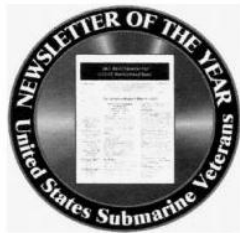


American Submariners Inc.
4370 Twain Ave.
San Diego, CA 92120-3404



The Silent Sentinel August 2017



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.



Subvets Picnic 2017

U.S. Submarine Veterans San Diego Base

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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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USSVI Base Commander
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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*

August 2017 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 *August 8th*. 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

*Harry Humpreville, Frank Walker, Glen Gerbrand,
Everett Mauger, and Marie Tate (Wife of WWII VET Charlie)*

Submarine Losses in August

Originally Compiled by C J Glassford



USS Bullhead (SS-332)

Lost on August 6, 1945 with the loss of 84 crew members in the Lombok Strait while on her 3rd war patrol when sunk by a depth charge dropped by a Japanese Army plane. Bullhead was the last submarine lost during WWII.

USS Flier (SS-250)

Lost on August 13, 1944, with the loss of 78 crew members while on her 2nd war patrol. Flier was transiting on the surface when she was rocked by a massive explosion (probably a mine) and sank within less than a minute. 13 survivors, some injured, made it into the water and swam to shore. 8 survived and 6 days later friendly natives guided them to a Coast Watcher and they were evacuated by the USS Redfin (SS-272).

USS S-39 (SS-144)

Lost on August 13, 1942 after grounding on a reef south of Rossel Island while on her 3rd war patrol. The entire crew was able to get off and rescued by the HMAS Katoomba.

USS Harder (SS-257)

Lost on August 24, 1944 with the loss of 79 crew members from a depth charge attack by a minesweeper near Bataan while on her 6th war patrol. Harder had won a Presidential Unit Citation for her first 5 war patrols and CDR Dealey was awarded the Congressional Medal of Honor posthumously. Harder is tied for 9th in the number of enemy ships sunk.

USS Cochino (SS-345)

Lost on August 26, 1949 after being jolted by a violent polar gale off Norway caused an electrical fire and battery explosion that generated hydrogen and chlorine gasses. In extremely bad weather, men of Cochino and Tusk (SS-426) fought to save the submarine for 14 hours. After a 2nd battery explosion, Abandon Ship was ordered and Cochino sank. Tusk's crew rescued all of Cochino's men except for one civilian engineer. Six sailors from Tusk were lost during the rescue.



***San Diego Base, United States Submarine Veterans Inc.
Minutes of Meeting - 13 June 2017***

1910 Meeting called to order by Base commander Warren Branges.

Conducted opening exercises, Pledge of allegiance lead by Fred Fomby.

Chaplain lead in prayer and announce the death of shipmate Phill Richeson. Chaplain had a few words concerning Phil and memorial service.

Junior Vice Commander announced attendance, 19 members and 2 guests.

Call Committee reports:

Joel Eikam reported we will not participate in Oceanside parade. COB informed the meeting that Rocky Rockers is back in Kansas with sick brother and since Rocky coordinated the parade it was requested we cancel and not attend.

Membership: total 257 members at present.

Breakfast: next breakfast 30 July 2017.

52 Flags: all flags will be put up tomorrow at 0700.

No other committee reports.

1925 50/50 Break

1935 Meeting call to order by Base Commander

Baja Fishing trip: No new information yet. Dave Ball rose and reported the this is a great opportunity and an excellent trip. He announced we hope to have tickets in the next couple of weeks. We need to sell at least 300 tickets.

Western Region Director Bob Bissonnette reported on this year's National convention in Orlando, Fla and possible cruise in 2018. It looks like convention will be in Austin Texas in 2019.

Annual picnic will be on July 8 starting at 0900. We need the Social Committee members to help set up. Boat tours in am are still available. We will have to escort guests who have no military ID. Base security is very tight so we must observe all rules and regulations on the Base. Some games for the picnic are available, horseshoes, card games, swimming. June 23 is last date to get you name on the tour list. Base Cmdr will have the list and send it the Squadron.

National Insurance. Western Region Director Bob Bissonnette reviewed the coverage and what events are covered. The Policy has been updated and renewed, we have liability insurance to conduct outside events. Coverage includes the float and members during a parade for that event only. A copy of the policy will be placed on the website for review.

Base Cmdr reviewed with members the turn down of participation in parades and maybe we need to review our participation in so many parades. Bob Bissonnette encourage the members to continue in parade participation.

