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

The Silent Sentinel

December 2016

SEASONS GREETINGS

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.

CSR11 and SDSV at 52 Boats Memorial on December 7th, 2016

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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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December 2016 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 *December 13th.* 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
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Submarine Losses in December

Originally Compiled by C J Glassford

USS Capelin (SS-289)
Lost on Dec 2, 1943 with the loss of 76 men. She was on her 1st war patrol, but her exact location, date and cause of loss remain a mystery. She may have been lost to mines or an operational casualty.

USS Sealion (SS-195)
Lost on Dec 10, 1941 with the loss of 4 men. To prevent her from falling into enemy hands, she was scuttled in Manila Bay after incurring severe bomb damage during the initial Japanese attack. One other Sealion man was later captured and died in POW camp.

USS F-1 / Carp (SS-20)
Lost on December 17, 1917 with the loss of 19 officers and men when it was sunk after collision with the USS F-3 (Pickerel(SS-22)) off San Clemente, CA.

USS S-4 (SS-109)
Lost on December 17, 1927 with the loss of 40 officers and men when it was sunk after being rammed by USCG Paulding. Salvaged in 1928 and recommissioned.

Current News

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

Today In Undersea Warfare History:

December 7th, 1941: A Submarine Force Perspective
Rear Adm. Fritz Roegge, Navy Live, December 6

This week, America remembers the 75th anniversary of the attack on Pearl Harbor. This remembrance is particularly meaningful to the U.S. Navy, and even more to Sailors serving at Pearl Harbor. But it should have the greatest significance to the Submarine Force, because it was our contributions to the Second World War that suggest that December 7th, 1941, was actually the day that Imperial Japan won a battle, but lost the war.

Submariners are well-aware that World War II provided some of our greatest challenges, our greatest successes, our greatest heroes, and also our greatest sacrifices. And here in Pearl Harbor, we can stand atop the Dive Tower on the Submarine Base and actually see the most visceral reminders of the complete cycle of the war: its opening salvo, the seeds of our eventual victory, and even the war's conclusion. That makes Pearl Harbor unique – where else in the world is there such a singular vantage point for the breadth of such a major conflict?

The Opening Salvo.

Visual reminders of the start of the war are obvious, and infamous. In the harbor lies the USS Arizona Memorial, which honors the nearly 1.200 Sailors and Marines who lost their lives onboard that fateful day. Seaward of Arizona sat the battleships that comprised Battleship Row, remembered now by a line of white caissons. These caissons remind us not only of the Sailors of those battleships, but of the sheer number of casualties: the nearly 2,400 men, women and children, both service members and civilians, who lost their lives on that "day that shall live in infamy."

The War's Conclusion.

Sweeping to the left of the Arizona from the Dive Tower, those caissons now bracket the most powerful symbol of the war's conclusion: the battleship USS Missouri. Today, we can visit the very place on board that ship where in September 1945 the peace treaty was signed that ended the war. That signing ceremony marked both a beginning and an end. As an end, it meant that the war had been won. But it also marked the beginning of the equally important challenge of how to win the peace. And as a result of having won the peace, the United States of America and our former adversary of Japan are now close friends, partners and allies – committed to each other's success, to each other's defense, and to promoting freedom and democracy throughout the Pacific.

The Seeds of Victory.

So the USS Arizona reminds us of the start of the war, and USS Missouri reminds us of the end of the war, but the reminders of how the war was won are also visible from the Dive Tower. Although the results of December 7th were horrific, they did not prevent us from prevailing. There were three significant targets that were not struck, and the omission of the fuel farm, the shipyard and the submarine base had strategic consequence.

From the Dive Tower, we can see some of the many fuel tanks that supplied the fleet. Adm. Nimitz observed that had these tanks been struck, and their four million barrels of fuel lost, it would have taken two years to replenish our supply such that the fleet could prosecute the war across the vast, vast reaches of the Pacific Ocean.

