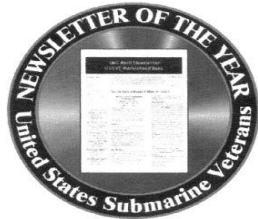


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## *The Silent Sentinel*

APRIL 2014

SAN DIEGO AREA  
SUBMARINE VETERANS



### *Our Creed and Purpose*

To perpetuate the memory of our shipmates who gave their lives in the pursuit of their duties while serving their country. That their dedication, deeds, and supreme sacrifice be a constant source of motivation toward greater accomplishments. Pledge loyalty and patriotism to the United States of America and its Constitution.

In addition to perpetuating the memory of departed shipmates, we shall provide a way for all Submariners to gather for the mutual benefit and enjoyment. Our common heritage as Submariners shall be Strengthened by camaraderie. We support a strong U.S. Submarine Force.

The organization will engage in various projects and deeds that will bring about the perpetual remembrance of those shipmates who have given the supreme sacrifice. The organization will also endeavor to educate all third parties it comes in contact with about the services our submarine brothers performed and how their sacrifices made possible the freedom and lifestyle we enjoy today.

## **First Nuclear Submarine Disaster Marks 51-year Anniversary: Vista Man Still Feels Impact : USS Thresher Sank in Atlantic in 1963**

Modified from [www.10news.com](http://www.10news.com), Originally Reported March 19, 2013

**VISTA** Fifty-one years ago next month, the U.S. Navy suffered one of the worst disasters in submarine history when the USS Thresher sank, killing all aboard. A North County man still feels the impact of that disaster on that day in April 51 years ago.

“It was one of a kind,” said Bob Miller of Vista. Miller was among a handful of sailors who was actually aboard the USS Thresher during its launch on July 9, 1960.

Three years later, the nuclear-powered submarine sank in the Atlantic, killing the 129 people aboard.

The USS Thresher was designed to go faster and deeper than anything that came before it.

Miller had been to sea on the submarine at least 40 different times but in 1963, the electronics technician made a decision to advance his career and go to school. It was a decision that saved his life.

“I was driving back from school with three others in the car,” he said. “When I heard the news that Thresher had sunk, I blacked out.”

It was later determined that a weld on a pipe or valve gave way, which flooded the engine room and ultimately doomed everyone on board. The submarine sank in about 5,000 feet of water.

Initially, Miller was haunted by what had happened.

“I kept thinking that maybe if I was there, I could’ve done something to help save her,” he said.

Miller said he has since come to realize that those who were aboard that fateful day were as skilled as anyone who ever sailed and that they did all they could.

A second nuclear-powered submarine, the USS Scorpion, sank five years later under different circumstances.

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### The Silent Sentinel via Email

To all of my Shipmates and families who currently receive our Great newsletter via the mail who would like it sent via email or continue to receive it via mail, please fill out the form and mail it to the base or myself. We are trying to cut the cost of the newsletter down from \$3700 to about \$1900 a year. By receiving the Silent Sentinel via email will cut down the printing and mailing cost. The other plus to receiving it via email is you can save it on your computer and not have the paper lying around the house.

*A subscription to the Silent Sentinel newsletter will be available to surviving family members via internet email, at no charge, upon notification of the Membership Chairman. If a printed hard-copy is preferred, via US Post Office delivery, an annual donation of \$5.00 will be requested to cover costs.*

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**DUE TO LOGISTICS CONSTRAINTS, ALL INPUTS FOR THE SILENT SENTINEL MUST BE IN MY HAND NO LATER THAN ONE WEEK AFTER THE MONTHLY MEETING. IF I DO NOT RECEIVE IT BY THIS TIME, THE ITEM WILL NOT GET IN. NO EXCEPTIONS! MIKE**

### ***April Meeting***

Our monthly meeting is held on the second Tuesday of the month at VFW Post 3787, 4370 Twain Ave., San Diego. Our next meeting will be on 8 April, 2014. The post is located one-half block West of Mission Gorge Road, just north of I-8. The meeting begins at 7 p.m. The E-Board meets one hour earlier at 6 p.m.

***Check us out on the World Wide Web  
www.ussvisandiego.org***

### **BINNACLE LIST**

George Koury, Al Strunk, Frank Walker, and Tommy Cox

## ***Submarine Losses in March***

Originally Compiled by C J Glassford



SKATE (SS 23) - 21 Men on Board  
Sunk, on 25 Mar 1915, Following Battery Explosion, Off the Coast  
of Honolulu, Hawaii : "ALL HANDS LOST"

SEAWOLF (SS 28) - 23 Men on Board  
Foundered and Sunk, on 12 Mar 1920, Off Santa Margarita Island, California : "4 MEN LOST"

PERCH (SS 176) - 59 Men on Board:  
Scuttled, on 3 Mar 1942, after Severe Damage suffered from Japanese Destroyers, Entire Crew ended up in POW Camp :  
"SIX MEN DIED IN POW CAMP"

GRAMPUS (SS 207) - 71 Men on Board:  
Sunk, on the night of 5 Mar 1943, by Japanese Destroyer, In Blackett Strait :  
"ALL HANDS LOST"

TRITON (SS 201) - 74 Men on Board:  
Sunk, on 15 March 1943, either by Japanese Destroyer or by Submarine Chaser, North of Admiralty Islands :  
"ALL HANDS LOST"

TULLIBEE (SS 284) - 79 Men on Board:  
Accidentally Sunk, on 29 March 1944, by Circular run of her own Torpedo, Off Palau, Islands :  
"78 MEN LOST - ONE SURVIVOR"

TRIGGER (SS 237) - 89 Men on Board:

Sunk, on 28 April 1945, by Japanese Patrol Vessel, and Coastal Defense Vessel, In the Nansei Soto Area :

“ ALL HANDS LOST “



## **Minutes for Submarine Veterans San Diego Base 11 March 2014**

1900 - Meeting of the Submarine Veterans Inc., San Diego Base was called to order by Base Senior Vice Commander Bill Earl.

### **Conducted Opening Exercises:**

Reading of Our Creed.

Pledge of Allegiance lead by Jack Kane.

Chaplain Jack Lester lead us in prayer.

Conducted tolling of the Boats for March.

Observed a moment of Silent Prayer for our lost shipmates.

Base Senior Vice Commander recognized past E-Board members and Officers.

Secretary Ferguson announced 32 members and 2 guests (Juanita Williams, Larry Lloyd) present.

Treasurer Report: No report. Treasurer was not present.

The minutes of the 11 February meeting were approved.

### **Call for Committee Reports:**

Chaplain Lester announced George Koury, Al Strunk, Frank walker, and Tommy Cox were on the binnacle list.

Members present welcomed back Benny Williams and Storekeeper Phil Richeson.

William Stevens and Donald Lawrence were on Eternal Patrol

Parade Committee: Joel Eikam mentioned that modifications to the float were underway and should be complete by the next parade April 26th in Linda Vista.

Membership Committee: Ray Ferbrache stated 292 paid members and asked that whomever gave him cash for Life Membership to contact him as he has misplaced the members name.

Scholarship Committee: Paul Hitchcock has two applications and deadline is 15 March. He asked for volunteers to assist in the selection process.

Storekeeper: Phil Richeson announced receipt of ST, and Eagle Scout patches.

Breakfast: Senior Vice Commander Bill Earl reminded members of next breakfast on March 30th. Help needed.

Float Committee: No report.....see Parade Committee for information.

52 Boat Memorial Committee: Warren Branges announced “progress”. Members could help by dropping by the Memorial Site to wipe off the markers occasionally.

1918 Senior Base Vice Commander called a break.

1930 Senior Base Vice Commander called the meeting back to order.

### **Unfinished Business:**

The West Region Caucus in Laughlin, NV will be April 27 to May 1 at the Aquarius Resort.

Discussed placing of donated submarine memorabilia and suggested that the USS Midway Museum has more space than the Maritime Museum.

### **New Business:**

Warren Branges discussed need for replacement and/or cleaning of various Float Flags and estimated costs of about \$367 which will be covered by a \$400 donation in the memory of WWII veterans Capt. Robert J. Branges, USA and Lt. Col.

David H. Turner, USAF. A motion was approved to accept the donation and authorize the necessary Flag improvements. He asked the members to give future consideration to procuring an “Honor and Remembrance Flag” for the float at a estimated cost of \$50 to honor our Veterans.

**Good of the Order:**

Chaplain Lester reminded the members the Vietnam War Memorial replica “wall of healing” will be on display 24 hours a day from 3-12-14 to 3-16-14 1600 hours in the park by the USS Midway Museum.

Tom Palen mentioned that MCAS Miramar is offering free income tax assistance.

Storekeeper Richeson volunteered to bring the midrats if given at least 24 hour notice when Fred Fomby can not make the meeting.

Mike Hyman is concerned that our memorabilia turns up on E-Bay.

Senior Vice Commander Earl reminded the members to register for the 2014 National Convention being held in San Francisco. Download application from the National website and they have added a Giants vs Mariners baseball game to the side events.

Base Vice Commander Earl adjourned the meeting at 2002.

