Welcome to the spring/summer from hell. I keep going back to the days when my Dad (rest in peace) use to tell "me do it right or I'll knock you into next year". I would take the shot now just to get this behind us. I pray you and yours are all well and are surviving this pandemic. In the Spring (March), Diane and I had a wonderful trip to Hawaii to visit with Dennis and Colleen Morgan, then off to the Big Island to visit with some old friends for a few days, we returned to home to an immediate shelter in place and quarantine. My health conditions required me to stay inside for 7 weeks after we got home. After some conversations with the Exec. Board it was decided to cancel the WWA624 reunion for this year and move it to next year. There was a lot of hand wringing trying to be sure we weren't overreacting, but as fate have it, we made a wise decision. Again, a special thanks to Wayne Gray for riding point with the hotel in DC. I will keep my message very short this newsletter. We are all at a vulnerable age or have health conditions that require us to be ever vigilant just like when we were on duty. Today, an old friend of mine who I worked with at Mare Island for years is having his ventilator unplugged. His lungs are gone. He is 71 years young. He will become a statistic. This stuff is no joke for those of us who have pre-existing conditions. Please take care of yourselves and your loved ones. Your kids and grandkids all want Grandpa (and Grandma) to be around when we come out the other side. And I do believe we will see the end of this someday, so stay alert and take care. God Bless.

Russ Johnston
President WWA624
Words From Your Secretary

Aloha Shipmates!

Times are difficult across the Country these days. The Covid-19 Virus has had an impact on our lives that could take years to overcome, not only in the way we live, but in the economic and political climate of the Nation. I hope that you and your family members are all well and taking precautions, so you can stay that way!

As you may be aware, Hawaii’s economy has moved primarily to nothing but the tourist industry. There are effectively no large sugar cane operations remaining, and pineapple is still being grown but not by the hundreds of acres that you might remember from past years you may have spent here. There used to be other industries here, some High Tech and some manufacturing, but costs of facilities and a general unfriendly and highly regulated business climate pushed those businesses off Island.

My point is that, as with many areas of the Country, Hawaii has been severely hurt by the pandemic. Our Governor has pushed out tourist arrivals until the middle of August, so if you come to visit now, you will have to quarantine for 14 days! Many businesses remain closed, partly due to government mandates, and partly because there just aren’t any tourists to make being open profitable. Unemployment here is very high, and with the cost of living being expensive, so many families are desperate. Something I never thought I would see in my lifetime are hundreds of cars lined up at various distribution sites across the Island every weekend, just to get donated food! I hope things in your neighborhood are a little better. We are looking forward to things improving as time goes on, and a successful vaccine to be developed and made available.

Colleen and I had to cancel our trip to Japan in late March to see the cherry blossoms due to the virus but would like to reschedule maybe sometime in the future, perhaps travelling in 2022. As I have expressed in previous Newsletters, the Washington D.C. Reunion had the promise of being a fun and very informative event for all, particularly for those who have never been there before. But as things have evolved, cancelation of 2020 Reunion and rescheduling to 2021 was, unfortunately, the best thing to do. I look forward to seeing you all in the future at another event, so be careful out there and stay well! After reading this edition of the WW Newsletter, please GO WASH YOUR HANDS!

Aloha and Mahalo!

Dennis Morgan

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<th>Board of Directors 2018-2020:</th>
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The WWA has always worked on a “voluntary” basis and the same shipmates have setup and run the Reunions. Now we are to the point that most of the Reunion Coordinators are getting “long of tooth” and need to turn over the watch to some new and “younger” shipmates. Wayne Gray has volunteered to “get qualified” and will do the Northeast. He is presently setting up the 2020 /21 DC Reunion. We are now looking for someone to volunteer to be trained to handle the Reunions for the Northwest, Southeast. WWA will provide the necessary training.