Volunteers are need to fill to officer positions, Senior Vice Commander and Storekeeper.

Chief of the Boat Bob Bissonnette made motion to have short meeting during the annual picnic and not hold the normal meeting on Tuesday, 11 July. Motion was second and passed. At the picnic we will have a 50/50 drawing and raffle for some items. In the past we have collected but we would like to cover cost this year with drawing and raffle.

Scholarship winners will be announced at picnic meeting but awarded in August.

Good of the order:

Dave Ball reported what happens when you have to move your gas line and meter, very expensive.

Ray Ferbrache reported on Navy League meeting, what new commands are coming to San Diego.

Holland Club recipients: Chris Stafford and David Kauppiner. Awards presented:

2025 Meeting adjourned

ss/ Manny Burciaga

Manny Burciaga, Junior Vice Commander for Base Secretary

Base Muster Sheet

Fred Fomby
 Joe Peluso
 Jim Harer
 Mert Weltzien
 Joel Eikam
 David Kauppinen
 Ed Farley

Bill Earl
 Mike Hyman
 Ray Febrache
 Peter Lary
 Warren Branges
 Robert Golembieski
 Jessie Chang Farley (guest)

David Ball
 Matt Baumann
 Chris Stafford
 Manny Burciaga
 Bob Farrell
 Bob Bissonnette
 David Martinez

***San Diego Base, United States Submarine Veterans Inc.
 Minutes of Meeting - 8 July 2017 - At Smuggler's Cove - Naval Base Point Loma CA***

1415 - Base Commander Warren Branges called the meeting to order.

Conducted Opening Exercises - Pledge of Allegiance lead by Roy Bannach.

Chief of the Boat Bob Bissonnette lead the prayer.

Chief of the Boat Bob Bissonnette conducted Tolling of the Boats for boats lost in the month of May. Junior Vice Commander Manny Birciaga recognized Past Commanders, dignitaries and guests.

Base Secretary Jack Kane announced 8 members present.

Base Treasurer Joe Peluso was not in attendance. Treasurers Report will be presented at August meeting.

The minutes of the June and July meetings will be published in the Sentinel before the August meeting.

Base Commander Warren Branges waived Call for Committee Reports - Reports will be given at August Meeting.

1420 - Unfinished Business

National Convention sign-ups are slow. If not enough people attend it will cost SUBVETS a substantial amount and future Conventions may have to be curtailed. A day trip to Kennedy Space Center has been added to the Convention Agenda.

Tickets for the Baja Fishing Trip Fund Raiser should be available at the next meeting.

Scholarship Committee has finished deliberations. Three scholarships will be awarded this year. Names and sponsors will be announced at the August Meeting.

1423 - New Business is tabled until August Meeting

1424 - Good of the Order

It was announced that Life Member Len Heiselt will be moving to Las Vegas. Len is a long time member of both San Diego and Scamp Base. Len was thanked for all he contributed to both Bases, especially his role in organizing Memorial Day Ceremonies at Point Loma for many years.

The Meeting was adjourned at 1425.

/s/ Jack E. Kane

Jack Kane, Secretary

Sailing List for 8 July 2017

Base Muster Sheet

James Pope
 Manny Burciaga
 Bob Bissonnette
 Roy Bannach
 Len Heiselt
 Paul Hitchcock
 Jack Kane
 Warren Branges



Julian 4th of July Parade 2017





La Mesa Flag Day Parade 2017

Current News

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

Race to Renew India Submarine Force Amid Rising China Threat Nc Bipindra and David Tweed, Bloomberg, August 3

INDIA -- After years of delay, India’s navy is preparing to take delivery of one of the world’s stealthiest and most deadly fighting tools: the INS Kalvari, an attack submarine named after a deep-sea tiger shark.

The commissioning later this month of the Scorpene class submarine is a milestone in India’s effort to rebuild its badly depleted underwater fighting force, and the first of six on order. It comes as China’s military expands its fleet to nearly 60 submarines -- compared to India’s 15 -- and increases its forays into the Indian Ocean in what New Delhi strategists see as a national security challenge.

A Chinese Yuan-class diesel-powered submarine entered the Indian ocean in May and is still lurking, according to an Indian naval officer who asked not to be identified, citing policy. It’s an unwelcome reminder of China’s rapidly expanding naval strength at a time when Indian and Chinese soldiers are engaged in a border dispute stand-off in Bhutan. China’s defense ministry didn’t respond to a faxed request for comment.