From here, we can also see the dry docks and the incredible industrial capacity of the Navy's "No Ka Oi" shipyard, the Pearl Harbor Naval Shipyard. After the attack, 12 ships including five battleships had been sunk or beached and nine ships including three more battleships had been damaged. Yet within only three months, most of the smaller ships and all three of the damaged battleships were returned to service or refloated, and all of them eventually returned to the fight in the Pacific.

Lastly, Pearl Harbor submarines and the Submarine Base weren't struck. Within hours of the attack, Chief of Naval Operations Adm. Harold Stark ordered, "EXECUTE AGAINST JAPAN UNRESTRICTED AIR AND SUBMARINE WARFARE;" our submarines were the only forces able to immediately begin war patrols. They carried the battle across the Pacific and into Japanese home waters while the fleet was repaired.

Our submariners did their deadly business very well. Although submarines made up only two percent of our entire Navy, they sank 30 percent of all Japanese warships, and 55 percent of all Japanese merchant ships sunk during the war. But submariners also paid the heavy price of the heaviest casualty rate of any American branch of service in the war: 52 submarines were lost, and 3,628 submariners (22% of the force) remain on eternal patrol.

The Pearl Harbor horizon has many memorials containing much history, but this important story of submarine force success and sacrifice is hard to find within the Pearl Harbor narrative already on display. Until now. Today, we begin to share that story – honoring our heroes and educating the public – with a new display located in front of the USS Bowfin Memorial, free and accessible to anyone visiting Pearl Harbor's iconic landmarks.

It's important to remember though that the history of our submarine force didn't begin on Dec. 7th, 1941; and the submarine force's significant contributions to our nation's security didn't end in September 1945. Throughout the hostile peace of the Cold War, our strategic forces proved undetectable and invulnerable to threats, while our attack submarines demonstrated the ability to hold at risk what other nations' hold most dear. And strategic deterrence and undersea superiority are just as important to our national security today as they have been in the past.

That makes this an incredibly exciting time to be a submariner, and an incredibly important time for our submarine force to maintain its undersea superiority. Our Navy and our Nation should expect no less. So although the history of our submarine force is impressive and is to be celebrated, that history is not complete. Our history is being made today, and every day, by every one of today's submariners. Because throughout the 116-year history of the U.S. Submarine Force, the most important factor in all of our many successes and in all of our nation's conflicts has been the submarine Sailor. It is our submarine Sailors, supported by our families, then as now, that are our greatest asset; our secret sauce; our competitive advantage. They are the envy of every would-be competitor on the high seas – or below them.

So on this Pearl Harbor Day, let us remember the debt we owe to the veterans who preceded us – veterans who have won our Nation's wars and who have also won the peace. But perhaps their greatest legacy is their example of honor, courage and commitment that is now proudly carried forward and embodied in today's generation of submarine veterans. This is another greatest generation; one that continues to preserve that hard-won peace. It is their service that should now give us all great confidence that Gen. MacArthur's words delivered on board USS Missouri in 1945 should prove to be prophetic: "Let us pray that peace be now restored to the world, and that God will preserve it always."

Funding For Replacement Fleet Expected To Be Approved

Gordon Jackson, GoldenIsles.news, December 6

ST. MARYS — Funding for the design and production of a new fleet of ballistic missile submarines appears to have the necessary support to keep the $97 billion project on schedule.

The National Defense Authorization Act passed the House last week and is expected to be approved by the Senate this week. The replacement fleet is the Navy's No. 1 priority and also has the support of the White House.

U.S. Rep. Buddy Carter, R-1, described the legislation as "vital to the future of Naval Submarine Base Kings Bay." He said he had to fight to ensure funding for the replacement fleet remained in the bill.

"Keeping this provision in the bill was certainly worth the fight as it will keep Kings Bay viable for years to come," Carter said. "Kings Bay plays an important role in our nuclear deterrence, and we must ensure Kings Bay has the opportunity to remain the elite home base to the Atlantic ballistic submarine fleet. Including this measure in the negotiated legislation ensures this can happen."

Funding in the proposed legislation is about $1.9 billion and is necessary to keep the project on schedule.

