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STATEMENT OF

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ON UNDERSEA WARFARE

BEFORE THE

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Mr. Chairman and distinguished members, I thank you for the opportunity to testify before the Subcommittee on Seapower, representing the men and women of your Navy's Undersea Forces.

Undersea Warfare

Undersea warfare consists of military operations that originate from the undersea or are directed into the undersea, ranging from survivable nuclear deterrent patrols by ballistic missile submarines to intelligence collection by attack submarines to surveillance by undersea sensors. It includes antisubmarine warfare by aircraft, Tomahawk strikes like those conducted by the guided missile submarine (SSGN) USS FLORIDA in Operation Odyssey Dawn against Libya, and mine-hunting operations by small unmanned vehicles near the Strait of Hormuz.

Not all undersea warfare is done by undersea forces. For instance, antisubmarine warfare and maritime mine warfare are often done by airborne or surface systems and platforms. These cross-domain operations require careful coordination of efforts between Undersea Forces and surface ships, aircraft, space assets, communications systems, and headquarters facilities, but they often yield outstanding results and greatly improved efficiency. This is an area where we are applying greater emphasis in our maritime operations around the globe.

Today, though, I intend to focus on how Undersea Forces—the platforms and their crews that operate in the depths—contribute to Undersea Warfare.

The Unique Strengths of Stealthy Undersea Forces

The stealth of our Undersea Forces provides an advantage that no other part of the Joint Force can provide: persistent, undetected, assured access far forward and the ability to do valuable things with that access. By leveraging concealment, our Undersea Forces can deploy forward without being provocative, penetrate anti-access/area denial (A2AD) perimeters and conduct undetected operations. These operations might be precautionary preparatory ship movements, intelligence collection and surveillance, Special Forces support or nuclear deterrent patrols.

Should it be necessary, these forces can exploit the element of surprise and attack at the time and place of our choosing to maximize the desired effect while minimizing risk. These attacks could include efforts specifically focused on helping gain access for follow-on general purpose forces. Concealment enables survivability while operating independently with magazines focused on offensive payloads. Finally, stealth enables Undersea Forces to exploit ambiguity to sow disruption and uncertainty in adversary operations, diverting adversary resources and creating confusion.

Feedback from our operational commanders indicates that the demand for this capability is strong. As the threat grows from advances in sensors and weapons such as cruise missiles, anti-ship ballistic missiles and integrated air defense systems, more pressure will be placed on Undersea Forces. This pressure will be further amplified by the proliferation of these advanced systems to more adversaries and more regions.

In addition, the role of the undersea to the globalized industrial economies of the world is hard to overstate and is growing. The intercontinental telecommunications backbone of the world rides on the seabed, with undersea cables carrying over 95 percent of all traffic. Offshore oil and gas production is growing rapidly, and undersea pipeline infrastructure is proliferating to service fields in Asia, the Middle East, the Gulf of Mexico, off Brazil and Africa, and in the North Sea. Transportation infrastructure such as tunnels, piers, bridge supports are accessible from the undersea, and the expansion of shipping traffic and oil drilling into the Arctic as ice-cover shrinks will further expand the importance of the undersea to the global economy.

Considering these factors, it is clear that the importance of the undersea will continue to grow, both in economic and in military terms, for the foreseeable future.

Trends in Undersea Force Structure

Against this backdrop of unique Undersea Force value and continued strong demand we must consider the trends in Undersea Force structure – the long-term number and type of vessels we can expect in our future Undersea Forces. The Navy has worked hard to arrest the downward trajectory in overall Navy force structure and stabilize the Navy near or slightly above its current level. Even this stabilized force, though, includes as part of its baseline a reduction in submarine platforms of more than 25 percent over the next 15 years. This decline is not the result of some recent decision; it is the consequence of budget decisions taken over years and indeed decades. There were only two submarines procured from 1991 to 1998, producing two undesirable results. First, the expertise for submarine construction was dismantled and has only recently begun to recover to full strength. Second, it resulted in the loss of nearly a dozen SSNs in the force. Today's attack submarine force of 55 SSNs will drop to 42; the 4 guided missile submarines (SSGNs) will drop to 0; and the 14 ballistic missile submarines will drop to 10. The total submarine force will drop from 73 to 52 ships -- a cut of 29 percent – before rebounding in the 2030s. The vertical strike payload volume provided by the Undersea Force will drop by well over half. This trough is borne of the submarine shipbuilding hiatus of the 1990s, and no realistic build plan could now prevent it.

