UPDATED FORCE MAP FOLDOUT INSIDE

FALL 2018

UNDERSEA WARFARE

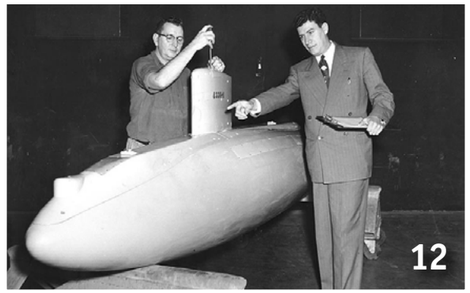
U. S. SUBMARINES... BECAUSE STEALTH MATTERS

UNDERSEA WARFIGHTING:

"PREPARE FOR BATTLE"

INSIDE

Issue No. 66 Fall 2018



UNDERSEA WARFARE

THE OFFICIAL MAGAZINE OF THE U.S. SUBMARINE FORCE

UNDERSEA WARFIGHTING:

"PREPARE FOR BATTLE"

On the Cover

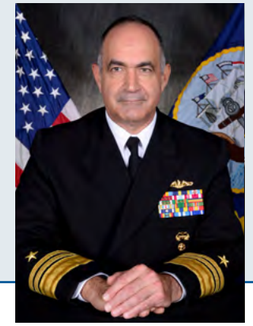
An unarmed Trident II D5 missile launches from the *Ohio*-class ballistic missile submarine USS *Nebraska* (SSBN 739) off the coast of California. The test launch was part of the U.S. Navy Strategic Systems Program's demonstration and shakedown operation certification process.
Photo by Mass Communication Specialist 1st Class Ronald Gutridge

Departments

UNDERSEAWARFARE is online at:www.public.navy.mil/subfor/underseawarfaremagazine

FORCE COMMANDER'S CORNER

Vice Adm. Charles A. Richard, USN
Commander, Submarine Forces



Undersea Warriors,

Greetings from Norfolk! This edition of *UNDERSEA WARFARE Magazine* is truly special to me as it is not only my first Force Commander's Corner, but also because its theme, warfighting, is so important to me. Lisa and I are honored to have been given this responsibility, and we look forward to the rewards and challenges of serving as your Force Commander.

Since I relieved Vice Adm. Tofalo in August, I've had the opportunity to visit and speak to Sailors in Norfolk, King's Bay, and Groton, as well as get some underway time on USS *Washington* (SSN 787). I must say that I have been impressed with the technical expertise, professionalism, and character of every Sailor I've encountered. It's truly our Sailors that make us the finest Submarine Force in the world.

"We must provide our leaders with credible options to protect America from attack, to advance our prosperity, further our strategic interests, reassure our allies and partners and deter our adversaries."

If you haven't done so recently, I'd like you to read through our updated Commander's Intent at https://www.public.navy.mil/subfor/hq/Documents/Commanders Intent March 2018.pdf and focus on the letter on page 12, Commander's Guidance to All Members of the Submarine Force and Supporting Organizations. That letter really gets to the heart of what it means to be a Submariner and a member of our organization. Then, as you read this issue of *UNDERSEA WARFARE*, I want you to think about your role in warfighting within the greater undersea enterprise. We exist in a world of great-power competition, and understanding what is expected of us is fundamental to our ability to properly respond should we be required to react to a crisis.

In this issue you'll read about historical innovations that have increased submarine lethality, how technological and tactical developments are increasing our warfighting capability, and the characteristics common to successful submarine commanders in combat. We must provide our leaders with credible options to protect America from attack, to advance our prosperity, further our strategic interests, reassure our allies and partners, and deter our adversaries. These rest on the ability of the Navy and our Submarine Force to win decisively if conflict breaks out. To that end, we must instill a warfighting culture in everything that we do.

Prepare for battle.

Our nation needs you.

AAIII!

C. A. Richard

DIVISION DIRECTOR'S CORNER

Rear Adm. John W. Tammen, Jr., USN
Director, Undersea Warfare Division

Undersea Warriors,

I have been in the job for 10 months, and it's clear to me that, although we dominate the undersea domain today, we must continue to accelerate our efforts to deliver next-generation capabilities to our warfighters. Russia and China recognize the asymmetric advantage of the undersea domain and are determined to close the gap. The CNO challenged us to expand our margin relative to undersea superiority. To that end, we will strive to make our ships and weapons more lethal, improve our stealth, increase our reach, leverage artificial intelligence and machine learning, and get technology in the hands of the warfighter faster. Vice Adm. Richard's vision is clear: "Prepare for battle!"