The Navy plans to build 12 new boats. They will be 560-feet long, the same length as the Ohio-class subs they will replace, and 43 feet in diameter, one foot larger than the older boats. For improved stealth, they will have an electric drive propulsion train that will be quieter than the mechanical drives on other submarines.

The new vessels will be designed to be in service 42 years with no need for mid-life refueling of nuclear fuel, a process that takes boats out of service for about two years.

The new submarines will be called Columbia-class after the first one which will be named in honor of the District of Columbia. The subsequent boats are expected to be named after states. They will replace the aging fleet of 14 Ohio-class submarines ported at Kings Bay and another base in Bangor, Wash.

Sheila McNeill, former national Navy League president, said Carter's announcement was good news. McNeill serves as president of Camden Partnership, an organization that works to support Kings Bay and the Coast Guard. She and other Camden County business

leaders and public officials will go to Atlanta in January and to Washington later in the winter to discuss, among other things, the importance of the replacement fleet.

One concern is some elected officials in Congress have suggested building less ballistic missile submarines, perhaps as few as six. It's an issue McNeill said is discussed in the meetings in Atlanta and Washington.

Reducing the number to below 12 could raise questions about whether the vessels are home ported in both bases or consolidated in one location.

McNeill said the Navy is still determining how the replacement fleet will be structured. She isn't concerned at this time, but McNeill said she is paying close attention to arguments to build fewer boats.

"It is a concern if it goes any further," she said.

Russia Developing Robot Able to Imitate Any Submarine

Staff, TASS, 6 December

Specialists of Russia's Rubin Central Design Bureau for Marine Engineering have developed a conceptual design of a seaborne robotized system called Surrogat for holding naval exercises, the design bureau's press office told TASS on Tuesday.

Currently negotiations are under way with the Navy on this project, the press office said.

Surrogat is equipped with a lithium-ion battery. This submarine imitator provides for up to 15-16 hours of naval exercises, reproducing an enemy submarine's maneuvering, including at high speed, over this time.

The robot's relatively large size (about 17 meters long) and the ability to carry towed sonar arrays for various applications will help realistically reproduce an enemy submarine's physical fields - acoustic and electromagnetic, the Rubin design bureau said.

The imitator's modular design allows changing its functionality: Surrogat will be able to imitate both a conventional and a nuclear-powered submarine, and also to carry out terrain mapping and reconnaissance.

"Today, combat submarines have to be involved for exercises or tests and this practice distracts them from carrying out their basic missions. The use of an unmanned imitator will help avoid this and cut the cost of drills. Besides, a submarine without a crew reduces risks while keeping simulated scenarios realistic," Rubin CEO Igor Vilnit told TASS.

"This apparatus will be distinguished by its simplicity in operation and the low cost of its maintenance and upgrade. Now we're holding consultations with Navy representatives to make the imitator fully meet the Navy's requirements," he said.

The Rubin design bureau also does not rule out that foreign customers may display interest in Surrogat.

The autonomous unmanned submarine Surrogat will have a displacement of about 40 tons, a cruising range of about 600 miles at a speed of 5 knots, a maximum speed of over 24 knots and the maximum immersion depth of 600 meters.

Russia's Military to Monitor Foreign Ships With Undersea Robots

Nikolai Litovkin, RBTH.com, December 5

The Russian Defense Ministry has begun deploying the Harmony deepwater acoustic monitoring system, according to reports by the Izvestiya newspaper.

After fully installing the new development in 2020, the military will be able to "see" what is happening in the most remote and previously inaccessible areas of the world's oceans, including the movements of foreign ships and submarines.

The Defense Ministry's general contractor, Spetsstroi, is constructing a new command post for managing the system on the Novaya Zemlya archipelago in the Arctic Ocean. A special plant to produce Harmony's components will be built in the closed city of Severomorsk in the Murmansk Region (930 miles north of Moscow).

According to Izvestiya, almost seven billion rubles ($108 million) has been allotted to develop the project.

Underwater robots

The Harmony system consists of a network of robotized ocean bed stations that can work autonomously at temperatures from minus 10 to plus 45 degrees Celsius (14-113 degrees Fahrenheit). This stability is obtained with the help of special lithium polymer batteries that have an automatic energy-consumption control system.

