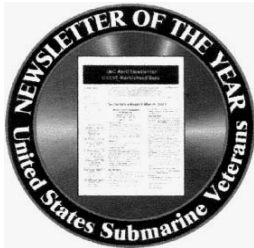


American Submariners Inc.
4370 Twain Ave.
San Diego, CA 92120-3404



The Silent Sentinel

FEBRUARY 2015



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.



TM1(SS) Don Tetschlag on Jallao observing Spinax

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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

FEBRUARY 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 10 FEBRUARY, 2015. 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

Ron Gorence, Rocky Rockers, George Koury, Frank Walker, R.C. Thompson, John Grienberger, John Lester, Judith Addington, Frank Gomez, and Debbie Justo (Mother of Fred Fomby) on the binnacle list.

Submarine Losses in FEBRUARY

Originally Compiled by C J Glassford



USS Barbel (SS-316)

Lost on Feb 4, 1945 with the loss of 81 officers and men on her 4th war patrol. Based on Japanese records, she was bombed near the southern entrance to the Palawan Passage. The day before, she reported she survived 3 depth charge attacks.

USS Shark I (SS-174)

Lost on Feb 11, 1942 with the loss of 59 officers and men on her 1st war patrol. Shark was the 1st US submarine sunk by enemy surface craft in the Pacific. She was most likely sunk by depth charges.

USS Amberjack (SS-219)

Lost on Feb 16, 1943 with the loss of 72 officers and men on her 3rd war patrol. Off Rabaul, she was attacked by a Japanese patrol plane, attacked by a torpedo boat and then depth charged by a subchaser.

USS Grayback (SS-208)

Lost on Feb 26, 1944 with the loss of 80 officers and men on her 10th war patrol. She appears to have been caught on the surface in the East China Sea by a Japanese carrier plane whose bombs made a direct hit. During this patrol she sank 4 ships totaling 21,594 tons and was tied for 11th in the number of ships sunk.

USS Trout (SS-202)

Lost on Feb 29, 1944 with the loss of 81 officers and men on her 11th war patrol. She was sunk by escorts in the middle of the Philippines Basin after sinking a passenger-cargoman and damaging another in a convoy. She carried out several notable special missions, including carrying over two tons of gold bullion out of Corregidor in February 1942.



Minutes for Submarine Veterans San Diego Base 13 January 2015

1900 - Meeting of the Submarine Veterans Inc, San Diego Base was called to order by Base Commander Bob Bissonnette.

Conducted Opening Exercises:

Pledge of allegiance by Senior Vice Commander Bill Earl.

Chaplain Russ Mohedano lead us in prayer.

Conducted Tolling of the Boats for January

Observed a moment of Silent Prayer for our lost shipmates.

Recognized past and present E-Board members and Officers present.

Secretary Ferguson announced 37 members and 4 guests (Juanita Williams, Bob Bode, Mac McCormick, and Mike Colombo) present.

The meeting minutes of 9 December 2014 were approved with one change; The Scholarship deadline for applicant submittal is 15 April not March.

Treasurer Ball announced \$18,897.99 total assets with \$3,655.62 in checking and \$15,242.37 in savings including \$2412.00 in the Charlie Marin Memorial Scholarship Fund.

Call for Committee reports:

Chaplain Mohedano announced Rocky Rockers, George Koury, Frank Walker, R. C. Thompson, John Grienberger, Judith Addington, Frank Gomez, and Debbie Justo (Mother of Fred Fomby) on the binnacle list.

Parade Committee: Joel Eikam announced next parade in Linda Vista on April 25th.

Membership Committee: Ray Ferbrache was not present and the Base Commander and members present had a discussion regarding payment of dues in a timely manner and recent problems doing so. Members are reminded that on January 31st, unpaid members are dropped from the rolls.

Nomination Committee: Paul Hitchcock reported no members so far have indicated a desire to serve on the Board of Directors for 2015. Base Commander Bissonnette announced that volunteers are needed to serve for two years as Base Commander, Base Senior and Junior Vice Commanders, and Secretary for 2015. The Base Commander reminded all that the new Board will be elected and sworn in at the February meeting.

Scholarship Committee: Paul Hitchcock reminded the members that applications are due no later than 15 April.

Storekeeper Report: Phill Richeson donated one brass belt buckle to the raffle.