Since this summer, I attended the Advanced Naval Technology Exercise (ANTX) at the Naval Undersea Warfare Center in Newport, R.I.; spoke at the Joint Undersea Warfare Technology Conference in Groton, Conn.; and briefed the Naval Submarine League's Fall Symposium in Crystal City, Va. Military, government, industry, and academic leaders attend these events, which are critical to align our efforts to swiftly get combat-credible capabilities to the Fleet to increase our lethality. One recurring theme was evident at all the venues and through all the speakers: the United States is once again engaged in a great power competition. To outpace these threats, I firmly believe we will only get *faster* through experimentation and not through PowerPoint presentations. This is what made ANTX a phenomenal event; participating organizations developed prototypes and put them through their paces *in the water*. Expect to see more at-sea demonstrations, experimentation, and tactical development exercises in the future.

"We have the best people and the best training. Now is the time to get them the best tools and tactics to outpace our adversaries in this great power competition."

The continued success of our Submarine Force relies on our ability to train and execute across a broad spectrum of warfare areas. In the CNO's words, we have to advance our high-end capabilities so *we* control the de-escalation of conflict across all domains. In the undersea domain, this requires expanding our tool set beyond ADCAP torpedoes and TLAMs; we need more ways to give our enemies a "bloody nose." As such, N97 is developing a spectrum of weapons and payloads to maximize the lethality of the submarines our Sailors take to sea, give operational commanders increased firepower in our response, and allow us to confront our adversaries from the seabed to multiple domains.

In addition to payloads, our boats must evolve with the threat. The Tactical Submarine Evolution Plan (TSEP) is synchronizing our future submarine design efforts to drive additional capability and lethality into Blocks V, VI, and VII of the *Virginia* class. At the same time, the TSEP is guiding our development of the New SSN. Finally, we transitioned the Integrated Undersea Surveillance Systems (IUSS) family of fixed, mobile, and deployable sensor systems to N97. Realizing that Theater Undersea Warfare (TUSW) is not just about submarines but is a team fight, this re-alignment within the undersea enterprise puts us in a better position to develop technologies across the undersea domain and build a truly integrated undersea infrastructure.

In this great power competition, we must maintain our advantage in the undersea domain. This being the warfighting edition, I must recognize the principal reason for our strength as a submarine force. We have the best people and the best training. Now is the time to get them the best tools and tactics to outpace our adversaries in this great power competition.

J. W. Tammen, Jr.

UNDERSEA WARFARE
The Official Magazine of the U.S. Submarine Force

Charter

UNDERSEA WARFARE is the professional magazine of the undersea warfare community. Its purpose is to educate its readers on undersea warfare missions and programs, with a particular focus on U.S. submarines. This journal will also draw upon the Submarine Force's rich historical legacy to instill a sense of pride and professionalism among community members and to enhance reader awareness of the increasing relevance of undersea warfare for our nation's defense.

The opinions and assertions herein are the personal views of the authors and do not necessarily reflect the official views of the U.S. Government, the Department of Defense, or the Department of the Navy.

Contributions and Feedback Welcome

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CHINFO Merit Award Winner

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LETTERS TO THE EDITOR

In keeping with *UNDERSEA WARFARE* Magazine's charter as the Official Magazine of the U.S. Submarine Force, we welcome letters to the editor, questions relating to articles that have appeared in previous issues, and insights and "lessons learned" from the fleet.

UNDERSEA WARFARE Magazine reserves the right to edit submissions for length, clarity, and accuracy. All submissions become the property of *UNDERSEA WARFARE* Magazine and may be published in all media.

Please include pertinent contact information with submissions.

Send submissions to:
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★ MEDAL OF HONOR MOMENT ★

Cmdr. Samuel D. Dealey

COMMANDING OFFICER USS *HARDER*

For conspicuous gallantry and intrepidity at the risk of his life above and beyond the call of duty as Commanding Officer of the U.S.S. *Harder* (SS-257) during her 5th War Patrol in Japanese-controlled waters. Floodlighted by a bright moon and disclosed to an enemy destroyer escort which bore down with intent to attack, CDR Dealey quickly dived to periscope depth and waited for the pursuer to close range, then opened fire, sending the target and all aboard down in flames with his third torpedo. Plunging deep to avoid fierce depth charges, he again surfaced and, within 9 minutes after sighting another destroyer, had sent the enemy down tail first with a hit directly amidship. Evading detection, he penetrated the confined waters off Tawi Tawi with the Japanese Fleet base 6 miles away and scored death blows on 2 patrolling destroyers in quick succession. With his ship heeled over by concussion from the first exploding target and the second vessel nose-diving in a blinding detonation, he cleared the area at high speed. Sighted by a large hostile fleet force on the following day, he swung his bow toward the lead destroyer for another "down-the-throat" shot, fired 3 bow tubes and promptly crash-dived to be terrifically rocked seconds later by the exploding ship as the *Harder* passed beneath. This remarkable record of 5 vital Japanese destroyers sunk in 5 short-range torpedo attacks attests the valiant fighting spirit of CDR Dealey and his indomitable command.

by COMSUBLANT Public Affairs

Q&A with Vice Adm. Richard

A native of Decatur, Ala., Vice Adm. Charles "Chas" Richard began his Navy career in 1982 after graduating with honors from the University of Alabama.

