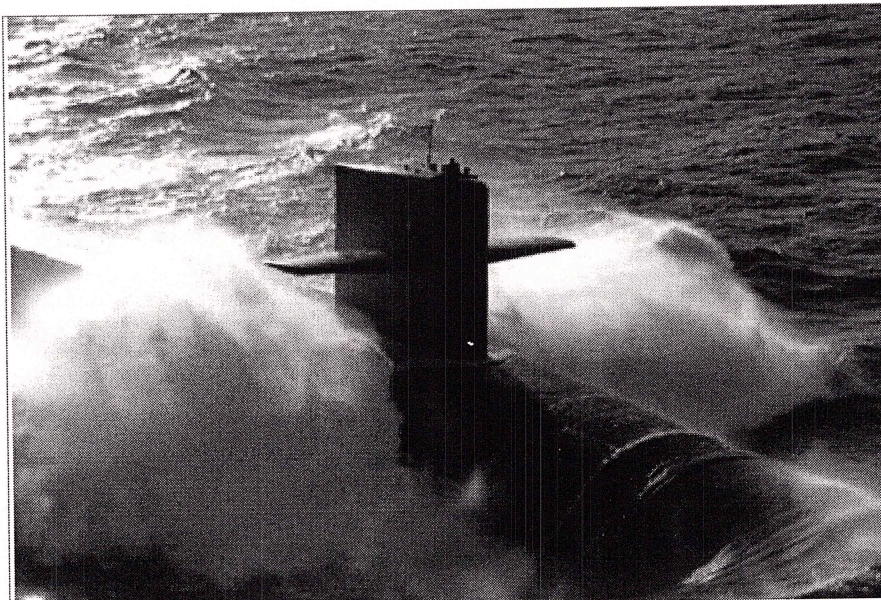


## U.S. Strategic Submarine Patrols Continue at Near Cold War Tempo

China, France, Hans Kristensen, India, Nuclear Weapons, Russia, United Kingdom, United States [Add comments](#)



U.S. ballistic missile submarines conducted 31 nuclear deterrent patrols in 2008 at an operational tempo comparable to that of the Cold War.

By Hans M. Kristensen

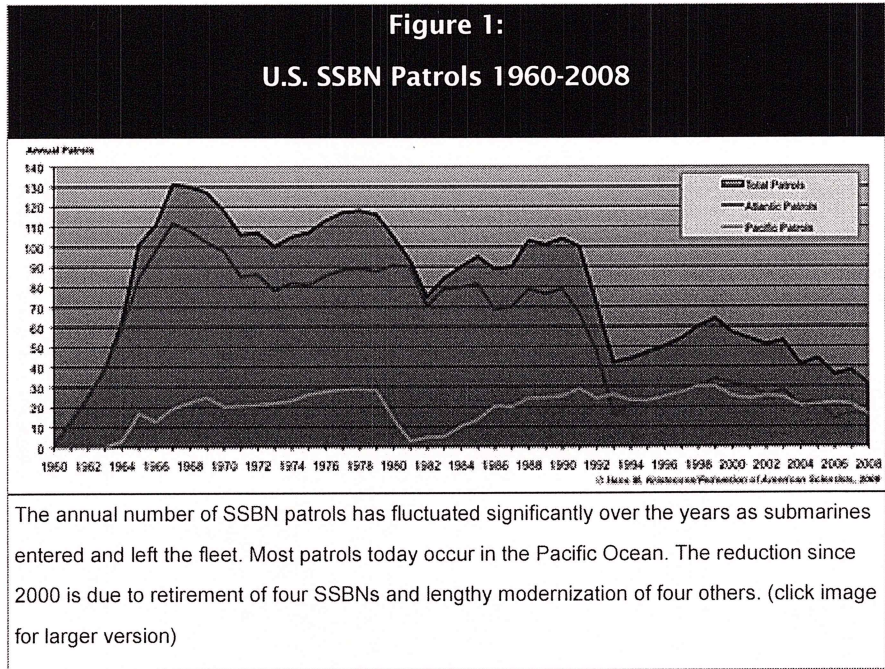
The U.S. fleet of 14 nuclear-powered ballistic missile submarines conducted 31 nuclear deterrent patrols in 2008 at an operational tempo comparable to during the Cold War.