The official opening in July of China’s first naval base at Djibouti at the western end of the Indian Ocean, recent submarine sales to Pakistan and Bangladesh and a visit last year of a Chinese nuclear-powered submarine to Karachi, have also exposed how unprepared India’s navy is to meet underwater challenges.

“The lack of long-term planning and procurement commitment in defense acquisition plans can be considered tantamount to negligence” by the Indian government, said Pushan Das, a research fellow at the New Delhi-based Observer Research Foundation’s National Security Program. India needs to “counter increasing PLA-N activities in the region,” he said, referring to the People’s Liberation Army Navy.

Ministry of Defence spokesman Nitin Wakankar would not comment on the Indian Navy’s submarine fleet plan.

Dwindling Fleet

Since 1996, India’s attack submarine fleet has dwindled to 13 diesel-electric vessels from 21 as the navy failed to replace retired boats. The entire fleet -- a mixture of Russian-origin Kilo class vessels and German HDW submarines -- is at least 20 years old. All have been refitted to extend their operational lives until at least 2025.

In contrast, China's underwater fleet boasts five nuclear-powered attack submarines and 54 diesel-powered attack submarines. By 2020, the force will likely grow to between 69 and 78 submarines, according to the Pentagon's latest report on China's military.

Still, analysts say it will be years before China can pose a credible threat to India in the Indian Ocean.

"Simple geography gives India a huge strategic advantage in the Indian Ocean," said David Brewster, a senior research fellow with the National Security College at the Australian National University in Canberra. "And although China has been sending in submarines, you have to understand they are probably decades away from being able to seriously challenge India there, especially while the United States is present."

China's navy needs to enter the Indian Ocean through narrow choke points like the Malacca Strait that runs between Indonesia and Malaysia. Indian surveillance planes deployed to Andaman & Nicobar Islands patrol the area, and one spotted the Chinese submarine in May.

In the meantime, India is slowly upgrading its underwater fleet.

The INS Kalvari is the first of six French-made Scorpene submarines on order in a 236 billion rupee (\$3.7 billion) project awarded in 2005 to the state-owned defense shipyard Mazagon Dock Shipbuilders Ltd. and France's Naval Group, formerly known as DCNS Group. Junior defense minister Subhash Bhamre said in July that the first of these would be delivered in August.

In February 2015 India approved the construction of six nuclear-powered attack submarines. Few details have been released about the 600 billion rupee program.

And on July 21, India initiated another program to build six more diesel submarines. It sent information requests to six manufacturers -- Germany's ThyssenKrupp Marine Systems GmbH, Naval Group of France, Madrid-based Navantia SA, Sweden's Saab AB, a Russia-Italian joint venture called Russian Rubin Design Bureau and a consortium between Mitsubishi Heavy Industries Ltd. and Kawasaki Heavy Industries Ltd. The project is worth about 500 billion rupees.

As well as its attack submarines, India is developing an underwater nuclear deterrence. The first nuclear-powered submarine that can launch ballistic missiles was commissioned in 2016, part of a program to build at least three. The navy is using a Russian nuclear-powered submarine it leased for 10 years in 2012 to train the crew. China has four nuclear-powered ballistic-missile submarines.

Even with the announced programs, India isn't likely to meet its 2030 deadline for shoring up its submarine fleet. To deter both China and Pakistan, planners reckon the fleet needs at least 18 diesel, six nuclear and four nuclear-armed submarines.

"While the operational urgency cannot be undermined, there is a need for the Indian Navy to fight its wars with Indian-made submarines," said K.V. Kuber, a Delhi-based independent defense analyst who previously served on government-appointed committees that reviewed defense industrial policies. "Even if we go for a global tender to meet the urgent requirements of the Indian Navy, we would still be years away from acquiring them. Yet, this is the fastest route.

Indonesia Commissions First Attack Submarine in 34 Years Franz-Stefan Gady, The Diplomat, August 3

INDONESIA -- The Indonesian Navy (Tentara Nasional Indonesia -- Angkatan Laut) has commissioned its first attack submarine in over three decades this week.

The first out of three ordered Type 209/1400 Chang Bogo-class (a license-built variant of the German Type 209 sub) diesel-electric attack submarine was handed over by South Korean defense contractor Daewoo Shipbuilding and Marine Engineering (DSME) on August 2.