Breakfast Committee: Warren Branges announced the next breakfast will be March 29th.

52 Boat Memorial: Warren Branges reported all new markers are here and installation is being negotiated.

Float Committee: David Kauppinen announced no changes.

1930 Base Commander called for a break.

1945 Base Commander called the meeting back to order. Warren Branges donated his portion of the 40-30-30 back to the Base.

Unfinished Business:

The Christmas Party was a success with great food, gifts, and fellowship. The budget will be presented for a vote by members at the February meeting. David Kauppinen reminded the members that matching funds in the name of Al Strunk to the Scholarship Fund ends at the end of February. Members wishing to donate please do so.

New Business:

A motion was passed to donate \$300 as a sponsor for the Laughlin Western Region Roundup from 27 April to 1 May.

A motion was passed to donate \$20 to the VFW Poppy Drive Memorial Board, \$10 each in the name of Subvets WWII, and USSVI San Diego Base.

Good of the Order:

J. J. Lynch gave a brief discussion of his video show of a trip to Australia.

David Kauppinen mentioned that sale of memorabilia.

Warren Branges announced the next Submarine Warrior Luncheon 11 February at Pt. Loma Navy Base. Also contact cards are available to distribute to potential new USSVI members.

Russ Filbeck reminded us of the Rickover Special TV show on KPBS 15 February.

Ed Farley donated a CSF1 jacket that was auctioned off for \$25.

The meeting was adjourned at 2010.

Jack Ferguson, Secretary

Sailing List for 13 January 2015

David Ball	Bob Bissonnette	Bill Earl
Bob Farrell	Joel Eikam	Paul Hitchcock
Jack Ferguson	Joe Peluso	Russ Mohedano
Russ Filbeck	Chris Stafford	Jack Kane
Jack Lester	Mike Hyman	Ed Welch
John Fox	Tom Polen	Dennis Mortensen
Dan Eberhardt	Peter Lary	J. J. Lynch
William Johnston	David Kauppinen	Mert Weltzien
Ron Gorence	Dennis McCreicht	Phill Richeson
Keith McKee	Benny Williams	Warren Branges
Jessie Taylor	Bob Welch	Joe Sasser
Richard Steele	Ed Farley	Bud Rollison
Jim Harer		

Current News

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

Hyman Rickover Powered Up The Cold War’s Nuclear Navy
Scott S. Smith, For Investor’s Business Daily, Feb 4

Adm. Hyman Rickover was not a fan of neat formulas.

Leadership to him meant so much more than coloring by the numbers.

He openly dissed hidebound Navy brass and infuriated defense contractors, resulting in repeated efforts to end his career.

Those moves to ax him backfired, as allies in Congress and the public saw him as a hero, standing up to corruption and incompetence.

Their backing helped him serve 63 years of active duty, a record.

“He didn’t think case studies in schools, books or seminars, designing a grand strategic theory, hiring consultants and relying on formal organizational charts had any meaning,” Tim Foster, a former Rickover senior staff member, told IBD.

The Rickover Direction

“These, he believed, tended to limit individual creativity, initiative and personal responsibility, and the only thing that counted was the experience that would help form good judgment, which needed to be honed with constant training,” said Foster, author of “Technology and Leadership: Hyman G. Rickover” in the volume “The Art of Command,” edited by Harry Laver and Jeffrey Matthews. “Rickover was arguably the most significant technical leader in U.S. military history.”

Rickover’s Keys

- Father of Nuclear Navy.
- Overcame: Bureaucratic resistance to innovation.
- Lesson: To get critical things done on time, sometimes ask neither permission nor forgiveness.
- “A boss should hire only people smarter than the boss, then listen to them and do what they say.”

Rickover drove the creation of the nuclear Navy, whose submarines served as a gun to the head of any Soviet leader who might be tempted to incinerate America.

Rickover (1900-86) was born Chaim Godalia Rickover to a Jewish family in Makow Mazowiecki, Poland, then ruled by Russia.

The Rickovers fled persecution in 1906, arriving in New York City and soon moving to the Chicago suburb of Lawndale, where the patriarch worked as a tailor.

As a Western Union messenger during high school, Hyman got to know his congressman, who recommended him to the Naval Academy in Annapolis, Md.

But Rickover was not ready for the entrance exam, so he paid for a preparatory class. He quickly realized that it was over his head, dropped out and did his own intensive study, passing the algebra portion by one-tenth of a point.