Rich Stepp has volunteered to be Southwest Coordinator.
Any shipmates that might be interested and want more details, please contact me:

Dennis Morgan, Email: morgand004@hawaii.rr.com. Tel: (808 ) 393-8930
May 11, 2020: The second Russian Graneys class SSGN (nuclear powered cruise missile sub), the Kazan, is undergoing sea trials and expected to enter service in late 2020. Russia plans to build nine Yasens and five of these are under construction. Once the Kazan was visible for fitting out and sea trials it was noted that it appeared quite different from the first Graneys, the Severodvinsk. Kazan is nine meters (27 feet) shorter than the 139.2 meter (457 foot) Severodvinsk. The bow is a different shape (sharper) and there are eight torpedo tubes instead of ten. The size and shape of the propeller/rudder system has increased. About half the length reduction at the expense of crew quarters. That is not a major problem because the crew is smaller, at 64 men, than the Severodvinsk. The length and crew reduction were accomplished with the use of more automation and improved electronics that take up less space and require less maintenance. The revisions were not expensive to implement and were apparently planned before the Severodvinsk was completed. While the Severodvinsk cost $1.6 billion the Kazan cost half that and subsequent boats are expected to cost closer to $700 million each. The navy is confident that the changes in the Graneys design will solve a lot more problems than they cause.

Russia knew it had some serious problems with the Graneys as the lead boat ran into a seemingly endless series of problems. In mid-2014, after two decades of construction effort and nearly six months of acceptance trials the Russian Navy finally put the Severodvinsk into service. This boat set some of the wrong kind of records on its way to the fleet. For one thing construction of the Severodvinsk began in 1993, based on a Cold War design and a lot of Cold War technology. Then there were the sea trials, which took two years during which the Severodvinsk was at sea 30 percent of the time (222 days) and submerged over a hundred times. There were at least five live firings of its cruise missiles. Sea trials are not supposed to go on for that long, but these SSGNs were special in so many ways.

Putting the Severodvinsk into service was delayed twice in 2013. Early on the sea trials revealed that the nuclear reactor did not produce the required power and that the ability of the boat to remain quiet while under water was not what it should be. An underpowered and noisy sub was not combat ready, and the navy demanded that the builder make it all better before 2014. This proved hard to do because in the 1990s lack of work and money meant that most of the best people left the companies that produced the nuclear subs and their complex components. Those left behind have produced a growing list of embarrassing failures. Earlier, undisclosed problems with the first Graneys postponed it from entering service for at least a year. These problems are not restricted to the Graneys, as other new subs are also encountering numerous construction and design problems.

In early 2011, the crew of the Severodvinsk took their boat to sea, or at least around the harbor, for the first time. Sea trials were to begin three months later but first the sub took baby steps to ensure that everything worked. These harbor trials were seen as a major progress. Things went downhill again after that; with a growing number of delays as more and more problems were encountered. The Kazan was different. Construction of the Kazan began in 2009 and was not completed until 2017. This was two years longer than expected and apparently the result of implementing the design changes. The third Graneys did not begin construction until 2013 and it was launched in 2019. That was two years less than Kazan and the fourth Graneys is expected to take the same amount of time and be launched in 2021. The fifth Graneys began construction a year after the fourth boat and is expected to be launched at about the same time. The Russians appear pretty confident about the redesigned Graneys, in part because once the Severodvinsk was in service it proved as quiet and capable as expected. The Americans admitted as much when they revealed that during the first long range cruise of the Severodvinsk in 2018 the U.S. Navy had a very difficult time locating and tracking it. That was unusual for Russian subs, which had previously been noisy enough for U.S. submarine detection systems to keep track of. The Kazan will have its chance to prove it is as quiet and hard to track as the Severodvinsk in a year or so when it takes a long range cruise in waters patrolled by American ASW (Anti-submarine warfare) aircraft, surface ships, subs and other submarine detection systems.
Submarines: Try, Try Again (cont)