Jack Ferguson, Secretary

**Sailing List for 11 March 2014**

Jack Ferguson	Jack Lester	Benny Williams
Bill Earl	Tom Polen	Jack L. Addington
Phil Richeson	Phillip Richeson	Mert Weltzien
Bob Farrell	Richard Smith	Chris Stafford
W. J. (Joe) Sasser	Jim Harer	Joel Eikam
Peter Lary	Seymore Phillips	Nihil D. Smith
Paul Hitchcock	Dennis Mortensen	Russ Mohedano
James Pope	Russ Filbeck	Jack Kane
Glenn Gerbrand	Alfred Varela	Ron Gorence
Bob Welch	Mike Hyman	Bud Rollison
Warren Branges	Ray Ferbrache	

***Thoughts on Thresher***

by Sharkey Chartier: EM2(SS) '59-65 ' (updated for 51st Anniversary)

With the upcoming 51st anniversary of the sinking of the USS Thresher SSN 593 on April 10, 1963, some information about the incident remains murky, at least to myself. I realize that, to some, I may seem to be re-writing history about a painful incident. I assure you my intent is not to do so, rather, I simply feel that if there are other data available it should be in the public domain.

I distinctly remember reading in the Naval Institute Proceedings shortly after the incident, an in-depth writeup which had published much more data about it than has ever been released, since. I was a designated “Emergency Nuclear Power Plant Welder” at the time, while aboard the Nathan Hale SSBN 623, under construction at Electric Boat, Groton, CT. As a trained welder, I had a personal, “vested”, interest in staying abreast of such relevant material. I read everything published within assigned reading material and, also, all the outside publications that I could find. I do not forget such relevant material, even today. Mysteriously, most of what I read has disappeared from the public eye. Several attempts by myself to recover and re-read the article published in the Proceedings have been unsuccessful. Perhaps it is because what I was reading at the time was classified and not widely read outside circles of the submarine engineering Reactor Plant Operator and auxiliary equipment crews assigned to all the nuclear boats at that time. I have also discussed this with several Nuke submariners, from grunts to Sub Drivers (Sub Skippers). No other “A-Gang” sailors seem to remember any of these data except myself.

Some things I remember were the following: While the incident was happening, it was reported that the rescue vessel floating topside, the USS Skylark, was actually in communication with Thresher all the while, via “Gertrude”, (the nickname for the underwater communications link). From what I remember, the sub was able to rise to a depth of around 200' before she began to slip back due to increased negative buoyancy. Also, the subsequent “Sub-Safe” program, mandated shortly after, specifically ensured that ALL hull penetrations were to be machined fittings, not welded ones, from that day forward. That fits with what I read in the Proceedings, which was that a 5" sweat-welded fitting, bringing in cooling water to the secondary cooling system, “popped” off the hull, directing a stream of water onto the electrical distribution systems, causing an immediate reactor scram. History Channel’s and other’s “explanations” do not jive with what I read, and place the incoming stream as coming from

an internal pipe, on which a bolted fitting gave way, somewhere amidships. If that were true, why were ALL hull penetrations subsequently mandated to be “Machined” from a single piece of metal which was then “Built” right into the hull, while it was under construction? Also, because Thresher did not have any way to draw off emergency steam when the plant shut down, she was unable to utilize the enormous amount of energy extant within the reactor core, to drive her to the surface. Sub-Safe put in that capability on all later systems.

Subsequent to the sinking, there was a virtual flurry of activity within the submarine community and as we, (Nathan Hale), were available for a special test, we were towed out into the stream of the Thames River and anchored all around. While on the surface we conducted several tests which mimicked those which purported to reflect those of Thresher during her fatal dive. The Hale was directed to perform an emergency blow of all main ballast systems for the amount of time that Thresher did and to then shutdown that blow after the same amount of time she did as well. What happened then was never recorded anywhere I recall yet it remains part my personal memory.

The system tested consisted of piping and quick operating “Marotta” valves which could be switched instantly from fully closed to fully open. The valves were 180 degree globular shaped valves operated by an electrical switch. This action caused pneumatic, (high pressure air), to operate the hydraulic operators which then opened or closed the “Marotta” valve. Our test revealed that the system operated as it was supposed to function and that Thresher then closed the valves, after determining they had achieved an up bubble and were rising towards the surface. After awhile they began to sink again and apparently attempted to facilitate another emergency blow. The system then failed just as did ours aboard the Nathan Hale. When we attempted to go to emergency blow again, all the valves failed to open and were found to be “Frozen” shut. I distinctly remember seeing a half inch or more of solid ice around each valve, which had formed as the air was released from thousands of pounds pressure to that pressure inside the ballast tanks. The valves had “Seized” and could not be made to open again until ours had warmed enough to do so. As a result of this seizure none of Thresher’s valves opened and she could not blow any more water out of either the ballast tanks or even into the internal spaces. Thresher then slowly sank until she reached “crush depth”. All the while she remained in communication with Skylark topside. All other data, of which I am cognizant, seems to be correct. I just want all the facts to be “out there”.

## Current News

**“Plataginet, I will; and like thee, Nero,  
Play on the lute, beholding the towns burn” (Henry VI, Shakespeare)**

**Pentagon’s Growing Fleet Of Underwater Drones Could Find Missing Airline**  
*Dan Lamothe, The Complex, Mar 26*

Read the word “drone,” and you immediately think of unmanned aircraft flying through the skies above countries like Pakistan and Yemen. Some of the Pentagon’s newest drones, though, swim underwater like robotic submarines – and they may hold the key to finding missing Malaysia Airlines Flight 370.

The Pentagon is sending a 17-foot-long drone submarine that can descend to 14,700 feet and scour the ocean floor with high-tech sonar equipment and cameras to Australia to help search the Indian Ocean for wreckage from the doomed flight. But the drone, which looks like a yellow torpedo and is known as the Bluefin-21, is far from the Pentagon’s only option for the search. The U.S. military has a growing array of robots, drones and other gadgetry that could help if called upon, and the Pentagon is investing even more money underseas in the future.

The current fleet includes a 6,400-pound underwater craft (pictured above) that allows the Navy to dissect undersea wreckage. It’s known in military-speak as the CURV-21, short for cable-controlled undersea recovery vehicle. The eight-foot long, five-foot wide craft is equipped with sonar, and uses seven hand-like manipulators to pick through salvage while recording images on a high-resolution digital still camera and several television cameras, Navy officials said. It can operate up to 20,000 feet under water.

Christopher Johnson, a Navy spokesman, said its Office of Salvage and Diving has used “various types of remotely operated or autonomous vehicles” to help recover black boxes and other key components from downed commercial aircraft.

The CURV, for instance, has an array of smaller cousins like the Deep Drone 8000 and the Magnum Remotely Operated Vehicle. The Deep Drone weighs 4,100 pounds, and can descend up to 8,000 feet deep. Like the CURV, it is equipped with sonar technology and has manipulators that can lift and move pieces of wreckage. It also is equipped with sonar sensors and cameras, and operated remotely. The Magnum is even smaller, weighing about 3,500 pounds. It is encased by a cage that protects it from debris when operating in strong currents, and deployed using an armored cable from the side of a ship. Once the vehicle is close to its target, it is released from the cage with a 600-foot cable made of Kevlar, the same material used in bullet-proof vests and many combat helmets.

A new generation of underwater vehicles is under development by the Pentagon, too. In one novel example, the Office of Naval Research is examining “GhostSwimmer” technology developed by Boston Engineering in Massachusetts. The program envisions a fleet of underwater drones that resemble fish, mimicking the motion of a tuna and cutting down on drag. It isn’t clear when aspects of the design could be incorporated into the Navy’s fleet of underwater surveillance drones, but the Pentagon awarded the company a \$1.5 million grant in 2008.

Researchers at the Defense Advanced Research Projects Agency, better known as DARPA, are also busy developing new drones, including a “Hydra” program that will include an underwater truck capable of carrying both drone submarines and unmanned aircraft. The vehicles would be used for a variety of missions, including surveillance and countering enemy mines at sea and small enough for the Navy to drop them off using existing ships, aircraft or submarines. DARPA plans to spend about \$29.9 million on Hydra in fiscal 2015, up from \$14.9 million this fiscal year, according to DARPA budget documents. There is no timeline on when the vehicles could be fielded, but DARPA held a “proposers’ day” for the program on Aug. 5 at Johns Hopkins University Applied Physics Laboratory in Laurel, Md.

DARPA also is developing a small underwater vehicle designed to operate in the shallow waters off coastlines as both a drone and with a small crew of sailors on board. It’s known as the Unmanned/Minimally-manned Underwater Vehicle, or UMUV. The program appears to be even earlier in development than Hydra. It received \$2 million in funding in fiscal 2013, but no additional money this year. Still, the program remains on DARPA’s books.

The Navy, for its part, is interested in new technology under development by DARPA that can help detect enemy diesel-electric submarines using a series of underwater surveillance. The program would rely on a network of underwater satellites, known as subullites, and use sonar and other forms of detection. The program is known as Distributed Agile Submarine Hunting or DASH for short. It, too, is early in development, with no fielding timeline set.

The Bluefin submarine sent to Perth, Australia, to assist in the hunt for Flight 370 is operated by Phoenix International Holdings Inc., of Largo, Md., which collaborates with the Navy on many salvage operations. The company also owns a “black box locator” that is towed behind a vessel to listen for acoustic “pings” coming from beacons mounted on a downed aircraft’s flight data recorder and cockpit voice recorder.

