by CDR Robert Aronson, USN

Recently, the President signed the FY 2000 Defense Authorization Act, which for the first time will allow the Department of Defense (DoD) to reduce TRIDENT-class ballistic missile submarine (SSBN) force levels below 18 TRIDENTs. In 1994, the Nuclear Posture Review recommended a two-ocean-based, 14 TRIDENT SSBN force - all carrying the TRIDENT II (D-5) missile - as sufficient to meet U.S. national security requirements under the Strategic Arms Reductions Treaty II (START II). As a result, four TRIDENT SSBNs will be available for conversion to nuclear-powered guided-missile submarines (SSGN). In this modification, the submarine-launched ballistic missile (SLBM) capability would be replaced with the ability to launch as many as 154 precision-guided, conventional, land-attack weapons, such as the Tomahawk Land-Attack Missile (TLAM). In addition, other new features would enable SSGNs to support Special Operations Forces (SOF) campaigns and missions by accommodating up to 66 SOF personnel, two Advanced SEAL Delivery Systems (ASDS), two Dry Deck Shelters (DDS), or one of each, along with the facilities and materiel needed for support of sustained SOF operations.

Trident Submarine Force

The current TRIDENT force consists of eight TRIDENT I (C-4) SSBNs based in Bangor, Washington, and ten TRIDENT II (D-5) SSBNs based in Kings Bay, Georgia. The first four TRIDENTs, no longer required for strategic service and with 22 years of hull life remaining, are currently scheduled to be inactivated - two in FY03 and two in FY04. The other four platforms carrying the older TRIDENT I (C-4) missiles will be refueled, overhauled, and converted to support the TRIDENT II (D-5) system. They will join the existing ten D-5 SSBNs to make up the two-ocean, 14 D-5 TRIDENT force.

Arms Control

The conversion of four TRIDENT SSBNs to SSGNs must be consistent with U.S. obligations under the 5 December 1994 START I Treaty, the START II Treaty ratified by the U.S. but not by Russia, and any future START III Treaty. Three general approaches to maintaining consistency are feasible. The most straightforward (and most costly) is to remove the 4 SSBNs from START accountability by removing either all individual launchers or the entire missile compartment under the procedures of the START I "Conversion or Elimination Protocol." SSGNs converted in this manner would not be subject to further arms control constraints and would result in no reduction in deployed strategic warheads actually allowable. This conversion option is known as the "START Compliant" variant. A four-ship START Compliant conversion program would cost approximately $4.4 billion, including refueling overhauls.

A second approach would be to retain and modify the current TRIDENT missile tubes and treat the launchers on the converted SSGNs as though they continued to contain TRIDENT I (C-4) missiles. This conversion option is known as the "START Accountable" variant. Under current START counting rules, the total number of warheads attributable to a platform is calculated by multiplying the number of launchers (such as an SSBN missile tube) by the specific number of warheads assigned to each type of missile carried. Even though they wouldn't actually be carrying SLBMs, the SSGN launchers would be attributed with "phantom" warheads that would count against the warhead totals allowed under present arms control treaties. Because these phantom warheads would displace real ones, they would reduce the actual number of deployed strategic warheads available to the National Command Authority. While this reduction may be acceptable under START I warhead levels, it would be problematic under START II, and fully unacceptable under any plausible future START III regime. A four-ship START Accountable conversion program would cost approximately $2.4 billion, including refueling overhauls.

The final approach would be to negotiate revised conversion procedures under START I (which would also apply to START II) or to include provisions in START III to exclude the SSGNs from accountability without meeting the existing requirements of the START I Conversion or Elimination Protocol. Although these treaty changes would be straightforward technically, negotiating them would be very complex, given the number of other competing priorities and issues involved in future bargaining. Further, given the political turbulence in Russia and the uncertain status of START II, it is unclear when such negotiations could begin.

The second two approaches create potential dangers. If SSBNs were converted to SSGNs in anticipation of an agreement on new arms control procedures, and that agreement is not reached, the United States could be faced with the difficult choice between an unacceptable reduction of SLBM warheads actually deployable under

a START III agreement, or wasteful elimination of the converted SSGNs. These risks need to be considered in any conversion decision.

