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

The Silent Sentinel

November 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.

San Diego Base Members of the USSVI

The below news item is forwarded for information.

To support our getting payment for 2016 dues in to the system at USSVI National, Submit Dues for 2016 as noted in the attached EMail from National. please contact me for any questions or verification you may need as to status. Your dues can be accepted at the November or December meeting or any time before that. I would request a drop-dead date of December 15th in order to give our Treasurer time to get the money into National USSVI Office before Christmas with time to spare.

FYI - The National WebSite will be rebuilt with a Feb roll-out time frame. It is a complete new construction with the ability to pay your National Dues by credit card over the internet. San Diego Base dues will still be handled locally.

If you have any questions, please give me a shout.

Ray Ferbrache
Membership Chairperson
USSVI San Diego Base
arayz@san.rr.com
Cell Phone 610-972-4474
My cell will always take a note and get it to me.

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.

NAME: _____

ADDRESS: _____

CITY/STATE/ZIP: _____

EMAIL: _____

TELEPHONE: _____

Would like the SILENT SENTINEL emailed: YES_____ NO_____

Robert Bissonnette
1525 Walbollen St.
Spring Valley, CA 91977-3748

USSVI Base Commander
c/o VFW Post 3787
4370 Twain Ave.
San Diego, CA 92120-3404

*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*

November 2015 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 *November 10th*. 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

Benny Williams

Submarine Losses in November

Originally Compiled by C J Glassford

USS Albacore (SS-218)

Lost on Nov 7, 1944 with the loss of 85 men when she was sunk off northern Hokkaido. Winner of two Presidential Unit Citations, Albacore was on her eleventh war patrol and struck a mine while running submerged near a Japanese patrol craft that had detected her.

USS Growler (SS-215)

Lost on Nov 8, 1944 with the loss of 86 men when she was sunk in the South China Sea. Winner of two Navy Unit Commendations, Growler was on her 12th war patrol, and was lost while attacking a convoy, probably as a result of a depth charge attack or victim of a circular run by one of her own torpedoes.

USS Scamp (SS-277)

Probably sunk on November 16, 1944 with the loss of 83 men near Tokyo Bay. On her 8th war patrol, she may have been damaged by a mine and was trailing oil, which helped Japanese coast defense vessels locate and destroy her with depth charges.

USS Corvina (SS-226)

Lost on Nov 16, 1943 with the loss of 82 men when she was sunk just south of Truk. Corvina was on her 1st war patrol and appears she was lost to the torpedoes of a Japanese submarine.

USS Sculpin (SS-191)

Lost on Nov 19, 1943 with the loss of 43 men near Truk. Severely damaged by depth charges after attacking an enemy convoy, Sculpin continued to fight on the surface. When the captain was killed, the crew abandoned ship and scuttled Sculpin. 41 men were taken prisoner but only 21 survived the war. Among those not abandoning ship was CAPT Cromwell,aboard as a potential wolfpack commander, he rode the Sculpin down, fearing that vital information in his possession might be compromised under torture. For this, CAPT Cromwell was posthumously awarded the Congressional Medal of Honor.

San Diego Base, United States Submarine Veterans Inc.
Minutes of Meeting, October 13, 2015

1905 - Base Commander Bob Bissonette called meeting to order.

Conducting Opening Exercises - Pledge of Allegiance lead by Warren Branges.

Base Chaplin Russ Mohedano lead the prayer and conducted Tolling of the boats lost in the month of October.

Base Commander Bob Bissonnnette recognized Past Commanders, dignitaries and guests.

Secretary announced 22 members present, no guests.

The minutes of previous meeting were approved as published in the Sentinel.

Treasurer David Ball gave his report. Report was accepted as presented.

Base Commander Called for Committee Reports.

Chaplain Moheldano reported the following on the Binnacle List: Fred Frombeys mother. Benny Williams.

Parade Chair Joel Eikam announced the next parade is in Borrego Days Parade, October 24, 1000. If you need a ride let Joel know and you can ride up with the float. Next will be Veterans Day Parade, November 11, starting a 1000.

Membership Chair Ray Febrache announced we are down in membership. Dues will be going up next year so get your membership dues in before the increase. The dues increase is for covering additional cost of Submariner magazine.

Member Mike Hyman request new membership card. Ray will supply new card.

Scholarship Chair Paul Hitchcock reminded members that age limit for applicants is 23 years old and dead line is April 15, 2016.

Storekeeper Phil Richerson announced he has new 2016 Calender's for only 8 dollars. He also has magnets and vest clasps with chains, and lots of new items.

Breakfast report and 52 memorial update: Warren reported that the base made $310.17 on the August 30 breakfast. The next breakfast will be November 29 starting at 0800. A special food handlers class will be conducted October 31 at 0900.

We have a list of all food handles and you can check to see if you need to attend the class.

52 Boat Memorial has completed the and submitted the 51C3 paper work. All new markers have been installed completing the memorial repair. The local Submarine league has contacted us and desire continued support for the Memorial. They would like to continue financial support next year. It has been suggested that we move the Memorial day service from the Sub Base to the Memorial area at NTC, However the problem is we lack control at NTC and due to the serious nature of the Memorial Service it is felt that the Sub Base it the best place for this type of service.

Eagle Scouts - Some additional awards have been given out and been well received by Scouts.

Special Award - Warren Branges was awarded the Silver Anchor Award by Base Commander for outstanding work in providing community support and advancing the work of local base and USSVI. Well done.

Christmas Party - Date is set for Saturday, 19 December., 1330 - 1600. Dinner starts at 1400 menu will be Cornish hen or Pork chops, $20.00 per person see Warren for signup.

1942 - Base Commander called for a break.

1952 - Base Commander called meeting back to order 50/50 drawing was held.

Unfinished Business

Convention update.