Graduating in 1922, he was commissioned as an ensign and assigned to a destroyer, learning every facet of its operation. Then he served on five other ships, his only command being on a minesweeper in 1937.

He was allowed ashore to earn a master’s degree in electrical engineering from Columbia University in 1929. Two years later, he married fellow student Ruth Masters, and they would have one child. After Ruth’s death in 1972, he married Eleonore Bednowicz.

Intel Chief Warns U.S. Tech Threatened By China Cybertheft

Matthew Pennington, Associated Press, Feb 3

WASHINGTON – The U.S. defense intelligence chief warned Tuesday that America’s technological edge over China is at risk because of cybertheft.

Lt. Gen. Vincent Stewart, director of the U.S. Defense Intelligence Agency, told a congressional hearing the U.S. retains technological superiority. But he said China had stolen “a lot” of intellectual property from U.S. defense contractors and that effort continues.

He’s declined to say publicly whether that has affected U.S. defense capabilities.

“I do not believe we are at this point losing our technological edge, but it is at risk based on some of their cyber activities,” Stewart told a House Armed Services Committee hearing on worldwide threats.

Stewart’s comments underscored the strains between the U.S. and China over cyberespionage. Last May, U.S. authorities indicted five Chinese military officials over allegations they targeted big-name American makers of nuclear and solar technology.

China denied the allegations.

Then in September, the Senate Armed Services Committee reported that hackers associated with the Chinese government repeatedly penetrated the computer systems of the U.S. Transportation Command, showing vulnerabilities in the U.S. military's system to deploy troops and equipment in a crisis.

Beyond the cyber tensions, China's military buildup poses a challenge to America's post-World War II predominance in the Asia-Pacific region, although both the U.S. and China have sought to tamp down talk of rivalry between the established world power and the rising one.

Stewart told lawmakers that China was designing their forces to counter the U.S. military, and Chinese training and weaponry, including missiles, aircraft and space defense capabilities, pose a "significant threat" to U.S. forces in the western Pacific.

His written testimony noted China's increasing power projection in the Indian Ocean, with two submarine deployments there in 2014, and modernization of its air force "on a scale unprecedented in its history."

He said China is deploying growing numbers of an anti-ship ballistic missile – which analysts have said pose a potential threat to American aircraft carriers.

Stewart said China also has two stealth fighter jet programs, and is developing a missile defense system.

PLA's Type 091 Nuclear Submarine 'Based on US Toys'
Want China Times, Feb 02

Huang Xuhua, China's chief submarine designer, has told Shenzhen Satellite Television that China's Type 091 Han-Class nuclear-powered submarine was designed and developed based on two toys from the United States.

After Huang took over the position as chief designer of the Type 091 submarine from Peng Shilu in 1983, he argued that the linear-shape design is no longer suitable for nuclear-powered submarines which operate at high speeds and at depths of up to 300 meters. Since each tangent plane of the hull is round in a streamlined water-drop shape, Huang believes the boat will be subject to minimum friction or drag while maintaining stability at great depths.

During this period of time, China was unable to get any foreign assistance since it was under a technology blockade imposed by both the United States and Soviet Union. Huang said that the United States took three steps to develop its own water-drop shaped nuclear-powered submarine. First, they installed a nuclear reactor into linear-shape submarines; then the American designed a conventional submarine with a water-drop shape and finally they put a nuclear reactor into the water-drop shaped submarine.

China decided to complete the three steps in one because it did not have enough time according to Huang. Eventually, they brought two US-made toy submarines back to China from Hong Kong and the United States. With those two toy submarines in different sizes, the Chinese researchers were able to learn the design of American water-drop shaped submarine through disassembling them. Huang said this is the reason why China was able to design its first water-drop shaped submarine.

Vexing Specks of China
David S. Cloud, Los Angeles Times, Jan 28

Man-made islands in disputed waters add to worries

China is rapidly building five man-made islands from tiny reefs and shoals in the South China Sea, U.S. officials say, sparking concern that Beijing is growing more assertive in the disputed waters even as the United States boosts its own forces in the western Pacific.

Dredging around Fiery Cross Reef, a former outcropping in the Spratly Islands, over the last year has created a new island nearly 2 miles long and several hundred yards wide.