In the end the Graney class boats were a major advance in Russian submarine technology. That was remarkable because Russian submarine building has been on life support since the Cold War ended in 1991. Many subs under construction at the end of the Cold War were cancelled, and the few that avoided that spent a decade or more waiting for enough money to resume construction. The first Graney crew was put together in 2007 and then spent years training and waiting. The crew got their new boat in 2013, but only after record delays and time spent in the shipyard getting tweaked. The 8,600 ton Graney’s all have eight VLS (vertical launch system) tubes that can carry 32 Oniks anti-ship missiles or forty slower Kalibr (similar to the U.S. Tomahawk) missiles or the more capable Kn-101 cruise missile, as well as the torpedo tubes. The Onils missiles are designed as "carrier killers" because their final approach is at high speed and difficult to intercept. The torpedo tubes were originally supposed to be larger so they could use some new torpedo designs. Those designs did not work out as planned so the standard 533mm torpedo tubes were used along older but proven torpedo designs.

The Graney’s are highly automated, which is why there is a crew of 64 that is less than half the 134 needed to run the new U.S. Virginia class boats. The Graney design is based on the earlier Akula and Alfa class SSNs. Russia had originally planned to build 30 Graneys, but now nine seems the most optimistic goal. In an effort to deal with this Russia has gone ahead with a program for refurbishing Cold War era boats just to obtain a respectable number of subs in the future. Russia considers the Graney their answer to the American Virginia class. But the Virginias are a more recent design while the Graney is a late Cold War effort that had some tech upgrades in the two decades it took to build the first one. The first Virginia began construction in 1999 and entered service in 2004. So far 19 are in service, 11 are under construction and a total of 66 are to eventually enter service.
Tucked away in its most recent budget proposal, the U.S. Navy says that it is interested in giving its submarines the ability to launch small torpedoes. These weapons could offer added offensive firepower, as well as an all-new anti-torpedo defense interceptor capability. The mini-torpedos use a common body and future variants might also arm unmanned ships or submarines, as well as flying drones, act as naval mines, and more.

The Navy’s budget request for the 2020 Fiscal Year, which came out in February 2019, asks for more than $60 million to support the continued development of the AN/BYG-1 Submarine Payload Control System. Virtually all of the service’s existing submarines use variants of this software-driven combat control architecture to launch weapons and other payloads, via combinations of torpedo tubes, vertical launch systems, or countermeasures launchers, depending on the particular design. The Navy’s future Columbia-class ballistic missile submarines and Block IV and V Virginia-class attack boats, as well as Australia’s future Attack-class, will also use versions of this system.

The funding for the 2020 Fiscal Year will go toward continuing work on the Advanced Processing Build 19 (APB19) software upgrade and updates to add other capabilities, known as Technology Insert 20 (TI-20). The Navy also says that the development of AP-B19 will support the early integration of new payloads, such as the improved anti-ship variant of the Tomahawk land attack cruise missile and improved decoys to confuse and distract incoming torpedoes.
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But the budget line also specifically mentions an “Anti-Torpedo Torpedo Compact Rapid Attack Weapons program (ATT CRAW)” as a possible new payload to integrate into the AN/BYG-1’s control systems. When asked, the Navy would not officially confirm that there are fixed plans to add either an Anti-Torpedo Torpedo or a Compact Rapid Attack Weapons capability to its submarines.
The mini-torpedo has a Stored Chemical Energy Power Systems (SCEPS) power system for its propulsor in the rear. SCEPS works by bathing a solid block of lithium in sulfur hexafluoride gas, creating an extremely energetic chemical reaction that, in turn, produces steam to drive a turbine engine. In use in torpedoes for years already, this helps make the smaller CVLWT accelerate very fast, reaching fifty percent of its unspecified top speed in less than 12 seconds on average.

At six and three-quarters inches in diameter and approximately 85 inches long, the CVLWT is significantly smaller than the latest variants of the Navy’s Mk 48 heavyweight torpedo, which is the standard weapon of this type for its submarines now. The Mk 48s are around 21 inches in diameter and 228 inches long. The mini torpedo’s typical weight, around 220 pounds, is also more than 16 times lighter than its heavyweight counterpart. So we are truly talking about a tiny torpedo here.