His operational assignments include command of USS *Parche* (SSN 683) as well as Submarine *NR-1*, then the U.S. Navy's only nuclear-powered, deep-submergence submarine. He also served aboard USS *Portsmouth* (SSN 707), USS *Asheville* (SSN 758) and USS *Scranton* (SSN 756).

His staff assignments include service as the executive assistant and naval aide to the Under Secretary of the Navy; chief of staff, Submarine Force Atlantic; and command of Submarine Squadron (SUBRON) 17 in Bangor, Wash. Other staff assignments include director of resources, Under Secretary of Defense (Policy); squadron engineer of SUBRON 8, and duty on the Deputy Chief of Naval Operations (Submarine Warfare) staff. He has also served as a member of Chief of Naval Operations' Strategic Studies Group XXVIII, studying the integration of unmanned systems into naval force structure.

Vice Adm. Richard's Flag Officer assignments include command of Submarine Group 10 in Kings Bay, Ga.; director of Undersea Warfare (OPNAV N97) at the Pentagon; deputy commander, Joint Functional Component Command for Global Strike at U.S. Strategic Command, and deputy commander, U.S. Strategic Command.

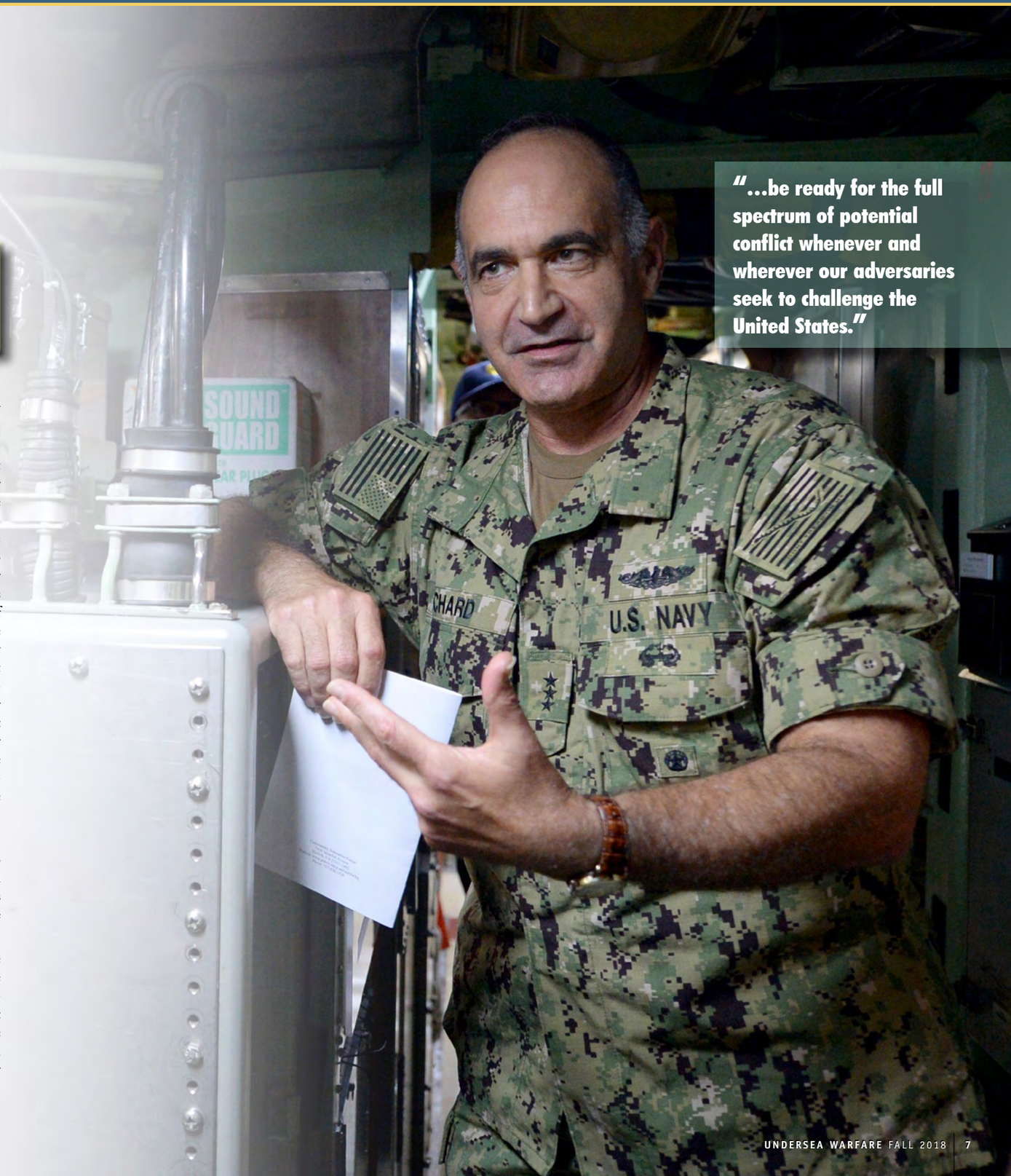
Upon assuming his current duties as Commander, Submarine Forces in August, Vice Adm. Richard took some time to share his thoughts on the future of the Submarine Force.