Shortfalls in Undersea Forward Presence

Undersea Forces will also suffer degraded forward presence. As a way of maximizing the deployed presence of U.S. nuclear submarines, the Navy uses a different rotational duty pattern for SSNs, SSGNs, SSBNs and Guam-based SSNs. Over the next 15 years, the forward presence of SSNs and SSGNs taken together will fall by over 40 percent. Roughly half of this reduction is due to the decline in the number of SSNs and half is due to the retirement of the SSGNs. One SSN will move to Guam to help mitigate this decline; additional increases in the number of SSNs in Guam, however, are constrained by the unavailability of infrastructure on the island and on the risks associated with concentrating too much of the force in one potentially vulnerable place.

Today, the SSN force is at 55 SSNs -- above the 48-SSN minimum requirement defined by force structure analysis. Despite this nominal excess in SSN capacity, the combatant commander unconstrained demand for SSN forward presence greatly exceeds that which can be provided.

In 2006 Congress tasked the Navy about how it would provide the required SSN forward presence of a 48-SSN Navy with a force that would drop as low as 40 SSNs. In 2007 CNO Mullen testified about the tools available to him to reduce the impact of letting the SSN force dip below the required 48 level. The three tools he outlined were (1) reducing the time to build each VIRGINIA-class submarine to about 60 months; (2) extending the service lives of selected LOS ANGELES-class SSNs beyond 33 years as fuel and material condition allow; and (3) using deployments as long as 7 months to increase deployed availability. Since the first of the Block II VIRGINIAs was delivered in 2008, we have been making significant progress in reducing the construction time of our submarines. Getting to below 60 months on PCU NORTH DAKOTA will help to add one to two effective SSNs to the force level. SSN fuel and material condition are being carefully managed to maximize the chance that some life extensions will be possible. If current trends continue it may be possible to fill about one-third of the ship-years of SSN shortfall. Lengthened deployments above 7 months, as mentioned, are already in use.

The Undersea Forces have a demonstrated willingness to exploit creative operational concepts and basing schemes, and will continue to investigate potentially effective means to improve the presence of our limited number of SSNs during the shortfall time period. It bears noting, however, that most of the available measures discussed increase SSN forward presence but do not increase the number of SSNs available to surge in the event of conflict.

The Navy's Integrated Approach to Future Undersea Capability

Facing a long-term trend of increasing undersea importance and decreasing Undersea Force capacity, the Navy developed an integrated approach to providing as much of the necessary future undersea capability as would be possible within realistic constraints on force size, budgets, shipyard capacity, practical maintenance limits, and technical realism. This integrated approach does not solve all of the capability and capacity shortfalls faced by the Navy, but it focuses attention on providing specific strategic effects while remaining closely in touch with acquisition realism.

I would like to describe the key interlocking pieces that represent the backbone of the Navy's lean integrated undersea investment strategy:

(1) It is mandatory that we sustain our survivable sea-based nuclear deterrent with about the same level of at-sea presence as today – this is priority number one. This requires a force no smaller than 10 operational SSBNs. The Navy has done everything possible to delay SSBN Replacement procurement as long as possible and reduce its scope as much as possible while still providing the required deterrent coverage. Collectively, OHIO life extensions, force level reductions, maintenance efficiency and risk management enabled the OHIO Replacement first patrol to be delayed by 20 years to 2031. This driver determines that we procure the first OHIO Replacement SSBN in 2021 so we can achieve that first patrol in 2031. It also fixes the start dates of the later ships as necessary to stay at ten SSBNs during the transition from OHIO to OHIO Replacement, and to restore the inventory to 12 to retain 10 operationally available as OHIO Replacement submarines enter extended depot availabilities

