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Subtract Unneeded Nuclear Attack Submarines from the Fleet

by Ivan Eland

Ivan Eland is director of Defense Policy Studies at the Cato Institute.

Executive Summary

In its 1997 Quadrennial Defense Review, the Department of Defense decided that the decline of the U. S. nuclear-powered attack submarine force from its Cold War level of 100 boats would stop at 50 vessels. By 2012, the Joint Chiefs of Staff require 10 to 12 of those ships to be very quiet. Both of those conclusions should be reexamined.

The nuclear attack submarine force remains too large. To justify keeping more submarines-- even as the undersea threat declined after the Cold War--the Navy began assigning two boats to protect each of the 12 aircraft carrier battle groups from enemy attack submarines. That mission is unnecessary and impractical. Also, the recent elimination of the outdated mission for U.S. attack submarines to hunt Russian ballistic missile submarines in the arctic makes the requirement for very quiet submarines obsolete. Therefore, the number of submarines could be cut to 25 modern boats, while still fielding the best force in the world. Because all nuclear-ship production and overhaul could be consolidated at one shipyard, no new submarines need to be produced purely to sustain the current bloated submarine industry—the Pentagon's other prominent justification. Thus, the nascent production of the $56 billion New Attack Submarine program—the

successor to the aborted Seawolf submarine program—should be cancelled.

Introduction

During the latter stages of the Cold War, the U.S. force of nuclear-powered attack submarines reached approximately 100. A primary mission of those boats was to fight the large Soviet attack submarine force, which was the heart of the Soviet navy. In any conflict, U.S. attack submarines would have also hunted Soviet nuclear-powered submarines designed to launch nuclear-tipped ballistic missiles (SSBNs) at the United States. (In addition to its fleet of attack submarines, the United States also has a small fleet of SSBNs.)

Thus, U.S. attack submarines were more focused on Cold War missions than most other weapons—for example, the aircraft carrier, which spent much of the Cold War intervening in crises in the Third World. As a result, with the demise of the Soviet Union and virtual collapse of its main naval adversary, the Department of Defense, in its 1993 Bottom-Up Review (BUR), planned to reduce the attack submarine force to between 45 and 55 ships in the post-Cold War era. The BUR argued that 45 submarines would be needed to fight two major regional wars and 55 boats would be needed to provide the required presence overseas during peacetime.[1] The recently completed Quadrennial Defense Review (QDR) reassessed this goal and chose 50, the midpoint in the range.[2] Although the planned goal of 50 boats is half of size of the force during the Cold War, even this number is much too high.

The effective reduction of the number of submarines needed for the overseas

presence requirement without any DoD justification leads to the suspicion that the requirement has been inflated primarily to justify building 30 unneeded New Attack Submarines (NSSN).[3] The NSSN, which begins production in 1998, was designed to cost less and, in most respects, be less capable than the Seawolf, its predecessor.

Designed to operate against Russian submarines during the Cold War, the expensive Seawolf (at over $2 billion per submarine) was cancelled after the third boat. With declining budgets for shipbuilding after the Cold War ended, the Navy designed the NSSN to eventually be a less expensive alternative (about $1.5 billion a piece) that could be built in greater numbers. The ship was designed to be as quiet as the Seawolf, but was slower, carried fewer weapons, and could not dive as deep.[4]

Even to maintain a force of 50 to 55 nuclear attack submarines, the Navy would not need to produce any more submarines until after the turn of the century.[5] As a result, the Navy is decommissioning usable Los Angeles (688) class nuclear submarines early--before the end of their 30-year usable life--so that it can build the three new SSN-21 Seawolf submarines and begin producing successor NSSNs.[6] It is dubious logic for the United States to be scrapping usable high quality nuclear attack submarines and replacing them with new ones when the U.S. Navy already has widely recognized undersea superiority.

The two most prominent justifications for retaining a force of 50 attack submarines, as well as building three Seawolf submarines and 30 NSSNs, are the alleged satisfaction of military requirements and the need to ensure a healthy industrial base to produce submarines in the future. Neither of those justifications is valid.

The Military Reasons for a Large Submarine Force Are Specious

The following questionable military reasons have been given for retaining a future submarine force of 50 boats, 30 of which would ultimately be NSSNs:

- The submarine may now be the most powerful naval weapon and at least 45 boats should be retained to fight two major regional wars at nearly the same time.
- The Russians are fielding some submarines that are quieter than the existing improved U.S. Los Angeles class (688I) boats.
- Fifty submarines are needed to sustain a credible U.S. military presence overseas, including two subs to protect each carrier battle group against attacks by enemy submarines.
- The Joint Chiefs of Staff have a requirement for 10 to 12 very quiet submarines in the force by 2012 to provide overseas presence and attack Russian ballistic missile submarines in any nuclear conflict.