When you relieved as Commander, Submarine Forces in August, you told the men and women of the Submarine Force to 'prepare for battle.' What did you mean by that?

When I said, "Prepare for battle," I meant what I said, which is a direct order to prepare for battle. We have returned to a period of great-power competition, great-power competition that is based on the reality that we are threatened by those that seek to change the current global order, balance, and way of life we have defended as Americans for decades. This has required our forces—not just the Submarine Force, but all of our forces—to be ready for the full spectrum of potential conflict whenever and wherever our adversaries seek to challenge the United States. The fact is our Sailors may be called upon to go into a situation where they don't come home if they don't do their jobs correctly. Our submarines are equipped with the most lethal weapons and technologically advanced equipment in the history of undersea warfare, but that's not enough. Keep in mind that we have not shot a torpedo in anger since World War II. This is a credit to our ability to deter conflict, but there are no guarantees in the future. Now is the time for commanding officers and crews to rehearse the fight, our tacticians to adapt and adjust our tactics and processes for the threats we will face, and our enemies to recognize the cost of challenging our combat-ready Submarine Force. So when Rear Adm. Caudle and I say, "Prepare for battle," our submarines and crews have to be combat ready at all times. Should deterrence fail, we must be prepared to win.

The CNO recently said that our naval forces must be prepared to "operate globally from the sea floor to the stars and in the information domain to deter aggression and to peacefully resolve crises on terms acceptable to us and our allies." What do you see as the role of the Submarine Force in that effort?

Fundamentally, we are in a threat-based environment. That means our role as a Submarine Force and the greater maritime force has to be focused on the current threats across the full spectrum of geographical and spatial boundaries vice just our own capabilities. I think it's important to recognize that today's Submarine Force has an impact within every domain. Whether it be on the sea floor, within the water column, on the surface, on land, in cyber, or in space, today's submarines are delivering capabilities unlike any other platform in any navy.



"...be ready for the full spectrum of potential conflict whenever and wherever our adversaries seek to challenge the United States."

As the only survivable leg of our strategic deterrent triad, and carrying approximately 70 percent of the nation's accountable nuclear warheads, our SSBN force is always on watch, worldwide and undetected. Deterrence is all about denying benefit or imposing unacceptable cost. Without even having to shoot, just having our SSBN force underway every day helps ensure that potential adversaries know the United States has credible and effective options at any level of escalation.

I firmly believe that deterrence has helped prevent major power war for over 70 years. But deterrence isn't just based on nuclear weapons. With our ability to conduct undetected operations in a denied environment, our SSN and SSGN forces have a unique access that allows them to collect vital intelligence in support of our national interests. Likewise, we have to treat cyber and electromagnetic warfare as warfare domain areas. That touches on how we conduct defensive and offensive operations within both the physical and virtual spheres.

As the CNO has said, the best way to avoid a fight is to develop the most powerful, deadly, and competitive Navy possible. Not only to deter a potential adversary, but to ensure that when called upon, we conduct decisive combat operations to defeat any enemy. That's no easy task, but I know we have the right people for it. That is one piece. The other piece is to maintain a constructive paranoia about how we measure our readiness and strategically think about the future.