Harmony will use sonars to conduct acoustic monitoring of the world ocean. When it detects an object, it will send a signal along a cable to a buoy floating on the surface, which in turn will send the data through a satellite to the command post.

If necessary, the station can shut down by itself and then be picked up by a nearby submarine.

Such a system will give the military almost full control of the waters at a distance of hundreds of miles.

The areas where the system will be deployed

"We are interested in areas where the U.S., the UK and France deploy their strategic submarines in the world ocean. In the Pacific, the Atlantic and Arctic Oceans," a source from Russia's defense industry told RBTH.

He stressed that Russia will be acting in accordance with the Law of the Sea Charter and will not intrude into or carry out military activity in waters belonging to other countries.

"The U.S. is deploying similar reconnaissance systems in the Norwegian and Barents Sea, as well as the Sea of Japan. They monitor our submarines attentively with the help of sea systems but also with the help of satellites," added the defense industry source.

Viktor Litovkin, a military expert for the TASS news agency, says that the deployment of the new sea monitoring system is part of increasing military competition between Russia and the U.S., which is "resulting in an arms race."

In his words, although Russia is trying not to get involved in this race and is limiting itself to what is "necessary and sufficient," the development of military affairs requires the country to spend heavily on new technologies and technical services.

Which submarines will deploy the system?

Dmitry Kornev, editor of the Militaryrussia internet project, says that Harmony's first carrier was the B-90 Sarov diesel electric submarine, which became part of the fleet in the beginning of 2008. On the following day tests were carried out on several experienced models.

However, nuclear submarines appear to be a more appropriate base for this system. The Khabarovsk and Belgorod submarines, which will become part of the Russian Navy by 2020, are more suitable for the role. They will guarantee that the system functions in the best possible way.

In particular, the Belgorod is scheduled to enter the water at the end of 2016 or the beginning of 2017. Military historian Dmitry Boltenkov says that consequently, the Russian Navy can start using Harmony on a partial basis in the near future.

The Chinese Acoustics Research That Might Help Shield Submarines From Sonar

Staff, South China Morning Post, December 5

Chinese scientists are developing a technique they hope will be able to make submarines invisible to sonar detection under the sea.

If successful, it would ultimately involve covering subs with special rings made of aluminum alloys.

The researchers at the Chinese Academy of Sciences in Beijing and Huazhong University of Science and Technology in Wuhan in Hubei province experimented with rings about 14 cm across and with periodically etched grooves.

They found that sound waves were guided around the rings rather than bouncing back, which would allow them to be traced by sonar detectors.

The grooves were able to steer the sound waves in a set direction like cars travelling on an expressway.

The researchers published details of their work earlier this month in the scientific journal Nature Communications.

The scientists were originally using the technology - called a topological insulator - to control the movement of electrons to reduce heating in computer chips, but they later realised it also had applications for sound waves.

Several rings could work together to direct sound waves in almost any direction, potentially hiding a submarine from sonar in the future.

Other researchers have been working on the technology, but the Beijing and Huazhong researchers said their system was the simplest.

A research team at Nanyang Technological University in Singapore constructed an array of cylinders creating similar effects last years, but they had to spin at high speed, about 400 revolutions per second, to keep the sound on a strict course.

The Singaporean team also claimed their technology could help submarines evade sonar detection, but planting a large number of spinning cylinders over the hull of the craft could prove an engineering nightmare.

"Our method is simpler. It does not require moving parts," said one author of the Chinese paper, who asked not to be named.

However, he added that many problems remained to be solved before the technology can be used outside the laboratory on submarines or to reduce noise on aircraft.

Submarines now use used a rubber or plastic coating to absorb sound waves produced by sonar.

The anechoic tiles also reduce noises produced from inside the sub, but the technology is old, first used by the Germany navy in U-boats during the Second World War.

New materials have been developed over the decades to increase the absorption rate, but a powerful and sensitive sonar system can still pick up traces of vessels.

Yang Jing, associate professor of acoustics at Nanjing University, said the topological insulator could trigger a revolution in acoustic studies.