Submarines for Fighting Wars Could Be Reduced

Recent wars have shown that the submarine, which is hard to find and kill in its underwater environment, can have a devastating effect in a war at sea. In the two world wars, submarines were extremely effective at destroying military and commercial surface vessels. The submarine is still difficult to find and kill and has now added the lethal anti-ship cruise missile to the formidable torpedo already in its offensive arsenal. Thus, the submarine may possibly now be the dominant naval weapon.

A foreign policy that uses military forces sparingly and only as a last resort, however, would allow the United States to reduce the number of submarines required for fighting wars. A smaller fleet of about 25 submarines would be sufficient to carry out a

U.S. foreign policy that tries to stay out of regional wars, the vast majority of which are unimportant to U.S. national security.[7] That force would be more than sufficient to fight one major theater war. A force of such size would be a hedge against the improbable reconstitution of the Russian submarine fleet as a viable fighting force or the eventual rise of a potent regional submarine navy—for example, that of China. If more submarines were needed to combat such unlikely threats, the United States would have plenty of warning time to produce more ships. Such large threats do not materialize overnight.

A 25-ship force would also be enough to defend the national coastline or protect U.S. trade from attacks by diesel submarines in the coastal waters of Third World countries. Furthermore, all of the remaining 25 submarines would be capable of firing Tomahawk Land Attack Missiles (TLAMs). TLAMs are usually used for limited, surprise punitive strikes (for example, they could be used to attack an enemy nation in response to a terrorist attack on the United States or one of its embassies overseas). They can also be used for covert attacks on the first day of any war to destroy air defenses and command centers--to make subsequent flights by manned aircraft safe. Only limited numbers of submarines and missiles, however, are needed for those missions. Later in any war, overt Tomahawk attacks are more efficiently performed by surface ships, which can deliver greater numbers of those weapons more cheaply than can submarines.

Traditionally, the submarine has been used by lesser naval powers to deny the use of the sea to greater naval powers that were attempting to control it to transport commerce or military supplies. During the Cold War, the more powerful U.S. Navy intended to use its nuclear submarines to defend against Soviet submarines that would attempt to deny the use of the sea to resupply any war in Europe. Now that the Cold War

is over and that severe submarine threat has almost vanished, the U.S. Navy has bone-crushing superiority over any other naval force.

The U.S. Submarine Force is Vastly Superior to Russia's

The U.S. naval superiority includes submarines, as well as other ships. Until recently, when the United States commissioned the first of three Seawolf submarines, the Improved Los Angeles-class (688I) submarine—the mainstay of the U.S. fleet—was regarded as the best submarine in the world.[8] Norman Friedman, a prominent independent naval expert, maintains that the U.S. Navy exaggerates the stealth, speed, and firepower of Russian submarines.[9]

The Navy and Norman Polmar--also a noted naval authority--contend that the latest Russian submarines being sent to sea are quieter, in some instances, than the 688I.[10] That effect, however, holds only at slow tactical speeds of five to seven knots (nautical miles per hour); U.S. boats are much quieter than their Russian counterparts at higher speeds.[11] Furthermore, technology is being developed that will restore the 688I's quieting lead.[12]

More important, while quiet submarines are important, the real test is whether U.S. submarines can hear Russian boats before they are heard by them. U.S. boats have the edge because they have much better electronic sensors to pick up acoustic signals and better computer processing to make sense of them than do the Russian submarines.[13] They also have better weapons and more highly trained crews, two very important advantages in undersea combat. (Even the Office of Naval Intelligence admits that concentrating too much on only one component—stealth—can result in serious trade offs in sensors, mobility, and firepower.[14]) A lack of money to operate the Russian submarine

force has severely limited deployments, causing the performance of Russian crews to deteriorate dramatically. Even the quietest submarine can be made audible by a poorly trained crew. Chronic shortages of funds have resulted in poor maintenance, lack of fuel, and insufficient spare parts.[15] In fact, more than 100 Russian submarines are rusting at the pier because of lack of funds for crews and maintenance.[16]

Moreover, although Russia's tight military budget puts a higher priority on building submarines than it does on producing most other weapons, it provides only enough money to produce the new, quieter ships in very low quantities.[17] Independent experts estimated that the Russian Navy's budget for both 1997 and 1998 is a paltry $2.5 billion annually. (The 1997 budget for the U.S. Navy was about $80 billion.)[18] As a result, during the period from 2005-2010, Naval Intelligence admits that the number of modern Russian attack submarines will be reduced to a total that barely exceeds 20, the vast preponderance of which will be models currently in the force.[19] A fleet of 25 688I and the new Seawolf submarines already built would be far superior to that force. In short, a few new quiet submarines will not make up for the sorry operational state of the Russian submarine force.