The new boat was subsequently inducted into the Indonesian Navy in a commission ceremony at the Okpo shipyard in Geoje Island, in the southeastern part of South Korea attended by senior Indonesian officials including Indonesian Minister of Defense Ryamizard Ryacudu on the same day.

The new sub, designated Nagapasa with pennant number 403, will be homeported at the Palu Naval Base in the Watusampu province of Central Sulawesi, IHS Jane's Navy International reports. Indonesia also plans to build a new submarine base on Pulau Natuna Besar, the largest of the Natuna Islands in the South China Sea.

The Nagapasa was originally slated for delivery in March of this year. It is unclear what led to the four-month delay. Prior to the handover, the boat underwent extensive builder and sea trials off the Korean coast.

Like the lead sub of the new Nagapasa-class (Chang Bogo-class), the second boat slated for service in the Indonesian Navy will be built in South Korea. The last submarine will be assembled by Indonesian state-owned shipbuilder PT PAL in Surabaya, Indonesia under a technology transfer agreement.

PT PAL is expected to receive the modules for the second Nagapasa-class submarine in block form from DSME this year. PT PAL is scheduled to begin assembling the third sub at its new facilities in Surabaya under DSME guidance in 2018.

The remaining two subs are expected to be commissioned in 2018 and 2019 respectively.

"The 1,400-ton submarines have an operational range of approximately 10,000 nautical miles and are multipurpose vessels capable of conducting anti-surface warfare, anti-submarine warfare, and Special Forces missions," I explained elsewhere.

The submarine features eight 533 millimeter tubes for torpedoes and guided missiles, and will be operated by a crew of 40. The new boats are expected to serve in Indonesia's Navy for at least 30 years.

The last time the Indonesian Navy received new submarines was in the 1980s with the delivery of three German Type 209/1300 (Cakra-class) diesel-electric attack submarines.

Indonesia and South Korea concluded a \$1.1 billion contract for the three Nagapasa-class diesel-electric submarines in December 2011 as part of the Ministry of Defense's 2024 Defense Strategic Plan, which calls for the acquisition of at least ten new submarines.

Indonesia is expected to place an order for three more submarines in the coming months. Contenders include Russia, China, and France. The Indonesian Navy might also choose to place a follow-up order with DSME.

What Russia's new Navy Strategy says about the Arctic Atle Staalassen, The Barents Observer, August 3

The policy document, which was signed by President Putin on 20th July, includes high ambitions for the country's naval forces. «The Russian Federation will not allow significant superiority of other countries' navies over its fleet and will be committed to strengthen its position as the second most combat capable in the world», the strategy reads.

The adoption of the policy document comes as military and navy investments over the last years have surged. And more is to come.

According to the strategy, not only will the Russian strategic submarine fleet be sustained and developed, there will also be developed new kinds of underwater defense systems, including new generation deep-water capacities and robotized submarine devices. A new aircraft carrier complex is under planning and from 2025 the naval forces will apply new hypersonic missiles.

The policy document, named the Principles of the Russian Federation's State Policy in the field of Naval Activity, covers the period until year 2030.

The Northern Fleet, the most powerful of the country's five fleets, will continue to play a crucial role. With their bases in the Kola Peninsula, Northern Fleet vessels have easy access to the World Ocean through Arctic waters.

According to the policy document, these nearby Arctic waters are increasingly challenged by foreign powers.

«National security is under threat by the aspiration of the USA and its allies to control the World Ocean, including the Arctic».

The region's rich hydrocarbon resources are among the reasons for the pressure from outside, the document authors argue. In addition, there are foreign efforts made to weaken Russia's control of the Northern Sea Route.

«There are economic, political, legal and military pressure against the Russian Federation with the aim to hamper its efficiency of marine activity in the World Ocean and weaken its control over the Northern Sea Route - the country's historical national transport communication route».

A set of counter-measures are ready. The strategy proposes to step up efficiency with regard to protection of the state maritime borders, including in its underwater part and on the continental shelf. In the Arctic, the development of remote bases and infrastructure objects will be continued. These bases will have a dual application, the document reads. They will provide base support for civilian vessels, as well as for Navy vessels and the FSB's coast guard vessels.

Over the past couple of years, the Russian Armed Forces have invested big money in the development of the new and upgraded bases. Infrastructure and base objects are now built along the whole Russian Arctic coast from Franz Josef Land in the west to the Wrangle Island in the east.

This new infrastructure is needed in order to protect economic activity and shipping along the Northern Sea Route, the country's government has argued.