(2) All three submarine types go through large drops between 2025 to 2030 that are beyond fiscal and shipyard capacity to address. Between 2025 and 2030, the SSN force drops to 42, all four SSGNs retire and the SSBN force drops from 14 to 10. Top priority is placed on the SSBNs. Building new SSGNs from the keel up would require designing and starting construction of two large submarine classes (SSBNs and SSGNs) simultaneously – a task which exceeds the capacity of our design work force. Converting four more SSBNs into SSGNs is not possible because there are no surplus SSBNs to draw on. This determines that SSGN capacity, if it is to be retained, must be built into future SSNs. The SSN force structure trough coupled with this undersea strike capacity shortage dictates that SSN procurement must be our second priority.

(3) In order for SSNs to carry strike missiles displaced from SSGNs and future payloads that extend the influence inherent to our assured access, added SSN payload volume is required. Adding more SSNs to the build plan beyond two per year is fiscally unlikely, would challenge yard capacity, and is not necessary. Instead the needed volume can be achieved by adding modules to SSNs already in the build plan, covering most of the lost SSGN capacity and providing UUV carrying capacity— thereby solving two problems at once. To mitigate the loss of strike capacity when SSGNs retire in the next decade, the Navy requested Fiscal Year 2014 Research and Development funding to continue the design for a modification to the VIRGINIA Class SSN, the VIRGINIA Payload Module. Modified VIRGINIA Class SSNs could be procured starting no earlier than Fiscal Year 2019. Our challenge will be executing this option affordably alongside competing priorities within the overall shipbuilding program.

(4) As the SSN force gets smaller and as the importance of its unique forward access becomes clearer, additional payloads are likely to emerge. The strategic impact of each SSN being able to carry a family of different capabilities without any discernible external difference in the ship is daunting to an adversary planner and therefore not only valuable to military capability but to deterrence value as well. It is not necessary to field all of these payloads soon – but the ability of the module to support them in the future will give future force commanders much flexibility. Additionally, the insert may allow for incorporation of sensors and stealth advancements to maintain dominance over capable undersea adversaries. This determines the need for the large tube payload volume to be flexible for maximum strategic and deterrent value.

(5) The smaller SSN force structure will require each SSN to cover more physical territory and also cover more potential new types of undersea targets. Combined with the shortfall in torpedo inventory and the fact that there has not been a U.S. heavyweight torpedo produced since 1996, this creates a compelling need to restart torpedo production. Not only is there a shortfall in numbers, there is also no proven facility capable of producing weapons with a new capability. In the short term, this allows us to address the shortfall and capacity issues. More importantly, in the long term this provides a foundation for us to adapt our undersea weapons with new, expanded target set capabilities. This determines the need to restart torpedo production soon with emphasis on modularity.

OHIO Replacement

Some important aspects of the OHIO Replacement Program deserve special emphasis.

First, the sea-based strategic deterrence provided today by OHIO and tomorrow by the OHIO Replacement is critical to the country. It is the most survivable leg of the deterrent Triad which is the bedrock upon which we build our ability to deter warfare with major adversaries. This prevention of major war and deterrence of nuclear coercion is one of the most important roles that we can have in the military, and our SSBN force is the cornerstone of that deterrent.

Second, we have been conducting uninterrupted strategic deterrent patrols for more than 50 years and, as long as our adversaries retain nuclear weapons, we plan on continuing those patrols. The OHIO class represents the best lessons learned from the 41 for Freedom—the class of SSBNs that preceded it—and the OHIO Replacement will likewise benefit from the lessons learned from OHIO. We have optimized our SSBN model and we know how to do sea-based strategic deterrence reliably and cost-effectively. Fifty years will have passed between the first OHIO patrol and the first patrol by the OHIO Replacement. That is a strong demonstration of cost-efficiency.