Base Commander gave a report the Pittsburgh convention. Some of the things discussed:

There has been a big loss of bases in the West due to lack of participation and lack of leadership.

It was noted that many of the base show a lack of innovation which cause members to drop out of the organization. Lack of recruiting new members and follow up of lost members.

Things suggested were use of outside speakers regardless of the subject matter. We could move out of the Submarine only. General Navy information as to what is going on in the Navy and military.

Using members to present lectures and presentations, making meeting more interesting.

The USSVI will be bringing on line next March a new and improved website. This site will be user friendly and will improve access to membership information.

Next Convention will be in Reno, Nevada, August 15 -20, 2016.

Veterans Walk November 7, 2015. Base Commander proposed a motion we supply one team of four individual. Entrance fee is 100 dollars. Motion second and carried. We will onate 100 dollars to support on team. The Veterans walk is four miles. Addition members are 25 dollars per person. If addition members want to join let Base Commander know.

New Business

Western Regional Round Up. May 1- 6, 2016 in Laughlin Nevada. This is a mini convention, very reasonable and lots of fun. See flier on the back table for more details.

Submarine Birthday Ball. Base Commander discussed the possibility of sponsoring a WWII veteran to attend the ball. We did this last year with great success. The Vet was well received and had a great time. We paid for dinner and a room in the hotel which made it easier on the vet and his family. We would like to do this again, but we need input from the members for names of possible candidates.

Good of the order.

On the back table you will find membership forms, some point of contact cards and other information.

Member J.J. Lynch informed membership his brother in law is associated with Maritime Museum in Long Beach and they have a hall way which they would like to turn it into a submarine exhibit. This maybe a good place to display submarine memorabilia.

Amazon Smiles - USSVI Charitable Foundation receives a percent of your purchase on Amazon. Please us this when you purchase any item on Amazon.

Member Mike Hyman presented the need for better communications when a member dies and funeral services are announced. A heated debate enSan Diego Base, United States Submarine Veterans Inc.

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2050 - Meeting was adjourned.

Sailing list:

Bob Bissonnette
Bob Ferrell
Phil Richerson
Russ Mohedano
David Ball
Peter Lary
Paul Hitchcock
Bud Rolleson
Manny Burciaga
Dennis McCreight
Rocky Rockers
Tom Polen
Ray Ferbrache
Alfred Valela
David Kauppinen
Nihil D. Smith
Michael Hyman
Warren Branges
Ed Farley
Joel Eikam
John Lynch
Chris Stafford
Russ Filbeck

Current News

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

The U.S. Navy's Robotic Undersea Future
Dave Mujumdar, National Interest blog, Nov 3

The U.S. Navy's fleet of Seawolf and Virginia-class attack submarines are by far the most advanced vessel of their kind in the world, however new technologies are emerging that might change their role for ever.

While it is widely recognized that unmanned systems are slowly chipping away at the domain of manned aircraft platforms, less visible is the fact the robotic technologies are also impacting the undersea realm.

I asked several of Washington's preeminent naval minds about what unmanned underwater vehicles (UUVs) might mean for the future of the Navy's submarine force.

Bryan McGrath, managing director of The FerryBridge Group and assistant director of the Hudson Institute's Center for American Seapower had this to say:

"We've only begun to scratch the surface on the utility of UUV's. I'm impressed with the degree to which the Navy's Submarine Force is innovating in this area, and I'd like to see the surface force begin to work more closely with them to leverage what is quickly becoming a vast undersea information architecture. We will someday see UUV's doing a great number of things that manned submarines currently do—not replacing them but extending their power and reach the way helicopters have for the surface force. Doubling down on our mastery of the undersea environment is a no brainer."

Jerry Hendrix, former Navy Captain and director of the Defense Strategies and Assessments Program at the Center for a New American Security, also shared his thoughts:

"UUV's provide a unique opportunity to place a long dwell persistent all acoustic spectrum sensor in the water column. The challenges will be in the areas of communications with information collection nodes, integration of data and deconfliction with other submerged platforms. Despite these issues, the upside of UUVs is much larger than the downsides and it's important to accelerate their maturation and introduction into the operational environment."

I also asked Bryan Clark, who is a former Navy submarine senior fellow at the Center for Strategic and Budgetary Assessments for his thoughts. I was fortunate in that he was preparing for his testimony before the House Armed Services Committee. As such he was able to offer a very detailed assessment of UUVs and their capabilities:

New power and control technologies are improving the endurance and reliability of unmanned undersea vehicles (UUV), which will likely be able to operate for months at a time during the next decade. The autonomy of UUVs will remain constrained, however, by imperfect situational awareness. For example, while a UUV may have the computer algorithms and control systems to avoid safety hazards or security threats, it may not be able to understand with certainty where hazards and threats are and what they are doing. In the face of uncertain data, a human operator can make choices and be accountable for the results. Commanders may not want to place the same responsibility in the hands of a UUV control system–or its programmer.

As sensors and processing improve, UUVs will progressively gain more autonomy in maintaining safety and security while accomplishing their mission. In the meantime, the U.S. Navy can expect to shift some operations to unmanned systems for which the consequences of an incorrect decision are limited to damage and loss of the vehicle, rather than loss of life or unplanned military escalation. These missions could include deploying payloads such as sensors or inactive mines; conducting surveillance or surveys; and launching UAVs for electronic warfare. For missions where a human decision-maker is needed, unmanned systems can operate in concert with submarines or use radio communications to regularly "check-in" with commanders.