Russia's new navy policy document clearly has a sting towards foreign powers, and especially the USA and Nato. However, in certain areas Russian naval forces should also cooperate with other countries. That especially regards the FSB and its Coast Guard Service.

According to the strategy, fields of practical cooperation between the FSB and foreign powers' border authorities should be extended. That is good news for countries like neighboring Norway, which over many years has engaged in close cross-border cooperation on the level of coast guards.

In May this year, vessels from the two countries took part in the Exercise Barents, which includes both joint search and rescue and oil spill training.

The new Russian document does not touch on the potential major effects of climate change to shipping and navy activities in the north.

Canadian military developing surveillance system to monitor Arctic waters

Jimmy Thomson, CBC News, August 2

Department of National Defence scientists arrived this week on Devon Island, Nunavut, to work on a new system to monitor Arctic waters.

"It's important from a sovereignty perspective; if Canada has sovereignty over this part of the world, we need to know who's there," said Dr. Dan Hutt, of Defence Research and Development Canada (DRDC).

"This is part of that solution."

Hutt is the director of the project, called the Canadian Arctic Underwater Sentinel Experiment, or CAUSE. It consists of developing and testing a number of new technologies at a remote military station in Gascoyne Inlet.

The station is a stone's throw away from Beechey Island, where graves from the doomed Franklin Expedition were found.

The roots of the station itself are a throwback to the Cold War, when the location acted as a choke point to monitor any Soviet submarines passing through the Arctic. Vessels travelling the most common route down Lancaster Sound have to pass within earshot of the station.

Today, the work taking place there has echoes of its submarine-monitoring past.

"DRDC is investing quite a bit of money to look at other sorts of innovative ways to do surveillance over the approaches to Canada with emphasis on the North," said Hutt.

AI and roving sensors

CAUSE, with a price tag of approximately \$16 million, has several goals: developing underwater microphones that can be left on the Arctic seabed for years at a time, with a long-lasting power supply to match; working on autonomous underwater vehicles that can patrol the Arctic while towing sensors; and even developing artificial intelligence software that can analyze the sound as it comes in, rather than devoting a human analyst to constantly monitor the area.

"It's still got quite a ways to go until we've got a computer with enough artificial intelligence to reliably analyze tons of acoustic data and say, 'that's a ship, that's a whale, and, oh, that looks like a submarine,'" said Hutt.

"We can't do that reliably enough right now. At least not reliably enough for operational use. There always has to be a human in the loop these days."

The autonomous underwater vehicles come with their own challenges, like working under ice, having long range capabilities, and being able to dock at an underwater station and transmit data without human interference.

The project could be one of the ways the military will replace the aging North Warning System radar line, built in the 1980s, that currently keeps an eye on the North, watching for ships, missiles, and other threats.

It is also intended to watch the increasing number of civilian vessels that take the Northwest Passage, either for tourism or shipping. Many smaller vessels don't have the tracking systems that larger ships have, and with fewer eyes on the water and no deepwater ports to house coast guard ships, search and rescue is exponentially more challenging in the icy labyrinth of the Canadian Arctic archipelago.

Civilian scientists could be involved

The military has plans to loop in civilian organizations on the scientific work. Documents obtained by CBC point to an intention to work with Ocean Networks Canada, which runs the VENUS and NEPTUNE sensor arrays — giant underwater "laboratories" off the coast of British Columbia that monitor marine life and ship noise and perform other monitoring on the ocean floor.

Richard Dewey, an associate director at Ocean Networks Canada, said he was not aware of any ongoing contracts with DRDC but that his organization would be interested in working with the defence ministry on improving Arctic observatories. He says observatories in the Arctic like the one being tested at CAUSE present an essential opportunity for scientists to get measurements over long periods.

"The Arctic isn't just there in the summer when it's convenient for our [research] ships; we want to know what the Arctic is doing all year round," said Dewey.

"The time series from these observatories provide us with that continuous reference to see how things are changing in time."

The sensors being tested at Gascoyne Inlet for CAUSE are works in progress, a test of how to work in that extreme environment. Some equipment has been left in the ocean over the winter, and among the tasks the team will perform is to recover the equipment and check how it has fared. If it's still there, that is.

"There's always a chance that an iceberg has scoured them out," said Hutt.

***DSME Exports Submarine Named 'Nagapasa' for First Time in Korea
Jung Min-hee, Business Korea, August 2***

SEOUL, KOREA -- Daewoo Shipbuilding & Marine Engineering (DSME) exported submarines for the first time in Korea. In 1988, this rare feat was accomplished in 30 years since Korea has made a lot of efforts to develop its own submarine after receiving technology from Germany.