Business as usual will not retain our competitive edge. Instead, we must continuously and aggressively innovate in how we will develop a ready force for today and tomorrow, how we will fight today and tomorrow, and understand what our adversaries are doing today and tomorrow. When you integrate unmanned systems, our access becomes even greater as we grow longer arms, extend our reach across multiple spectrums, and effectively multiply our Force. We're able to leverage our stealth to penetrate defensive perimeters to deny safe haven, reduce the enemy's defense, and expand our influence into areas where we would otherwise not have access. Our potential adversaries know all of this, and it's our ability to remain far-forward, on scene, and unseen that helps deter potential adversaries.

What do you think we need to do as a Navy and as a Force to ensure that we are prepared for the war of the future?

As we published in our Commander's Intent back in March, the mission of the Submarine Force is to execute the Navy's mission in and from the undersea domain. In order to do that, we must focus our efforts on warfighting capability, capacity, and endurance. We have to ensure the readiness and operational proficiency of our crews to safely and stealthily execute challenging missions.

Again, for the first time since the fall of the Soviet Union, we are experiencing a return to great-power competition. With a rising China and a resurgent Russia, the United States' ability to conduct sea control and power projection is now threatened. Our National Defense Strategy, which is guided by the President's National Security Strategy, directs our Navy to protect the American homeland, to promote American economic prosperity, and to advance American influence throughout the world. This requires effort at every level; at the Type Commander, within our maintenance organizations, and on the waterfront.

Even under the context of peacetime operations, we must deploy submarines ready to conduct high-end combat operations. This means the ability to surge SSNs in support of Operational Plans, homeland defense, and Theater ASW operations. We must continue to develop, refine, and validate our plans to rapidly respond to all wartime contingencies. Most importantly though, it's absolutely imperative that we instill a warfighting culture in everything we do. We can do that by developing toughness while guarding with jealousy those aspects of being an elite force. This, at its core, means we must operate with character and integrity because only through trust can our submarines be successful. When our Sailors are underway and lying in their racks at night, or driving home from work, they should reflect on their day and feel satisfied that they've done their part to ensure their ship and our Force are prepared to win in battle.

How do you think we prepare our Sailors to have this mindset?

Like I've said, we're in the business of achieving victory in battle. Our Sailors must be prepared to fight and win. It's important to recognize, though, that the enemy is fighting to win too. So when the day comes when we begin trading ordnance with an enemy, we don't want to get surprised. Our crews must be ready to respond quickly because our assumptions are not going to hold in battle. We've got to make sure that we build resiliency within our teams to ensure they can respond to adversity. To do that, we've got to build trust such that every member of the crew knows that every Sailor aboard is going to do his or her job when needed.

We've also got to give the enemy unsolvable dilemmas because, in battle, it's us or them. Our Sailors need to recognize that if we're not better than the enemy, we won't be coming home. The good news is that we've got an elite Force filled with the greatest Sailors in the world. Rear Adm. Caudle and I know that every one of them is doing everything they can to make sure they are the best. We can look at history and see that, whenever called upon, the Submarine Force has always responded with resounding success. Just this year the USS *John Warner* (SSN 785) successfully launched Tomahawk land attack cruise missiles into Syria. It's not hard to find examples of that type of success throughout the recent and past history of the Force.

What are some things that are going on across the Force that will help ensure we can deliver on the imperatives you discussed?

First, we must ensure we have the right equipment to deliver on those imperatives. In support of that, we are continuing to deliver two *Virginia*-class SSNs per year. It's absolutely essential that we continue that build rate as we drop to 42 SSNs in the late 2020s. It's crucial in our ability to meet the requirement of 66 SSNs. The *Columbia*-class SSBN is on schedule to be ready to replace our *Ohio*-class SSBN fleet. We continue to work on improvements to our missiles, our torpedoes, and our cyber and electromagnetic warfare capabilities by pursuing a family of weapons that compliments the characteristics of our submarines. We're also working to achieve a family of unmanned aerial and underwater vehicles. These vehicles will extend our reach more than ever before. They will allow our Force to accomplish missions we are unable to today. Just last year we established Unmanned Undersea Vehicle Squadron (UUVRON) 1 to field all of the Navy's UUV family of systems to meet fleet tasking.

In addition to equipment, we're focusing on training. We've restructured and retuned the SSN training period for the high-end fight. This includes restructuring the Combat Readiness Evaluation and Pre-Overseas Movement Certification to eliminate duplication and put the right focus in the right place. We're working to drive competition inside the Force and into our processes to produce winners and losers, like you would have in battle. It does us no good to be "At Standards" when the other guy is "More At Standards." This will help ensure that our submarine crews are achieving their maximum warfighting readiness for Surge Ready certification while also ensuring that their challenging peacetime mission skills peak for deployment. We've also restructured the timing and focused the content of Pre-Deployment Training to maximize that readiness piece even further. Taking a page from the aviation community, we are establishing an aggressor squadron with a team that will become experts in studying our adversaries' tactics and capabilities in order to more accurately reflect their tactics and capabilities within our trainers and evaluations.