"It has borrowed many ideas from quantum physics, which shed new light on sound problems," she said.

But the technology was still in its infancy with major problems remaining, said Yang, who was not involved in the rings research.

For instance, a submarine has to remain invisible from sonar beamed from different directions and at different frequencies.

The rings, however, are now only able to deflect sound waves coming from certain angles and within certain frequencies.

Remains of Navy Vet Who Narrowly Missed 1963 USS Thresher

Tragedy To Be Buried At Sea

Staff, Associated Press, November 30

HARTFORD, Conn. — For a half-century after the deadliest submarine disaster in U.S. history, Navy Capt. Paul "Bud" Rogers struggled with feelings that it should have been him — and not his last-minute replacement — on the doomed voyage of the USS Thresher in which 129 men died.

This week, at his family's request, a Navy submarine is bringing his cremated remains to be buried at sea near the Thresher's wreckage some 200 miles off Cape Cod, Massachusetts.

"I'm just so happy. I feel like my husband will be at peace," said his widow, Barbara Rogers, 86, of Wernersville, Pennsylvania. "He felt he should have gone down with the Thresher."

It was within a few days of the loss of the Thresher that its captain replaced Rogers with a more experienced sailor for deep-dive testing. On April 10, 1963, the submarine suffered a mechanical failure, descended below crush depth and imploded. The sub's remnants came to a rest on the ocean floor at a depth of 8,500 feet.

At a memorial service for the lost men, Rogers served as an usher and tried, unsuccessfully, to console the wife of the man who took his place on the crew.

"He said that she wouldn't speak to him, and that really made him upset," Barbara Rogers said. "He wanted to apologize to her."

Rogers served 41 years in the Navy, including time spent as a manager for the Trident Missile Program in Washington, D.C., before retiring in 1990. When he died in October 2015 at age 86, he expressed in his will that he wanted to be buried at sea. His son-in-law, Fred Henney, made inquiries about depositing his ashes near the site of the Thresher disaster.

His ashes and a Navy chaplain were aboard an attack submarine, the USS Springfield, when it left the Navy base in Groton, Connecticut, on Tuesday. The chaplain, Lt. Cmdr. Paul Rumery, said he plans to recite passages from Scripture, and the submarine's security force will fire a three-round volley before he lowers the ashes over the side of the submarine and into the North Atlantic.

Rogers' family will be presented with the empty shells, an American flag and a chart showing the longitude and latitude of the submarine at the time of the ceremony.

A submarine force spokesman, Cmdr. Tommy Crosby, said the ceremony coincided with regularly scheduled operations for the Springfield.

The Navy believes the Thresher went down after sea water sprayed onto an electrical panel, shorting it out and causing an emergency shutdown of the nuclear reactor. In response to the sinking, the Navy accelerated safety improvements and created a program called "SUBSAFE," an extensive series of design modifications, training and other improvements.

People involved in the SUBSAFE program are required to watch a documentary about the Thresher that ends with an actual underwater recording featuring the sounds of the sub disintegrating under the crushing pressure of the sea.

A Rare Look at the Chinese Navy's Submarines

Kyle Mizokami, Popular Mechanics, November 29

A news report on Chinese state television provided a rare look inside one of the submarines of the Chinese Navy. The Kilo-class submarine was purchased from Russia during the 1990s and is the tip of Beijing's spear in its disputes with neighbors.

The People's Republic of China bought twelve 636-class submarines in the 1990s and early 2000s. The submarines, known as the "Kilo" class to NATO, were originally designed by the Soviet Union to operate in Cold War European coastal waters. After the fall of the USSR and the end of the Warsaw Pact, the 636 class became a useful means for Russia to earn hard currency, and the submarines were exported to China, Algeria, India, Iran, and Vietnam.

The 636 class is fairly small by modern standards, just 238 feet long by 32 feet wide. They displace 3,076 tons submerged, less than half that of an American nuclear attack submarine. The subs are powered by diesel engines that allow them to move at speeds of up to 10 knots on the surface and 17 knots underwater. They have a maximum operating depth of 984 feet, but normally dive to a maximum of 787 feet.