The Department of Defense (DoD) has pursued a large variety of UUVs during the past decade, mostly for mine clearing and ocean surveillance and launched from surface ships or shore. These applications did not require particular sizes of UUVs. As UUVs become more integrated with submarines as part of a family of systems, the Navy should focus on UUVs that can use the submarine's ocean interfaces and conduct the most likely UUV missions. Specifically, the Navy should pursue the following UUV types as part of its undersea family of systems:

—Micro UUVs (about 6" or less in diameter) are inexpensive and improving in their endurance and on-board power. They could be procured and deployed in large numbers or swarms as weapons, to survey the ocean floor, or interfere with enemy ASW operations.

—Small UUVs (about 12” in diameter) are commonly used today for surveys and minehunting, such as the Navy’s Mk-18 UUV. They will be able to take on other surveillance or attack missions as part of the Fleet Modular Autonomous Undersea Vehicle (FMAUV) program and operate from submarines as well as surface ships and aircraft.

—Medium UUVs (about 21” in diameter) are the size of the Navy’s Mk-48 submarine-launched torpedo. And while the Navy is not operating UUVs of this size today, the Modular Heavyweight Undersea Vehicle (MHUV) program plans to make the torpedo of the future able to be configured to conduct a range of missions, from mining and long-range attack to electronic warfare.

—Large UUVs (about 80” in diameter) such as the Navy’s Large Displacement UUV (LDUUV) are designed to use the planned Virginia Payload Module (VPM) tubes in Block V Virginia-class submarines. The LDUUV will provide a way for submarines to increase their sensor reach, expand their payload capacity, or deliver payloads into areas that are too risky or constrained for the submarine to reach.

—Extra-Large UUVs (More than 80” in diameter) would be designed to launch from shore or very large ships with well decks or “moon pools.” They could be used for long-endurance surveillance missions or primarily as “trucks “ to deliver other payloads and UUVs. Experience with LDUUV will help inform concepts for using XLUUV.

IDF Holds First-Ever Submarine Rescue Exercise
Yoav Zitun, Y Net News, Nov 3

An Israeli Navy submarine crew took part in an exercise last week, which simulated the rescue of a sunken submarine on the high seas. This type of exercise is rare among navies, and the first of its kind in Israel.

The drill, held off the coast of Atlit, was conducted with the special cooperation of the Italian navy - one of the few in the world that maintains the ability to extract a sunken submarine's crew.

The unique training drill, which lasted three days, tasked troops with rescuing 40 crew members from a Navy submarine at a depth of 60 meters. After a year of planning ahead of the drill, the navy made history, and became one of the few fleets in the world to ever carry out such an exercise.

Israel does not maintain the capability to extract submarine crews from the depths of the sea, mainly due to the serious price tags which accompany the resuce equipment. The low probability of a submarine sinking has led the IDF to base its training for crew extractions on a limited number of representatives who had been sent to NATO courses.

"This is an international event. Only a few navies, including Italy, NATO and the United States, have these extraction vehicles," navy officials stated. The commander of the Italian forces in the exercise held the rank of colonel. 100 navy soldiers and Israeli doctors took part in the exercise and conclusions from the drill will be shared with other naval forces around the world.

The two main extraction vehicles used in the exercise were "the Bell", a small submarine, and the SRV300 submersible. 40 people were rescued in total, twelve during each round. Every round lasted two to three hours and included a descent to the seabed, a physical connection to the vessel and the gathering of crew members.

"The biggest challenge in these situations is the technical ability rather than the position of the sunken submarine, as that is not something the rescue staff or those being rescued have control over," explained Major (res.) K'. "Part of the motivation to conduct such exercises is dealing with time constraints in a situation of a sunken submarine."

"A sunken submarine can continue its routine functions with its crew for a few days until it is rescued, and for Italians, because of their geographical proximity to us, it's a matter of two to three days until they arrive, if at all. In rare cases, the vehicles are flown over and assembled before going out to sea."

There have been very few recorded incidents of submarines sinking. On January 25 1968, the Israeli submarine Dakar sunk while on its way from Britain to Israel - all 169 crew members perished. In the 1960s and 1970s, two American submarines sank and in 2000, the Russian submarine Kursk sank.

While the new and fourth submarine of the Israeli Navy, INS Tanin, has been operational for the last few months, the navy is waiting for a fifth submarine to arrive from Germany sometime this year.

The IDF has recently begun excising the support and close assistance roles which would possibly be filled by submarines in the next possible IDF operation in southern Lebanon.

This capability had only existed on paper, but is slowly being implemented by the Navy. Submarines have begun conducting joint training with ground troops that are set to operate in southern Lebanon. Although the main purpose of a submarine is to be a strategic weapon, the navy intends to substantially influence the tactical battle.

"A drone accompanying the force is able to see a specific area but not the entire area. A submarine with all its systems can see an entire village from both sides and be in constant contact with the maneuvering force commander, "said a Navy spokesperson.

The U.S. Navy's Worst Nightmare: Super Advanced Russian Submarines
Dave Majumdar, The National Interest, Oct 29

In recent years, the Russian navy has started to slowly recover from the 1991 collapse of the Soviet Union. While the Russian surface fleet still faces quite a few challenges, the country's submarine force has been more active than ever since the end of the Cold War. Though not near as large or as capable as the once mighty Soviet submarine fleet, some of the most advanced late Soviet-era designs are starting to enter service.

The best example is Russia's Project 885 Yasen-class nuclear attack submarine K-329 Severodvinsk, which started construction in 1993 but only entered service in 2014. The massive cruise missile-carrying SSGN's construction had been repeatedly delayed because of post-Soviet Russia's budgetary woes. During the intervening years, many of the vessel's components were rendered obsolete and the follow-on Project 885M vessels – starting with Kazan – will have many refinements. Nonetheless, Severodvinsk is by far the most capable submarine in the Russian fleet.