Photo by Mass Communication Specialist 1st Class Jeffrey M. Richardson

Machinist Mate (Weapons) 1st Class Mark Hoel demonstrates the torpedo system aboard USS *John Warner* (SSN 785) to Commander, Submarine Forces, Vice Adm. Chas Richard.

What barriers exist that could prevent the Submarine Force from being able to accomplish its warfighting mission?

There are a few things that we can do as a Force to ensure that we are ready to accomplish the mission. First and foremost, as previously mentioned, we must continue to be a Force that maintains the highest of standards when it comes to character, trust, and integrity. We have to continue to nurture and generate leadership from the most junior Sailor on the deck plate to the commanding officer that recognizes the standards we are held to as Sailors so that, when we are challenged in combat, our success is built on trust with each other. This trust also takes the form of ensuring that an environment exists that welcomes critical feedback regardless if it comes from the newest Sailor aboard or within the Command Triad. Equal is acting on and being responsive to feedback.

Evidence of struggle in this area comes in the form of a poorly executed Plan of the Day, maintenance refit period, or simply a Sailor not knowing what he is doing at work the next day before leaving to go home. We've all got a part to play in supporting these goals. If there are Sailors out there with good ideas or some way to better conduct business, I want to hear from them. In fact, give them my email address and they can write me directly (charles.a.richard2@navy.mil).

Shifting gears, over the past eight years, six SSNs have taken or are projected to take 50 percent to 100 percent longer to complete overhauls, with the shortest delay being a non-trivial 11 months. That's something that we are getting after. These challenges directly impact our ability to provide ready forces, and we have to close the gap.

Second, while today we continue to enjoy a real advantage in undersea capabilities, our competitors are working hard to narrow the gap. As a result, we have to measure our readiness not based on our internal metrics but realities of our adversaries and the threats they pose. I encourage everyone to ask themselves how they know they are ready. I think most people would respond to a metric or evaluation standard; but remember, we defined those standards and metrics, not our adversaries. So we can't rest on just meeting the standard.

Rear Adm. Caudle and I need our teams to frame everything that they do through the lens of warfighting and do so with a sense of urgency. We have to challenge ourselves, compete internally across watch sections, and drive to develop expertise across the full spectrum of submarining. For example, it is not enough to just shoot a snapshot. We must be able to execute the full range of motion from rules of engagement to the presets to firing the snapshot to drafting the after action report. Again, ask yourself how you know that you and your team are ready for combat.

Third, going back to cyber and electromagnetic warfare, we have to treat our virtual ship the same way we treat our physical ship. Just as the chief walks through divisional spaces, deck plate and command leadership are expected to conduct virtual ship tours. The failure of SUBLAN, the inability to logon to the shared drive to plan maintenance, open a work authorization form, or conduct operational planning can result in the same mission kill as a loss of propulsion or grounding. We have to ensure we treat our cyber and IT aboard just as we do our engineering spaces. Doing this will go a long way in ensuring we have full ship readiness.

Any parting words for our readers?

I can't tell you enough just how proud Rear Adm. Caudle and I are of each and every Sailor in the Submarine Force, not just because of the amazing things that they are doing every day across the fleet, but because of the decision that they made to defend our nation by joining the Navy and the Submarine Force. It is a rare character trait to raise your hand and pledge yourself to a cause greater than yourself, and that is reflected in just how few people are willing to make that commitment today. More importantly, though, our Sailors have earned the respect and admiration of the American people. I think that sometimes our Sailors are too close to it to recognize just how amazing what they are doing day in and day out is. In August when we had the change of command on USS *Washington* (SSN 787), every civilian I talked to was in awe of the Sailors they interacted with. They're taken aback by the technical knowledge and professionalism exhibited by our Sailors. Very few people in this country are willing to do something that requires such sacrifice, and I couldn't be more proud of our Sailors for doing it. I am proud to be your Force commander. And so to the Sailors of the Submarine Force, thank you for all that you do and for dedicating your lives to this great Force.

UNDERSEA WARFARE TODAY AND TOMORROW

by Staff of Undersea Warfare Development Center

"If deterrence fails, the Navy will conduct decisive combat operations to defeat any enemy."

–ADM John Richardson, USN;
"A Design for Maintaining Maritime Superiority," January 2016.