The new patrol information, which was obtained from the U.S. Navy under the Freedom of Information Act, coincides with the completion on February 11, 2009, of the 1,000th deterrent patrol by an Ohio-class submarine since 1982.

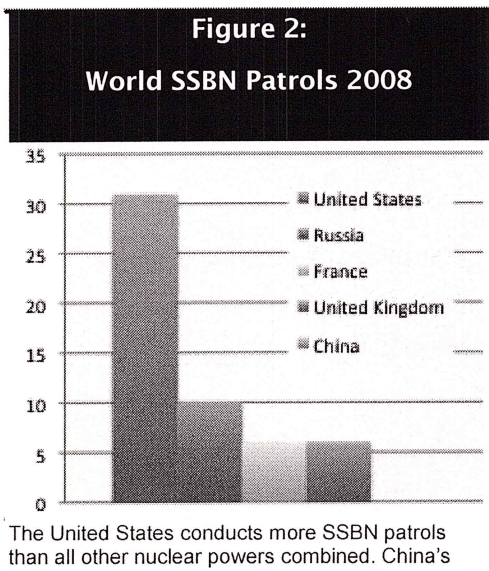
The information shows that the United States conducts more nuclear deterrent patrols each year than Russia, France, United Kingdom and China combined.

### Patrols by the Number

The 31 patrols conducted in 2008 top a 48-year history of continuous deterrent patrols. Since the USS George Washington (SSBN-598) departed Charleston, S.C., on the first nuclear-powered ballistic missile submarine (SSBN) patrol on November 15, 1960, 59 SSBNs have conducted 3,814 patrols through 2008 (see Figure 1).



The annual number of patrols has fluctuated considerably over the years, peaking at 131 patrols in 1967. Declines occurred mainly due to retirement of SSBNs rather than changes in the mission. The retirement of the early classes of SSBNs in 1979-1981 almost eliminated patrols in the Pacific, but the new Ohio-class gradually rebuilt the posture. The stand-down of Poseidon SSBNs in October 1991 and the retirement of all non-Ohio-class SSBNs by 1993 reduced Atlantic patrols by nearly 60 percent. The patrols increased again in the second half of the 1990s and more Ohio-class SSBNs were added to the fleet, but started dropping from 2000 as four Ohio-class SSBNs were withdrawn from nuclear missions and four others underwent lengthy backfits from the Trident I C4 to the Trident II D5 Trident missile.



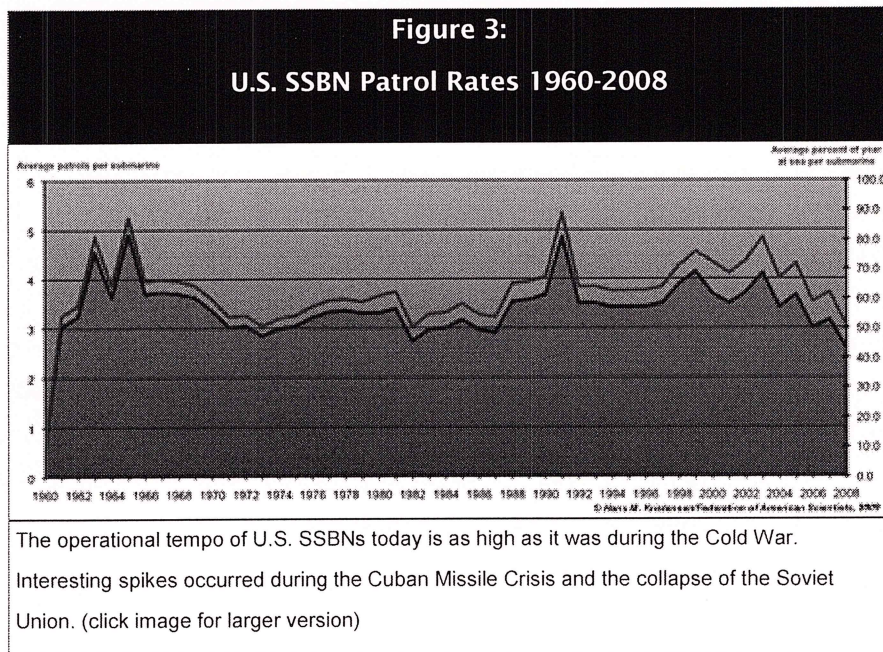
SSBNs have yet to conduct a deterrent patrol.