U.S. officials say it is large enough for China to build its first airstrip in the remote archipelago, one long enough for most of its combat and support aircraft. Satellite photos also reveal a small port under construction.

U.S. officials worry that the buildup indicates a Chinese push to establish de facto control over the resource-rich waters and islets also claimed by the Philippines, Malaysia, Taiwan, Brunei and Vietnam.

Except for Brunei, those nations all maintain small airstrips or symbolic military outposts in the Spratlys, but the Chinese military dwarfs others in the region and could undermine the tense status quo. Confrontations have broken out over fishing, oil and gas drilling and military maneuvers in recent years.

India is the latest country to express alarm about Beijing's growing military clout, partly because the Chinese navy has sent

nuclear submarines into the Indian Ocean, rattling New Delhi's defense community.

During a three-day visit to New Delhi that ended Tuesday, President Obama signed a joint statement with Indian Prime Minister Narendra Modi calling for "safeguarding maritime security and ensuring freedom of navigation and overflight throughout the region, especially in the South China Sea." They urged all parties "to avoid the threat or use of force."

White House aides portrayed Obama's trip as a way to emphasize his attempt to focus more military and other resources on Asia and the western Pacific, a pivot intended in part to offset China's influence. The Pentagon has sent more warships and troops to the region and has forged closer military ties with several of China's neighbors.

A military-grade airstrip and dredged harbor on Fiery Cross Reef, which lies on the western edge of the Spratly archipelago, clearly would expand China's ability to operate in an area considered a potential tinderbox. Land reclamation is also underway at Johnson South Reef, Johnson North Reef, Cuarteron Reef and Gaven Reef.

"China appears to be expanding and upgrading military and civilian infrastructure – including radars, satellite communication equipment, antiaircraft and naval guns, helipads and docks – on some of the man-made islands," according to a report last month by the U.S.-China Economic and Security Review Commission, which was set up by Congress.

Beijing insists the reclamation projects are an internal matter taking place on Chinese territory, and recently said it needs a base in the South China Sea to support radar and intelligence gathering. It has rebuffed regional demands to submit to international arbitration to resolve the maritime and territorial disputes.

The White House has refused to take sides in the territorial disputes, calling for a halt in all provocative activities. But the Obama administration faces growing pressure from allies to push back any Chinese effort to establish a permanent offshore military presence in the contested area.

Pentagon officials and the State Department repeated those demands in the last week, urging China to halt the island-building projects.

"We call on China to clarify their reclamation intentions" and "to cease these large-scale reclamation activities, recognize how they are increasing regional tensions, and pursue diplomatic alternatives," said Lt. Col. Jeffrey Pool, a Pentagon spokesman.

"They're reclaiming land in shoals and rocks in sensitive areas whose sovereignty is contested," Assistant Secretary of State Daniel R. Russel said at a Jan. 21 news conference in Manila. "We think there is a powerful case to be made for the maximum exercise of restraint."

Evan P. Garcia, a senior Philippine diplomat, told reporters the island-building "is not helpful in terms of finding a way forward... It's so frustrating."

In late 2013, China's Defense Ministry sparked deep unease when it warned that it would take "defensive emergency measures" against foreign aircraft that did not give notification before entering an air-defense identification zone that Beijing had declared off its coast.

In response, the Pentagon sent a pair of unarmed B-52s over the East China Sea to challenge the Chinese claim. The crisis was defused when China backed down and signaled it would not endanger the lives of pilots and passengers.

Pentagon officials were furious in August when a Chinese fighter jet did a barrel roll over a U.S. Navy P-8 Poseidon surveillance aircraft over the South China Sea, and the White House called the incident a deliberate provocation. In 2001, a Chinese fighter jet collided with a Navy EP-3 surveillance plane, forcing it to make an emergency landing on nearby Hainan island.

At the same time, the Chinese military still faces severe limitations. Most of its fighter aircraft lack the range to patrol over the Spratly Islands, which lie more than 600 miles from China's nearest air base and more than 400 miles from a Chinese airstrip in the Paracel Islands at the northern end of the sea, according to the report by the congressional commission.

Its navy similarly has a limited ability to operate in open waters for long periods because it lacks offshore bases for refueling and resupply, said U.S. officials who requested anonymity because of the sensitivity of discussing China's military. China launched its first aircraft carrier in 2012, but the ship is not expected to be capable of flight operations until 2016, at the earliest.