A simple statement, elegant and succinct, and at the same time both broad and deep in context: "...decisive combat operations to defeat any enemy." Submarine crews operate arguably the most complex and capable weapons of war in history, but these capabilities will be squandered if their crews and the commands involved with submarine operational employment are unable to appreciate and meet the challenges of being decisive against any potential adversary. Warfighting professionals must constantly ask themselves, "Are *we* truly ready to meet the commander's intent?"

In reading Capt. R.B. Laning's excellent examination of wartime submarine commanders, "Submarine Command in Transition to War" (reproduced in this issue), one recognizes that the lessons he describes from World War II are just as valid today. Times and technologies may change, but the need for brave, intuitive, and capable warriors remains as equally vital today as it ever was; if anything, the complexities and demands of modern naval warfare have increased this need.

From the Undersea Warfighting Development Center's (UWDC) perspective, these complexities and demands are broken down into two distinct yet closely coupled lines of effort (LOEs): Submarine Warfare and Integrated Operations. The first LOE involves the fundamentals of ensuring that a submarine's crew employs its unique capabilities to the maximum desired effect, and the second LOE involves leveraging and integrating these same key capabilities across the range of the Fleet Design document—in particular, Distributed Maritime Operations.

Working the first LOE, UWDC has two groups dedicated to ensuring that submarine crews' warfighting readiness remains at the levels required of a fight against a modern, sophisticated adversary: the Tactical Analysis Group (TAG) and the Arctic Submarine Lab (ASL). The TAG is based in Groton, Conn. with a detachment in Pearl Harbor, and ASL is based in San Diego.

The TAG is constantly advancing two broad fronts: ensuring that current tactical doctrine and operating guidance is up to date, and second, ensuring that as new combat systems are fielded across the Submarine Force, effective tactical doctrine is already in-place such that crews can fully employ new capabilities from day one.

In terms of tactical doctrine, the TAG maintains a persistent effort to develop, plan, execute, and analyze submarine at-sea exercises with the ultimate goal of providing the most effective tactical doctrine to the Fleet. These tactical development exercises are uniquely constructed along these LOEs, and TAG team members routinely embark participating submarines to both evaluate a tactic's effectiveness and receive feedback from and provide feedback to the Force. The value of direct feedback from the Force cannot be overstated; hearing from the actual operators of our new systems has provided some of the best and innovative advances to our Submarine Force doctrine.

UWDC and the Submarine Force rely on the Fleet operators to drive the out-of-the-box thinking on better ways to employ capabilities, both current and emerging. The high-end fight is dynamic and fluid. The adversary is constantly evolving, and the teams that are best suited to staying ahead of the problem are those waterfront commands who have the latest operational experience. Frontline expertise and perspective is crucial to mission success; commands are encouraged to propose better ways to fight.

A separate but closely related TAG effort involves the use of Artificial Intelligence and Machine Learning (AI/ML) to improve submarine crew situational awareness and buy back decision time, particularly in high-tempo environments such as high-density shipping areas or approach and attack. The TAG is actively engaged with organizations inside and outside the Navy to explore, adapt, and field technologies that will streamline some of the more repetitive and routine but necessary tasks currently performed by watchstanders. The goal is to rapidly introduce systems meeting this intent without the delays inherent in the normal acquisition process.

The team at ASL similarly has a two-pronged LOE: prepare submarine crews for Arctic operations today and lead the development of tactics, techniques, and procedures (TTP) for tomorrow. *UNDERSEA WARFARE*'s summer 2018 edition extensively covered ASL's most recent biannual Ice Exercise, but on any given day ASL is closely involved with global submarine operations. Specialized equipment installation/de-installation, training, and the embarkation of ASL Arctic Operations Specialists are just a few of the many activities conducted by these highly trained professionals.

Ensuring that the individual submarine can fully employ its range of capabilities forms the foundation of the Submarine Force contributions to the Joint fight. As the tenets of Distributed Maritime Operations dictate, these contributions must in turn be fully integrated into wider, theater-level execution supporting the Joint Force Maritime Component Commander. This integrated fight is the focus of effort for the UWDC Norfolk and San Diego detachments.

The San Diego and Norfolk teams have two primary audiences: Strike Groups (SGs) and Theater Anti-Submarine Warfare Commanders (TASWCs). UWDC works with other Navy stakeholders at all levels of command, including Numbered Fleet staffs and Carrier Strike Groups (CSGs) 4 and 15, to ensure that ASW capabilities and skills at the tactical and operational levels are sufficient to win tomorrow's complex battles. While this LOE originally targeted CSGs, the fielding of the F-35B Joint Strike Fighter brings with it expanded power projection capabilities for the Expeditionary Strike Group (ESG), which in turn has increased the demand for integrated ASW training.