The Compact Rapid Attack Weapon (CRAW) has much of the same hardware, the bulk of which consists of Commercial Off-The-Shelf components to help keep production costs and maintenance requirements low, according to public Navy briefings and other documentation, but is optimized as an offensive weapon against other submarines. Both variants could offer important capabilities for various American submarines.

Navy Wants New “Seawolf-Like” Attack Submarine To Challenge Russian And Chinese Threats

The boats would be a key part of the service’s plans to revitalize its anti-submarine capabilities, but at a price of more than $5 billion each.

The U.S. Navy appears to be leaning toward developing a new, advanced fast attack submarine that focuses more on hunting maritime threats above and below the waves than on stand-off strikes against targets ashore. The decision would reflect growing concerns about Russian and Chinese submarine activity, but could come at a steep price of more than $5 billion per sub.

USNI News was one of the first to spot that the Congressional Budget Office explored the Navy’s shifting priorities in its analysis of the service’s latest shipbuilding plan for the 2019 through 2048 Fiscal Years, which it released on Oct. 18, 2018. Purchases of the Virginia-class attack submarine are supposed to end in 2033, after which the Navy expects to begin buying new boats to succeed that design at a rate of two every year through 2048. This would result in a fleet of 30 of the new subs, presently referred to simply as SSN(X).
The world submarine scene is changing fast, and it feels as if 2019 was the start of a sharp rise in the rate of development. Perhaps because of a lull following the end of the Cold War, or because of the dawn of the next industrial revolution, things are heating up.

From the perspective of the history books, in my view by far the most significant new submarine of 2019 was Belgorod. Russia’s latest super submarine, she was launched on April 24 in Severodvinsk. She is second only to the famous Typhoon Class in terms of size. But her significance is not in her size alone. She is expected to be the first submarine to carry Russia’s enigmatic super weapon, the Poseidon Intercontinental Nuclear-Powered Nuclear-Armed Autonomous Torpedo. A better term might be ‘mega torpedo.’ It is designed to be around 20 to 30 times the size of a regular torpedo, or twice the size of a ballistic missile, and to carry a 2 megaton nuclear warhead, able to target coastal cities such as New York or San Francisco. With essentially unlimited range and deep diving capability, if it performs as described, it will be challenging to counter.

And Belgorod has another trick up her sleeve. As well as carrying 6 Poseidons, she can act as a mother submarine for Russia’s secretive deep-diving midget submarines. These can work on communication cables, such as internet cables, deep below the surface. This makes her a spy submarine in common parlance.

Russia will not be alone in the submarine history books. The U.S. Navy awarded the world’s first contract for an extra-large unmanned underwater vehicle (XLUUV) in February. Boeing will build the Orca XLUUV which is essentially a full size submarine but shrunk because it has no crew. The Orca is likely to go down in history as one of the all-time most significant designs, unless another country beats America to it.
2019 Was An Important Year In Submarine Developments (cont)

In Japan, the second lithium-ion battery equipped Soryu Class submarine was launched in November. This increases underwater range of the boat. Submariners have been slow to adopt new battery technology due to safety concerns. So if Japan's project is seen as successful it could lead to another revolution in non-nuclear submarine technology.

Elsewhere, France launched the first of its Suffren Class nuclear-powered attack submarines in July. Sleek and impressive boats, these are roughly the Marine Nationale's equivalent to the U.S. Navy’s Virginia Class and Royal Navy’s Astute Class boats.

And at the other end of the spectrum, Myanmar has received its first submarine. The Kilo Class boat was formerly in service with the Indian Navy and will be used to develop the country’s submarine capability. This is part of a wider trend which sees many smaller navies building a submarine capability. Perhaps this is the bigger and more world-altering trend, hiding beneath the headline-grabbing big navy projects?

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US Unveils Terrifying New Weapon as Submarines Will Now be Armed with Powerful Lasers

THE US Navy is arming its submarines with lasers that can target enemy crafts "at the speed of light".