On July 2, Daewoo Shipbuilding & Marine Engineering (DSME) held a ceremony in honor of the delivery of the first submarine among three 1400 ton-class submarines which the Indonesian Ministry of Defense asked DSME to build in 2011 at Okpo Shipyard on Geoje Island. The ceremony was attended by 80 VIPs including Ryamizard Ryacudu, Indonesian defense minister, Ade Spandi, chief of staff of the Indonesian Navy, and Jung Sung-rip, president of DSME.

The submarine delivered on this day was named the Nagapasa after the arrow used by ancient Hindu god Idrajit. The 61-meter-long 1,400-ton submarine can sail a distance of 10,000 nautical miles (18,820 km) with 40 crewmembers. The distance spans from Busan Port to LA Port of the United States. The vessel is armed with eight launchers and an advanced weapon system capable of launching weapons such as torpedoes and mines. "The Nagapasa is excellent in terms of underwater operation capability, which is the most important aspect of submarines," said a representative of DSME. "In particular, we have proven our excellence in submarine technology that is evaluated as the highest level of shipbuilding technology by carrying out all the building process including design, production and test operation.

Daewoo Shipbuilding & Marine Engineering's three submarines ordered by Indonesia amounted to about US\$ 1.1 billion, the largest amount among Korea's defense hardware exports. This amount is equivalent to exports of 73,000 medium-sized cars made in Korea. With this successful export, Korea has become the world's fifth largest exporter of submarines after Britain, France, Russia and Germany.

***North Korea's submarine fleet is a big threat
Tom Rogan, Washington Examiner, August 1***

On Monday, CNN reported "highly unusual" North Korean submarine activity. Put simply, Kim Jong Un's regime is deploying more submarines in different ways and on longer missions.

This is not too much of a surprise. North Korea has aggressively focused on submarine development and operability for the last five years. What's different now is that the regime is reaching a new level of submarine competence. And that matters for a few reasons.

First, it represents a new era. For a long time, North Korea's submarine fleet has relied on archaic Russian vessels from the early Cold War era. Those ships are now four generations out of date and easily detectable by even the most basic anti-submarine sensors.

In recent years, however, North Korea has embraced self-made submarines. These ships are far-inferior to their U.S., South Korean, or Japanese counterparts, but they have been mass produced. As such, the North Koreans might be able to overwhelm individual allied vessels by their sheer numbers. Consider that Kim Jong Un already has around 70-90 submarines. As he builds and deploys more, he will strain allied monitoring efforts.

After all, while the U.S. Navy has approximately 30 attack submarines in the Pacific (though some are always in maintenance), the South Koreans have only about 15, and Japan around 17. Over 6,000 personnel are on each U.S. aircraft carrier, so it's a pretty big problem if even just one North Korean submarine gets through.

That said, what's most concerning for U.S. security is North Korea's new "Sinpo-class" ballistic missile submarines (SSBNs). Based on Russian ballistic missile submarines, the Sinpo-class carry North Korea to the next level of submarine warfare. The challenge posed by SSBNs is their disruption of an adversary's confidence in detecting and destroying nuclear weapons before they can be used. While the U.S. tracks North Korean submarines, sometimes, as in 2010 when a North Korean submarine sank a South Korean corvette, they slip through the net. The Sinpo appears likely to provide a nuclear ballistic missile capability (SSBN) within 3 to 4 years, but it may be sooner.

One final problem? Based on North Korea's recent and rapid improvements in its land-based ballistic missiles, the U.S. cannot take anything for granted. As we saw last week, North Korean ballistic missiles can likely already strike the outskirts of Chicago.

Ultimately, this is just another wake-up call. The threat posed by North Korea is immense and it is growing. In turn, the Trump administration must prepare to strike North Korean ballistic missile development and combat forces. Absent that, it will never be able to get China to apply adequate pressure to Kim Jong Un.

Regardless, we're running out of time. Resting on a patient posture of missile defense is not an option."

***Indonesia to acquire acoustic underwater monitors with eye on possible foreign submarine incursions
Ridzwan Rahmat, HIS Jane's Navy International, August 2***

To deter foreign submarines from sailing undetected in Indonesian waters, the government is looking to install fixed underwater acoustic monitors at several locations across the archipelago, Rear Admiral Aan Kurnia, commander of the Indonesian Navy's (Tentara Nasional Indonesia – Angkatan Laut, or TNI-AL) Western Fleet, told local reporters on 31 July.