During the Cold War standoff with the Soviet Union, the vast majority of patrols were done in the Atlantic Ocean. Since the early 1990s, patrols in the Atlantic have plummeted and the SSBN force been concentrated on the west coast. The majority of U.S. SSBN patrols today occur in the Pacific.

The current number of patrols is significantly greater than the patrol levels of other countries with sea-based nuclear weapon systems. In fact, the U.S. Navy conducts nearly twice as many SSBN patrols each year as Russia, France, Britain and China combined (see figure 2).

### High Operational Tempo

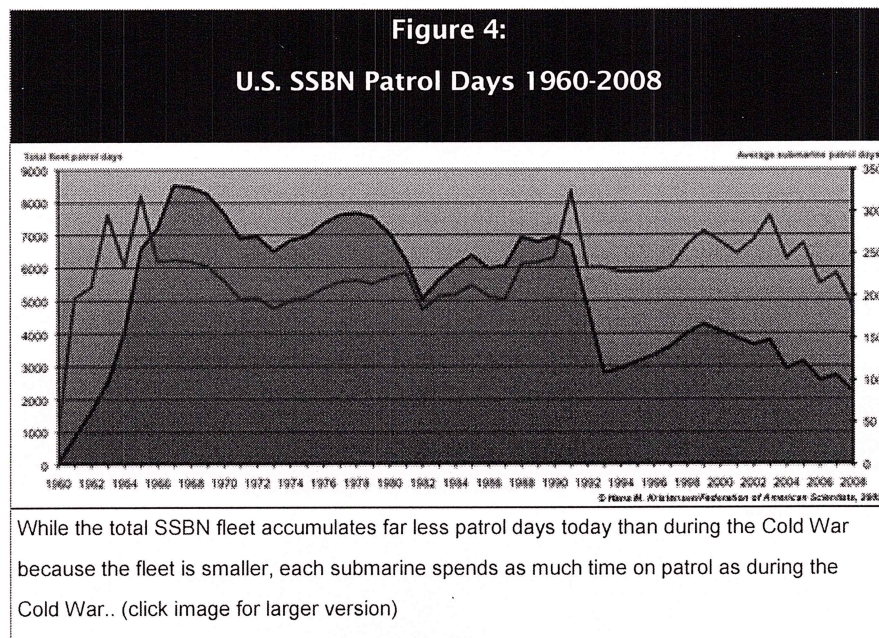
Although the total annual number of SSBN patrols has decreased significantly since the end of the Cold War, the operational tempo of each submarine has not. Each Ohio-class SSBNs today conducts about the same number of patrols per year as during the 1980s, but the duration of each patrol has increased. As a result, each SSBN now spends 70-90 percent of the year on patrol compared with 50-70 percent during the Cold War (see Figure 3).



The high operational tempo is made possible by each SSBN having two crews, Blue and Gold. Each time a submarine returns from a patrol, the other crew takes over, spends a few weeks repairing and replenishing the boat, and takes the SSBN out for its next patrol.

The data also reveals a couple of interesting spikes of increased patrols in 1963/1965 and 1991. The reasons for this increased activity is not known but the periods coincide with the Cuban missile crisis and the failed coup attempt in the final days of the Soviet Union in 1991.

Another way to examine the data is to see how many patrol days each submarine and the fleet accumulate each year. During the Cold War the larger submarine fleet averaged approximately 6,000 patrol days each year, with a peak of 8,515 patrol days in 1967. That performance declined to an average of 3,400 days in the post-Cold War era as the size of the SSBN fleet was reduced. With the removal of four SSBNs from nuclear operations and four others undergoing lengthy missile backfits, the fleet's total patrol days has now dropped to a little over 2,200 (see figure 4).



