OHIO-Class Nuclear-Powered Guided Missile Submarine (SSGN) At-Sea DEMVAL

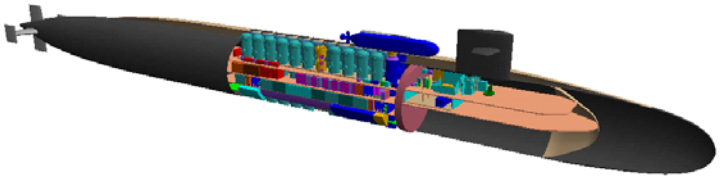
BACKGROUND

Early in his administration, President Bush directed the Defense Department to transform America's military and prepare it for the new, unpredictable world in which we are living. In the 2001 Quadrennial Defense Review (QDR) the Department of Defense did just that. Further, Congress directed the Defense Department to conduct a comprehensive Nuclear Posture Review (NPR) to lay out the direction for American nuclear forces over the next five to ten years. Building on the Quadrennial Defense Review, the NPR provides direction that transforms the Cold War era offensive nuclear triad into a New Triad designed for the decades to come. The New Triad is composed of three legs: offensive strike systems (both nuclear and non-nuclear); defenses (both active and passive); and a revitalized defense infrastructure that will provide new capabilities in a timely fashion to meet emerging threats.

The OHIO-class nuclear-powered guided missile submarine (SSGN) is part of the New Triad's strike systems. The FY02 Defense Appropriations Bill, signed into law in January 2002, provided funding and authorization for two of the four-ship SSGN program; the FY03 appropriation provides funds for the remaining two submarine conversions. Four Ohio-class fleet ballistic missile submarines (SSBNs) previously scheduled for inactivation in fiscal years 2003 and 2004 were recognized as being in excellent condition with well over 20 years of service life remaining. Under the SSGN conversion program, the Navy will refuel and convert those four SSBNs to SSGNs using the missile tubes that once carried ballistic weapons to bring conventional weapons and Special Operations Forces (SOF) into areas of conflict. This approach uses an existing platform for a totally new purpose. The SSGN program represents a relatively low cost method of leveraging the highly successful Trident maintenance and training infrastructure and two-crew concept to maximize forward deployed warfighting capability. Initial operational capability (IOC) is scheduled for 2007.

OHIO-CLASS NUCLEAR-POWERED GUIDED MISSILE SUBMARINE (SSGN)

In addition to filling a role in the New Triad, SSGN is a key element of the Navy's future force. SSGN will support joint warfighting with unique SOF capabilities and large-scale strike capabilities of up to 154 Tomahawk or Tactical Tomahawk (TACTOM) missiles in one clandestine, survivable platform. In addition, SSGN will serve as a transformation "bridge" for testing and incorporation of joint payloads and will provide the platform for experimentation and development of future offboard sensors and vehicles.



The SSGN program will develop and install modifications to four OHIO-class SSBNs that will include integration of the Tactical Tomahawk Weapon Control System and conversion of the existing strategic fire control system. These modifications will support the launch of Tomahawk Block III and TACTOM missiles housed in a Multiple All-Up-Round Canister (MAC) subsystem within the submarine missile tubes. Leveraging existing Trident and Tomahawk infrastructures will allow for cost effective development and life cycle support as well as provide flexibility for the future.

SSGN, with its tremendous payload capacity, will be able to employ emerging technologies to create an entirely new and affordable capability for the joint force. The conversion process will remold the fleet ballistic missile submarine to perform joint missions never envisioned by the original designers, meeting the CNO's Sea Power 21 vision for a fraction of the cost of developing a comparable capability from scratch.

SSGN will contribute to the operational concepts of Sea Strike, Sea Shield and Sea Basing through:

- Extending the submarine's reach to gain and sustain battleforce access with the employment of Special Operations Forces (SOF) and future unmanned vehicles and sensors;
- Development and sharing of knowledge with Combatant, National, and Joint Commanders using onboard equipment, SOF, and future unmanned vehicles.
- Extension of homeland defense, deterring conflict and countering weapons of mass destruction with covert organic intelligence, surveillance and reconnaissance, the employment of SOF, and future unmanned vehicles and sensors; and
- Projecting close-in power with surprise through the employment of large volume Tomahawk Strike, SOF, and future submarine launched munitions.

SSBN to SSGN conversion will be conducted during a shipyard period that will include Engineered Refueling Overhauls (EROs), already begun with USS OHIO in November 2002.

SSGN AT-SEA DEMONSTRATION AND VALIDATION (DEMVAL) TEST

In support of the SSGN program, the Navy's Strategic Systems Programs (SSP), in conjunction with Naval Sea Systems Command (PMS 398), will conduct an at-sea DEMVAL test of the Tomahawk launch concept from the USS FLORIDA (SSBN 728) in January 2003. This will be the first time an OHIO-class submarine platform has launched Tomahawk missiles.

SSP is responsible for the design, development, production, and life cycle support of the SSGN MAC which will provide the support structure for up to seven Tomahawk All-Up-Round (AUR) missiles per tube. DEMVAL testing will identify and help reduce risks associated with a submerged Tomahawk launch from a tightly packed cluster of AURs collocated in the large diameter Trident tube on an OHIO-class submarine. The MAC development process includes conducting land-based DEMVAL tests as part of an overall risk reduction plan culminating in an at-sea launch.

The principal objective of the at-sea DEMVAL test will be to collect underwater launch risk assessment data for MAC design. The test will involve launching two instrumented Block III Tomahawk missiles from a single Trident missile tube onboard an SSBN. One missile will be configured with an MK 106 Rocket Motor Assembly (RMA) to obtain a boosted energy profile similar to the TACTOM missile, currently in development. The other missile will be configured with an MK 111 RMA to obtain a normal Block III missile boosted energy profile. Both Block III missiles will transition to full cruise flight with recovery to occur at Eglin AF Base. An instrumented test vehicle will be present in the launch tube to measure the effect of nearby launches on adjacent missiles.

The at-sea DEMVAL test is being followed by and coordinated with the GIANT SHADOW Sea Trial experiment which includes an Intelligence, Surveillance and Reconnaissance (ISR) and Nuclear-Bio-Chem (NBC) Force Protection Mission Experiment in support of SOF utilizing the same submarine. The SSGN at-sea DEMVAL test and GIANT SHADOW demonstrate the advantages of Commander Fleet Forces Command's Sea Trial process, the key enabler for achieving the Navy's Sea Power 21 vision. These demonstrations will integrate war gaming, experimentation, and exercises into rapid concept and technology development that will deliver improved capabilities to the fleet as swiftly as possible.

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