The United States will also field very quiet boats. The successors to the 688I—the three new SSN-21 Seawolf-class submarines—will merely expand the already wide gap in capabilities between the U.S. and Russian submarine forces. Because the Office of Naval Intelligence predicts that Russian advances in quieting will level off, the Seawolf will be quieter than any current or future Russian boat.[20] The Russians got a one time boost in their efforts to quiet submarines from information supplied by the John Walker spy ring.[21] That gift is unlikely to be repeated in the future. During recent sea trials, the first Seawolf

was actually faster and quieter than the designers expected.[22] Also, the Seawolf has better sensors and computer processing and more weapons than the 688I. According to the Navy, the Seawolf will have three times as much capability as the 688.[23]

Not only is the U.S. nuclear submarine a powerful naval weapon, its most worrisome potential wartime adversary has been vastly weakened. Realizing that, DoD has also creatively justified the large submarine force by citing the mission to provide overseas presence as a justification for 50 subs.

Overseas Presence Requirements for Submarines are Overstated

To a great extent, using submarines to provide overseas military presence is suspect. The Navy has always maintained that ships on-station overseas reassure allies and deter potential foes from aggression. To the extent that forward naval presence has those effects is open to question. In many cases, sending ships from the United States on an unplanned deployment may send a stronger message to an obstreperous country than using ships regularly on-station in the particular theater. In any case, even if forward presence has the positive effects attributed to it, it usually requires ships to be visible--something a submarine is not.[24]

Moreover, the Navy has retained a force of 12 aircraft carriers and the associated ships of their battle groups to provide overseas presence. It is now assigning two nuclear-powered submarines to help protect each carrier battle group from the diesel–electric submarines of potential Third World foes lurking in coastal areas. This requirement is both new and highly questionable. At the height of the Cold War, when the threat from Soviet nuclear attack submarines was the most severe naval threat on the planet, U.S. submarines were not usually assigned to protect carrier battle groups. Instead, submarines

operated independently and in secret. According to one officer in the submarine community: "The submarine force, still referred to as the 'silent service,' has a long history of operating independently and covertly."[25]

In today's world, diesel submarines are much less of a threat to carrier battle groups than their Soviet nuclear brethren were during the Cold War. Because they are smaller than nuclear submarines, they carry fewer sensors, data processing equipment, and weapons. Although diesel boats are very quiet—sometimes making them initially hard to locate—they have serious vulnerabilities. The boats need to come near the surface periodically to take in air through a snorkel. The air is needed to run a diesel engine that recharges the ship's batteries. The subs are very vulnerable to attack at this shallow depth. In addition, diesel boats usually do not operate too far from the coast, making them somewhat easier to find in the first place. Diesel submarines are a greater threat to coastal commercial shipping than they are to warships with sophisticated antisubmarine systems. The Office of Naval Intelligence admits that the number of modern diesel boats in the world is not increasing rapidly.[26] It curious that as the threat from enemy submarines decreased dramatically from its Cold War zenith, the need for underwater protection of carrier battle groups increased.

Furthermore, although U.S. nuclear submarines are fast enough to keep up with the battle group, most cannot use their sensors at such speeds. Under those circumstances, it is questionable how much protection against diesel submarines a blind submarine provides to the battle group.[27]

More important, instead of merely offering "overkill" against the threat from diesel submarines, the nuclear attack submarine may actually hinder the battle group. The same

submarine officer admitted that "Forward From the Sea," the Navy's new doctrine for littoral warfare,

> requires submarines to become an integral part of the carrier battle group or other military forces involved in particular operations. This has not been easy for the submarine force or the traditional battle group surface and air components. …mutual interference, i.e., submarine navigation safety with respect to other submerged objects, including other submarines, and waterspace management (identification of waterspace for use of antisubmarine weapons), presented significant barriers to smooth integration of submarines into the battle group. Submarines have been depth-charged by friendly destroyers and bombed by friendly aircraft since early in their service…This concern remains valid today…In exercises I have watched opportunities to sink an enemy submarine—allowable under waterspace management in effect—forgone because of concern by the prosecuting aircraft for a potential blue-on-blue engagement.

The officer continues, "Inability to reposition friendly units because of communication problems, at the very least will hamper efforts to complete a task and could result in failure to perform the assigned mission. If they are to be an asset and not a liability, submarines must be fully integrated with the battle group."[28]

A submarine commander who believes that submarines should not be allowed to operate with the carrier battle group, echoes the argument that the submarine's limited ability to communicate with other ships in the battle group can increase the potential for collisions and even fratricide with antisubmarine weapons. "It's a dirty little secret, one of those things most in the business know but are too polite to say: U.S. nuclear-powered

attack submarines (SSNs) no more support the carrier battle group commander than wet roads support traffic safety.…The heart of the problem is that no one really seems to know what the submarine is supposed to do for the carrier battle group."

The commander goes onto say that battle group commanders regard accompanying submarines as a nuisance because they constantly have to keep them out of everyone else's way. He also candidly admits that the new requirement for submarines to serve as escorts for carrier battle groups is designed merely to justify a larger submarine force.