A senior Chinese military official said in November that Chinese leaders decided to expand a military presence in the South China Sea after participating in the multinational search for Malaysia Airlines Flight 370, which disappeared March 8 while flying from Kuala Lumpur to Beijing with 239 people aboard.

The pilots made their last voice contact over the South China Sea, although the search soon expanded to the southern Indian Ocean. Debris from the jet still has not been found.

"There is a need for a base to support our radar system and intelligence-gathering activities," Jin Zhirui of the Chinese air force headquarters said at the Xiangshan Forum, a Beijing national security conference, according to news reports.

The search "made us realize we lacked sufficient air force capabilities in the South China Sea," Jin said. "There is a need for a base of operations in the South China Sea for state security and to protect national interests."

China is unlikely to build a major military base in an area regularly hit by typhoons, said Jeffrey Engstrom, an Asia security expert at Rand Corp., a Santa Monica-based think tank. But, he said, the "man-made islands would be useful for establishing presence and limited power projection in the South China Sea."

Times staff writer Julie Makinen in Beijing contributed to this report

No, The Russian Navy Isn't Going To Collapse
Dmitry Gorenburg, War is Boring, Feb 2

Is the Russian Navy about to collapse? In a recent article on War is Boring, David Axe made this argument largely based on data from my recent articles on the Russian shipbuilding program and the Russian Navy's priorities. While the information I provided is sound, Axe's overall interpretation is not.

The Russian Navy is investing in a time-phased recapitalization of its navy over the next 20 years. Submarines are the first phase, already well under way, followed by smaller surface combatants, then increased amphibious capabilities. The navy is letting recapitalization of cruisers and destroyers slip into the next decade. As such, the availability of large combat ships will decrease in the near term but begin to increase in the medium to long term.

The Russian Navy has historically had four main missions: 1) strategic deterrence, 2) coastal defense, 3) protection of sea lanes of communication, and 4) out-of-area deployment. Under Admiral Gorshkov's leadership in the late Soviet period, it consistently built up the deployment mission while retaining the primacy of the others. During the immediate post-Soviet period, the Russian Navy largely collapsed. The vast majority of its combat ships were rendered inoperable and a large number were scrapped. In addition, lack of financing meant that the remaining operable ships and submarines rarely deployed in the period from 1994 to 2005.

When the Russian government resumed significant financing of naval procurement in recent years, naval planners understood that they could not rebuild the entire capacity of the Navy at the same time. The strategic deterrence mission remained primary, and the development and construction of new types of nuclear submarines (both ballistic missile and attack submarines) and submarine launched ballistic missiles proceeded with great speed once funding was increased (though the introduction of new Borei class ballistic missile submarines was delayed by problems with the Bulava missile).

As for the conventional naval force, the Russian Navy has decided (quite rationally) to focus on rebuilding its coastal defense mission first and foremost. It is building a fair number of highly capable smaller ships in the current rearmament program (i.e. through 2020) that will allow it to fully carry out this mission. The corollary of this choice is that building capabilities for the blue water/expeditionary mission has taken a back seat for now. This means that over the next five to ten years, the ability of the Russian Navy to deploy on long range missions will decline somewhat, as the remaining Soviet-era large ships age and become less reliable (with some perhaps being retired). But this is a short-term problem for them. In the medium to long term, the Russian Navy is going to rebuild that capability, with new destroyers currently being designed and expected to start entering the fleet around 2025. It is also planning to build new amphibious ships to increase that capability, also by the middle of the next decade. And there's a current ongoing debate about building new aircraft carriers, though the first would not be ready until 2030 at the absolute earliest.

So rather than facing imminent collapse, the Russian Navy is going to continue to grow, but primarily with smaller ships coming in the short term, and larger ships entering the fleet no earlier than eight to ten years from now. What's more, the new small ships will be well-armed, carrying the latest Oniks anti-ship missiles and Kalibr multi-purpose missiles, both of which can both be fired through universal vertical launch systems.

The Russian Navy's primary mission has always been strategic deterrence and it will continue to have highly capable nuclear subs (both missile and attack subs) with new classes now entering service. The secondary mission will be coastal defense, very different from the U.S. Navy's focus on out-of-area deployment. But it will be highly capable in performing that mission, with small ships (corvettes and frigates) carrying advanced attack and defensive missiles.