The monitors will be similar to the sound surveillance system (SOSUS) that utilises a chain of very-low-frequency (VLF) listening posts, said the admiral. A location that is being considered for a pilot project is the Sunda Strait, which runs between the main Indonesian islands of Java and Sumatra, he added.

<<<<<<<< AND MEANWHILE BACK ON THE FARM! >>>>>>>>

***Navy Plans Massive Acceleration in Adding New Attack Submarines
Kris Osborn, Scout Warrior, July 31***

A newly completed comprehensive Navy analysis says producing more Virginia-Class attack submarines on a much faster timetable is "achievable" and necessary to ensure future undersea dominance for the US - in an increasingly contested strategic global environment.

The Navy report, titled *The Submarine Industrial Base and the Viability of Producing Additional Attack Submarines Beyond the Fiscal Year 2017 Shipbuilding Plan in the 2017–2030 Timeframe*, was delivered to Congress on July 5, 2017, Navy officials told Scout Warrior.

The current or previous status quo had been for the Navy to drop from building two Virginia-Class boats per year to one in the early 2020s when construction of the new Columbia-Class nuclear armed submarines begins.

The completed study, however, maintains that the Navy and industry can produce two Virginia-Class boats and one Columbia-Class submarine per year, increasing the current plan by one Virginia-Class boat per year.

Navy leaders have consistently talked about an expected submarine shortfall in the mid 2020s and that more attack submarines were needed to strengthen the fleet and keep stay in front of near-peer rivals such as Russia and China.

"The sustainment of the two per year Virginia-Class submarine production rate during the procurement years of the Columbia-Class SSBNs is achievable and provides significant benefit to the Navy and the SSN (Attack Submarines) force structure," Lt. Lauren Chatmas, Navy Spokeswoman, told Scout Warrior in a written statement.

Maintaining a two-per year Virginia Class build-rate will help the Navy reach its goal of 66 SSNs, as identified in the December 2016 Force Structure Assessment, Chatmas added.

Increasing production will, to a large extent, rely upon the submarine-building industry's capacity to move up to three submarines per year.

"Producing these additional submarines will be a challenge to the submarine industrial base that can be solved only if the shipyards are given sufficient time to adjust facility plans, develop their workforces, and expand the vendor base," Chatmas said.

The Virginia-Class Submarines are built by a cooperative arrangement between the Navy and Electric Boat, a subsidiary of General Dynamics and Newport News Shipbuilding, a division of Huntington Ingalls Industries.

Each industry partner constructs portions or "modules" of the submarines which are then melded together to make a complete vessel, industry and Navy officials explained.

Virginia-Class Attack Submarine Technology

Virginia-Class subs are fast-attack submarines armed with Tomahawk missiles, torpedoes and other weapons able to perform a range of missions; these include anti-submarine warfare, strike warfare, covert mine warfare, ISR (Intelligence, Surveillance, Reconnaissance), anti-surface/ship warfare and naval special warfare, something described as having the ability to carry and insert Special Operations Forces.

"Future Virginia-Class submarines (VCS) provide improved littoral (coastal waters) capabilities, sensors, special operations force employment, and strike warfare capabilities, making it an ideal platform for the 21st Century security environment," Chatmas said.

Compared to prior Navy attack subs like the Los Angeles-Class, the Virginia-Class submarines are engineered to bring vastly improved littoral warfare, surveillance and open ocean capabilities, service officials said.

For instance, the ships can be driven primarily through software code and electronics, thus freeing up time and energy for an operator who does not need to manually control each small maneuver.

The Virginia-Class submarine are engineered with this "Fly-by-Wire" capability which allows the ship to quietly linger in shallow waters without having to surface or have each small move controlled by a human operator. With this technology, a human operator will order depth and speed, allowing software to direct the movement of the planes and rudder to maintain course and depth.

Also, unlike their predecessor subs, Virginia-Class subs are engineered with what's called a "Lock Out Trunk" – a compartment in the sub which allows special operations forces to submerge beneath the water and deploy without requiring the ship to surface.

Unlike their "SSBN" Columbia-Class counterparts to be armed with nuclear weapons, the Virginia-Class "SSN" ships are purely for conventional attack, Navy officials said.