> How does the [submarine] force continue to play a vital role in shaping the future if we continue to be less than fully integrated into what the American people pay their naval forces to do—maintain peace and stability through the presence of forces forward, the centerpiece of which is and will remain the carrier battle group…
>
> Submarines remain critical to this nation's maritime future. But if we decide that this future in fact requires a decreased level of effort or even precludes us from conducting direct support operations, where will the informed arguments for a strong submarine force come from? We might be able to continue to argue within the community for sufficient platform strength, but drumming up support outside the force will be difficult.[29]

All of the elaborate procedures needed for U.S. nuclear submarines to operate and communicate with the battle group are being initiated less to combat the threat to the battle group from Third World diesel submarines than to combat pressure to reduce the submarine force after the Cold War. Arguments that two submarines are needed to escort

each of 12 battle groups provide justification for 24 more submarines than are really needed for naval forward presence missions. Thus, instead of the 50 submarines that the QDR requires for forward presence, only about half of that number would be needed. Those remaining submarines would primarily perform the legitimate overseas presence mission of gathering electronic intelligence off the coasts of potential adversaries. A submarine force of about 25 ships could keep at least four submarines continuously deployed worldwide for collecting intelligence. (For every submarine that is deployed overseas, the Navy needs 5.7 in inventory because some submarines are training their crews and others are in port for crew rest, maintenance, or overhaul.)[30] Four submarines on station collecting intelligence is more than enough given the mild threat environment of a post-Cold War world, the plethora of other U.S. intelligence assets, and the desirability of a U.S. foreign policy of military restraint.

The Goal of 10 to 12 Very Quiet Submarines by 2012 is Suspect

As noted earlier, the United States has so many modern submarines that even an excessive 50-ship force would not justify starting to build a new submarine until well after the turn of the century. So the Joint Chiefs of Staff (JCS) came up with the requirement to have 10 to 12 submarines in the fleet as quiet as the Seawolf by 2012. Because only three Seawolf-class submarines will be built, fulfilling this requirement would of course require producing a successor at an earlier date than otherwise would be necessary. Officially, the JCS wants the very quiet submarines for overseas presence and to attack Russian nuclear ballistic missile submarines in any nuclear conflict.[31] The official justification for the requirement is questionable.

As noted earlier, the main legitimate mission associated with overseas presence that should drive force goals is intelligence gathering. To gather intelligence, a U.S. submarine must be able to evade Third World naval forces. This would not be hard for the 688Is in the current inventory. According to Naval Intelligence, even the existing 688Is are already as quiet or quieter than most third world diesel submarines.[32] Diesel submarines are no real threat the 688I because their limited sensors, combat systems, and weapons compare unfavorably with the world's best. One U.S. submarine commander reported that he would not even bother to destroy a diesel because he could detect the boat before it detected him; he said that he would simply avoid it.[33] In addition, 688Is would be safe from Third World surface navies because those navies do not have very capable antisubmarine warfare systems. Although the 688I is not optimally designed for the rare insertion of Navy Sea, Air, and Land (SEALs) special forces teams into enemy territory, it is adequate. If more capability is desired, one or more of the larger Seawolf submarines could be made to carry special forces. In short, new quieter submarines are not needed to perform the overseas presence mission when the 688I and Seawolf boats—already the best submarines in the world—can carry out this mission well into the future.

Nor does, the United States need 10 to 12 very quiet submarines to attack Russian SSBNs during a nuclear exchange. Even during the Cold War, making a sufficient portion of the opponent's nuclear forces vulnerable to a preemptive attack was a destabilizing act. In a any crisis, such a policy might force the opponent to use those forces early or risk losing them. This "hair trigger" problem is likely to get worse in the post-Cold War setting as the overall number of warheads is reduced. In this environment, Russia may feel

especially threatened if many of its few remaining "invulnerable" nuclear weapons (about 200[34])—those missiles under the sea in SSBNs—are targeted for destruction. During the Cold War, the Russians had 12 ballistic missile submarines deployed, most of them protected by arctic ice flowe. Now U.S. intelligence estimates that they have only one or two deployed under the arctic ice.[35] In a post-Cold War strategic environment, U.S. submarines should not be performing the anti-SSBN mission. Recently, the United States belatedly—eight years after the Cold War ended--announced that the anti-SSBN mission for U.S. submarines in the Arctic would be phased out.[36] The JCS requirement for 10-12 very quiet submarines to perform that obsolete mission should also be phased out.

Industrial Base Arguments Are Also Questionable

When denuded of the specious argument that new submarines are needed for military reasons, the Navy would undoubtedly fall back on the rationale that the submarine industrial base—that is, the long-term ability to design and build submarines—can be kept healthy only by producing the new boats. The argument is that if the NSSN is not produced in a timely manner, at least one of the shipyards producing submarines and some of the key vendors supplying them--all with little commercial work—will go out of business. According to this line of reasoning, that situation would adversely affect national security by making it difficult or even impossible to produce submarines if needed for a future national emergency. The Navy argued that the third Seawolf should be produced to maintain the industrial base until the NSSN began production in 1998.[37] The third Seawolf could not be justified even by the need for 10 to 12 quieter submarines by 2012.[38] If the NSSN program was cancelled, the Navy would perceive that it had an even larger problem with the submarine industrial base. That perception is erroneous.