SSGN Characteristics and Configurations

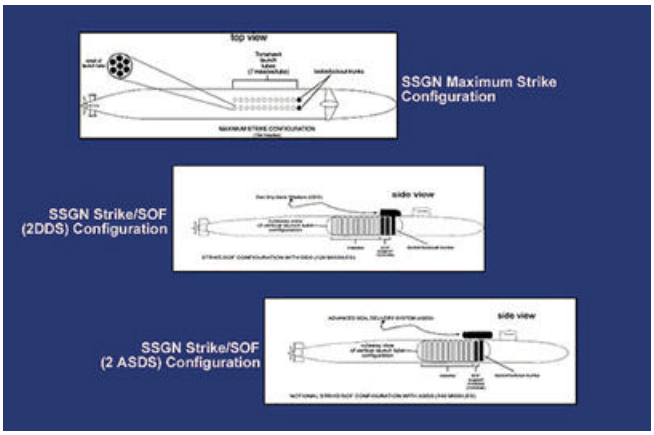
This section describes the major modifications that would be made to a TRIDENT-class SSBN when converting it to an SSGN, and details the basic operational configurations envisioned for the new class. It assumes that the "START Accountable" approach would be employed in the conversion. SSGNs would be multi-mission platforms that could support both conventional land-attack and SOF missions in several force package options. In each of these, TRIDENT missile launch tubes 1 and 2 have been permanently modified for SOF lock-in/lock-out and attaching ASDS or DDS. The remaining 22 missile-launch tubes would be modified to accept modules or canisters that could be loaded and unloaded just as TRIDENT missiles are handled today. Tubes 3 through 6 could be loaded with either SOF stowage or a cruise missile module, depending upon the configuration. The three basic force package options summarized below are portrayed in an accompanying diagram.

- *Maximum Strike* - Launch tubes 3 through 24 would be fitted with 7-pack cruise missile canisters. The SSGN would have the potential to fire all 154 (22 x 7) missiles in as little as six minutes.

- *Strike/SOF* (2 ASDS) - 66 SOF personnel could be accommodated. Two ASDS mini-submarines would be positioned on tubes 1 and 2. Launch tubes 3 and 4 would be loaded with SOF ammunition stowage canisters. Launch tubes 5 through 24 would be loaded with 140 (20 x 7) land attack missiles in seven-pack canisters.

- *Strike/SOF* (2 DDS) - 66 SOF personnel could be accommodated. Two DDSs would be attached at tubes 1 and 2. Launch tubes 3 and 4 would be loaded with SOF ammunition stowage canisters or other SOF equipment. Launch tubes 5 and 6 could remain empty or be loaded with additional SOF storage canisters since they are blocked by the two DDSs or the DDS support rails. Launch tubes 7 through 24 would be loaded with 126 (18 x 7) land-attack missiles in 7-pack canisters.

Interior modifications would provide a SOF command and control area and work and berthing spaces for SOF troops. Stealth, speed, and general operating characteristics would remain the same as those of the TRIDENT SSBN. SSGN's primary offensive weapons would be land-attack missiles, SOF, and torpedoes. Mines for precision SOF emplacement could also be carried. Changing the SSGN's configuration to maximum strike or to Strike/SOF could be done either in theater, in homeport, or in selected enroute ports.



SSGN Deployment

Based on experience gained in SSBN continuity of operations (SCOOP) exercises, an SSGN deployment cycle has been proposed to maximize deployed presence while continuing to meet the TRIDENT-class maintenance plan. A four-SSGN force would be used to provide 365 days of 154-TLAM CENTCOM presence and 365 days of global SOF availability per year, while meeting all periodic TRIDENT crew certification requirements and providing SOF training opportunities. Typically, an SSGN would alternate between CENTCOM strike and EUCOM or PACOM SOF availability. After a 50-day refit, for example, Kings Bay SSGNs would transit to the CENTCOM AOR, where they would provide the CINC with strike presence in CENTCOM for 65 days while also being available for SOF-mission tasking. This would be followed by a 14-day in-theater crew exchange and upkeep period, after which the SSGN would transit to the EUCOM AOR, where it would be available to the CINC for 65 days, primarily for SOF missions, but also for strike taskings as well. After a return transit to Kings Bay, a crew exchange, and another 50-day refit, the cycle would repeat. At the end of every third cycle, the ship would conduct a periodic certification for SOF missions. Pacific SSGN cycles would be similar. A four-ship SSGN force with 2 LANT and 2 PAC SSGNs can maintain a 1.29 presence in CENTCOM and an overseas SOF presence in EUCOM and PACOM of 0.49 and 0.45, respectively.

SSGN Basing

SSGNs would be based in Kings Bay, Georgia, and Bangor, Washington to take advantage of existing infrastructure support. The ships would use the TRIDENT Refit Facility to continue the TRIDENT maintenance concept - crucial to the planned 72% ship OPTEMPO - and would benefit from the existing TRIDENT Training Facility and other submarine support capabilities. SSGNs would transit to the SEAL training areas at Pearl Harbor, Hawaii, or Little Creek, Virginia, for combined exercises and predeployment training.

Benefits of the SSGN

Concept Converting TRIDENT-class SSBNs to SSGNs with strike and special operations features would provide capabilities that current and planned strike and SOF support assets can not offer.