Third, the effectiveness of the SSBN in its mission is determined by its survivability, and its survivability is driven by its stealth. Stealth is an attribute that is largely built into an SSBN in construction. Once the ship is built, you can make some small changes, but the stealth of the ship is largely determined. Because we are setting the specifications for a ship that will operate for 42 years after it enters service, and that service life counter doesn't start for another 20 years, we must accurately determine how much stealth is enough. We must find the most cost-efficient way of achieving adequate stealth.

Finally, we took risk in our ability to meet SSBN requirements during the decade of transition when we delayed the OHIO Replacement SSBN by two years. This moderate risk was clearly articulated and well understood – but to ensure an uninterrupted undersea strategic deterrent, the program can stand no additional delay.

Notwithstanding these considerations, we are acutely mindful of the costs of the OHIO Replacement Program, and the burden these costs pose on the Navy's entire shipbuilding program, and the resultant impact on nation's shipbuilding industrial base. We are absolutely determined to work across the Navy, with industry, and with Congress to field the OHIO Replacement in the most affordable manner consistent with mission requirements. All aspects of the OHIO Replacement Program will continue to be thoroughly reviewed and aggressively challenged to responsibly drive down engineering, construction, and operations and support costs. However, Navy will need the means to resource construction of the next generation nuclear ballistic missile submarine.

Implementing the Integrated Undersea Strategy: OHIO Replacement SSBN

Currently in its third year of the technology development phase, the OHIO Replacement SSBN program is dedicated to providing the right nuclear deterrence capability at a responsible cost and

delivering a lead ship ready for strategic patrols in fiscal year 2031 with sufficient survivability to address projected future threats. To succeed, many efforts must remain aligned and properly resourced, including the overall ship design and construction led by the OHIO Replacement program, the life extension of the TRIDENT II (D5) strategic weapon system, the Common Missile Compartment partnership between the U.S. and the UK, and the development of the ship's propulsion system by Naval Reactors.

Lead OHIO Replacement submarine construction must begin in 2021 to allow it to commence its first Strategic Patrol in 2031 to meet the nuclear deterrence mission requirements. Funding is vital to the procurement timeline, which meets U.S. Strategic Command requirements with moderate operational risk during the transition period between OHIO and OHIO Replacement SSBNs. The lead OHIO Replacement construction start has shifted from FY19 to FY21. Further delays would produce a gap in at-sea strategic requirements, as there is no additional margin to further extend the life of the OHIO SSBNs nor is it possible to accelerate the already aggressive lead ship construction schedule. Construction for the lead OHIO Replacement SSBN must commence in FY21 with requisite design maturity in order to meet strategic requirements.

Implementing the Integrated Undersea Strategy: VIRGINIA and VPM

This past weekend, on September 7, we commissioned the 10th submarine of the VIRGINIA Class – the USS MINNESOTA (SSN 783). MINNESOTA is the 6th and final submarine of the Block II construction contract, each of which was delivered to the Navy early to its contract delivery date and within budget. Of the 10 VIRGINIA Class submarines in the fleet, seven were delivered ahead of their contractual requirement. The next submarine of the class, PCU NORTH DAKOTA (SSN 784), the first of the Block III submarines, is on track to deliver next January and will take approximately 59 months to build – the shortest construction period yet for a VIRGINIA Class submarine.

NORTH DAKOTA's early delivery is important to note as it incorporates design changes to about 20% of the boat. Included in those design changes is a redesigned bow with a new sonar array and the introduction of VIRGINIA Payload Tubes – or VPTs. VPTs allow the submarine to deploy with the same load-out of TOMAHAWK cruise missiles as Blocks I and II, but also increase the submarine's payload volume from 1,300 to 2,100 cubic feet of space to accommodate the use of future payloads as they come online.