Yet total patrol day numbers can be deceiving because they can obscure how each submarine is doing. Because the Ohio-class SSBN design was optimized for lengthy deterrent patrols, the average number of days each submarine spends on patrol has been higher in the post-Cold War period than during the Cold War itself. Patrols can be shortened by technical problems, but many Ohio-class submarines today stay on patrol for more than 80 days. Last year, the USS Maine (SSBN-741) conducted a 98-day patrol in the Pacific.

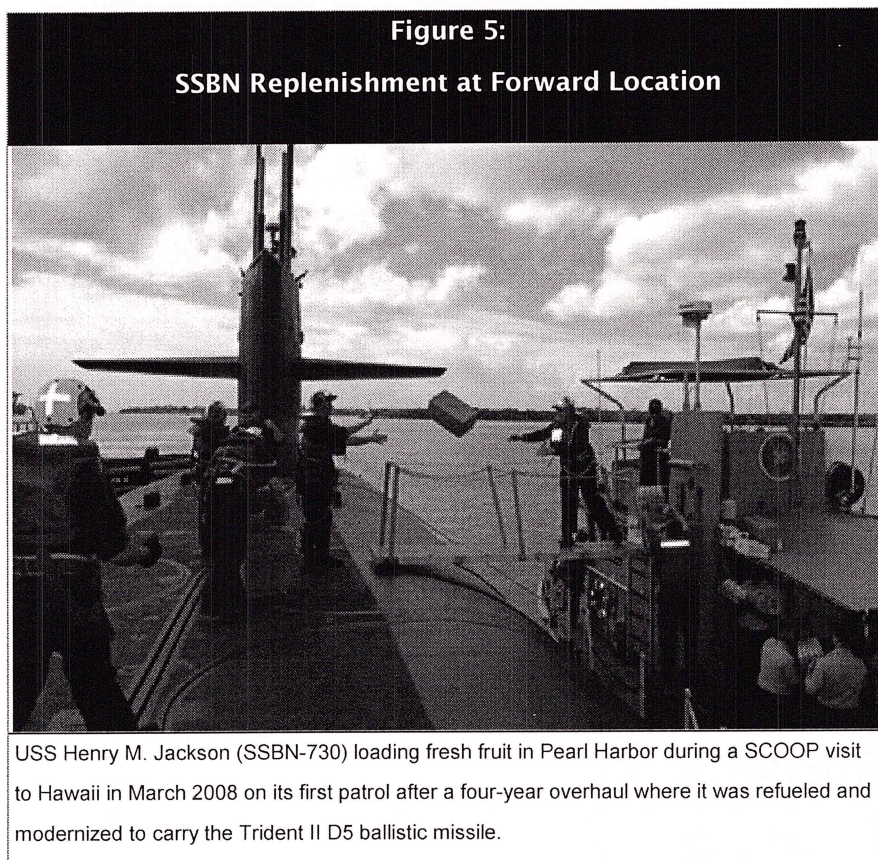
#### **What is a Deterrent Patrol?**

An SSBN deterrent patrol is an extended operational deployment during part of which the submarine covers its assigned target package in support of the strategic war plan. Each Ohio-class patrol typically lasts 60-90 days, but one submarine in late 2008 conducted an extended patrol of 98 days and patrols have occasionally exceeded 100 days. Occasionally a patrol is cut short by technical problems, in which case another SSBN can be deployed on short notice. As a result, patrols today in average last about 72 days.

Being on patrol does not mean the submarine is continuously submerged on-station and holding targets at risk. In fact, when the submarine is not on Hard Alert holding targets at risk in Russia, China, or regional states, much of the patrol time is spent on cruising between homeport, patrol areas, exercising with other naval forces, undergoing

inspections and certifications, performing Weapon System Readiness Tests (WSRTs), conducting retargeting exercises, and Command and Control exercises.