While the Russian Navy has by no means given up on the out-of-area deployment mission, this is going to be a longer-term proposition, with construction of larger class ships (destroyers, aircraft carriers) dependent on the availability of financing in the long term. Furthermore, given their current capacities Russian shipyards are unlikely to be able to carry out the entire shipbuilding plan in the expected timelines. Even if the financing is available, the Russian Navy will not be able to deploy significant battle groups outside its immediate neighborhood for at least the next 10 years. In the short term, it will continue to deploy ships out-of-area, but mostly one or two at a time, not in a manner that would threaten the U.S. Navy. And if the Russian Navy's shipbuilding program is implemented in full, the Russian Navy could well be back as a full-fledged oceangoing force by the end of the next decade.

Dmitry Gorenburg is a senior research scientist in the Strategic Studies division of CNA, a not-for-profit research and analysis organization. Dr. Gorenburg is also the editor of the journals Problems of Post-Communism and Russian Politics and Law and an associate at Harvard University's Davis Center for Russian and Eurasian Studies.

Russian Threats Expose Europe's Military Cutbacks
Ari Shapiro, National Public Radio, Jan 27

An international cat-and-mouse game played out in the waters of Stockholm a few months ago.

The "mouse" was a foreign submarine - Russia is the main suspect - that got away.

And as Russia's military becomes more aggressive, European leaders fear they do not have the military power to deal with this

new threat.

Take Sweden, for instance. Its days of military might are long gone.

The numbers tell the story, says Karlis Neretnieks, who used to run Sweden's National Defense College and has had a long career in the military.

"The army has been reduced by 90 percent, from approximately half a million men to, today, 50,000 [troops] including the home guard, 25,000 if you just count the regulars," he says.

The story is similarly dramatic with the navy - which has been scaled back by some 80 percent - and the air force, which has slimmed down by 70 percent, according to Neretnieks.

After the Cold War, Sweden and the rest of the continent believed they had entered an era of European peace and unity. Lately, Russia has proven them wrong - and not only by seizing part of Ukraine.

Last month a Russian military aircraft flying in stealth nearly crashed into a commercial passenger plane taking off from Copenhagen. In April, Russian fighter jets carried out a simulated bombing raid on Stockholm. And nobody seems able to do anything about it.

Adm. Jan Thornquist, chief of staff for the Swedish navy, worries that with tensions this high, a small slip-up could turn into an international crisis.

"The situation around us has dramatically changed in a very negative way," he says.

"If you're doing an exercise close to a border of another country, you could easily pass that border by mistake," he says. "You point out another ship with a radar system, that could easily be interpreted as a threat."

Suddenly, armed conflict in northern Europe seems plausible, and the region is not prepared. Sweden, for instance, is trying to find foreign submarines in its waters even though the country retired its last submarine-hunting helicopter in 2008.

And as Jan Solesund, the secretary of state for Sweden's Ministry of Defense, notes, it's not just his country.

"Europe as a whole, of course, downsized their forces," he says. "We tend to forget that things can change quicker than we thought."

Now, thanks to Russia, many European countries including Sweden are talking about rebuilding the military. Solesund says it's hard to overstate what a huge change that is.

"I've been in the armed forces since the early '70s, and I've only experienced reductions," he says.

But many analysts fear it won't be enough.

Keir Giles is a military expert at the Chatham House think tank in London.

"Right now, yes, most European leaders do appreciate the scale of the problem," Giles says. "But European leaders come and go. And Russia benefits from a continuity of leadership and also from strategic patience, which none of its adversaries can match."

Just look at Russia's latest budget: Even with the ruble at its lowest point in years, Russian President Vladimir Putin announced last month that he is increasing the military's already-huge budget by one-third.

Nuclear Power Plants on New Submarines May Last 40-Plus Years

Stew Magnuson, National Defense Magazine, Feb 2015

The Navy hopes to have the first replacement for the Ohio-class ballistic missile submarine on duty by 2031. When that vessel is launched, the onboard nuclear power plant is expected to last its entire 40-year service life.

That is seven years longer than the current reactors aboard U.S. submarines.

"Our goal for the new submarines is to have a life-of-the-ship reactor," said Frank G. Klotz, National Nuclear Security Administration administrator and the Department of Energy's undersecretary of nuclear security. NNSA is responsible for developing government-owned nuclear power plants.

