong tradition and great shipbuilders who have stuck with the industry through good times and bad. Today, we have nearly 1,000 "Master Shipbuilders" who have reached 40 uninterrupted years of shipbuilding, leading the way on a daily basis.

We are committed to developing our people to ensure this nation's ability to build great ships. However, another potential challenge to maintaining our workforce looms ahead. The expected build-up of domestic energy infrastructure could drive a talent drain from the shipbuilding workforce. The shipbuilding skills required to work with heavy steel, large component fabrication and assembly, as well as nuclear knowledge, are the same skills necessary to support the energy infrastructure. This threat to shipbuilding however, could become an opportunity for our shipyards and shipbuilders with the help of Congress. Outside the US, shipyards are becoming stronger and are remaining viable by taking on energy infrastructure work. Such work allows these shipbuilders to maintain their skilled workforce so the skills are there in sufficient numbers to take on shipbuilding when the need arises. This could not happen without foreign governments that support this redeployment of facilities and skilled workforce.<sup>1</sup>

### Facilities

We have the same industry footprint today as we did when the plan called for a 600-ship Navy. Today, the shipbuilding industry, consisting of six large shipyards, numerous secondary shipyards and four public yards, has more capacity than what is required to support the Navy's 30-year plan. The maintenance cost to upkeep the piers, dry docks, cranes, facilities, equipment, and other infrastructure is expensive but necessary in order to sustain our shipbuilding capabilities. Workforce skills and qualifications need to be maintained, especially in nuclear skills, because the cost to re-train or re-qualify is even higher. However, to invest their capital, our shareholders expect a return on their investment commensurate with the risks inherent in our shipbuilding business. This has not always been the case.

Aside from the challenge of obtaining the capital due to less work and lack of returns, under the current government regulations, we cannot readily redeploy our assets to other non-defense work

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<sup>1</sup> In the BusinessGreen news, Liberal Democrat leader Nick Clegg announced plans to strengthen United Kingdom's struggling wind turbine manufacturing industry by diverting £400m of government spending to conversion of underused shipyards into offshore wind turbine plants through the party's new Green Jobs Manifesto. The manifesto estimates that this will create 12,000 jobs in port development and additional 45,000 new jobs in manufacturing.

that could improve the utilization rate, lower overall overhead rates, and yield higher rate of return on investment for our shareholders. Foreign countries offer subsidies to build ships as well as incentives for the industry to transition from defense work to commercial work such as wind, nuclear, and solar.<sup>2</sup> In the U.S., the industry will have to bear the cost of start-up, cost for facility and equipment impairment, and address any environmental issues as well as fund the necessary capital investment. Shipbuilding Capability Preservation Act agreements helped the industry in the past and perhaps, working together we can create a mechanism to enable the industry to responsibly rationalize its facilities and create a healthy industrial base.

### Supply Chain

No discussion of the shipbuilding industrial base would be complete without a discussion of the supplier base. Just over a year ago, we combined the supply chain function across our shipyards to ensure we were doing the very best job we could in managing these critical resources. All told, we have more than 4,900 suppliers across the 50 states that currently support our programs with raw material, components, and systems.

In the past decade, as shipbuilding rates declined, we drove focused efforts to rationalize our supply base taking into account the marketplace, prices, predictability, and risks. While we made many conscious decisions about the suppliers we needed to keep, the marketplace also made decisions on its own with many suppliers choosing to exit naval shipbuilding. Drivers included the attractiveness of adjacent markets, inconsistency of demand, and costs associated with maintaining the unique skills and qualifications required for naval ship supply. We felt the brunt of the impact as suppliers, especially sole-source suppliers, closed their doors. The low volumes we have today are eliminating competition. As a result, today approximately 60 percent of our total material spending is with sole source suppliers who design, integrate, and manufacture key systems.

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<sup>2</sup> In September 2009, ThyssenKrupp Marine Systems sold its German shipyard, Nordseewerke, to SIAG Schaeff Industrie who planned to convert the yard to support manufacturing for the wind energy industry. Nordseewerke Shipyard was founded in 1903 but has been challenged in the recent years with diminishing workload. Germany's feed-in-tariff system, which guarantees prices or premiums for electricity produced from renewable sources, provides the incentives for many who are entering the renewable energy industry.

With one programmatic exception, *Virginia*-class submarines, we have seen material costs escalate at a rate beyond that which simple material price indices would dictate. This phenomenon is directly related to our ability to take sustained demand to the marketplace. Virtually every other program has had some form of production interruption that has led to increased material costs. When we have consistent reliable demand, we can manage our costs.

Advanced funding to procure material in pre-construction contracts, multi-ship contracts, and block-buys have contributed significantly to our ability to bulk purchase and negotiate better pricing. Just as we can achieve labor savings through volume production, suppliers can better manage their workforce, retain skills, maintain stable production rates, and achieve the learning curve much like we have been able to achieve with our team mate on the *Virginia*-class ships.

In summary, to rationalize the shipbuilding industrial base to support the plan, we must come through the challenges I discussed above in the workforce, facilities, and the supply chain.

### **What the Congress, the Navy, and Industry must do**

There is much debate and scrutiny over the fleet size and whether the Navy is properly resourced to carry out their mission. Over the past two decades, the fleet decreased from over 600 ships<sup>3</sup> to 287 ships today with a projection to 301 by 2040. While industry is not qualified to tell the Navy what ships it may or may not need to fulfill its essential missions, we are uniquely qualified to prescribe what is required for a strong and healthy shipbuilding industrial base to build and maintain these ships. Since the Navy's plan assumes a smaller industrial base than the current size, this will require a responsible rationalization of the current workforce, facilities, and supply chain.

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<sup>3</sup> Congressional Research Service has compiled a table showing total number of ships in the Navy since FY1948. In 1970, the Navy had 769 ships in the fleet, which declined steadily to 477 ships in 1980. The fleet size slightly increased through the '80s at its highest at 566 ships in 1989. Starting in 1990, the fleet size once again steadily fell to 318 ships by 2000.

Looking to the horizon, executing the Navy's plan will require greater collaboration and partnership between Congress, the Navy, and industry on the following:

- Drive programs toward multi-year, multi-ship, block-buys
- Provide incentives to support workforce stability and a stronger supply base
- Support closure and/or redeployment of select shipbuilding assets to new endeavors such as energy infrastructure manufacturing

We look forward to actively participating in any future dialogues on these challenges. I represent men and women who share a single vision: to build the finest military ships in the world. We share a single profession — we are shipbuilders. Working together, with the strong support you continue to show our industry, we can build a healthier shipbuilding industry that will continue to provide great ships for our nation into the next century.