"We'll be facing tough potential opponents. One only has to look at the Severodvinsk, Russia's version of a [nuclear guided missile submarine] (SSGN). I am so impressed with this ship that I had Carderock build a model from unclassified data." Rear Adm. Dave Johnson, Naval Sea Systems Command's (NAVSEA) program executive officer (PEO) submarines said last year during the Naval Submarine League's symposium in Falls Church, Va. "The rest of the world's undersea capability never stands still."

Severodvinsk leverages many of the automation technologies the Soviet Union invested in during the 1970s and 1980s with the Project 705 Lira-class boats – better known by their NATO-code name as the Alfa-class. The Alfa-class submarines – which were built with a titanium hull and liquid-metal cooled reactor – were the fastest and deepest diving operational submarines ever built – save for the lone Soviet Project 661 Anchar-class (NATO: Papa-class) boat. As such, the 13,800-ton, 390-foot long, submarine is highly automated vessel with a crew of only 32 officers and 58 enlisted submariners.

The U.S. Naval Institute's Combat Fleets of the World noted that some reports suggest the vessel might have a maximum speed of between 35 and 40 knots. It is far quieter than previous Russian submarines and has a maximum "silent" speed of about 20 knots. Like most new nuclear submarine designs, Severodvinsk reactor is designed to last for the life of the boat.

According to the Office of Naval Intelligence (ONI), while the new Russian submarine is quieter than the Improved Los Angeles-class boats, the new vessel is not quite as silent as the Seawolf or Virginia-class. However, the Russians were always only lagging slightly behind the U.S. in quieting technology according to Navy sources.

Unlike most Soviet submarine designs, the Yasen-class boats do not make use of a double-hull – instead it has hybrid design with a lighter structure over the vessel's pressure hull according to Russian media reports. Another unique feature for a Russian vessel is that it incorporates a spherical bow sonar called the Irtysh-Amfora for the first time. As a result, Severodvinsk has its torpedo tubes located at about mid-ship like U.S. submarines. The vessel has eight torpedo tubes, four of which are 650mm tubes while the rest are 533mm tubes. Combat Fleets of the World estimates that the Yasen-class may carry as many as 30 torpedoes.

But the Russians are well aware that time has not stood still since 1993 when Severodvinsk was laid down. The Russian navy is set to take delivery of an improved Project 885M Yasen-class attack submarine in 2016 according to Russian state media, which is named after the city of Kazan. The new Project 885M boat incorporates many improvements over Severodvinsk. Kazan is expected to have improved sensors and weapon systems compared to Severodvinsk. It is also likely to be quieter than Severodvinsk.

The Russian navy hopes to procure a minimum of eight Yasen-class attack boats. Four boats have been ordered thus far with a third vessel, Novosibirsk, having been laid down in July 2013.

While the Project 885M is an impressive and very capable vessel, it is not quite an equal to the latest American boats in terms of acoustical or sensor performance. In terms of raw performance, the Severodvinsk and her sisters are likely more similar to the U.S. Navy's three Seawolf-class attack boats, which according to Navy sources were designed specifically to counter late generation Soviet vessel like the Project 941 Akula – also known more commonly as the Typhoon – Project 971 Shchuka-B (oddly code-named Akula by NATO) and the Project 945 Sierra-class boats.

The Yasen-class boats are fast, heavily armed and deep diving – and ideally the United States would have more Seawolf-class vessels to handle them. But while the Virginia-class subs don't have the deep diving, high-speed open ocean performance of the Seawolf-class, it should be more than adequate to handle the handful of Project 885s that Russia builds.

Dave Majumdar is the defense editor for The National Interest.

A New Cold War Deep Under The Sea?
Admiral James Stavridis, USN Ret., Huffington Post, Oct 28

Virtually all of the world's information moves deep under the sea. Well over 95 percent of everything moving on the global Internet passes through 200 or so highly active cables, some as deep under water as Mount Everest is tall. On a normal day, that information is safe and sound, humming along the protected fiber optic strands upon which moves the information that is the backbone of the world's economy.

But recent reports by a variety of sources indicate renewed interest by Russian submarine forces in surveillance of those cables, including detailed monitoring and targeting of the system. The tactical reasons for doing so are plain: in the case of heightened tensions, access to the underwater cable system represents a rich trove of intelligence, a potential major disruption to an enemy's economy and a symbolic chest thump for the Russian Navy.

Placing the submarine activity in the larger context of Russian geopolitical strategy, it is possible to see the broader rationale for these moves at this moment. First, such actions play well to a domestic Russian audience that wants to see Russia as the global counter-weight to the U.S. Russian President Vladimir Putin above all else craves respect, and his actions – from invading Georgia to annexing Crimea to muscling into Syria on the side of the reprehensible Assad regime to active surveillance – enhance his international importance and profile.

Second, these types of high tech, delicate and complex undersea maneuvers constitute important training and preparation for the Russian Navy. The ability to tap these cables for intelligence as well as attack them with precision is a skill-based activity that requires detailed knowledge and real precision work at depth according to many reports. Practice is vital.

Additionally, the underwater maneuvers are a signal to the U.S. and its allies, much like the other recent aggressive international moves coming from Moscow. Russia is reaching for many other Cold War tools as well, including aggressive long-range bomber patrols above NATO nations (particularly the Baltic states) and building up significant military capability in the Arctic.

Are we headed back to another Cold War? Probably not, despite the ominous range of activities. We should remember that we still cooperate with Russian on a wide range of activities: counter-piracy patrols off the Horn of Africa, counter-terrorism information sharing, counter-narcotic activity in Central Asia, support to Afghanistan and constructing the controversial but widely accepted counter-proliferation agreement with Iran. Unlike the Cold War, there are zones of U.S.-Russia cooperation today.

The Cold War dwarfed in size and scope anything we see today. The war saw millions of soldiers facing each other across the Fulda Gap in central Europe; two immense battle fleets grappling with each other across the oceans of the world; and two massive nuclear arsenals on a hair-trigger alert, ready to launch within minutes. We are not remotely at that point today.