By BRIAN MCGLEENON Published: Feb 11, 2020

The submarines, known as the Virginia Class attack vessels are formidable weapons platforms. They carry advanced-capability torpedoes and Tomahawk land-attack cruise missiles. But now they are to be armed with a powerful laser as well.

New documents obtained by Popular Mechanics suggest the US Navy has developed lasers for its Virginia Class attack submarines.

Documents suggest the High Energy Laser could be incredibly powerful, around 300 kilowatts and eventually be up to 500 kilowatts.

The power will come from the submarine’s nuclear reactor which has a capacity of 30 megawatts.

Popular Mechanics claims “open-source budge documents” refer to the US Navy’s plans.

It explained: “Open-source budget documents, the earliest of which date back to 2011, show the Navy’s plans to arm Virginia-class nuclear subs with high-energy laser weapons.

“It’s a strange idea seeing as laser weapons definitely do not work underwater.

“Submarines are also quiet recluses by design, rarely popping their heads above water.”

While the documents suggest the US Army is working on the technology, experts warn that arming submarines with lasers isn’t exactly simple.

(NOTE: No validation of these claims were made. Story pulled from internet sources)
China continues to surprise the defense world. It is probably the only country on earth that can build a full-size submarine without any details leaking out. By comparison the name, size and general characteristics of U.S. Navy submarines are well known long before they roll out of the shed. A year ago China surprised everyone by launching a submarine that no one had been expecting. Only now are further details emerging via open source intelligence.

Until now we could only estimate her size based on the launch photos. Thanks to fresh analysis of commercial satellite imagery, which caught the new submarine outside the shipyard, we now know that she is 150 feet long and about 15 feet across. This is slightly smaller than my initial estimates and makes her compact for a submarine but still too large to be described as a midget submarine. The satellite passed overhead in September, demonstrating that she is undergoing some form of builder’s trials. She is not yet posted to an operational base.

This submarine is a unique design that has no sail to speak of. All other submarines have this fin-like structure rising up from the middle of the deck where the periscope goes. Until now it has been a defining characteristic of a submarine: this boat is flatter and has a tiny bump where the sail should go. The reason for this has been the subject of speculation. One theory is that the submarine is uncrewed, and so does not need a sail for the captain to stand in when navigating on the surface. This would make it the world’s largest and most impressive Autonomous Underwater Vehicle (AUV). China recently revealed a large AUV but that is nothing in comparison.
**WWA Web Page**

Stan Cook has been upgrading our web page on a continuous basis. If you haven’t been on the web page lately, check it out; www.usswoodrowwilson.com

**Ships Store:** I’ve added the new Challenge Coins to the Store. I’ve still got about 30 Coins on hand.

Here's link: [https://websitesbycook.com/wilson/ships-store/](https://websitesbycook.com/wilson/ships-store/) If you don’t want to order via the PayPal system, you can just send a check and correct shipping address to: WWA, P O Box 868, Seabeck, WA 98380.

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**New Ships Store Item**

I’ve been working with one of my Ships Store providers (Unlimited Details) to make us some License Plates. I’ve queried some of the shipmates to see what interest there is. So far I’ve got positive responses from about 20 shipmates (only the ones I could reach via email). I would like to hear from the shipmates who are interested, but haven’t responded. We’ve established a price of $20 each (that includes S & H).

Obviously, these Front Plates can only be used in the States that allow same, but you could still buy one and put it up in your garage.

Please contact me with your response at 360-271-9830 or email: mcross@telebyte.com.

**To order send check & mailing address to:** WWA, P O Box 868, Seabeck, WA 98380. Allow 10 days for delivery.

Thanks,

Mel
Sorry to say that we have been informed of the loss of more shipmates: (many of the Death notifications that we receive are way after the event):

*Our condolences go out to the family and friends.*

**Kermit Beaver, EN1/SS, Gold 1965-67**

**Larry Duke, MM3/SS, Blue 1964-67**

**James Murphree, RM1/SS, Gold 1965-68**

“*Sailor Rest Your Oar*”

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**Shipmates on Eternal Patrol**

Part of a Burial at Sea ceremony aboard the USS Newport News