The problem of safeguarding the ability to design and produce submarines in the long-term, however, can be solved with a needed downsizing of the nuclear shipbuilding industry. Currently, there are two private companies that produce submarines, both of which are wards of the state. General Dynamics' Electric Boat, with facilities in Connecticut and Rhode Island, produces only nuclear submarines for the U.S. Navy and has no commercial business. Newport News Shipbuilding, with its large facility in Virginia, produces both aircraft carriers and submarines and performs overhauls on carriers. It has only a small amount of commercial business. Maintaining such excess industrial capacity costs the U.S. taxpayer dearly. In addition, if the excess capacity is eliminated, the Navy does not have to build expensive ships that satisfy no military need just to provide work for such unneeded industrial facilities.

Political and Institutional Factors

Unfortunately for the taxpayer, both the Congress and the Navy have an incentive to keep excess capacity in the nuclear shipbuilding industry. The shipyards and their vendors provide many jobs in certain states and districts. Members of Congress with such industrial concerns in their jurisdictions migrate to key defense committees on which they have disproportionate power over nuclear shipbuilding. Spreading contracts over as many states and districts as possible—instead of using the commercial practice of choosing a contractor that provides the best quality or price--allows the Navy to maintain popular and congressional support for a larger Navy. As a result, "competitive" contracts are largely an illusion in the largely political business of building military ships. Such political and institutional factors manifested themselves in recent efforts by the Navy and Congress to keep open both private nuclear shipyards.

In 1996, the Clinton administration originally proposed a plan that would have allocated production of the third Seawolf submarine, as well as at least the first few NSSNs, to Electric Boat. Newport News accurately concluded that if Electric Boat designed the NSSN and produced the first few ships, the promised competition for future boats would not be a competition at all. Essentially, the plan was designed by the Navy to sustain two shipyards capable of producing nuclear-powered ships, with submarines being produced at Electric Boat and aircraft carriers being produced at Newport News. Newport News successfully lobbied its congressional allies to kill the Navy's original plan.

Congress, in the 1996 legislation to authorize the Defense Department's funding, formulated a plan to keep both nuclear shipyards open that was even worse than the original Navy plan. The congressional version allowed Electric Boat to complete the design of the NSSN, but required that it be transferred to Newport News so that it too could produce submarines. Production of the first four NSSNs was allocated between the two shipyards, with each company getting two boats. Each of the four boats would have been an incremental prototype from the original design. A "competition" would have been held among the two companies' prototypes to produce subsequent submarines serially.

The purported competition in the congressional plan was not a real competition at all. A meaningful competition cannot be held at the low production rates that were planned. The recently completed QDR indicated that the long-term rate of production would be only one-and-a-half (alternating between one and two boats per year) to two boats per year.[39] In the DDG-51 destroyer program, it became infeasible for the Navy to conduct a meaningful competition when purchasing three ships per year to be divided

between two producers. Like the DDG-51 program, the NSSN program—with even lower average annual rates of production--would fall victim to allocating production between the two companies. In fact, John Douglass, Assistant Secretary of the Navy for Research, Development, and Acquisition, stated that his research failed to find another defense program with continuing competition at such low rates of production.[40]

Even if real competition at such low rates of production could be achieved, the price reduction to the government through competition would have had to be greater than the costs incurred in setting it up. In effect, under the congressional plan, the U.S. Navy would be paying almost all of the overhead to keep two shipyards open to "compete" in the hope of eventually saving the government money on submarines. Extra expenses for the Navy would have included the costs of transferring the design from Electric Boat to Newport News, extra overhead to keep a second company as a viable submarine producer, the creation of prototypes to insert new technology, and the concomitant delay in learning (efficiencies discovered as more units are produced) associated with serial production, and lost economies of scale by having two producers build only a limited number of items. Instead of reducing the unit cost of each submarine, as Congress exhorted the Navy to do, the "competition" in the congressional plan actually increased the projected cost by 16 percent--from $1.55 billion to $1.8 billion.[41]

The Navy astutely perceived that the real intent of the congressional plan was not to foster competition, but instead to distribute industrial pork to keep two shipyards alive indefinitely instead of one. The service just said no to the congressional plan. In its proposed budget for 1998, the Navy decided to eliminate Congress's facade of competition. It encouraged the two shipyards to form a team to produce each submarine.

Intuitively, a plan that has one contractor build the front half of each submarine, the other contractor construct the back half, and each of them--alternating for every other submarine--integrate the two halves together is inefficient and impractical.

Better Alternative: Consolidate the Production of All Nuclear Ships at One Shipyard

All three plans—the Navy's original plan, its 1998 reformulation, and the congressional plan—are inadequate. In all of them, the government is still paying overhead to keep two nuclear shipyards open.