So what we should do in response to Russian behavior around the world, including reports of underwater cable surveillance? We must avoid stumbling backwards into a new Cold War. This means maintaining open lines of communication, searching for zones of cooperation where we can find them (from the Arctic to Arms Control) and taking a deep breath when we see provocations before we respond militarily. We should convene an international conversation (to include Russia of course) about protecting the underwater fiber optic grid system, much as we do for air and sea lanes of communication.

But we must also stand firmly behind established principles of international law: nations should not simply annex the territory of their neighbors, as was done in Ukraine; nor should they support brutal, lawless, illegal regimes like that of Assad in Syria. We should rally as much international support as we can muster to criticize such behavior, and when it is particularly egregious – as in Ukraine – impose sanctions.

Another important component is operational. Our naval forces need to be ready to defend our submarine cables, exactly as we defend our electrical grid, industrial base and transportation networks. That means a robust, highly technical and capable undersea Navy. The U.S. leads the world in operations underwater, and we absolutely must maintain that edge.

In this context, exercises and operations with key allies and friends to protect this shared and vital undersea infrastructure is a good signal to send to the Russians as well. NATO allies, Japan, Australia and many other friends have significant undersea capabilities: by practicing and operating together, we help create a stable and protected global communication grid.

Finally, we need to build more resiliency and redundancy into the underwater cable network. It is far too vulnerable to sabotage, especially at the terminals where the cables are in relatively shallow water. We need more "dark cables" that are not operational but kept in reserve. The movement of information is the lifeblood of the global economic system: it needs to be more secure from accident and attack.

Russia's robust Cold War-like moves should be concerning, but we should remember what a weak hand of cards Russia actually holds: a declining population, high rates of alcoholism and drug abuse, few real allies and an economy that is a one-trick pony. As Sen. John McCain (R-Ariz.) has said with a bit of hyperbole, Russia is "a large gas station masquerading as a country."

Despite these fundamental weaknesses, under Putin, the Russians will reach for Cold War tools in an effort to prove their global relevance. It will not broadly succeed as a strategy, and we should not overreact. Instead, let's take sensible steps to maintain a dialog, cooperate where we can, confront where we must and protect our vital infrastructure and interests around the world – including in the deepest parts of the sea.

Admiral James Stavridis (Ret.) was Supreme Commander of NATO (2009-2013) and is Dean, Fletcher School of Law and Diplomacy, Tufts University.

Navy Preparing For Next-Generation Attack Submarine Decisions In 2024
Megan Eckstein, USNI News, Oct 28

Though the Virginia-class attack submarine program (SSN-774) is still going strong, delivering boats ahead of schedule and below original cost estimates, the Navy needs to start planning the next generation of attack submarines soon, according to the program executive office for submarines.

PEO Subs executive director George Drakeley said last week at the annual Naval Submarine League symposium that an analysis of alternatives for the next-generation sub, or SSN(X), would take place in 2024.

To prepare for that milestone, PEO Subs has created a future capabilities group to begin studying what the operating environment might look like in the 2050 timeframe, what technologies submarines would require to be successful in that environment, and what enablers the research and development community can start working on now to set up the future program for success, he said.

“We’re already putting together a team to look at, what does the future submarine after Virginia need to look like? This is looking forward just as the Ohio Replacement Program is looking forward, but it’s important that we do this now,” Drakeley said.

“We need to identify the technologies that we’re going to need out in the future years in the attack submarine business ... This is going to be a submarine that will have to be better integrated with [unmanned underwater vehicles] and other sensors and other capabilities that we maybe haven’t even thought of yet.”

In 2013 the Navy expanded the Virginia class from a 30-boat program to 48, which now puts the last Virginia-class sub at delivering in 2034, he said. The SSN(X) analysis of alternatives will take place in 2024, the authorization for the lead ship in the new class will happen in 2034, and the new class will reach initial operational capability in 2044, according to current PEO Subs plans.

Starting the SSN(X) discussion nearly a decade ahead of the AoA will help ensure that mature technologies and design tools are ready when the program starts, which reduces risk and cost; will help the Navy understand the impact of external factors and other programs on the SSN(X) design and mission; and build affordability into the program, Drakeley said during his presentation.

For example, he said the program will need to understand how the Navy expects the submarine to interact with off-board assets, and whether a single design can meet all mission needs or whether a mixed-class approach might be more appropriate.

On the Virginia class, the Navy is about to deliver the third Block III sub, Illinois (SSN-786), later this year. Block III included a 20-percent design change and is still expected to deliver in 66 months, compared to the 84 months for the first block of boats. The service has already authorized several of the Block IV boats, which will begin delivering in 2019 and will boast increased operational availability and decreased total ownership cost. Block V, which will include the Virginia Payload Module, is in the design phase now and will be authorized beginning in Fiscal Year 2019.

Special Supplement

Today we live in an environment where books have been minimized to curiosities of a bygone era. Smart-phones and other electronic devices have become the replacements. Nonetheless—and you can accuse me of preaching (I've been labeled worse)—it is my belief that if we allow our minds to be controlled by others who filter the data we see, then we actually change into the useful idiots that some would prefer that we become.

The average high school student up until the late 1960s exhibited more intelligence than most college graduates do today. What's my point? It's simply this. I refuse to accept mediocrity. There's a vast amount of information and literature which will never make it to the world wide web—it simply is not sellable material. It does not tickle the minds of the useful idiots with credit cards who will never exceed the educational level of a fifth grader. Consequently, I am including in the Silent Sentinel historically significant and intellectually stimulating material which one will never find online. The larger public libraries once maintained these works but most no longer do, arguing that it can now be found on the Web. It's an outright lie. The material generally cannot be found online. And in the few cases where it can, the reader is charged for the privilege of seeing it (does anyone really expect a 16 year old high school kid to pay $45 to read a Harper's Monthly account of the sinking of the USS Monitor?—albeit written by one who actually served on her). Rather, the average reader is directed these days to Wikipedia (an online encyclopedic reference where facts are a function of popular opinion rather than dependent on historical data—I justify this statement by bringing to my reader's attention that Wikipedia can be edited by anyone who chooses to do so—and with enough bias and volunteer editors, history can and often does take a back seat to spin).