The 636 class excels in two areas: silence and shallow water operations. Nicknamed "Black Holes" by the U.S. Navy, their teardrop hulls reduce water resistance and offer a huge leap over China's older Ming class diesel electric subs. The 636's propulsion plant is isolated on a rubber base to prevent vibrations from being picked up by enemy submarine hunters. Each ship is covered from bow to stern with rows of rubber tiles that deaden sound. A pair of ducted props powered by low-speed motoring motors allow it to operate closer to the sea floor, a useful feature when operating in shallow water.

The "Kilo" subs are armed with six 533-millimeter standard diameter torpedo tubes that can fire homing torpedoes, SS-N-15A Starfish anti-submarine rockets, and Klub anti-ship missiles. In the video, the Chinese submarine is shown firing a torpedo underwater.

It's also shown launching what appears to be a missile straight up, as though from an underwater silo. That's particularly weird because the Kilo doesn't have silos, so it is probably footage from another submarine inserted for dramatic effect.

China has based its 636 boats in the East and South China Seas, opposite Taiwan and the new "islands" in the South China Sea. They are the ideal submarines for the task. Close to China, the average depth of the Taiwan Strait is only sixty meters. The South China Sea, while on average quite deep, has several connecting channels that are also shallow. If tensions between China, its neighbors in the South China Sea, and Taiwan come to a boil, you can be pretty sure a 636 class submarine isn't far away.

The New Frontier For Drone Warfare: Under The Sea

Christian Davenport, Washington Post, November 24

As unmanned aerial drones have become a critical part of modern warfare, the Pentagon is now looking to deploy autonomous robots underwater, patrolling the sea floor on what one top Navy official called an “Eisenhower highway network,” complete with rest stops where the drones could recharge.

Although still in the development stages, the technology has matured in recent years to be able to overcome the vast difficulties of operating underwater, a far more harsh environment than what aerial drones face in the sky.

Saltwater corrodes metal. Water pressure can be crushing at great depths. And communication is severely limited, so the vehicles must be able to navigate on their own without being remotely piloted.

Despite the immense difficulties, the Navy has been testing and fielding several new systems designed to map the ocean floor, seek out mines, search for submarines and even launch attacks. While the unmanned crafts are now able to stay out for days or weeks, the goal is to create an underwater network of service stations that would allow the vehicles to do their jobs for months – and eventually years.

Military officials say there is a sense of urgency because the undersea domain, while often overlooked, could one day be as contested as the surface of the sea, the skies – and even space.

While Russia and China are investing in their submarine fleets, the Pentagon has sought to seize an advantage by introducing new technologies, especially those where humans team up with highly capable robots and autonomous systems.

In 2015, the Navy appointed its first deputy assistant secretary for unmanned systems. And the Pentagon plans to invest as much as $3 billion in undersea systems in the coming years.

Last month, the Navy participated in the multi-nation Unmanned Warrior exercise off the coast of Scotland. Autonomous subs worked in concert with aerial drones to pass along intelligence that could be relayed from undersea to the air and then to troops on the ground.

It’s too early to tell how the Trump administration might view the plans. But Bryan Clark, a senior fellow at the Center for Strategic and Budgetary Assessments, said advancements in undersea warfare should continue to be a priority for the Navy.

“The Pentagon feels like the U.S. is well positioned to do undersea warfare and anti-submarine warfare better than any other country,” said Clark, the author of a report titled “The Emerging Era in Undersea Warfare.” “What’s changing, though, is other counties are developing the ability to deny above the water. . . . So the U.S. is thinking it’ll have to rely much more on under the water.”

The goal is to have the unmanned underwater vehicles (UUVs) deploy from manned submarines or even large autonomous drone subs the way fighter jets take off from aircraft carriers, he said. The Chinese and others have built sensors that can detect large manned submarines, but the military could still send in small, hard-to-detect drone subs.

The Office of Naval Research (ONR), which looks to develop advanced technologies, is seeking to “build the Eisenhower highway network on the seabeds in the seven oceans,” Rear Adm. Mathias Winter, head of the office, said at a conference hosted by the Center for Strategic and International Studies this year. The ultimate goal is to “have large-scale deployments of UUVs,” he said. “We want them to go out for decades at a time.”