In the last five years, Phoenix has participated in 95 search-and-recovery projects with the U.S. government, many of them involving underwater drones. In one example, the Navy collaborated with Phoenix to recover a U.S. Air Force F-16C fighter jet that crashed in the northern Pacific Ocean on July 22, 2012, after the pilot safely ejected while traveling from Japan to Alaska. The Navy sent Phoenix personnel along with a CURV-21 drone and a high-tech Navy sonar system known as Orion from the company’s headquarters in Maryland to Hawaii, where it was loaded on board the USNS Navajo, a tugboat. Searchers spent 10 days traveling to the crash site, and another 10 recovering items needed by accident investigators, company officials said. Even then, Air Force officials said it was difficult to reconstruct what happened because the plane’s data recorder was crushed by water pressure.

#### **Bulava Missile Launch By Russian Nuclear Subs Planned For Summer-Autumn 2014** *The Voice of Russia, Mar 27*

Russian strategic nuclear-powered submarines Vladimir Monomakh and Alexander Nevsky will conduct Bulava missile launches in summer-autumn 2014, says a source in the Russian Navy.

Two strategic Project 955 Borey class nuclear-powered submarines of the Russian Navy will conduct single launches of transcontinental ballistic Bulava missiles in summer-autumn 2014 as directed by Russian Defense Minister Sergei Shoigu. This was reported by a source in the General Headquarters of the Russian Navy.

Vladimir Monomakh is to undergo state tests in summer-autumn this year, including a sub-launch of a Bulava missile in the White Sea aquatorium. The missile will be fired toward the Kura test site in Russia's far-eastern Kamchatka territory.

"Alexander Nevsky submarine will also conduct launches of Bulava missiles," the source added. He also specified that "the two nuclear-powered submarines are expected to conduct four Bulava launches all together."

#### **Cold War Echoes Under The Arctic Ice** **American Naval Exercise Using A Russian Submarine Takes On New Importance** *Julian E. Barnes, Wall Street Journal, Mar 26*

**BENEATH THE ARCTIC OCEAN** — Five hundred feet below the Arctic ice cap, the USS New Mexico's crew filled two torpedo tubes. "Match sonar bearings and shoot," ordered the skipper, Cmdr. Todd Moore. The air pressure rose sharply as a simulated torpedo headed toward its simulated target: a Russian Akula-class submarine.

The Arctic exercise, one of two over this past weekend, was intended as a show of U.S. force for the benefit of America's allies, defense officials said. The drills were arranged before Russia's annexation of Ukraine's Crimea province, these people said, but have taken on new geopolitical significance as tensions soar between East and West.

The simulated attack came amid a new era of increasingly cold U.S. relations with Moscow. U.S.-Russian cooperation in the Arctic came to a sudden halt after the U.S. recently canceled a joint naval exercise in the northern waters and a bilateral meeting on Coast Guard Arctic operations. The U.S. also put on hold work on an Arctic submarine rescue partnership. "This trip had a slightly different cast to it because hunting mythical submarines took on more urgency," said Sen. Angus King (I, Maine), who came as an observer. "This is the only ocean where we confront each other."

Defense officials said they chose a Russian simulated sub as the target because that was the only other nation that operates in the Arctic. Moreover, these people said the exercise wasn't a signal that the U.S. sees a military conflict on the horizon.

Russian officials didn't respond to a request to comment.

Across the Arctic Ocean, the U.S. has been conducting ice exercises with submarines since 1947. During the 1980s, the Navy had three ice camps a year, a frequency that declined rapidly after the Cold War's end. The Navy is considering a renewed commitment to the Arctic as a retreating ice sheet opens up new sea lanes and makes oil exploration more feasible.

As part of the exercise, which took place 150 miles off the north coast of Alaska, the Navy sent two subs beneath the Arctic Ocean to test their ability to operate, punch through the ice, find other submarines, hide and fire their torpedoes. The Navy publicized its exploits on social media.

Adm. Jonathan Greenert, chief of naval operations, who viewed the exercise, said showcasing American subs' ability to operate and to collect intelligence in any corner of the world undetected is critical to U.S. security. The U.S. has a fleet of 72 subs compared with Russia's approximate 60.

"If our allies and friends are reassured, that is a deterrent," said Adm. Greenert. "It is about being able to get to any area of the world and people understanding that we can."

The same weekend, 440 U.S. Marines concluded another Arctic exercise, this one in northern Norway with other allied troops, near the Russian border.

Norway says it plans to continue cooperating with Russia on search-and-rescue missions in the Arctic, but is reviewing its military-to-military cooperation with Moscow, said Norwegian Defense Minister Ine Eriksen Soreide. Norway is building a \$125 million pier to help make it easier to move American and North Atlantic Treaty Organization military gear in and out of the country, U.S. defense officials said.

Ms. Soreide said she didn't want to remilitarize the border. "At the same time we do have, and want to have, situational awareness for our own country and the alliance," she said in an interview.

Across the Arctic Ocean, Ice Camp Nautilus, this year's base, was named after the first sub to transit the Arctic in 1958. Basically a tent and some temporary wooden shacks perched on a cracked and shifting chunk of ice, the camp conducted a variety of Arctic experiments and tests, including the ability of a new Navy satellite system to send and transmit classified data more reliably in the high north than older satellites.

This year, the first ice exercise since 2011, the Navy sent two subs — the USS New Mexico and the USS Hampton, an older Los Angeles class.

Inside the New Mexico, many of the crew was trying to pay close attention to Crimea. But underwater for weeks at a time, the crew was cut off from news reports, save for what comes from an encrypted, very-low-frequency radio signal that penetrates the ice and delivers a news report a page and a half long.

Petty Officer Third Class Christopher Willis, who was drawn to undersea service by devouring tales of submarine prowess in the Cold War, was skeptical there would be a submarine shooting war soon. The real importance of America's undersea fleet is its intelligence gathering, he said.

"It is not about putting warheads on foreheads," he said. "It is about finding out things."

Adm. Greenert said that despite tensions with Russia, he didn't foresee a return to a military competition in the Arctic and hopes to restart cooperation.

But for at least a portion of the exercise, the simulated fight raged as Cmdr. Moore demonstrated his sub's ability. As the crew prepared to fire the simulated torpedo, Sen. King asked Cmdr. Moore if there were Russian subs in the Arctic. The commander said Russian forces were usually found closer to their bases on Russia's northern coast. But, he emphasized, a sub crew must always be listening. "We never assume we are out here alone," he said.

#### **Top US Official: China Will Soon Place Long-Range Nuclear Missiles On Submarines** *Agence France Presse, Business Insider, Mar 25*

A Chinese Naval submarine docks at the Ngong Shuen Chau Naval Base in Hong Kong.

China for the first time will likely have subs equipped with long-range nuclear missiles later this year, part of an increasingly potent submarine fleet, a top US officer said Tuesday.

The head of US Pacific Command, Admiral Samuel Locklear, said the latest class of Chinese subs would be armed with a new ballistic missile with an estimated range of 4,000 nautical miles (7,500 kilometers).

"This will give China its first credible sea-based nuclear deterrent, probably before the end of 2014," Locklear told the Senate Armed Services Committee.

Locklear was referring to the production of China's JIN-class nuclear powered ballistic missile submarine and the new JL-2 missile on board the vessel.

"China's advance in submarine capabilities is significant. They possess a large and increasingly capable submarine force," the admiral said.

In October, Chinese state media for the first time showed images of the country's nuclear-powered submarines, touting it as a "credible second-strike nuclear capability."

Locklear said China's submarine modernization effort was impressive.

"I think they'll have in the next decade or so a fairly well modernized force of probably 60 to 70 submarines which is a lot of submarines for a regional power," he said.

China now has five nuclear attack submarines, four nuclear ballistic missile submarines, and 53 diesel attack submarines, according to Jess Karotkin of the Office of Naval Intelligence.

China's production of submarines has moved at a quick annual pace. Between 1995 and 2012, Beijing produced 2.9 submarines a year, according to the Congressional Research Service.

Locklear, repeating the Pentagon's view of China's military profile, said Beijing is investing in new weapons and naval power in part "to deny US access to the Western Pacific during a time of crisis or conflict and to provide the means by which China can bolster its broad maritime claims in the region."

He added that Chinese military operations were "expanding in size, complexity, duration and geographic location."

#### **India Tests New Underwater Nuclear Missile** *nation.com.pk, Mar 26*

India tests new underwater nuclear missile New Delhi- India has test-fired a submarine-launched ballistic missile (SLBM) with a "longer range" than that of the existing one of 750-km in the quest towards building a credible nuclear weapons triad, Indian media reported on today.

The new SLBM with a range over 2,000 km, tentatively dubbed K-4, was tested from a submersible pontoon in the Bay of Bengal on Monday. The test came up for discussion in the annual DRDO directors' conference, attended by defence minister A K Antony and national security advisor Shivshankar Menon on Tuesday, said sources.

The new missile, part of the "K" series of underwater missiles being developed by DRDO, will have to be tested several times, first from pontoons and then finally from submarines, before it can become operational. While India for long has had land-based Agni missiles and fighters jury-rigged to carry nuclear weapons for deterrence, constituting the land and air legs of the triad, the lack of an operational SLBM has been a big operational gap.

The 750-km range K-15 SLBM, which has undergone around a dozen tests from pontoons, is yet to be tested from a submarine. That will happen only after the first indigenous nuclear submarine INS Arihant goes for sea trials later this year. Though the miniature 83 MW pressurized light-water reactor on board the 6,000-tonne INS Arihant went "critical" on August 10 last year, it is yet to attain the full power needed for the submarine to head for sea trials.