There are two primary reasons the NNSA is undertaking the new core design, he told reporters in November.

"It is extraordinarily important on cost because one of the largest elements of the total operational cost of a submarine over its life has been replacing the core when that has come due. It is very expensive," he said.

"The other aspect is that when you go into the deep overhaul that is necessary to replace the core, you're taking a submarine out of service for a long time. So if you have a life of the sub or a life of the ship core, then you avoid both cost, and you avoid both extensive downtime as you refuel the reactor," Klotz said.

The savings could be substantial.

Olivia Volkoff, a spokeswoman for the program, said: "Eliminating the refueling through insertion of a life-of-the-ship core allows the Navy to meet the strategic deterrent mission with two fewer SSBNs and saves about \$40 billion in ship acquisition and lifecycle costs over the life of the program."

The Virginia-class attack submarines were the first to have a core reactor designed to last the life of the vessel, which for it, is about 33 years.

The Ohio-class replacement submarines, which will carry the nation's sea-launched nuclear missiles, will be considerably larger

than the Virginia-class ships.

The NNSA and the Navy are facing a tight deadline for developing the new power plant. Fiscal year 2031 is when the fifth Ohio-class SSBN retires, which will leave the Navy with a force of nine ships. If the lead replacement is not ready to take over by that date, it would leave the Navy one below its mandated requirement to have at least 10, Rear Adm. David C. Johnson, program executive officer for submarines, said in a speech last year.

As the first ship in its class, it will need a three-year test-and-evaluation period to assess its performance, including shake down deployments to spot and then correct any shortcomings. There must be independent certifications of the readiness of the crew and weapon systems. That takes the timeline back to about 2027, he said.

It will take seven years to build the lead ship. That is an aggressive schedule given the Ohio-replacement will be the largest submarine ever built in the United States. That time frame is shorter than the previous three lead ship submarine builds: the Ohio, Seawolf and Virginia. The lead Virginia-class ship was 40 percent of the size of the Ohio replacement, and it took 86 months to build, Johnson noted.

In the next five and a half years, the program must execute the design phase, carrying out research and development and construction preparation activities. About 83 percent of the designs must be complete at the start of construction.

Under the New START Treaty, SSBNs will be responsible for approximately 70 percent of the nation's deployed nuclear warheads.

The program is now almost five years into development. The ship construction design phase is set to begin in 2017. The early stage work done in that period is crucial to deliver the first submarine on time and on budget, Johnson said.

The power plant program is progressing on time, Volkoff said. "Reactor design work is ongoing and in conjunction with reactor equipment procurement in fiscal year 2019 [and] supports a fiscal year 2021 ship construction start," she said in a statement.

This program leverages the ongoing work to refuel a land-based prototype at New York-based Knolls Atomic Power Laboratory's Kesselring site, where the NNSA carries out research and development for the program.

"We continue to work with our partners in the executive and legislative branches to ensure the program is supported," she said.

Bryan Clark, a senior fellow for the Center for Strategic and Budgetary Assessments, who served in the Navy as an enlisted and officer submariner and as chief engineer and operations officer at the Navy's nuclear power training unit at Goose Creek, South Carolina, said one of the Navy's goals with the Virginia-class attack submarines was to completely leave the business of refueling reactors.

"It is really expensive. It generates a lot of radioactive material that has to be disposed of and handled. So it was really a big burden on the Navy in terms of cost to have to refuel the reactors," said Clark. Over the past few decades, the NNSA has made incremental progress making the reactors last longer. While it is responsible for developing and maintaining the reactors, the Navy must integrate them into the larger power plant.

The Sturgeon-class attack submarines had to refuel every eight years, or three to five times over its lifespan. The Los Angeles-class, the Navy's next fast attack sub, refueled only once or twice over its 33-year lifecycle. The Virginia-class managed to do away with the process altogether, he noted.

Along with the high cost of refueling, which is anywhere from \$600 million to \$800 million, "It also saves the time that would have been lost when the ship is doing a refueling overhaul, which generally takes a couple of years," he added.

There are only a few shipyards, Clark said, that can carry out refueling: Portsmouth Naval Shipyard, New Hampshire, Norfolk Naval Shipyard, Puget Sound Naval Shipyard and Pearl Harbor.