The combination of repeated early deliveries and the improved capabilities afforded by the Block III design changes is impressive in its own right. However, the true measure of our success is the quality of the submarines we place in the hands of the warfighter. With each successive VIRGINIA Class submarine we build, we are improving quality. USS MINNESOTA had the highest readiness score to date of any VIRGINIA Class submarine as measured by the Navy's independent Board of Inspection and Survey (INSURV). VIRGINIA Class submarines are surge ready within months of delivery, capable of conducting their full mission set ahead of schedule. These submarines are on track to go from construction start to a fleet-ready asset in less than six years.

We are currently negotiating the Block IV construction contract which we anticipate will be signed in the first quarter of the next fiscal year. While the Block IV does not include design changes on the order of those in Block III, it embraces our plan for the Reduction of Total Ownership Cost – or RTOC. Under RTOC, we will reduce the lifecycle costs of the VIRGINIA Class while simultaneously increasing their operational availability. RTOC will allow us to reduce the number of maintenance availabilities for each VIRGINIA Class submarine by one—to three—over the life of the submarine while increasing the number of deployments by one to 15. This effort provides a net positive for the tax payer and the warfighter, saving money while increasing the operational capacity of our assets.

Looking beyond Block IV, we are now doing the early concept design work on the VIRGINIA Payload Module planned for insertion into Block V submarines. As discussed earlier, VPM is vital as the most cost effective option to mitigate the undersea TOMAHAWK strike shortfall we will face when our four SSGNs are decommissioned between 2026 and 2028. To recapitalize this strike volume, we have begun efforts to add four large-diameter VPTs each capable of firing seven TOMAHAWKS within the existing VIRGINIA Class SSN design. VPM represents a low risk effort using proven technology yielding a high return on investment. VPM utilizes the proven VIRGINIA Class platform, the same missile tubes as the VPTs used on our Block III submarines, and the same Multiple All-Up-Round canisters that hold and launch TOMAHAWKS aboard our current SSGNs. Additionally, the Submarine Force has a proven track record of inserting hull sections into existing designs, most recently demonstrated on USS JIMMY CARTER (SSN 23). VPM does not entail a radical design change to the submarine – in fact the investment to complete the VPM design is on the same order of magnitude as the Block III design – the first of which is will be the fastest delivery yet for a VIRGINIA Class submarine.

With each VIRGINIA Class submarine we put to sea, the Navy, our shipbuilding partners General Dynamics Electric Boat and Huntington Ingalls Industries – Newport News Shipbuilding, and our over 4,000 suppliers in all fifty states are gleaning valuable lessons learned that can and will be applied to our future designs such as VPM and the OHIO Replacement Program.

Our success is dependent on those that have come before us and who have performed the programmatic, engineering, and technical rigor and analysis that have made our Submarine Force without peer and we must continue to build upon to enable our future successes. To that end, the OHIO Replacement and VIRGINIA Class Programs have developed a highly collaborative construct ensuring every lesson learned and efficiency from the VIRGINIA Class be applied to the OHIO Replacement. These submarines are a vital part of our Nation's current and future undersea strategy, providing the "on scene, but unseen" guarantee of safety and security to our Nation.

Summary

In closing, I would like to highlight three points:

1. The importance of the undersea is growing – both economically and militarily – and in the future we will need to place increasing emphasis on stealthy undersea forces, to include our sea-based strategic deterrent.

2. This increasing importance is painted against an undersea force structure baseline that will decline – as a result of a long series of decisions made over many years -- by nearly 30 percent between now and 2030.

3. Your Navy has in place and is executing an integrated undersea capability plan that makes the most of a declining submarine force structure by marrying it with a forward-leaning payload volume and undersea system family that will deliver strategic influence, deterrence and, if necessary, robust warfighting capability.

The United States is fortunate to have what is by any objective measure the finest undersea force in the world. We face significant challenges to maintaining our undersea dominance, but we understand the challenges and are executing a realistic and economically feasible plan to address them.

I would like to thank the Committee for the opportunity to be here today to speak with you on our Undersea Warfare programs and the vital role they play in our national security today and well into the coming decades. I am happy to answer any questions you may have. Thank you.