SSGNs in the "Strike/SOF" configurations (with 66 SOF personnel and as many as 140 TLAMs) could operate covertly in close proximity to an enemy coast to perform multiple surveillance and intelligence-gathering missions for 90 days or more. Such a SOF campaign capability would provide the Commander Joint Task Force (CJTF) an improved picture of the enemy's activities. In its "Maximum Strike" configuration with 154 TLAM missiles, a single SSGN provides striking power almost equal to the 120 to 180 TLAMs normally carried by all the ships in the typical carrier battle group (CVBG) deployed to the Arabian Gulf. In crisis and transition to war, when air dominance and surface superiority are not assured, an SSGN can serve as a stealthy strike platform that could operate independently in denied areas, no matter who dominates the air or surface battle space. Additionally, during crises, the covert nature of the SSGN will provide the National Command Authorities and the CINC a non-provocative presence option without sacrificing striking power. With the SSGN, the CJTF gains a platform that will complement and leverage the rest of the force. The SSGN can thus be used as a:

- *Joint Enabler* - facilitating combat operations that permit earlier introduction of other forces into the theater. Its ability to suppress an enemy air defense campaign from positions near the enemy coast will allow less stealthy assets (e.g., tactical air) to be deployed sooner.

- *SOF and Strike Platform* - combining a unique SOF campaign capability with an ample load-out of land-attack missiles in a self-sustaining platform that could deploy to an assigned station rapidly and remain there covertly for long periods with very low risk. SOF and the ASDS could also be used to extend the SSGN intelligence/surveillance horizon and increase the range of strike options. The SSGN does not require an escort or other assets to provide force protection because of its inherent stealth, nor does it create in-theater logistics requirements.

- *Non-Provocative Intelligence-Collector* - providing surveillance and indications and warning (I&W) against enemy naval and land-based threats.

- *A Powerful Deterrent* - combining large-scale firepower, on-station time, and stealth to increase the spectrum of deterrent options. The presence, implied or actual, of the aggregate firepower of one or more SSGNs could well be sufficient to deter hostile actions by a potential adversary.

- *Force Multiplier and Force Level Multiplier* allowing other forces greater freedom of action and flexibility in weapon load-outs while doing the job of several submarines. Four two-crew SSGNs can effectively provide 154 cruise missiles forward-deployed in any theater and an SSGN configured for SOF operations, both for 365 days a year. Eight to 10 single-crew ships would be required to provide that same forward presence capability. As a consequence,

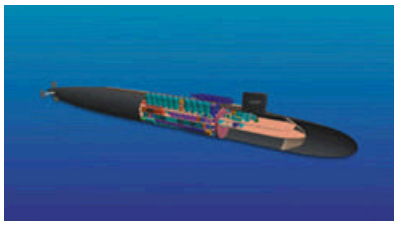
    - Vertical launch systems on surface combatants could

be tailored to include more theater missile defense (TMD) and counteroffensive air missiles.

- Attack submarines (SSNs) could focus primarily on anti-ship and undersea warfare missions, rather than being constrained by land-attack requirements.

- "SSGNs will help the Navy reduce the tradeoff between land and sea control by freeing surface platforms for other important missions where their comparative advantages are greatest."
  (From: Precision Strike from the Sea: New Missions for a New Navy)

SSGN - A Tool for Theater CINCs



The CINCs establish peacetime and contingency requirements for TLAM deployments. Acknowledging that CINC requirements exceed available Navy resources, CJCS established the Global Naval Force Presence Policy (GNFPP) in 1991 to provide a balanced distribution of assets among the CINCs. From 1991 to 1998, GNFPP levels increased but still remained within the capability of theater forces. During the two 1998 Iraq contingencies, it was necessary to re-deploy ships from other theaters to cover increased TLAM requirements. An on-station SSGN in a maximum strike configuration could satisfy most of the required increase in GNFPP levels and eliminate or significantly reduce the need to re-deploy ships from adjacent theaters to meet future TLAM contingencies. Thus, by using an SSGN's 154 missiles to meet land-attack missile requirements, the CINC can free up multipurpose surface combatants to perform other missions. Two SSGNs, each manned by two crews, could provide continuous presence in any theater, ready to launch their 154 TLAMs 365 days a year, and thus preclude redeployment of assets from other theaters to cover contingency requirements. This advantage will assume increased importance with any further decline in overall Navy force levels. Additionally, the SSGNs will retain all the tactical capabilities of an SSN for ASW, ASUW, and intelligence collection, while adding a new dimension to strike and SOF operations. Like SSNs, the SSGN will be capable of conducting global missions, even in shallow water regions, by using its excellent depth control ability.

Conclusion

SSGN conversions present a one-time, near-term opportunity to gain additional platforms of significant warfighting capability with low technical and schedule risk. The initial steps to make SSGN an official weapon system acquisition program were taken when Congress appropriated $10 million for fiscal year 2000 to commence design efforts on the ships. The future of the program now depends on the results of ongoing analyses that will weigh their military utility against that of other alternatives, as well as on the resolution of the arms control issues described above and - as always - funding constraints.

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TABLE OF CONTENTS