During these 18-month-long extensive "sea-acceptance trials", the 10-tonne K-15 missile — which can carry a one-tonne nuclear payload - will be fired from the four silos on the submarine's hump. Two more nuclear submarines are being built to follow INS Arihant under the secretive ATV (advanced technology vessel) project at the ship building centre in the naval dockyard at Vizag.

#### **Navy Terminates Ice Camp** *Commander, Submarine Forces Public Affairs, navy.mil, Mar 24*

**NORFOLK (NNS)** — Commander, Submarine Forces (COMSUBFOR) announced an early end to Ice Camp Nautilus March 23.

The ice camp was a temporary structure and tracking range camp built and operated especially for Ice Exercise 2014 (ICEX 2014).

Personnel at Ice Camp Nautilus, which is built into the ice floe north of Prudhoe Bay, Alaska, began a careful breakdown of the camp Sunday. All personnel are safe.

ICEX 2014 began March 17 and was scheduled to continue through March 30. However, large shifts in wind direction created instabilities in the wind-driven ice floes of the Arctic Ocean, and these changes in the prevailing winds between March 18 and March 20 led to multiple fractures in the ice near the camp. These cracks prevented the use of several airfields used for transporting personnel and equipment to the ice camp. The rapidly changing conditions of the ice, along with extremely low temperatures and poor visibility have hampered helicopter operations and made sustaining the runway and camp too risky.

The Virginia-class attack submarine USS New Mexico (SSN 779) and the Los Angeles-class attack submarine USS Hampton (SSN 767) will continue to gather data and conduct ice-related exercises until they transit out from under the ice.

Submarines have conducted under-ice operations in the Arctic regions in support of inter-fleet transit, training, cooperative allied engagements and operations for more than 50 years. USS Nautilus (SSN 571) made the first submerged transit to the North Pole in 1958. USS Skate (SSN 578) was the first U.S. submarine to surface through arctic ice at the North Pole in March 1959. Since those events, the U.S. Submarine Force has completed more than 120 Arctic exercises with the last being conducted in 2012. The last ice camp was established in 2011. Since 1987, most of these have been conducted in conjunction with Royal Navy submarines.

### Cuts May Shut Down Naval Reactor

*Lucian McCarty, The Saratogian, Mar 24*

**MILTON** – Federal budget cuts to military spending might mean that one of the Naval Nuclear Propulsion Training Unit's two nuclear reactors will be shut down, reducing site staff by a third and the students at the training site in half.

Knolls Atomic Power Laboratory provides training to all of the sailors who operate the 97 nuclear reactors in the Navy's aircraft carriers and submarines, according to Gene Terwilliger, spokesperson for Bechtel Marine Propulsion Corp., the company under contract with the Department of Energy and the Navy to operate KAPL.

The Federal Consolidated Appropriations Act, which covers spending for the federal government, included a \$151 million cut to NNPP's funding.

Terwilliger said if \$24 million of the funding is not restored it will mean shutting down one of the reactors in 2015 until the money could be secured.

Cmdr. Vince Garcia, who oversees the Naval Support Activities post in Saratoga Springs, said the cuts would have a significant impact on the amount of Navy personnel in the area.

At this point, there can be as many as 2,000 Naval personnel between Saratoga Springs and Milton on any given day, with 700 military and civilian contractors employed there, along with 1,300 students.

The Navy has been in Saratoga County since the early 1950s, and in 2012 graduated its 50,000th student from NNPP to work on the Navy's fleet of nuclear-powered vessels. Garcia told the City Council last week if the cuts don't change it could mean the Navy "will drop their staff size down by a third and maybe their student size by half."

Garcia said naval economic studies of the impact on the local economy put the estimates into the hundreds of millions of dollars, but he said if the cuts happen that would be significantly reduced.

Bechtel Marine Propulsion Corp. was reluctant to speculate about the impact of the cuts on personnel.

"We are working to minimize the impact on sailors, their families, and the work force," Terwilliger said. "The Naval Nuclear Propulsion Program continues to attempt to secure the necessary funding to avoid this shutdown."

In Congress, both U.S. Reps. Paul Tonko, D-Amsterdam, and Bill Owens, D-Plattsburgh, said they will work to restore the money to the site.

"Our local economy and national security depend on the work done in Niskayuna and Saratoga County," Tonko said. "That is why I will continue to work to ensure funding needs for fiscal year 2015 are met and they have access to adequate funding this fiscal year to ensure continuous operations."

"The Kesselring facility is critical not only to our national security but to the local economy," Owens said. "As a member of the House Appropriations Committee, I will work to ensure adequate funding for reactor maintenance at this important facility."

### Navy Spots An Arctic Future, But Struggles To Plot A Course

*Steven Beardsley, Stars and Stripes, Mar 24*

The Navy has published a thorough breakdown of what it needs for future surface operations in the Arctic, from new doctrine to platform assessments and an updated cold-weather handbook for sailors.

The next step? Getting buy-in from the rest of the fleet.

With shrinking budgets and growing mission requirements elsewhere, particularly the Pacific, the service has little appetite for new tasks, experts say, especially ones that are decades away and where threats remain speculative.

"We know there is no immediate threat in the Arctic, and there are [threats] elsewhere," said Robert Freeman, a meteorologist and the spokesman for the Navy's Task Force Climate Change, which released the report last month.

Meteorologists say shrinking ice coverage in the Arctic Ocean over the coming decades will open international sea routes and offer access to untapped oil reserves, driving more traffic and potentially sparking territorial disputes.

The Navy study, the Arctic Roadmap 2014-2030, estimates traffic going through the Bering Strait will double by 2025.

Critics say the U.S. military is not preparing fast enough for a presence in the international waters gradually opening, particularly as other nations including Russia, Norway and Canada establish regional commands or send more warships to train in the Arctic. U.S. nuclear submarines have operated under Arctic ice for decades, but few, if any, surface ships are hardened for the region.

The U.S. started to close its planning gap in the past year. The Obama administration released a national security strategy for the region in May, which the Pentagon followed with a national defense strategy. Earlier this year, the administration established an Arctic ambassador position for work with other Arctic nations.

The Navy study projects sea traffic in the Arctic over the coming decades, and it lays out milestones for preparing to operate in the Arctic, as well as a few general timelines. The Navy wants more sailors trained in Arctic operations by 2020. It wants to be able to respond to a national security threat in the region by 2030.

Yet as meteorologists move forward with Arctic planning, the Navy's operational side is focused on other parts of the globe.

The service is already manning more ships with fewer sailors than in past years, its top officers say. Combatant commanders across the globe meanwhile request more ships than the Navy can give them, Chief of Naval Operations Adm. Jonathan Greenert told the House Armed Services Committee earlier this month.

Arctic planning is likely to take a backseat at a time of tight budgets and the possibility of further cuts in the years ahead, Freeman and others admit. Even sending surface ships to future Arctic exercises with other countries, which the Navy did in 2010 and 2012, could be difficult as the service considers other needs, they say.

Under the study, Navy leaders aren't required to meet the timelines but must produce regular progress reports, which Freeman considers a step forward.

"It's drawing in the operational community more than they were before," he said. "It's making the operational fleet look at this. They could come back and say, 'It's too hard. We have to table this until later.' And that's fine."

The trouble with waiting is that the development of Arctic technologies, infrastructure and training take time. The region is vast and inhospitable – the Arctic Ocean is 5.4 million square miles, or about 1.5 times the size of the U.S. – and it has little of the support infrastructure that warships rely on for refueling and replenishing.

Meteorologists don't know how to forecast weather in the region. Broadband communication is virtually non-existent. Few ships are hardened for prolonged operations in the Arctic.

The two combatant commands responsible for the region – Northern Command and European Command – have yet to outline plans for Arctic operations, and there are questions of which of the Navy's numbered fleets should cover the region.

On a higher level, the U.S. has yet to ratify the United Nations Convention on the Law of the Seas, an agreement that creates the framework for nations to map and claim sovereignty over their submerged continental shelves, widely seen as important for avoiding territorial disputes.

Russia underlined international interest in the Arctic in 2007, when it planted a flag on the seabed beneath the North Pole. Russian territory accounts for roughly half of all Arctic land, and the country is making its case for including wide swaths of seabed as part of its continental shelf.

Norway moved its operational command above the Arctic Circle in 2009. Canada, meanwhile, is spending \$33 billion to build 28 Arctic vessels in the next 30 years, while Denmark, which has access to the region through Greenland, is establishing an Arctic Command.

Yet the Navy study and most experts agree open conflict is unlikely in the region. More likely scenarios involve emergency responses, from search-and-rescue to cleaning up after an oil spill or recovering a downed plane. The U.S. signed a search-and-rescue agreement with other Arctic nations in 2011.

Others say an increased military and Coast Guard presence in the region will encourage U.S. energy companies to invest in the Arctic. The U.S. is currently mapping its continental shelf in the region, despite not being a party to the UNCLOS agreement that recognizes shelf claims.

The Coast Guard is fighting its own battles for Arctic equipment. Two of its three icebreakers are functional, and one has been in service for longer than 30 years. A 2010 study by the service concluded it needed a total of three heavy and three medium icebreakers to meet its statutory requirements, an expansion it projected would cost \$2.8 billion.