I know that there is little hope of changing the world. And after recently seeing a photograph of a Walmart express checkout line which used a diagram with three hands (fifteen fingers) rather than the number "15" in order to state to customers the maximum number of items allowed, I console myself in the fact that my wife and I could never have kids. Having said this, I present to you this month a short story from The Strand Magazine (of Sherlock Holmes fame). It is the July 1899 issue. And I believe that you all will enjoy it! The name of the story is "The Trial of the Watch Below." ***Mike Hyman***, Editor

THE TRIAL OF THE "WATCH BELOW."

By J. H. Whitfield.

We were a merry party in spite of the weather and the scenery. Five of us, three ship-constructors, one engineer, and one pressman, standing on the edge of the unfinished Orient Dock; a vast expanse of quiet, muddy water before us, a lowering grey sky above us, and round us the flat shores of Kent and Essex. Near us, but aloof, were a few boatmen, labourers, hands connected with the slow making of this immense basin. We were there to test and to criticise the new submarine boat, *Watch Below*, designed and invented partly by Mackey, the engineer, principally by Boulger.

Who that ever knew Boulger could forget him? Who that knew his history could forget it? Shipwright at Portsmouth Dockyard, working his way upward until he held a good position at the Admiralty and had a hand in shaping all new fashions for ironclads, he was yet the good friend of all his old mates. I remember his good nature most of all. In his house at Clapham he kept four unmarried daughters, one son-in-law and wife, one widowed daughter, and a swarm of grand-children. He loved them all, excepting the son-in-law, and never grumbled at anyone but the persons who softened his "g" and called him "Bouljer."

Standing on the ragged edge of the dock, we were smiling because Boulger was too fat to get through the emergency door at the after-end of the cigar-shaped craft below us. We were disposed to good humour, for we considered this little trip merely as a registration of success. She had done well at a deep-sea trial: so well that the highest ones of the Admiralty had begun to show a faint interest in her. Another trial in Sea Reach, after certain improvements had been added, was not quite so successful; but this, now, was to put everything right. So, sniffing at success, we were merry, all but Bawke, undermanager of the firm which was backing Boulger with the necessary few thousands. Bawke and the inventors had a difference of opinion about the removal of certain ballast. Bawke mistrusted the craft, and said so frequently; while, English-fashion, he was doing his very skilful best to render failure improbable.

He said something again which caused Mackey to ask: "Do you think the motor will give out, then?" looking up from the large hatch which had been slid on one side to admit Boulger.

"No," answered Bawke, "I still think the danger is in the slanting descent and ascent. She'll drown all hands some day—your magnified Whitehead."

"Come and try," said Boulger, as he lowered his body into that of the craft.

"Unless you're afraid," growled irritable Mackey.

This word settled it, and Bawke descended, asking, not from fear but from his critical habit, "What's to keep this thing from turning turtle?"

"Mr. Boulger will oblige by sitting in the bottom of her," said O'Neill, of the *Current News*, who was the fifth of us and who had already embarked. "Come, hurry up."

Bawke hurried down and I followed. So there were five on board. O'Neill had been invited because it was time people heard of the *Watch Below*, which was better covered by patents than by any veil of secrecy.

Mackey closed and fastened the hatch and the emergency hole, gave us more light from the glow-lamps, and opened the air reservoir.

Our compartment had a space of 8ft. between floor and ceiling. These were mere flattenings of the hull's circular shape. Arrangements for comfort were rough, and consisted principally of ropes led along each side of the hold. These were for support when the craft tilted. There was nothing loose on board when the crew were clinging to these ropes, only necessary gear being carried, all fixed or fixable, in order to prevent it slipping about.

Abaft of our position was the sinking and rising gear, consisting of hollow cylinders, which could be thrust out or withdrawn in order to increase or diminish buoyancy. Forward of us were the engines, and forward of these again were arrangements similar to those right aft. The chief points about the invention were the electric engines, the air supply, the ease with which either end could be depressed, so that she plunged to the depth at which it was required to travel, and then could be brought head or stern first to the surface at an easy angle.

But the pride of Mackey's heart was the "look-out man," as he called his own particular invention. This was a telescopic tube topped by a cowl, which could be easily adjusted to the necessary height, being well braced by stays always taut, no matter whether high or low. Fitted vertically to the front of the cowl was a lens, which threw a view of the picture before it upon a slanting mirror, whence it was conveyed to and reflected from the surface of a second mirror, whereon the steersman might read his course. The lens was protected by plate-glass of such extraordinary hardness and polish that spray dashing upon it left it at once undimmed. The angle of the lens was so wide that one-third of the surroundings up to a certain height was received, and by tilting the cowl its vertical range was increased, giving a serviceable, if somewhat distorted, view of objects far above the surface.

We started; the deck beneath us sloped to a comfortable angle, then became level.

"We are 10ft. down," said Boulger, looking at his indicator. Portholes at the side showed, through thick glass, water like pea-soup; we went slowly ahead, and the pea-soup foamed past us.

"Up goes the look-out man," said Mackey, and a view of the land and water above came down the tube, and a picture spread itself like that of a camera-obscura upon the lower mirror.

Breathing was not easy, as Mackey kept the air-pressure high, which was quite necessary. The engines ticked away merrily.