Newport News—the largest shipyard in the United States--can produce at least four submarines a year while still producing carriers. Consolidating all nuclear shipbuilding—both carriers and submarines—at Newport News would save billions because having only one producer would provide maximum learning and economies of scale with minimum overhead. Even the Navy admitted that this was the lowest cost alternative.[42]

One other important advantage would arise from consolidating the production and overhaul of nuclear ships at Newport News. Less intensive government efforts would be needed to sustain the shipbuilding industrial base. Aircraft carriers are produced at a rate of about one every four years to maintain the carrier industrial base. During certain periods, this sporadic production can lead to down time or lay offs for the workers. In the debate over the 1998 defense budget, Newport News attempted to get advance funding for a future aircraft carrier early, claiming that it would prevent the costly lay off and rehiring of thousands of workers.[43] There may also be times when no submarines need to be produced—for example, from now until after the turn of the century. Compared to commercial ships, military ships are complex and building them requires a skilled

workforce. According to a RAND study on the submarine industrial base, once skilled workers are laid off, the major cost of reconstituting production is finding, rehiring, and retraining them. The study also concluded that many efficiencies could be gained by using the same skilled workforce to build submarines that is used to produce and overhaul carriers.[44] Only the large shipyard at Newport News has the flexibility to swing its workforce from producing carriers to producing submarines when needed and vice versa. Consolidating production there to keep the skilled labor force at one plant busy most of the time is better than laying off and then paying to rehire and retrain skilled workers at two underutilized shipyards. The tremendous capacity at Newport News could be used even more productively if the Navy's government shipyards, which currently perform most of the overhauls for submarines, were closed and the business transferred to the private shipyard.

Risks of Consolidating Nuclear Shipbuilding are Low.

The Navy has argued that two submarine producers are needed to guard against the possibility of losing one of them (for example, to a natural disaster). In addition, it argued that a second yard would be needed to increase submarine production if the Russian submarine force again became a threat. Yet, the Navy seems unperturbed that it has only one producer of carriers, which are less of a Cold War weapon than the submarine. The four submarines per year that Newport News can produce will support a total submarine force of 120 (4 X the standard 30-year service life of a submarine). We had a force of only 100 during the Cold War.[45] So even in the unlikely event that the rusting Russian submarine fleet could be effectively resurrected into a large, modern force at sea, Newport News could increase submarine production dramatically.

Another purported risk of having only one producer of carriers and submarines is that it could allow Newport News to dictate high prices for such items to the government. This argument, of course, assumes that real competition between the two producers could be instituted and that it would reduce costs. As noted earlier, effective competition at low projected rates of production is impossible. In shipbuilding, where there is little commercial business and the Navy pays almost all of the overhead to keep production facilities in business, the government would be better off to abandon the illusion of competition, reduce excess industrial capacity, and negotiate with the remaining large shipyard. Although the shipyard is a monopolist seller, the government has the advantage of being a monopsonist (single) buyer. The government could choose to spend its money on many things other than submarines—for example, naval aircraft or other kinds of ships. That advantage should give the government some negotiating leverage with Newport News, especially in times of tight defense budgets when weapons systems are in competition with each other.[46] Also, in such times, the government negotiates harder with defense contractors to get the best price.

In short, the costs to the government in money and effort to maintain two underutilized nuclear shipyards are high, and the risks of consolidating production at Newport News are low. If only one nuclear shipyard that produced and overhauled both carriers and submarines had to be sustained, the Navy could not justify buying unneeded carriers or submarines merely to preserve the industrial base. Such a situation would increase the likelihood that the Navy would buy each type of ship only when needed for legitimate military reasons.

Cancel the New Attack Submarine Program

If the military requirement is reduced to a 25-boat force and the justification to produce submarines to maintain the industrial base is eliminated, no ships need to be built until about 2010. If allowed to remain in the fleet for their full expected life of 30 years, the number of the best U.S. submarines--688I and Seawolf submarines--would not drop to 25 ships until the year 2017. Because it takes about seven years to build the first submarine in a new class, the United States would not need to build new submarines until 2010 to maintain the force goal. Thus, NSSN production can be cancelled. Instead, the development of better submarine technologies to insert in any submarine built at that time should be pursued. Both Rep. Duncan Hunter (R-CA.), Chairman of the House National Security Committee and author of the flawed congressional submarine plan, and Norman Polmar admit that a hiatus in the threat exists that would allow time to develop better technology.[47] Submarine design capabilities could be maintained with research and development contracts that did not include prototypes. New computer-aided design techniques should make it even easier to see the real-world effects of a particular design without building prototypes. Contributing to the overhaul and modernization of existing boats could also help the design base remain healthy.

Keeping Vendors Healthy

Similar to shipyard design and production facilities, some vendors that supply components to the shipyards have little commercial business. Therefore, the Navy may need to take action to keep those vendors viable. Yet, the need for such government intervention should not be overstated. About 90 percent of the nonnuclear parts of a submarine are variants of products sold elsewhere. Only 10 percent are distinctive

products, some of which are produced by firms that produce no other items. The production base for building nuclear reactors and their components for ships, however, is more specialized and fragile.[48] But as long as reactors for future aircraft carriers continue to be produced and reactors for existing carriers and submarines continue to be refueled through any hiatus in submarine building, those vendors may not need as much help.