Another activity involves so-called SCOOP exercises (SSBN Continuity of Operations Program) where the SSBN will practice replenishment or refit in forward ports in case the homeport is annihilated in wartime. In the Pacific, the SCOOP ports include Pearl Harbor, Hawaii (see Figure 5), Guam, Seaward, Alaska, Astoria, Oregon, and San Diego, California. In the Atlantic they include Port Canaveral and Mayport, Florida, Roosevelt Roads, Puerto Rico, and Halifax, Canada. The SSBN may even return to its homeport and redeploy a day or two later on the same patrol.



Although patrols normally end at the base where they started, this is not always the case. An SSBN that departs Naval Submarine Base Bangor, Washington, might go on-station for several weeks in alert operational areas, conduct various training and exercises, and then arrive at Pearl Harbor in Hawaii. After a brief port visit and replenishment the submarine typically resumes its patrol and eventually returns to Bangor. But sometimes the patrol will end in Hawaii, a new crew be flown in to replace the old, and the submarine undergo refit at the forward location as part of a SCOOP exercise. The SSBN then departs Hawaii on a new patrol, goes on-station in alert operational areas, conducts more exercises and inspections, and eventually returns to Bangor where the new patrol ends.

This type of broken up patrol where the submarine is allowed to do more than on-station operations is sometimes described as "modified alert" and said to be different from the Cold War. But SSBNs have never been on-station all

the time, with most deployed submarines being in transit between on-station alert areas and other non-alert operations. In fact, "modified alert" patrols date back to the early 1970s.

Of the 14 SSBNs currently in the fleet, two are normally in overhaul at any given time. Of the remaining operational 12 submarines, 8-9 are deployed on patrol at any given time. Four of these (two in each ocean) are on "Hard Alert" while the 4-5 non-alert SSBNs can be brought to alert level within a relatively short time if necessary. One to three SSBNs are in refit at the home base in preparation for their next patrol.

The SSBNs on Hard Alert continuously hold at risk facilities in Russia, China and regional states with an estimated 384 nuclear warheads on 96 Trident II D5 missiles that can be launched within "a few minutes" after receiving the launch order. The targets in the "target packages" are selected based on the taskings of the strategic war plan, known today as Operations Plan (OPLAN) 8010.

### **What is the Mission?**

But why, nearly two decades after the Cold War ended, are 28 crews ordered to sail 14 SSBNs with more than 1,000 nuclear warheads on 30-plus patrols each year at an operational tempo comparable to that of the Cold War?

The official line is, as stated last month by Secretary of the Navy Donald Winter during the celebration of the 1,000th Ohio-class deterrent patrol, that "the ability of our Trident fleet to [be ready to launch its missiles] 24 hours a day, seven days a week, 365 days a year, has promoted the interests of peace and freedom around the world... Since the beginning of the nuclear age, the world has seen a drastic reduction in wartime deaths."



STRATCOM commander General Kevin Chilton

(left) and Chief of Naval Operations Admiral Gary Roughead. General Chilton says SSBNs deter not only nuclear conflict but "conflict in general" and are "as equally important today, as they ever were during the height of the Cold War."

The warfighters add more nuances, including Commander Jeff Grimes of the Trident submarine USS Maryland (SSBN-738) who at the start of a recent deterrent patrol explained it to *Navy Times*:

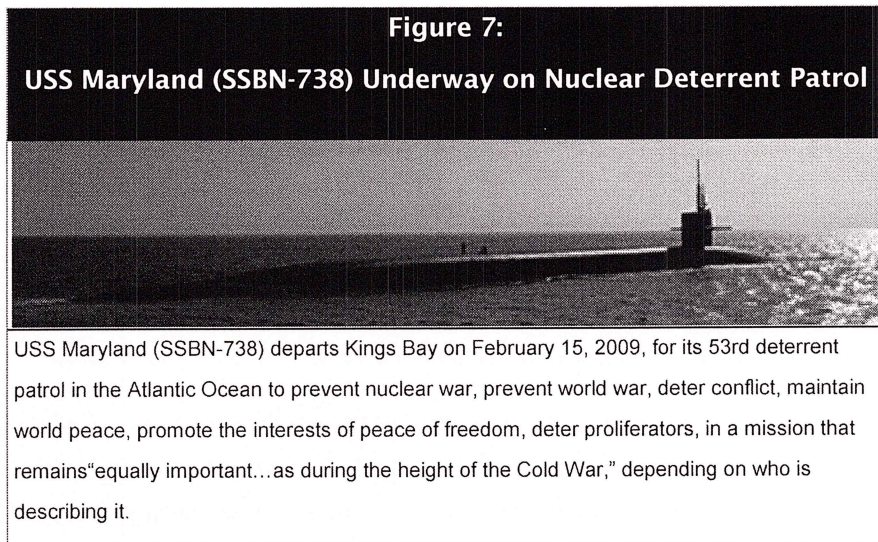
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"There are nuclear weapons in the world today. Many nations have them. Proliferation is possible in the growing technologies societies have. The power of the deterrent is the knowledge that the capability exists in the hands of controlled people. So on a global scale, deterrence is showing how it's working every day. We haven't had a global, world war, in a long time," he said. "Intelligence is different, the threats are different, so we do adjust the planning and contingencies for strategic operations continually to face the threats that may or may not be seen.... We're there on the front line, ready to go," Grimes declared.

STRATCOM commander General Kevin Chilton, who in a war would advise the president on which nuclear strike options to use, said recently that although some people thought the Trident mission would end with the 1991 collapse of the Soviet Union, the SSBNs "are as equally important today, as they ever were during the height of the Cold War.... The application of deterrence can actually be more complicated in the 21st century, but some fundamentals don't change," he said and added: "And it is not just to deter nuclear conflict. These forces have served to deter conflict in general, writ large, since they've been fielded."

These are strong and diverse claims that are also made in some of the command histories that each SSBN produces. Some of them state that the mission is to "maintain world peace," which has certainly not been the case in the post-Cold War era. Others describe the mission as "providing strategic deterrence to prevent *nuclear war*" (my emphasis), which sounds more credible. But even in that case, can we really tell whether it is the SSBNs that prevent nuclear war and not the ICBMs or bombers?

The enormous differences between maintaining world peace, preventing wars, and preventing nuclear war demand that officials articulate the SSBN mission much more clearly. To that end, it would be good to hear why it takes 12 operational SSBNs with more than 1,100 nuclear warheads on 30-plus patrols per year to deter nuclear attack against the United States, but only three operational SSBNs with less than 160 warheads on six patrols per year to safeguard the United Kingdom.



Last year Russia's SSBNs returned to sea at a level not seen in a decade and it plans to build eight new Borey-class SSBNs with new multi-warhead missiles. France is completing its fourth Triomphant-class SSBNs also with a new multi-warhead missile, and Britain has announced plans to build four new SSBNs. China is building 3-5 new Jin-class SSBNs with 8000-kilometer missiles, and India is said to be working on an SSBN as well. The U.S. Navy has also begun design work on its next ballistic missile submarine to replace the Ohio-class.

In short, the nuclear powers seem to be recommitting themselves to an era of deploying large numbers of nuclear weapons in the oceans. Most people tend to view sea-based nuclear weapons as the most legitimate leg of the Triad. Yet of all strategic nuclear weapons, sea-based ballistic missiles are the most difficult to track, the most problematic to communicate with in a crisis, the hardest to verify in an arms control agreement, and the only ones that can sneak up on an adversary in a surprise attack.

If the Obama administration wants to decisively move the world toward "dramatic reductions" and ultimately the elimination of nuclear weapons, then it must seek answers to these issues. In the short term, it needs to ask whether the Cold War operational tempo of U.S. SSBNs is counterproductive by sending a signal to other nuclear weapon states that triggers modernization of their forces and makes reductions harder to achieve than otherwise. In other words, what is the net impact of the SSBN patrols on U.S. national security objectives in an era of pursuing nuclear disarmament?

**Addition Resources:** [Russian Sub Patrols](#) | [Chinese Sub Patrols](#)