We went once round the dock and back to our starting-place, where those who had been watching the progress of our look-out tube just above the surface of the water gave us a signal shriek from a steam-crane whistle. This we heard distinctly and understood, and answered "All's well!" by means of specially-emitted air-bubbles.

Then again we travelled to the other end of the dock, which was only a sloping mud-bank, faced by a row of huge wooden piles at irregular distances from each other, feeling our way cautiously, knowing easily and exactly our position both as to depth and in relation to the dock sides. We fired a dummy wooden torpedo here. For some reason or other, as we slowly rose and proceeded towards our goal, we came into smart collision with the stone edge of the dock, just at the place where we should disembark.

Boulger was steering, and said to Mackey, who was about to slide back the main hatch, "No—stop—we must come home neater than that. Off we go again—sink her to 10ft., and finish in first-rate style."

We plunged. Mackey seemed to go for his little starting-lever rather testily, I thought, and I noticed at the same time that Bawke stiffened himself and gripped the life-line tightly. We were going at a higher speed although at a lesser angle than before. Suddenly, without warning, the deck listed and slid from beneath us. Clinging to our

ropes, we were all turning somersaults. She rolled violently, but seemed about to right herself, when we felt a shuddering, sliding sort of shock—not severe, but enough to incline our tossed bodies somewhat forward, and then we were all looking at each other, all on the ceiling of the hold, the engines hanging upside down ticking away merrily, lights good, no water coming up the inverted look-out tube, which was artfully constructed and came home automatically; everything working well.

"WE WERE ALL TURNING SOMERSAULTS."

"You've done it, Mackey," gasped Boulger.

"Aye, but I'll undo it," shouted Mackey, who was sitting under the engines with his back against the side and with both hands grasping his left leg. "Aft, lads, all of you, and shake her up. She's run her snout between the piles into the soft mud at the dock end."

Although shaken ourselves we were unhurt and able to rush aft, except Mackey, who dragged himself into a position whence he could control his engines.

We jumped and we shook her up, and Mackey gave the engines all they would take, as we could tell by the vibration and swirling of the useless propellors outside. In vain—she was fixed. And we were sealed up in a cigar-shaped box 15ft. below the surface of the Orient Dock, with a limited supply of air!

It is useless to describe all the attempts we made. She was fixed. Mackey stopped his engines and lowered himself down, where he sat on what was now our floor. He was ghastly. Sweat stood out upon him.

Boulger crouched, with his face resting in his hands, complaining that he felt sick and giddy; Bawke bit at his moustache and muttered, "What a fool I was to get in this mess." O'Neill squatted and wrote rapidly.

After a few minutes' panting we looked at each other again, all but Boulger. I went across to him and, as his grateful subordinate, touched him on the shoulder and said, "Look up, sir; we shall get out of this." He shook his bowed head and did not look up.

"Some of us are here till we're handed out stiff. That's certain!" predicted Mackey. "I can't think what made her twist."

"Those infernal triple propellers," exclaimed Bawke. "She was bound to go over sooner or later. If we could get her stem clear of the mud you might, by reversing the engines, right her again."

"Especially as she's not bang over," said Mackey. "She's got a list to—to—— Hanged if I know which is port and which is starboard now. Anyway, she would have righted herself if she hadn't got jammed here."

"If that ballast——" said Bawke.

"Ballast! Ballast!" shouted Mackey, drawing his right knee up close to his chin, while his left leg was stretched straight out before him. "I tell you, man, you're gone mad on ballast. You're a croaker; you're the Jonah of this voyage."

"I'll personify Jonah, if you'll kindly find some way of throwing me overboard," remarked O'Neill. "Or a torpedo; you might fire me through the tube."

Boulger looked around him in a dazed sort of way. Mackey's voice had aroused him. "Let's try her again, lads," he said.

"Shake her again, boys," cried Mackey, dragging himself up to his levers.

So we tried again, and we shook her again until we were exhausted. She was fixed.

"Power's giving out," said Mackey, referring to his storage batteries. He sank back to his former position.

"I'm done," moaned Boulger, dropping feebly.

"There's a chance for one, perhaps two, of you," said Mackey.

A chance? Of course—the emergency door at our feet. This was merely a hinged iron plate, fastened from inside with a water-tight joint, but opening outwards.

"The hatch is jammed, and, besides, it's too big to open. But one of you ought to get through that manhole door before the rush of water comes," said Mackey, "especially as it's below instead of above. One ought to get through; two *may*; but it's a dog's chance for the third."

"We must go odd-man for it," said O'Neill. "If we all bolt at once nobody will get through."

"And make haste, because of my air cylinders," remarked Mackey.

We stooped around Mackey and spun coins—I acting for Boulger, who would pay no heed. I won the toss for Boulger, and it was with a sickly sort of joy that I recognised his chance as being worth nothing.

Then Mackey won. Again that horrid thrill of satisfaction when Mackey said in low tones: "I tossed only for the form of the thing. My leg is broken—and—besides—the craft is a failure—and—and——"

And he sank back, his face that of a man who is suffering much and expecting to suffer more. Again we hazarded. The game was mine; Bawke came next.

"Strip yourself, Jemmy," muttered Mackey—he had always called me "Mister" before. "Strip yourself and keep your arms well above your head. You're young and wiry, and ought to get through. The door only opens a foot or so. There's about a balance now between our air and the water, that'll let the door fall down—then the water'll rush in and bang the door to—then the next man's chance'll come."

"Here, take these and tuck them in somewhere," said O'Neill, handing me a sheaf of the notes he had hastily scribbled for the *Current News*. "They ought to make some noise; 'tisn't often that a dead man speaks to the public."

"Any message, sir," I asked Boulger. No answer. He kept his face covered as he bent his body downward.

Bawke was leaning, arms folded, eyes fixed on the ceiling beneath him. He whispered, "I shall follow you. I can't die. I sha'n't die!"