While the project is still in the conceptual stages, the Navy would one day like to build service stations underwater, similar to highway rest stops. There is even a name for them: forward-deployed energy and communications outposts.

“A place where you can gas up or charge your underwater vehicles, transfer data and maybe store some data,” said Frank Herr, the head of the ONR’s ocean battlespace sensing department.

While that may be a long way off, the Pentagon is testing vehicles that are capable of going out for weeks or even months at a time. In recent years, Boeing has developed the Echo Ranger and Echo Seeker, autonomous vehicles capable of carrying out days-long operations. This year, it debuted the Echo Voyager, a 51-foot-long autonomous submarine with the ability to stay out for months; it isn’t dependent on a support ship the way others are.

“You don’t need to have a support ship involved, and that drastically reduces the daily operational cost,” said Lance Towers, director of sea and land at Boeing’s Phantom Works division.

This year, General Dynamics boosted its underwater offerings when it acquired Bluefin Robotics, which makes several types of underwater robots. Its 16-foot-long Bluefin-21 vehicle is capable of launching what the company calls “micro UUVs,” known as

SandSharks, that weigh only about 15 pounds. The SandSharks could scan an enemy shoreline and pop up to the surface to relay data to aircraft flying overhead. The Bluefin-21 could even launch a tube that goes to the surface, sticks up like a large straw and then shoots out an unmanned aerial vehicle like a spitball.

While there are still huge hurdles to overcome, especially when it comes to battery life, underwater-vehicle technology is about where drone technology for aircraft was in the 1990s, said Carlo Zaffanella, General Dynamics' vice president and general manager for maritime and strategic systems.

Signal processing is improving. So is autonomy, Zaffanella said. And the advancements are coming "at a time when underwater warfare is becoming more important."

The Defense Advanced Research Projects Agency (DARPA) has a plan to plant 15-foot-tall pods across the ocean floor that could sit there for years waiting to be awakened. When they received a signal, they would float to the surface and release aerial drones, which could perform surveillance over shorelines.

Raytheon, meanwhile, is working on a torpedo that instead of blowing things up would be the military's eyes and ears underwater, scouting for mines or enemy submarines, mapping the ocean floor and measuring currents.

The new generation of undersea vehicles would require powerful computer brains.

"The undersea environment is particularly challenging and unpredictable," Navy Rear Adm. Bill Merz said at a recent conference. "I would even go out on a limb here to say we are truly the unmanned of the unmanned vehicles, and in most cases we don't even have a man in the loop. So what we field and put in the water is on its own until we hear from it again."

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Shipmates,

Since the dedication of our 52 Boats Memorial a total of ten of our monuments have been either damaged or completely destroyed. Most recently the monument for USS Sealion was almost completely demolished over the Thanksgiving holiday weekend. Attached below is an e-mail from Warren Branges, vice commander of San Diego Base, US Sub Vets Inc. and a fellow board of directors member of our 501(c)3 charitable corporation that we formed two years ago to maintain the memorial. (52 Boats Memorial Veterans). In his call to arms Warren sums up beautifully what has happened since the damage occurred and how a Go Fund Me page has been set up to help cover the costs of repair. I encourage you to read the email below and check out the Go Fund Me page.

https://www.gofundme.com/32skkq8

Best,

Doug Smay

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Shipmates:

This is a combined Update and Call to Action.

Those of you who have attended a San Diego Base meeting in the last few months may recall I had mentioned my intention to invite Submarine Squadron Eleven to participate in the posting of flags at the 52 Boats Memorial on December 7th as we commemorated the 75th anniversary of the Pearl Harbor attack. We've discussed the need for SubVets to try to establish/re-establish ties to the Active Duty Submariners and this was a good opportunity to work on that issue.

I contacted CMDCM JR O'Donnell, CSS-11 CMC, who thought it was a great idea and he subsequently tasked PO2(SS) Nathan Bartholomew (CSS-11 Supply Department) to coordinate with us. Nathan sprang into action and....