An amendment to last year's defense authorization bill by congressmen from Alaska and Washington called for the Navy to build as many as four icebreakers for the Coast Guard – but was stripped from the final bill.

Walter Berbrick, a professor at the Naval War College and director of its Arctic Studies Group, said that absent funding, the Navy needs to begin reaching for the "low-hanging fruit" of preparation. Sailors should "cross-deck" with foreign navies such as Norway or Denmark and report back with their experiences. Officers need to attend seminars and symposiums on the region.

"There's so much uncertainty now around the region," Berbrick said. "Our people have to get smarter."

A full capabilities assessment by the Navy – which the roadmap suggested be finished this fiscal year – would be another positive step forward, Berbrick said. When the services and Congress are ready to allocate money for the Arctic, they'll know what they need, he said.

"We're saying this is something we have to do," Freeman said. "Now we have to decide when we want to do it and how much money we have to invest."

### Navy Secretary Considering End of Cigarette Sales on Ships, at Bases

*Jeanette Steele, San Diego Union-Tribune, Mar 24*

The Navy is considering banning tobacco sales on ships and bases, as the Department of Navy moves forward with a program to improve the health and fitness of sailors and Marines.

A Navy official on Monday confirmed that ending tobacco sales is one option on the table. There's apparently no timeline for a decision.



In March 2012, Secretary of the Navy Ray Mabus embarked on a get-healthy campaign called the 21st Century Sailor and Marine Initiative. It includes regular breath tests for alcohol when sailors and Marines report for work and expanded testing for designer drugs such as Spice.

The Navy already has stopped discounting cigarettes at its stores and banned all smoking on submarines, where non-smokers can't escape the fumes.

At present, sailors and Marines can smoke aboard surface ships in designated areas, usually at a side rail. The trick for smokers will now be to carry aboard enough cigarettes to get them through a deployment with few port calls.

Sailors on shore duty will have an easier time, as they can drive off base for cigarettes – though that will require more time and hassle than buying at a base exchange or convenience store.

A statement issued by Mabus' office said this move is about "maximizing readiness" in the fleet.

"The secretary has implemented a number of initiatives to improve the culture of fitness in the Navy and Marine Corps and curbing tobacco use is a part of that improvement,"

Cmdr. Tamara Lawrence said in a prepared statement.

"Secretary Mabus has asked his staff to look at additional ways to improve the health and readiness of our force. We are in the early stages of this process."

It's a cultural transformation for the Navy and the Marine Corps – where drinks at the officers club can be an after-work ritual and smoke breaks are one way to get through a long day.

According to a 2011 University of California San Francisco study, more than 30 percent of U.S. troops smoke – 50 percent higher than in the civilian population.

Young service members, aged 18 to 25, are more likely to smoke, and up to half of troops who have served in a war zone use tobacco.

From 1998 to 2005, tobacco use in the military increased 7.7%, from 29.9% to 32.2%, reversing declines in prior decades, the UCSF study concluded.

Calling out alcohol as a contributing factor in sexual assaults, the Navy has in the last year instituted "barracks patrols" to catch underage drinking and other misdeeds.

In San Diego, senior sailors take turns doing rounds of the barracks, where they check IDs when they come across sailors drinking.

The Navy also directed its base stores to reduce the area dedicated to alcohol sales to 10 percent of rear floor space and limited sales to base exchange outlets and "package stores" in some states.

### Israel, Greek and U.S. Navies Kick Off Annual Med Sea Drill

Barbara Opall-Rome, DEFENSE NEWS, Mar 24

**TEL AVIV** – Israeli, Greek and U.S. military personnel are slated to meet in Crete Tuesday to kick off Noble Dina 2014, a two-week, trilateral exercise in the Mediterranean Sea.

This year's annual multimission drill, the fourth conducted by the three nations, will involve hundreds of military personnel deployed on advanced surface ships, air assets and submarines, Navy sources here said.

In addition to search and rescue, sea maneuvering, anti-submarine warfare (ASW) and coordinated command-and-control missions, which have been practiced in previous years, Noble Dina 2014 will feature undersea divers and other specialists deployed for joint port protection.

The Israel Navy's Snafir Unit, a relatively new and highly specialized force trained for persistent surface and underwater port security, will support the newest element of the drill scheduled for later this week at a Cretan port.

"This is something new that reflects common, critically important operational requirements," said Rear Adm. Yaron Levi, chief of staff of the Israel Navy.

Noble Dina, sources here said, is the result of routine cooperation among the three navies and many months of focused planning.

"It's a long, complex and extremely substantive exercise aimed at enhancing the already significant coordination and interoperability among the three navies," said Levi. Israel's Sixth Fleet, based in Naples, Italy.

It includes a Dolphin-class submarine, a Sa'ar-5 Corvette-class ship, two Sa'ar 4.5 missile boats and ASW capabilities in addition to the Snafir Unit.

In a March 24 interview, Levi insisted that despite widespread perceptions, Noble Dina is not a replacement for Reliant Mermaid, a trilateral exercise that Israel had conducted for 10 years with the U.S. and Turkey.

Since 2010, Ankara has refused to allow Israel to participate in the annual drill due to the diplomatic fallout over Israel's seizure of a Turkish civilian ship bound for Gaza. Nine Turkish nationals died in violent clashes with Israeli commandos deployed to enforce Israel's naval blockage of Gaza.

"Noble Dina didn't replace Reliant Mermaid, which was a trilateral exercise that became a bilateral exercise. I would be very happy to have this return to a trilateral exercise," the Israel Navy's number two-ranking officer said of ongoing, U.S.-facilitated efforts to reach an Israeli-Turkish rapprochement.

### Submariners Were Unsung Cold War Heroes

Paul Post, saratogian.com, Mar 23

**SARATOGA SPRINGS** >> Sailors that served aboard the U.S. Navy's nuclear ballistic missile submarines were unsung heroes of the Cold War.

Their boats maintained a silent vigil beneath the waves while providing an ever-present deterrent to enemy aggression.

Ray Misiewicz, of Moreau, who spent 43 years designing nuclear reactors for Navy submarines, outlined the entire history of these underwater vessels during a Saturday presentation at the New York State Military Museum, with about 60 people on hand.

"Leonardo da Vinci devised the first plans for a submarine," Misiewicz said. "He kept them secret because he didn't want war to be more violent and scary than it already was."

The first submarine used for combat purposes was the Revolutionary War "Turtle," designed by American David Bushnell to attack British warships by attaching explosive devices to their hulls. But they proved largely ineffective because drills couldn't penetrate the ships' copper sheathing that was typically installed to protect against parasites.

The first successful submarine attack was by the Confederate Navy's H.L. Hunley against the USS Housatonic, a wooden sloop, in Mobile, Ala.

Submarine use became more widespread and deadly during World War I when a German U-boat sank the Lusitania, killing 1,200 people. Germany and the United States employed submarines with great effectiveness during World War II against Great Britain and Japan, respectively.

However, these seafaring war machines took on a whole new role with the advent of nuclear weapons, starting with the USS Cusk that successfully launched the first submarine missile on Feb. 12, 1947 near Point Mugu, Calif. The first Polaris submarine missile was test-fired in September 1959 with a range of 1,200 miles.

Today's Trident missile can travel 6,000 miles "giving it the capability of striking from almost anywhere in the world's oceans," Misiewicz said.

Retired Master Chief John Mulcahy, of Wilton, served aboard the USS Sam Rayburn and USS Ulysses S. Grant during his 21-year Navy career.

"Mostly it's long periods of boredom interspersed by brief moments of terror," he said.

On his first patrol, in the Caribbean, he remembers hearing a loud frightening sound overhead that kept growing in intensity.

"Whup, whup, whup," Mulcahy said. "We almost got run over by a supertanker. That's what the propeller sounds like."

He also knows what it feels like to be on board a nuclear-equipped sub when a missile is test-fired.

"The whole thing shudders," he said. "It's a real John Wayne moment."

Ballistic missile submarines are called "boomers" because of the loud sound that occurs when missiles are launched, he said.

Before retiring, Misiewicz, originally from Clifton Park, worked on the nuclear reactors that power the Seawolf and Virginia class of nuclear attack submarines. These reactors have a roughly 40-year lifespan.

The first Trident missile subs will start being retired in 2029. Work has already begun on the design phase for the next generation of submarines that will replace them.

Previously, the United States had 16 Trident missile subs. That number has been reduced to 12 under the SALT II agreement.

At present, seven nations including the U.S. have nuclear-equipped subs.

Saturday's presentation was hosted by Friends of the New York State Military Museum, a not-for-profit group that raises funds to support museum programming.

### Japan To Let U.S. Assume Control Of Nuclear Cache

Michael D. Shear and David E. Sanger, Washington Post, Mar 23

**THE HAGUE** — Japan will announce Monday that it will turn over to Washington more than 700 pounds of weapons-grade plutonium and a large quantity of highly enriched uranium, a decades-old research stockpile that is large enough to build dozens of nuclear weapons, according to American and Japanese officials.

The announcement is the biggest single success in President Obama's five-year-long push to secure the world's most dangerous materials, and will come as world leaders gather here on Monday for a nuclear security summit meeting. Since Mr. Obama began the meetings with world leaders — this will be the third — 13 nations have eliminated their caches of nuclear materials and scores more have hardened security at their storage facilities to prevent theft by potential terrorists.