O'Neill was on his knees, his eyes closed, his hands clasped.

Mackey said in a very low tone, without looking up at me: "You know my lodgings, you can get my wife's address there—she's at Leith. I've led her somewhat of a dance in my time, but we parted friends, and I leave her no bairns to bother her."

"HE WHISPERED, 'I SHALL FOLLOW YOU. I CAN'T DIE.'"

As I threw off all clothes but those next to my skin, a series of thoughts coursed through my brain. Should I give way? Boulger was doomed—Mackey was doomed. Should I give way to Bawke—Bawke with his keen intellect, with that eye which sees far below the surface of any base metal worked by civilized man? Should Bawke go first?

Or O'Neill—friendly O'Neill—careless in everything but his work, open-handed, open-minded? I thought of the glee with which he had told that when he left us he was

going to meet the great Galloper, most successful of special correspondents who was just home red-hot from a battle-field, covered with Press laurels. Should O'Neill have a chance?

But myself. I thought of my mother in that southern seaport—mother, to whom my promotion brought no joy because it meant separation. A picture stopped before me—I saw her and my sister in the little house, waiting for the chief pleasure of their life, my weekly letter, and receiving, instead, the news of my awful death. And pity for them quickened the instinct of self-preservation within me.

These men were bachelors like myself—their claims for life were no more than mine, and I had won the toss. The mechanical action of tearing off my clothes had allowed all this thinking in the minute consumed by it. But now I was to make my attempt.

"I STOOD ON IT, MY ARMS STRAIGHT ABOVE ME."

I took off the clamps which fastened the door. It did not fall, although a little water oozed in through the joint. So I stood on it, my arms straight above me. Bawke rushed towards me as if he would dispute my right, and I was ready for his attack. I could have killed him or whomsoever interfered with me at that time. However, he stopped, knelt, and made ready to follow my plunge. He evidently thought the door would not close again, and meant to endeavour to force himself head-first through the rising mass of water.

Thinking all this, and much more, as I stood there with my hands touching the floor over my head, my finger-tips playing with particles of grit in the planking, I could partly realize some of the sensations of a felon as he feels the gallows-trap giving way under his feet. Suddenly the heavy cover swung downwards and I slid out. I was conscious of struggling, of abrasion, of semi-suffocation. Then I was free amongst some effervescing liquid, and I felt myself fumbling around the hull of our prison. Then a rapid ascent into growing light—a rough hug from strong hands—and I was hauled into one of the boats even then searching for us.

I looked around, water in my eyes, many questions in my ears. Big bubbles showed there was strife between air and water below, but Bawke did not appear. It was evident that the rush of water had closed the door, and that the air-pressure was insufficient to allow of its being opened a second time.

The foreman in charge of that part of the dock said, after a few hurried words of explanation and wonderment had passed: "I expect she's got nipped between them two piles there. They seemed to be forced apart; the one on the left has only been driven in a few feet."

"Then it can be shifted easily," I shouted.

I took in a great gasp of air, the value of which, boundless around me, I had never estimated; and as I thought of those below with it doled out to them, priceless, I felt equal to any effort. Hurrah! Those giant logs should be drawn further apart, and the *Watch Below* should be released. "We must heave that highest pile over. To it, my men! Foreman, you must have blocks and tackle in your shed yonder. We'll have 'em up."

We all scrambled ashore and rushed to the shed, where we found the gear we required. Speedily the tackle was stretched from the top of the pile, which stood high above its neighbour, to a fixed log on shore, giving us a straight lead for pulling the pile over in the best direction.

"Now, yeave-ho, m' lads, pull like men and not like women. Yeave-ho, break the rope. That shakes her. Heave away, m' lads; show 'em what you can do. Pull away, m' hearties."

We were all on the rope, digging our heels

into the soft earth—a tug-of-war with men's lives as the prize. Slowly, slowly, the timber yielded and opened like the jaw of some monster unwilling to give up its prey. But, as it came over more and more, the resistance was greater.

"Pull, m' lads, pull, give her fits; now then, all together. I wish I had our crane here," gasped the foreman, who was working like two men; "here are the rails, and it could be run along, but steam's not up."

"Pull, lads, pull. Grim death is against us; tug away, we'll beat him yet. Now—a supreme effort!"

Merciful Heaven, is she coming? She is! A foaming, a shout from the foreman to the men in the boats: "Back your oars, there," a swirling of propellers, and her stern

"A SWIRLING OF PROPELLERS, AND HER STERN APPEARED."

appeared. Rolling violently, she was floating at an angle, but righted, the emergency door well out of the water, the main hatch just clear, the look-out cowl all snug and undamaged.

I jumped into a boat, which was rowed to her when the rolling had diminished and her engines had stopped. To my perfect joy the door was pushed open, and I saw Bawke, who looked at me, but said nothing.

"Is all well?" I demanded.

He answered, hesitatingly: "Yes; shipped a lot of water," and disappeared as if pulled away from below.

O'Neill then put out his head, and said, in his usual tones: "Faith, my boy, this is a narrow squeak. Have you got those notes safe?"

"Boulger—Mackey!" I ejaculated. "How are they?"

"Boulger's silly and Mackey's insensible, but otherwise I believe they're all well, barring Mackey's leg. Shall I come out this way?"

"No, no; we'll get the main hatch open," I answered.

This was done, and Mackey was handed out as he had predicted, but very limp. Boulger was still dazed, and I led him away, after regaining and donning my soddened clothes.

Boulger recovered and Mackey recovered, but the *Watch Below* was doomed. Many of her patents were sold, however, and few submarine boats are now designed without owing something to the two inventors. They earned about as much as they had spent, and so, as O'Neill remarked, "The only good turn the *Watch Below* did them was when she saved their lives."