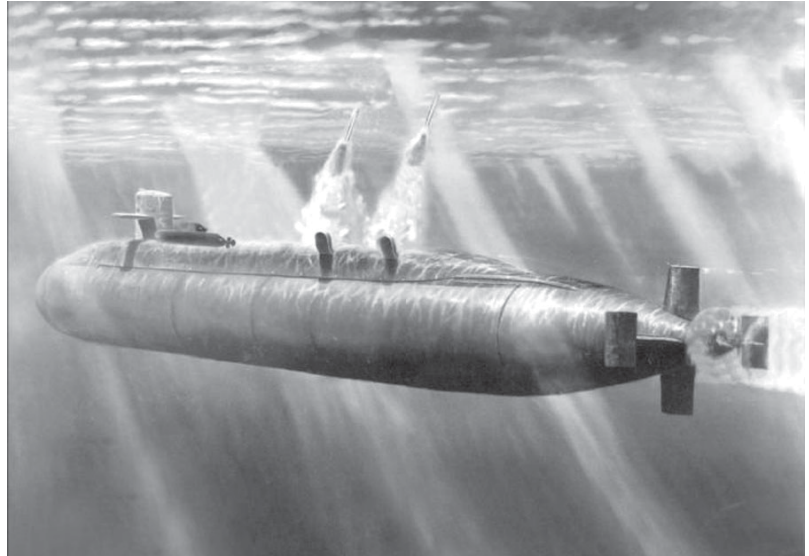


NAVY PROGRAMS

Ohio SSBN Class Conversion to SSGN

SUMMARY

- The SSGN Test and Evaluation Master Plan, signed in August 2002, required revision to reflect changes in the program schedule and test program. The revision will complete in early 2005.
- Developmental testing, including factory and dockside testing, will continue through 2006.
- Operational evaluation, focusing on Tomahawk strike missions and SEAL operations, will occur in 2007.



Ohio class cruise missile submarine entails the conversion of the four SSBNs to dedicated cruise missile submarines to support the Land-Attack/Strike and Special Operations Forces missions.

SYSTEM DESCRIPTION AND MISSION

The Navy is reconfiguring four *Ohio* class nuclear ballistic missile submarines (SSBNs) as tactical platforms and retiring them from their strategic role. The *Ohio* class cruise missile submarine (SSGN) program entails the refueling and conversion of the four SSBNs to dedicated

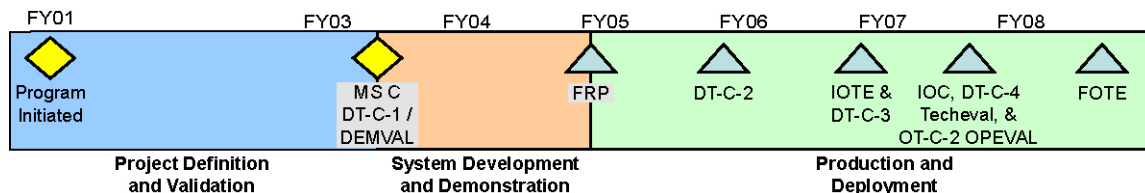
cruise missile submarines to support the Land-Attack/Strike mission. Each new multiple all-up-round canister (MAC) launcher contains seven Tomahawk Land-Attack Missiles (TLAMs) and fits within the existing Submarine Launched Ballistic Missile vertical launch tubes. Each SSGN will accommodate up to 22 MACs, for a total of 154 TLAMs.

The SSGN will also support Special Operations Forces missions. Two of the large vertical launch tubes will convert to Special Operations Forces lockout chambers and the ship will feature dedicated accommodations for Special Operations Forces personnel and their equipment. The SSGN is capable of hosting the Advanced SEAL Delivery System and Dry Deck Shelter on its upper deck.

In the future, the extensive payload capacity of the SSGN should be useful in supporting other off-board systems, including large unmanned and autonomous underwater vehicles, as well as alternate weapons systems.

The Navy plans to conduct operational evaluation of the SSGN's Strike and Special Operations Forces missions in FY07.

TEST AND EVALUATION ACTIVITY



The Navy approved the SSGN Operational Requirements Document in September 2002 and DOT&E approved the Test and Evaluation Master Plan in November 2002. The Test and Evaluation Master Plan is undergoing revisions to reflect recent schedule and program changes, and should be ready for signature in FY05.

NAVY PROGRAMS

The Navy conducted Demonstration and Validation testing of the MAC design in the Atlantic in January 2003. USS *Florida* conducted two TLAM firings using a non-production mock-up of the MAC. In addition, testers conducted land-based testing on MAC subsystems.

LFT&E activity in FY04 consisted of several program reviews that focused on defining the detailed LFT&E program and the scope of the Vulnerability Assessment Reports. The Navy goal is to maintain the level of survivability in the converted SSGN without introducing any survivability deficiencies into the platform.

TEST AND EVALUATION ASSESSMENT

During the Demonstration and Validation firings, USS *Florida* successfully launched two TLAMS that reached their targets. The launcher system employed a demonstration article (Demonstration and Validation MAC) which replicated the all-up-round spacing in a tactical production MAC, featuring two all-up-round missiles and an Inert Instrumented Test Vehicle. The program reported the witness round experienced some damage, and there were indications of post-launch debris and launch pressure transient problems. The program redesigned the all-up-round Capsule Closure Assembly to capture the launch debris caused by the Capsule Closure Assembly. This should enhance the adjacent missiles' survivability and minimize fouling the missile tube hatch during launch events.

The Program Office believes land-based testing of the Capsule Closure Assembly redesign will replicate aspects of the SSGN environment and provide the capability for repeatability testing, lifecycle testing, and testing at environmental extremes. DOT&E believes that the Navy should schedule additional at-sea TLAM developmental test firings using the production MAC to adequately test the launch system. The MAC represents an entirely new launch system. Specifically, the MAC includes seven separate all-up-round TLAM canisters placed within a vertical tube with a single hatch. There are risks associated with the launch concept, including the effects of launch debris on the ship and associated systems, launch damage to adjacent all-up-rounds, and the effects of the SSGN's hydrodynamic flow field on the missiles. DOT&E supports the program's Demonstration and Validation plan as an important technical test and risk mitigation effort, but will require a full end-to-end test of the production-representative system at sea to satisfy operational test requirements. Ideally, a full salvo launch of TLAMs would occur, but cost and range safety restrictions limit the launch rate of real cruise missiles. The current Strike operational test plans include the launch of five TLAMs from a single MAC, spaced as closely as possible over the course of several days. While the consecutive firings may provide some indication of the cumulative stress on the system, the firing rate will be too slow to replicate a true salvo. DOT&E and the program office are evaluating the ability to safely fire two missiles in rapid succession during operational test and evaluation.

For both the Strike and Special Operations Forces mission operational tests, the conduct of realistic operations against a capable opposing force is essential. DOT&E emphasizes that the SSGN missions will involve new concepts of operations and take it into new environments, including the littorals. The SSGN must demonstrate the ability to execute its missions effectively while maintaining survivability. DOT&E is particularly interested in the shallow water, slow speed ship control, and the ability of the communications, sonar and combat systems to support the situational awareness to accomplish these new missions.