If the Navy did feel that action was needed to shore up the base of vendors, several options exist for keeping critical nuclear or nonnuclear vendors alive:

- Stockpile critical components in advance of actual production.
- Shift other Navy work to critical vendors.
- Allow vendors to revitalize or modernize equipment on existing submarines.
- Shift the work of failing vendors to the shipyard. (Newport News has already absorbed the work of a failing vendor that produced torpedo tubes.)[49]

Terminating the NSSN Program.

For fiscal year 1998, Congress accepted the Navy's teaming arrangement and provided funding for the first NSSN and authority to buy three more boats under a single contract.[50] Funding for the other three submarines under the multiyear contract will be provided in subsequent years.[51] Providing such multiyear contracting authority at such an early stage of production is questionable because it obligates the government to buy several units of a weapon before all the bugs are out of it and the price has been reduced by learning.

Congress should terminate that contracting authority and pay any termination costs out of the amount appropriated for the first NSSN. Paying the relatively small costs to terminate the contract is much cheaper than spending $56 billion (in 1998 dollars) to buy

the remainder of a 30-ship program that is not needed for either military reasons or to preserve the industrial base.

After the Cold War, with the abject demise of the Soviet submarine threat and the elimination of excess requirements for submarines conducting overseas presence, a force of the 25 best submarines in the world--22 688Is and three of the even more capable Seawolf submarines--would allow the United States to continue dominating undersea warfare for years to come. Also, the smaller submarine force would fit better with a revised U.S. foreign policy of military restraint._

In addition, consolidating nuclear shipbuilding—both carriers and submarines—at one shipyard would eliminate the need to produce unneeded submarines to preserve a bloated industrial base. Thus, a new submarine is needed neither for military or industrial reasons. Killing an NSSN program that is a waste of taxpayer dollars is the right thing to do.

Notes

[1] U.S. Department of Defense, Report on the Bottom-Up Review, October 1993, p. 56-57.

[2] U.S. Department of Defense, Report of the Quadrennial Defense Review, May 1997, p. 47.

[3] When budgetary realities intrude, the Department of Defense usually makes do with less presence overseas without demonstrated ill effects. (It is very difficult to document the alleged positive effects of overseas naval presence—for example, the deterrence of potential aggressors.) When the number of aircraft carriers was reduced from a high of 15 ships during the Cold War to the still excessive number of 12, the Navy had to live with an aircraft carrier being present in two of the three principal theaters--the Mediterranean and the North Arabian Sea—only 79 percent of the time. (Because one carrier has its homeport in Japan, an accounting gimmick allows DoD to count it as forward deployed 100 percent of the time in the Pacific theater, even when it is in port for crew rest or maintenance. That practice illustrates how DoD manipulates the statistics on forward presence for its own ends.) Only with the 15 carrier force could the DoD maintain 100 percent presence in all three theaters. See Congressional Budget Office, Improving the Efficiency of Forward Presence by Aircraft Carriers, (Washington: CBO, August 1996),

pp. 1-2.

[4] John Donnelly, "New Attack Sub Will Be Quieter than Seawolf, Admiral Says," Defense Week, April 14, 1997, p. 5.

[5] Extrapolated from projections in William S. Cohen, Annual Report to the President and Congress (Washington: U.S. Department of Defense, April 1997), p. 182 and GAO, Attack Submarines, p. 27.

[6] Congressional Budget Office, Reducing the Deficit: Spending and Revenue Options (Washington: CBO, March 1997), p. 26.

[7] Analysts at the Cato Institute generally believe that the United States—with weak neighbors and two great oceans as moats—has a better security situation than almost any great power in history. They believe that U.S. military intervention should occur only in rare circumstances—for example, if either of the two theaters with a substantial portion of the world's industrial capacity (Europe or the Far East) is in danger of being completely overrun by a hegemonic power (for example, Nazi Germany or the Soviet Union). That country could then use those extra economic resources to threaten the United States or restrict its freedom of action. See, for example, Ted Galen Carpenter, A Search for Enemies (Washington: Cato Institute, 1992), pp. 3-4 and Ted Galen Carpenter, Beyond NATO: Staying Out of Europe's Wars (Washington: Cato Institute, 1994), pp. 36, 39.

[8] Remarks by Rear Admiral Michael Cramer, Director, Office of Naval Intelligence at an Institute for Foreign Policy Analysis breakfast, May 29, 1996.

[9] A study by Norman Friedman cited in Robert Holzer, "Study: U.S. Navy Overestimates Stealth, Might of Russian Subs," Defense News, July 29-August 4, 1996, p. 50.

[10] Oral testimony on the New Attack Submarine program given by Norman Polmar before the National Security Committee of the House of Representatives, March 18, 1997, and Office of Naval Intelligence Worldwide Submarine Challenges (Washington: U.S. Navy, 1996), p. 11.

[11] Remarks by Admiral Cramer.