On Wednesday, we had nine Active Duty participants with PAO support along with some of the usual SubVet and NSL suspects to post flags (see photos at https://www.facebook.com/pg/COMSUBRON11/photos/?tab=album&album_id=10154798468886974 . All flags were posted in record time. So far, so good.

Along with the recruiting pitch for USSVI, I brought the CSS-11 folks up to speed on the rash of monument- damaging incidents we were experiencing at the Memorial. If you hadn't heard, the Sealion marker was essentially destroyed over Thanksgiving weekend - another $3,000 to fix. That's the fourth significant hit this year and third since mid-September. That translates to over $10,000 in repairs this year alone.

And then a really good and unexpected thing happened.....

One of our CSS-11 Brothers decided to unilaterally take direct action. On Wednesday afternoon, PO1(SS) Jordan Yentzer, also from CSS-11 Supply Department and a Wednesday morning participant, set up a Go Fund Me page with a brief story of the damages at the Memorial and a fund raising goal of $10,000.

By Thursday morning, less than 24 hours from startup, the Go Fund Me donations had topped $1,000. Good news.

As of this writing late Friday afternoon, the Go Fund Me and off-line donations have topped $3,300. Very good news.

One guy. Just one guy that cares.

I asked Jordan why he did this, what prompted him to get involved. Not his exact words, but he essentially said, "We can't forget these people who gave so much". Amen, Brother.

Concurrently and independently, another good thing happened: Doug Smay contacted KUSI (Channel 9/51) and one of their anchors (Dan Plante) did a piece with Doug which ran on the news Wednesday evening. Dan had previously done a clip which aired in early October after the Trout marker was damaged. On Thursday morning, two additional stations (CW6 and ABC 10) were calling requesting interviews to run on the evening broadcasts Thursday night.

(CW6 - http://www.cw6sandiego.com/52-boats-memorial-liberty-station-vandalized-multiple-times/

KUSI - http://www.kusi.com/clip/12950991/war-memorials-being-vandalized-at-liberty-station)

We've been informed that the Mayor's Office has been made aware of our recent Memorial damage and that San Diego police Department has been requested (by the Mayor's Office) to see if patrol activity in the area can be inproved.

"To Perpetuate the memory of our shipmates who gave their lives in the pursuit of their duties while serving their country." Sound familiar? PO Yentzer gets it. Jordan's not even a member and he gets it. He's hard at work, reaching out to his contacts and twisting a few arms; read his update comments on the Go Fund Me page and tell me he's not total invested in this thing. Isn't this the best possible outcome to reaching out to our Active Duty Brothers?

So let's do our part: Go to the link to donate: https://www.gofundme.com/32skkq8

Share this link with as many people and in as many places as you can. Post it on your Facebook. Send it to your relatives. Send it to your friends. Send it to your enemies - twice. Get the word out any way you can.

If you don't want to use the Go Fund Me method, you can send a donation to: 52 Boats Memorial Veterans, 2960 Chicago Street, San Diego, CA 92117-6157.

Sincerely,
Warren Branges

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Computer Corner

In the 21st century, email has become a dominant form of communication. We constantly hear warnings about well known pitfalls like phishing, spoofing, malware links, and ransomeware, etc. However, there are other issues with email that we can control to improve the experience. Composing: if several points are being discussed, then consider numbering them (many times I receive a reply and it is obvious the respondent quickly answered the first point, and overlooked the other points; this requires a resend), edit the text and use spell check (it is embarrasing to read your email later and discover the error), remember to attach that attachment (consider adding the attachment before compose the text), if multiple recipients, then consider using blind copy (bcc) rather than cc to protect

privacy. Sending: after the email has been sent there could be more issues like it never reached the adressee because of an overactive spam filter or email server problem, the recipient did not respond due to travel or infrequent email checking, etc. There are two important take-aways from this 1) don't assume that because you sent it, he or she got it and read it, 2) if the email is important, then follow up the old fashioned way; the telephone. David Kauppinen, San Diego Base Webmaster 12/10/16

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