They are busy doing all the other refurbishment work required in the Navy, including long maintenance overhauls that have nothing to do with refueling, as well as carrier refueling and overhaul, Clark said. The yards are "jammed up and overwhelmed," he said.

The shipyards are busy and behind on most of their work because some of the carrier overhauls have taken longer than the Navy anticipated, he said.

"Right now carriers are the priority so they always get pushed out as fast as possible, where the submarines often end up being the last in line," he said. Refueling subs can take longer than two years because they become stuck back behind carriers, he said.

Nuclear power plants aboard submarines are the most expensive and difficult to maintain because of the tight space. To make them last longer, it requires more highly enriched uranium than what would be needed at a land-based plant, he added. Managing them is exacting work. Officers do not want a submarine to run out of fuel before the end of its service life.

Energy is created by the fission process, in which the fuel decays, creates heat, then steam, which turns the turbines. The process creates poisons as a byproduct, which pollutes the cell and makes it less efficient.

"Over the years you have to pull the rods out higher and higher to expose more of the fuel because the fuel on the bottom of the core gets used up, or all these fission products are keeping it from reacting efficiently," Clark said.

"You will eventually be at the point where there are so many fission product poisons and the fuel used up enough where you're not getting efficient fissioning, and the heat generation is not efficient and core has to be replaced," he added.

Making the reactors last longer requires dispersing the poisons in the fuel cell in such a way that it minimizes their impact on the fuel, he said.

The Ohio-class replacement submarine will have some challenges if it wants to deploy with a power plant that lasts 40 to 42 years.

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That is almost 25 percent more efficiency than what the Virginia-class submarines possess, *The Silent Sentinel*, February 2015

“It is a bigger submarine, so it will require a bigger plant,” Clark added. “And that is a significant time increase in terms of how long the reactors have to run without being refueled,” he said.

Success will depend on how precisely engineers can place the fuel and other components inside the reactor in order to maximize the availability of the fuel before it gets clogged up with poisons and other byproducts, he said.

The NNSA has some advantages. There are technologies outside the world of nuclear fission that have advanced considerably since the 1990s, when the agency designed the Virginia-class nuclear power plant, Clark said.

“With nanotechnology you are able to precisely control the exact structure of the fuel cells. And with computer modeling and new processing power you can really look at this stuff at a high level of resolution and detail,” Clark said.

“Those two things will allow engineers to hand-tool the fuel construction in a way that is going to make it last a lot longer than previous generation’s power plants,” he said.

Navy Announces Plan to Offer Enlisted Women Jobs on Submarines Ed Freidrich, Kitsap Sun, Jan 28

The Navy has announced it will immediately open submarine service to enlisted women, beginning at Naval Base Kitsap Bangor. Four Bangor subs — cruise missile-carrying USS Michigan and USS Ohio and ballistic missile boats USS Maine and USS Louisiana — already employ female officers. Three serve on each of their Blue and Gold crews. They also will be the first boats to add enlisted women, beginning with Michigan’s two crews in 2016. The other three boats and three at Naval Submarine Base Kings Bay in Georgia will bring them on board through 2021.

“This is another significant milestone for the submarine force, and we’re excited to welcome enlisted women aboard our ships here in Bangor,” said Lt. Cmdr. Brian Badura, Submarine Group 9 spokesman. “They will join a very capable group of officers already serving onboard four of our ballistic missile and guided missile submarines. I would encourage any enlisted woman to apply if they feel they’d like to join the ‘Silent Service’ and work in one of the most unique workplace environments anywhere.”

The large Ohio-class submarines are the first phase of integration. The second wave will be new Virginia-class attack subs.

All submarine ratings, the Navy’s term for job titles, will be open. Any rank from E-1 through E-8 can convert. New recruits can sign up directly.

The Navy isn’t just being politically correct by removing its final gender barrier. It’s doubling the talent pool. After a smooth and successful integration of female officers, it was a natural next step.

“Today, many of the people who have the technical and leadership skill to succeed in the submarine force are women,” said Vice Adm. Michael Connor, commander of Submarine Forces. “We will need them.”

The submarines will be modified for habitability and privacy while maintaining equity between men and women.

Secretary of Defense Robert Gates presented a letter to congressional leaders in February 2010 notifying them of the Navy’s desire to allow women to serve on submarines. The policy was changed two months later. The first female officers, after training, reached Bangor in November 2011.

The integration plan still needs to be approved and funded by Congress.