[12] Robert Holzer, "U.S. Works to Squelch Sub Sounds," Defense News, February 19-25, 1996, p. 1, 28.

[13] Ibid.

[14] Office of Naval Intelligence, Worldwide Submarine Challenges, (Washington: U.S. Navy, 1997), p. 3.

[15] Pyotr Yudin, "Russia's Navy Breaks Down Amid Chronic Lack of Funds," Defense News, November 10-16, 1997.

[16] Newsday, "The U.S. is Phasing Out Attack Sub Patrols Under Arctic Ice," Baltimore Sun, November 18, 1997, p. 20.

[17] Remarks by Admiral Clemens, Commander U.S. Pacific Fleet, at a breakfast sponsored by the Institute for Foreign Policy Analysis, June 4, 1997.

[18] As cited in Yudin with a clarification by telephone with the author.

[19] Worldwide Submarine Challenges (1997), p. 17.

[20] Worldwide Submarine Challenges (1996), p. 11 and Remarks by Admiral Cramer.

[21] Holzer, p. 28.

[22] Donnelly, "Seawolf Sub," p. 1.

[23] U.S. General Accounting Office, Attack Submarines: Alternatives for a More Affordable SSN Force Structure (Washington: GAO, October 1994), pp. 36-37.

[24] On rare occasions, the United States may want to intimidate a country without any publicity. It could simply inform the country that a U.S. submarine was in its coastal waters. Of course, a covert message could also be sent using other forms of military power. For the most part, the submarine is not good at providing overseas presence.

[25] Captain Kenneth Hart, "The Silent Service Must Communicate," Proceedings, February 1997, p. 76.

[26] Worldwide Submarine Challenges (1997), p. 6.

[27] John Donnelly, "Seawolf Sub: Big Bucks, Big Bang," Defense Week, November 17, 1997, p. 8.

[28] Hart, p. 76.

[29] Commander Kevin Pope, "SSNs: Supporting the Battle Group?" Proceedings, May 1997, pp. 40-41.

[30] Ronald O'Rourke, Naval Forward Deployments and the Size of the Navy (Washington: Congressional Research Service, November 13, 1992), pp. 13-14.

[31] Testimony by Richard Davis, Director of National Security Analysis, U.S. General Accounting Office before the Subcommittee on Seapower, Committee on Armed Services,

U.S. Senate, May 16, 1995, p. 8.

[32] Worldwide Submarine Challenges (1996), p. 11.

[33] Conversation with Daniel R. Sigg, the commanding officer of the attack submarine U.S.S. Columbus (SSN-762).

[34] Bruce Blair, Harold Feiveson, and Frank Von Hippel, "Redoubling Nuclear Weapons Reduction," Washington Post, November 12, 1997, p. 12.

[35] As quoted in "Arctic Ice," p. 20.

[36] Ibid.

[37] Bottom-Up Review, pp. 56-57.

[38] GAO testimony, p. 6.

[39] Quadrennial Defense Review, p. 47.

[40] Testimony by John Douglass, Assistant Secretary of the Navy for Research, Development, and Acquisition, on the New Attack Submarine program before the Subcommittee on Procurement, National Security Committee, U.S. House of Representatives, March 18, 1997.

[41] Briefing slides associated with John Douglass's testimony, pp. 8, 10.

[42] Testimony on attack submarine programs by Cindy Williams, Assistant Director for National Security, Congressional Budget Office, before the Subcommittee on Seapower, Armed Services Committee, U.S. Senate, May 16, 1995. p. 7 and briefing slides associated with John Douglass's testimony, p. 10.

[43] Philip Finnegan, "D-5 Missile, Arsenal Ship Lose as B-2 Funds Rise," Defense News, September 22-28, 1997, p. 1.

[44] John Birkler, John Schank, Giles Smith, Fred Timson, James Chiesa, Marc Goldberg, Michael Mattock, and Malcolm MacKinnon, The U.S. Submarine Industrial Base: An Analysis of Cost, Schedule, and Risk for Selected Force Structures (Santa Monica, California: RAND, 1994), pp. 40-41, 137-139.

[45]CBO testimony, p. 11.

[46] For example, one reason that some members of Congress have failed in their attempt to produce more than 21 B-2 bombers is the Air Force's fear that this initiative would cut into funds needed to purchase the F-22 fighter.

[47] Statements made by Duncan Hunter, Chairman of the Procurement Subcommittee, and Norman Polmar, naval historian, at hearings on the Navy's submarine program for fiscal year 1998 before the National Security Committee of the House of Representatives, March 18, 1997.

[48] RAND, pp. 43, 49, 51, 56-57, 59.

[49] Reducing the Deficit, p. 27.

[50] U.S. House of Representatives, National Defense Authorization Act, Conference Report, October 23, 1997, pp. 21-22.

[51] U.S. House of Representatives, Making Appropriations for the Department of Defense for the Fiscal Year Ending September 30, 1998, and for Other Purposes, Conference Report, September 23, 1997, p. 11.

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