Japan's agreement to transfer the material — the amount of highly enriched uranium has not been announced but is estimated at 450 pounds — has both practical and political significance. For years these stores of weapons-grade material were not a secret, but were lightly guarded at best; a reporter for The New York Times who visited the main storage site at Tokaimura in the early 1990s found unarmed guards and a site less-well protected than many banks. While security has improved, the stores have long been considered vulnerable.

Iran has cited Japan's large stockpiles of bomb-ready material as evidence of a double standard about which nations can be trusted. And last month China began publicly denouncing Japan's supply, in apparent warning that a rightward, nationalistic turn in Japanese politics could result in the country seeking its own weapons.

At various moments right-wing politicians in Japan have referred to the stockpile as a deterrent, suggesting that it was useful to have material so that the world knows Japan, with its advanced technological acumen, could easily fashion it into weapons.

The nuclear fuel being turned over to the United States, which is of American and British origin, is a fraction of Japan's overall stockpile. Japan has more than nine tons of plutonium stored in various locations and it is scheduled to open in the fall a new nuclear fuel plant that could produce many tons more every year. American officials have been quietly pressing Japan to abandon the program, arguing that the material is insufficiently protected even though much of it is in a form that would be significantly more difficult to use in a weapon than the supplies being sent to the United States.

Mr. Obama's initiative to lock down plutonium and uranium around the world was supposed to have been just the first step in an ambitious agenda to seek "the peace and security of a world without nuclear weapons," as he said in Prague in 2009. Now, the downturn in relations with Russia has dashed hopes of mutual reductions in the world's two largest arsenals. At the same time, North Korea has resumed its program, Pakistan and India are modernizing their weapons, and the Senate has not taken up any of the treaties Mr. Obama once described as vital.

The result is that nuclear security — eliminating or locking down nuclear material — may be the biggest element of Mr. Obama's nuclear legacy. The only other aspect of his agenda that may yet come to fruition centers on Iran, where economic sanctions, covert action and diplomacy have brought Tehran to the table to negotiate over its nuclear program. But even Mr. Obama says his chances of reaching a deal are at best 50-50.

"The Obama team came in thinking a lot of things would be easier than they turned out to be," said Matthew Bunn, a professor at Harvard's Belfer Center for Science and International Affairs.

One of Mr. Obama's major goals has been to stop the production of new supplies of nuclear material; at the last nuclear security summit meeting, in 2012, he said "we simply can't go on accumulating huge amounts of the very material, like separated plutonium, that we're trying to keep away from terrorists." But Pakistan has blocked his effort to negotiate a treaty that would end the production of more material — called the Fissile Material Cutoff Treaty — and it is unclear whether the summit communiqué will contain language urging other countries to disgorge their plutonium stockpiles.

There have been other obstacles to Mr. Obama's agenda.

He succeeded in negotiating a modest arms control treaty with Russia in 2010, but the rapidly deteriorating relationship with Russian President Vladimir V. Putin has all but ended hopes for further reductions in the arsenals of the two countries.

Nonetheless, the effort to secure dangerous nuclear materials in Russia and the former Soviet states has been one of the big successes of the post-cold-war era: Just last year Ukraine, then still under the control of the ousted president Victor Yanukovich, sent more than 500 pounds of weapons-grade uranium from a reactor back to Russia. Ukraine gave up its nuclear weapons — left over after the fall of the Soviet Union — two decades ago. Had the weapons and materials remained in Ukraine, the current standoff with Russia might have taken on far more dangerous dimensions.

But Mr. Obama's agenda has also run into major troubles in the Senate. In 2009 and 2010 the White House promised to reintroduce the Comprehensive Test Ban Treaty, which was defeated in the Senate during the Clinton administration. It has never been put back in front of the Senate, for fear of a second rejection. Even seemingly noncontroversial legislation, including passage of two nuclear terrorism conventions that deal with the physical protection of materials, has been stuck.

Both administration officials and advocates of major nuclear reductions argue that Mr. Obama has focused a level of attention on securing stockpiles even if his arms reduction efforts have come up short.

"What President Obama has done is put it more on the front burner and accelerated the process," said Sam Nunn, a former Democratic senator from Georgia who played a central role in creating the American-backed program to help dismantle nuclear weapons and clean up nuclear material around the world.

"Significant progress has been made — not enough," said Mr. Nunn, the chairman of the Nuclear Threat Initiative, a research group that presses for deeper cuts.

The summit meetings, which have taken place every two years, have forced national leaders to focus on their stockpiles of materials and their protections, and engaged the United States on their processes for securing them, blending them down so they cannot be used in bombs, or getting rid of them.

"This process has given us the opportunity to build relationships that have opened new doors to cooperation, some of which we can talk about and some of which we can't," said Elizabeth Sherwood-Randall, who heads the effort at the National Security Council and has been negotiating with countries participating in the meeting.

Of the agreement with Japan, she said: "This is the biggest commitment to remove fissile materials in the history of the summit process that President Obama launched, and it is a demonstration of Japan's shared leadership on nonproliferation."

Ms. Sherwood-Randall said that even Russia "has continued to work on nuclear security at a professional level," despite the tensions over Ukraine. But she conceded: "It is true that at this moment, we will not begin a new discussion about new arms control. This is not something the Russians are interested in at this time."

In fact, Russia is now modernizing its nuclear force. So is the United States: To pass the New START treaty in 2010, the administration told Congress it would spend upward of \$80 billion on a "life extension" program for its existing nuclear arsenal, and it will cost far more to upgrade nuclear submarines in years ahead.

### **Crisis in Ukraine Prompts Renewed Focus on U.S. Nuclear Posture** *Valerie Insinna, National Defense Magazine, Mar 20*

As tensions between Russia and Ukraine escalate, U.S. foreign policy hawks contend that Russian aggression merits a second look at the U.S. military's uncertain nuclear modernization plans.

Under President Vladimir Putin, Russia has become increasingly anti-democratic and hostile to the United States, said Mark Schneider, senior analyst at the National Institute for Public Policy. For the the United States, this should stir concerns about Russia's nuclear intentions.

"U.S. nuclear modernization programs are minimal. We are basically replacing systems only when they're 40 to 80 years of age," he said March 19 on Capitol Hill. "Assuming everything went perfectly [with future budgets], and we actually had the funding, nothing [new] will be operational before 2020."

Putin announced Russia's annexation of the Ukrainian province of Crimea on Tuesday. Since then, Russian forces have seized Crimean bases and pushed out Ukrainian forces, according to reports.

During Putin's two presidencies, Russia has invaded two countries — Georgia in 2008 and Ukraine. Putin previously held the presidency from 2000 to 2008.

"In both the Russian actions in Georgia and the Ukraine, the U.S. unfortunately made no significant effort to deter the events before they happened, and no real penalty was imposed on Russia for what it did in these situations," Schneider said.

President Barack Obama on March 20 announced sanctions against Russian officials and Putin allies.

The U.S. nuclear triad — comprised of land-based ballistic missiles, long-range bombers and submarines that can launch ballistic missiles — is aging and in need of modernization or replacement. Russia's military activities in Ukraine may push the U.S. government to move forward with procuring new weapons, said Loren Thompson, an analyst at the Lexington Institute, an Arlington, Va.-based think tank.

The most expensive leg of the triad to modernize is the Ohio-class submarine replacement, which the Navy wants to begin building in 2021. At about \$6 billion per copy, the service will likely struggle to fit procurement costs into its shipbuilding budget, which is about \$15 billion per year.

The Air Force also intends to purchase a long-range strike bomber at \$550 million per aircraft to replace the B-2 and B-52, Undersecretary of the Air Force Eric Fanning said earlier in March. He indicated that the price of the aircraft is causing the service to cut back on desired capabilities.

Although the Air Force plans to start building the new bombers in the mid 2020s, officials want to delay certification for nuclear operation until the 2040s, Thompson said. "If concern about a resurgent Russian threat persists, though, it may move up the date when the new bomber can contribute to nuclear deterrence," he wrote in a March 20 editorial for Forbes.

The service soon must also decide whether to upgrade its collection of Minuteman III intercontinental ballistic missiles or pursue new delivery vehicles. It is conducting an analysis of alternatives due later this year.

"The most important military consideration that Vladimir Putin overlooked in mounting his annexation of Crimea is how it would bolster the resolve of western nations to maintain their defenses. ... Many people in Washington might have been prepared to forego spending money on a new generation of nuclear weapons before Putin made his move, but he has now changed the strategic calculation," Thompson said.

Meanwhile, Russia is building its next-generation nuclear fleet. The first of the country's new Yasen-class attack submarine was delivered last year.

"The announced program involves modernization of about 98 percent of the ground-based ICBM force by 2021. They have announced a new heavy bomber which would be deployed somewhere around 2025 if they're successful," Schneider said. "The current pattern of modernization basically is one [in which] we will see complete modernization of Russia's nuclear portfolio before we modernize anything."

Schneider argued that the New Strategic Arms Reduction Treaty had the opposite effect on Russia than was intended. Instead of decreasing the number of nuclear weapons the country is allowed to have, the treaty contains loopholes that could allow Russia to expand its arsenal, he said.