Development of Virginia-Class submarines are broken up into procurement "Blocks." Blocks I and II have already been delivered.

The Block III subs, now under construction, are being built with new so-called Virginia Payload Tubes designed to lower costs and increase capability.

Instead of building what most existing Virginia-Class submarines have -- 12 individual 21-inch in diameter vertical launch tubes able to fire Tomahawk missiles – the Block III submarines are being built with two larger 87-inch in diameter tubes able to house six Tomahawk missiles each.

Although the new tubes were conceived and designed as part of what the Navy calls its "Design for Affordability" strategy to lower costs, the move also brings strategic advantages to the platform, service officials say. Specifically, this means that the submarines are constructed such that they will be able to accommodate new technologies as they emerge - this could mean engineering in an ability to fire upgraded Tomahawk missiles or other weapons which may emerge in the future.

"VCS are designed to remain current with technology advances for their entire operational life through extensive use of modular construction, open architecture design (uses industry common design), and commercial off-the-shelf components," Chatmas said.

The Block III Virginia-Class submarines also have what's called a Large Aperture Bow conformal array sonar system – designed to send out an acoustic ping, analyze the return signal, and provide the location and possible contours of enemy ships, submarines and other threats.

Virginia-Class Block V – Virginia Payload Modules

For Block V construction, the Navy is planning to insert a new 84-foot long section designed to house additional missile capability. "Virginia Payload Modules."

The Virginia Payload Modules, to come in future years, will increase the Tomahawk missile firepower of the submarines from 12 missiles up to 40.

"The VPM submarines will have an additional (approximately 84 feet) section with four additional Virginia Payload Tubes (VPTs), each capable of carrying seven Tomahawk cruise missiles, for a ship total of 40 Tomahawks," Chatmas said.

The idea is to have additional Tomahawk or other missile capability increased by 2026, when the "SSGN" Ohio-Class Guided Missile Submarines start retiring in larger numbers, he explained.

Early prototyping work on the Virginia Payload Modules is already underway and several senior Navy leaders, over the years, have indicated a desire to accelerate production and delivery of this technology – which will massively increase fire-power on the submarines.

While designed primarily to hold Tomahawks, the VPM missile tubes are engineered such that they could accommodate a new payload, new missile or even a large unmanned underwater vehicle, Navy officials said.

The reason for the Virginia Payload Modules is clear; beginning in the 2020s, the Navy will start retiring four large Ohio-class guided-missile submarines able to fire up to 154 Tomahawk missiles each. This will result in the Navy losing a massive amount of undersea fire power capability, Navy officials explained.

From 2002 to 2008 the U.S. Navy modified four of its oldest nuclear-armed Ohio-class submarines by turning them into ships armed with only conventional missiles -- the USS Ohio, USS Michigan, USS Florida and USS Georgia. They are called SSGNs, with the "G" designation for "guided missile."

U.S. Navy Researchers 3D-Print a Small Submarine
Staff, Maritime Executive, July 31

A team of researchers from the U.S. Department of Energy and the U.S. Navy have created the military's first 3D-printed submarine, an achievement that may have the potential to accelerate the defense R&D process.

The sub – called the Optionally Manned Technology Demonstrator – is a 30-foot submersible made of thermoplastic resin, and it closely resembles the covert infiltration mini subs used by the Navy SEALs. The hulls for these subs currently take three to five months to build and about \$600-800,000 each. But the Naval Surface Warfare Center Carderock Division's Disruptive Technology Laboratory (DTL) partnered with Oak Ridge National Laboratory (ONRL) to bring down the expense: using ORNL's Big Area Additive Manufacturing facility, they printed the hull in six sections at a cost in the tens of thousands. A contractor assembled the sections into the final product. The whole process took weeks rather than months.

"We asked ourselves, 'Can we do it a different way and get different results?'" said the director of DTL, Garry Shields. "This is a collapsing of the design and manufacturing spiral at an incredible iteration rate at very low cost. The impact of this may be that we change the way we play the game."

The proof-of-concept prototype isn't ready to go into operation yet, but it has already won the team the NAVSEA Commanders Award for Innovation. The next version will be produced at ORNL and tested at Carderock in 2018, with fleet-capable prototypes scheduled to arrive in 2019.

"Our intent was to provide something so disruptive to conventional expectations that it would demand reflection and re-evaluation of our commonly held constraints about how tactically relevant platforms can be built," said Michael Wardlaw, head of maritime sensing at the Office of Naval Research and a sponsor of the project.



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