"For example, the New START treaty does not mention ground mobile ICBMs, and all definitions in the treaty were changed to exclude coverage of ground mobile ICBMs. And they also eliminated the START treaty prohibitions on air-launched ICBMs or surface ship-launched ICBMs," he said. "Together those are very large loopholes that can be exploited to achieve capabilities far in excess of what's notionally permissible under the New START treaty."

Since that treaty was signed in 2010, Russia has announced increases to its intercontinental and submarine-launched ballistic missile fleets, he said. It plans to produce 400 new ICBM and SLBMs before 2020.

Schneider believes one of those new weapons, the RS-26, is an intermediate-range missile that would be illegal under the 1987 intermediate-range nuclear forces treaty.

Because the Obama administration has not called attention to Russian nuclear treaty violations, Congress should press executive branch officials to respond publicly to questions on arms control issues, said Paula DeSutter, former assistant secretary of state for verification, compliance, and implementation during the George W. Bush administration.

### **Vietnam Receives 2nd Russia-Made Submarine** *GlobalTimes.cn, Mar 20*

A freighter carrying the second Vietnam's kilo-class Russia-made submarine was safely anchored in Vietnam's southern Cam Ranh gulf in Khanh Hoa province, media reported Thursday.

The freighter called Rolldock Star arrived in Cam Ranh gulf late Wednesday, after a voyage of nearly two months from Russia's Kaliningrad. This is the second time Rolldock Star has carried out transportation for submarines from Russia to Vietnam, state-run news agency VNA reported.

The submarine, named HQ183-Ho Chi Minh City has the same technical standards as the others in a series of six submarines that Vietnam ordered from Russia.

The submarine has an over 3,000-ton displacement, and is able to operate at a maximum depth of 300 meters and at a speed of 20 nautical miles per hour with over 50 crew members. Ho Chi Minh City submarine is said to be equipped with many modern weapons on board, according to VNA.

After arriving at Cam Ranh gulf, Russian and Vietnamese experts will pump water into the cabins of freighter Rolldock Star to release the submarine to the sea. The submarine will then be taken to Cam Ranh Port.

Earlier on Dec. 31 last year, Vietnam received the first submarine named HQ182- Hanoi and took it to Cam Ranh port half a month later. Vietnam is expected to receive the third Russia-made submarine in 2014, which will be named HQ184- Hai Phong.

### **Russian Navy Unveils New Class of Submarines** *Turkish Weekly, Mar 19*

**MOSCOW** — A prospective series of Russia's new fifth-generation conventional submarine equipped with an advanced air-independent propulsion system will be designated the Kalina-class, the commander of the country's navy said Wednesday.

"Russia is currently designing a fifth-generation conventional submarine, dubbed Project Kalina, which will be fitted with an air-independent propulsion (AIP) system," Adm. Viktor Chirkov said.

"Our industry promises to develop this AIP system by 2017 and build the first boat fitted with such a system by 2018," Chirkov said.

The admiral earlier said that the new AIP system could be initially tested on the only operational Lada-class diesel-electric submarine in service with the navy, the St. Petersburg, which is undergoing sea trials in the Barents Sea after a series of design changes.

Air-independent power plants offer significant advantages over diesel-electric submarines, which must surface regularly to recharge their batteries, and nuclear submarines, which must continually run noisy pumps to cool their reactors.

Submarines with such systems can stay submerged for weeks at a time and are already in operation with a number of navies around the world. The United States has so far not employed the technology, however, in favor of the longer endurance and range of nuclear submarines.

#### **Minister: Fateh Submarine Soon to Join Iran Navy** *By Trend, Mar. 15*

Iran's Defense Minister Brigadier General Hossein Dehqan says the indigenous Fateh (Conqueror) submarine will join the Navy in May, Press TV reported. Dehqan said on Saturday that the submarine has undergone necessary tests and its faults have been corrected.

'He said the submarine will probably join the Navy on May 24 which marks the anniversary of the liberation of Khorramshahr city during the eight-year imposed war with Iraq. Fateh weighs nearly 500 tons and it is Iran's newest semi-heavy submarine.

In recent years, Iran has made major breakthroughs in its defense sector and attained self-sufficiency in producing important military equipment and systems.

Iran has so far launched different classes of indigenous advanced submarines including Fateh, Ghadir, Qaem, Nahang, Tareq and Sina.

The Islamic Republic has also conducted several military drills to enhance the defense capabilities of its armed forces and to test modern military tactics and equipment.

Iran says its military might poses no threat to other countries, stating that its defense doctrine is based on deterrence.

#### **'Silent Strength' a tribute to the USS Thresher and crew** *Fosters.com, Mar 12*

**PORTSMOUTH** — A limited edition of Silent Strength, the new book about the men lost aboard the USS Thresher, is expected to be available by April 10 — just in time for the 51st anniversary of the worst submarine disaster the world has ever known.

Nearly 200 of the 1,000 copies being printed through Peter E. Randall Publisher of Portsmouth have already been pre-ordered. Proceeds from the sales of this special edition will go toward the Thresher Memorial Project in Kittery, Maine, which is still about \$7,000 short of the funding required to complete its permanent tribute to the 129 men who died on the morning of April 10, 1963.

Silent Strength is authored by D. Allan Kerr, a former Foster's Daily Democrat reporter and Portsmouth bureau chief. Kerr now works for the U.S. Treasury Department and is a member of the Thresher Memorial Project Group.

The Thresher (SSN 593), designed and built at Portsmouth Naval Shipyard in Kittery, was the most advanced naval vessel of its era. Considered faster, quieter, deeper-diving and more lethal than any submarine built before her, the Thresher's primary mission was to hunt and destroy Soviet subs at the height of the Cold War — should the need arise.

The nuclear fast-attack submarine sank during deep-diving tests off the New England coast following a nine-month overhaul at Portsmouth Naval Shipyard. Thirteen of the men who died that day were civilian Shipyard employees, and three others were Navy officers assigned to the Shipyard's military staff.

The book derives its title from the Thresher's motto, *Vis Tacita* — Latin for "Silent Strength."

Subtitled *Remembering the Men of Genius and Adventure Lost in the World's Worst Submarine Disaster*, this hardcover volume includes personal photos and recollections from the widows and children of the Thresher heroes. As SSN 593 was the pride of the Navy at the time, the first submarine of her class, the branch's best and brightest were tasked with manning and maintaining the Thresher.

Many of the vessel's crewmen were personally selected by Admiral Hyman Rickover, the legendary "father of the nuclear Navy." The remarkable qualities of these pioneers may be best embodied by the Thresher's skipper, Lt. Cmdr. John Wesley Harvey.

Harvey was an honor student at his Philadelphia high school, earned a full academic scholarship to the University of Pennsylvania, and eventually graduated eighth in his class at the U.S. Naval Academy. He also won \$4,500 in prizes in 1958 on the NBC game show "Concentration."

But Harvey was also rugged enough to play on Pennsylvania's offensive line next to the great Chuck Bednarik, one of football's all-time tough guys and a future Hall of Famer. Harvey went on to play varsity at Annapolis as well, and took part in the classic Army-Navy gridiron rivalry.

Before assuming command of the Thresher, Harvey participated in three historic undersea Arctic voyages to the North Pole — two of them aboard the world's first nuclear-powered vessel, the USS Nautilus (SSN 571.) Considered a rising young star in the Navy, the Thresher's skipper was only 35 when he died aboard his first sea command. He left behind his wife, Irene, and two sons.

As Maine Sen. Susan Collins notes in her poignant foreword to the book, "The 'Silent Service' is a critical component of America's defenses, and those who step forward to serve willingly take on one of the most challenging assignments in our armed forces."

Albacore Park in Portsmouth and Pine Tree Country Store in Kittery are among the local sites selected to carry Silent Strength. Copies can also be ordered through the Thresher Memorial Project at PO Box 321, Kittery ME 03904, by writing Silent Strength in the memo section of the check.

Buyers can send payment via PayPal on the Thresher Memorial website as well, at: <http://threshermemorialkittery.sharepoint.com/Pages/Memorabilia.aspx> <<https://iemail2.alionscience.com/owa/redir.aspx?C=vTQ6dHeoyUmd6ZNCrriagTixHNLEtEliePMd0mpMTV-3gy9TLZVSxCh8mdJLAFITFOgXOkbzQ.&URL=http%3a%2f%2fthreshermemorialkittery.sharepoint.com%2fPages%2fMemorabilia.aspx>>

The Kittery memorial includes a 129-foot flagpole in the middle of the local traffic circle, commemorating the 129 men who died aboard the Thresher. An adjacent park currently under construction near Town Hall features a bronze plaque listing the names of those who perished in the disaster, and a black granite carving of the Thresher donated by local sculptor Thomas Berger.

Silent Strength \$29.99, Shipping and handling is \$5.95 or plan on picking up a copy week of April 10.

Kerr may be contacted at [the\\_culling@hotmail.com](mailto:the_culling@hotmail.com) for additional information.

#### **China Expands Into A World Of Peril** **Beijing Faces Mounting Vulnerabilities On The Global Stage** *Andrew Browne, Wall Journal Sreet, Mar 12*

**BEIJING** – The impression that China often projects to the world is one of supreme confidence, a country convinced that its moment has arrived.

That's been particularly true since the 2008 global financial crisis when the idea took root in China that America was on the wane – its time had come and gone. This bred a new assertiveness that gave rise to anxious questions in the region about how China intends to exercise its growing power.

Yet, just in the past several days, a series of events capped by the disappearance of a Malaysia Airlines jet packed with Chinese passengers has brought into focus an even more important question: How will China cope with its mounting vulnerabilities?

These cover everything from domestic terrorism, ethnic and social unrest to troublesome neighbors along the world's longest land border.

They constitute an immensely complex set of security challenges that, when added up, suggest that China's destiny is far less assured than its surface confidence might indicate.

A few days before the airliner vanished, attackers killed 33 people in a rampage through a crowded train station in Kunming, in southwestern China, slashing throats and hacking limbs with long daggers.

Authorities identified the assailants as separatists from Xinjiang, which would represent an alarming escalation in a violent insurgency that has been bottled up so far in the mainly Muslim northwestern border region.

The Kunming attack could be a game changer if, as some analysts fear, it represents the start of a Jihad orchestrated by Xinjiang's ethnic Uighurs against their Han Chinese overlords.

To be sure, there are plenty of reasons to think that might not be the case. For a start, Uighurs are mostly moderate Sunni Muslims, and separatist sentiment has mostly been for the creation of a separate state.

But the spread of violence from Xinjiang highlights the failures of Beijing's policies toward its ethnic minorities, who are scattered over two-thirds of China's land mass. In Xinjiang, billions of dollars of investment in infrastructure has produced, along with an oil and minerals bonanza, a backlash among Uighurs who feel exploited by Han settlers in their own land.

So far, there's no evidence of any connection between the Muslim insurgency in Xinjiang and the disappearance of Flight 370 from Kuala Lumpur to Beijing.

Still, the mysterious circumstances in which the plane vanished, and the presence of so many Chinese passengers aboard, spotlight the security risks China's created by its rapidly expanding global footprint.

China has never been more connected to the world through travel, trade and investment. But the economic benefits have a security downside: Chinese citizens and assets now provide soft targets for terrorists.

Last year, China sent almost 100 million tourists abroad. Chinese companies are heavily involved in resource extraction in troubled parts of the world, including the Middle East and Africa, where jihadists operate. China alleges that Uighur separatists have links with some of these groups, including al Qaeda.

Protecting Chinese lives, along with oil wells and other investments, has become a driving force behind China's military expansion. In 2011, for instance, China had to send planes to evacuate 30,000 Chinese construction workers from the civil war in Libya.

China, too, is made vulnerable by its geography. Whereas the U.S. is separated by vast oceans from its closest potential enemies, China is hemmed in by 20 states, several of them failed or unstable regimes.

That point was driven home last week when, just as Chinese authorities were grappling with the aftermath of the Kunming massacre, North Korea fired off a rocket without warning that passed near a Chinese passenger plane.

A nuclear-armed North Korea that threatens the peace on the Korean peninsula, or whose economic collapse spills chaos across its borders into China's industrial heartland, is one of China's recurring fears.

In short, the world as viewed from Beijing is dangerously unpredictable. That helps to explain the recent announcement of a 12.2% increase in military spending for this year.

China's neighbors focus on spending that goes into projecting the country's raw power: submarines, warships, stealth fighters and missiles.

Yet for China, the more immediate concern is to build a military that guarantees the survival of the Communist state in the face of internal threats, and secures the country's borders.

Asked to explain the jump in military spending, China's chief foreign ministry spokesman, Qin Gang, revealed exasperation with the world's perception of the country's security challenges.

"China's People's Liberation Army aren't Boy Scouts armed with only red-tasseled spears," he said.

**Submarines: Nazi U-Boats Prowl The Coasts Of Asia**  
*Strategy Page, Mar 12*

After over a decade of effort China has finally found export customers for its diesel-electric submarines. In December 2013 China agreed to sell Bangladesh two Type 035G subs for \$103 million each. China and Pakistan are still negotiating prices and terms for the sale of six Chinese Type 041 subs. The Type 035Gs are to be delivered within five years, indicating that these will be newly built.

The Type 035Gs are so cheap because they are an old design that actually goes all the way back to World War II. The Chinese, with their typical persistence have kept tweaking and improving that design. For China it all began in the 1960s with their Type 33 boats. These were copies of the Russian Romeo class which was the successor to the Whiskey class boats, which were, in turn, based on the German Type XXI. The German design first showed up in 1943, and was the first modern submarine in that it was designed to spend most of its time underwater (with just the snorkel device and periscope above water, to bring in air for the diesel engine and crew). The Type XXI was a 1,600 ton (on the surface) sub, compared to the 1,500 ton Romeos. Russia built over 500 Romeos, while China built over 80.

China stopped building Type 33s in the 1980s and began producing 21 boats of an improved design (the Type 35), which they continue to build in small numbers. These were more reliable boats with much improved capabilities. More importantly they are cheap, which is crucial for countries like Bangladesh. The first subs China ever exported were four Type 33s to Egypt and several to North Korea. Most of these exported subs are still in service.

During the last decade, the Chinese were still having problems with producing reliable diesel-electric boats, and even more problems with nuclear subs. But eventually the Chinese tend to solve the quality problems which is exactly what they planned to do all along. Only a few of the Type 33s are still in Chinese service, used mainly for training. They rarely go to sea. The Type 35 kept getting improved and construction continues. The Type 35G is the latest version and it incorporates modern sonar systems and the ability to launch missiles via the torpedo tubes.

This brings us to the Chinese Type 041 boats Pakistan wants. These look a lot like the Russian Kilo class and that was apparently no accident. The Type 39 and 41 subs are 1,800 ton boats that look very much like Kilos. These subs have crews of 60 sailors and six torpedo tubes. This is very similar to the Kilos, which are a bit larger. China began ordering Russian Kilo class subs, then one of the latest diesel-electric designs available, in the late 1990s. The first two Type 41s appeared to be a copy of the early model Kilo (the model 877), while the second pair of Type 41s appeared to copy the late Kilos (model 636). The Type 39s were the first Chinese subs to have the teardrop shaped hull. The Type 41 was, according to the Russians, a clone of the Kilos. The Russians now believe that the entire Type 39/41 project is part of a long-range plan to successfully copy the Kilo. If that is the case, it appears to be succeeding.

China currently has 13 Song class, 12 Kilo class, 7 Yuan class, and 18 Ming (improved Russian Romeo) class boats in service plus some Type 33s for training. The Chinese are still having a lot of problems with nuclear power in subs. Despite that, the Chinese tweaking and improving the designs. At this stage it would be difficult to find an export customer for Chinese nuclear subs. But their latest diesel-electric boats are competitive with Russian Kilos and cheaper as well.

**Underwater Drones to Map World's Oceans**  
*Rhiannon Williams, telegraph.co.uk, Mar 11*

A fleet of 16 underwater drones are to trawl the world's oceans as part of a research project into mapping the world's oceans. The 16 unmanned submarines will explore the world's oceans as part of a research project by Rutgers University. Each 2.2 metre-long glider will rely on the energy from buoyancy changes to propel it forwards at speeds of around 35 km per day as it navigates using altitude and depth sensors, a GPS receiver and altimeter.

The drones will continually collect data about the oceans' currents, temperature and salinity to improve the accuracy of current climate and weather forecasting. Levels of phytoplankton around the vehicles will also be monitored using sustainable optic sensors.

The data will be transmitted to the research time via a telecommunications link provided by Iridium satellites every time each submarine surfaces. David Wigglesworth, vice president and general manager of Iridium, said: "The health of our oceans is truly an indicator of the health of our planet, and the Challenger Glider Mission will provide the kind of high-resolution data desperately needed by researchers to evaluate and assess the current ocean state."

Scott Glenn, Co-leader of the Challenger Glider Mission and Professor of Physical Oceanography at Rutgers University, said: "The technology underpinnings of this mission are truly enabling our researchers to gather more and better data than ever before, enhancing the basis of knowledge for future generations."

"Part of our goal with this mission is to increase global ocean literacy. This expanded dataset will enable students and researchers to focus on the science of their local waters, as well as be a part of a global research community, all working toward understanding the ocean's role in regulating the changing climate and weather."

The project is scheduled to last until 2016, during which each glider is expected to travel between 6,000 and 8,000 km.

**CONSTANT BEARING, DECREASING RANGE**

San Diego Base Sunday Breakfast March 30 - 0800 to 1200	Annual Submariner Caucus April 27 - May 1 Laughlin, NV	Roncador Memorial Day Ceremony May 26 – time TBD
Submarine Memorial Dedication Riverside National Cemetery April 5 - 1030	114th Submarine Birthday Ball May 10 - Sheraton San Diego Hotel and Marina. Social hour @ 1600 - Ball @ 1800 Ticket info coming soon	La Mesa Flag Day Parade May 31 – starts at 1000
114 <sup>th</sup> Birthday United States Submarine Force April 11	Armed Forces Day May 17 Fly Flags at the 52 Boat Memorial	Flag Day June 14 Fly Flags at 52 Boat Memorial
Linda Vista Multi-Cultural Parade April 19 – starts at 1100	Ramona Parade May 17 – starts at 1000	Oceanside Independence Day Parade June 28 – starts at 1000
Doug Smay Base Easter Sunday Breakfast April 20 - 0730 to 1100	Memorial Day May 26 Fly Flags at 52 Boat Memorial	San Diego Base Sunday Breakfast June 29 – 0800 to 1200

USSVI 50th Anniversary National Convention  
 Burlingame, CA September 1-7  
<http://www.ussvigoldenanniversary2014sf.org>