Training for both SGs and TASWCs range from peacetime operations through escalation of hostilities. Across the spectrum, the focus of training shifts from primarily a defensive posture to more aggressive, offensive operations that emphasize and stress the coordination between the Warfare Commanders to achieve Numbered Fleet and Combatant Commander objectives. Since these integrated efforts bridge multiple platforms, close coordination with other warfighting development centers and the Naval Warfare Development Command (NWDC) is a critical element of this effort. Be it afloat training as part of a SG Optimized Fleet Response Plan or ashore training delivered to senior leadership and TASWCs and their staffs, UWDC subject matter experts provide classroom and afloat instruction and, when required, key assessments of ASW mission readiness.

The UWDC staff that supports the training and assessment LOE is composed of officers and senior enlisted Sailors with backgrounds from all of the Undersea Warfare (USW) warfighting communities: surface, submarine, fixed- and rotary-wing aviation, and information warfare. They in turn are supported by an equally diverse staff ashore who work the reconstruction and analysis necessary to provide rapid, detailed feedback to the commands conducting and evaluating the various training and rehearsal events.

Across the Navy, at levels of command from fire control parties up through Fleet commanders, UWDC engages to ensure alignment, synchronization, and unity of effort for those forces that produce effects in and from the undersea domain. The most recent result of this engagement is the development of Full Spectrum USW, a coordinated, integrated, coherent roadmap to the undersea warfighting force of the future, a force that can fully execute the Fleet Design and out-match any adversary. Understanding the "decisive combat operations" imperatives of a potential conflict today, UWDC is committed to its LOEs that generate the necessary readiness to "fight tonight," all while using that knowledge as a foundation to ensure readiness for the potential fights of tomorrow.

Combat by its very nature is a demanding task, both physically and mentally. Success is never guaranteed, but thorough preparation mitigates the risks. Given the ever-expanding capabilities of potential adversaries, it is essential that every single member of the watchstanding team have a detailed knowledge and understanding of the threat, our Force's TTPs, and the individual and collective responsibilities of his or her command. This knowledge requires dedicated study and practice at every opportunity (a point Laning's article also raises).

As a member of the Submarine Force, you may at this point be asking yourself if it's reasonable to expect that you'll be able to read and fully understand the myriad manuals, documents, publications, etc. required of your profession, regardless of what position in the crew you hold. If you think that committing the requisite time to your warfighting profession is unrealistic, consider this remark: "Thanks to my reading, I have never been caught flat-footed by any situation, never at a loss for how any problem has been addressed before. It doesn't give me all the answers, but it lights what is often a dark path ahead... A real understanding of history means that we face NOTHING new under the sun." The source? Secretary of Defense James Mattis. Put another way, also attributed to the Secretary of Defense, "The problem with being too busy to read is that you learn by experience (or by your men's experience), i.e., the hard way."

Success in combat begins with a solid foundation in warfighting fundamentals—TTP. As the warfighting development center for the undersea domain, UWDC's LOEs are driven by the imperative to provide this foundation to the entire USW team. When these fundamentals are amplified by individual and collective initiative, courage, and determination, history demonstrates that the U.S. Submarine Force, and the U.S. Naval Force as a whole, presents a potential adversary with a true Hobson's choice: choose not to challenge us at sea, for if you do, *we will prevail*.

Submarine Command in Transition to War

The start of WWII was a step into uncertainty for submarine commanding officers. For some, war was an environment to which they failed to adapt and consequently they proved a disappointment to the submarine service. Can lessons be learned from this past experience for those who will command our more modern boats at the start of a next conflict?

I was in carriers until after the Battle of Midway and hence had no first-hand experience regarding the transition to war of submarine COs. But I have subsequently examined this problem through questioning of submariners and through an extensive reading of submarine patrol reports. My own later commands in submarines brought this problem into focus and has caused me to attempt to examine it more seriously.


Capt. Richard B. Laning, USN

Prior to WWII, submarine COs were a very carefully selected elite. Most in the initial part of WWII performed heroically with imagination, daring and dogged persistence in spite of poor intelligence and poor torpedo performance. Yet there were some who didn't, and proved expensive to the war effort. Why COs failed or succeeded needs to be illuminated. The observations made in this article are not only mine but those of many other submariners who have proved equally interested in this problem. Hopefully, the judgments derived on the basis of the past history of COs transitioning to war may serve to alert present submarine commands to ways and means for minimizing this problem for a next big naval war.

Looking at several types of peacetime COs who proved inadequate in war, there is first the officer who appeared to be, in virtually every sense, first rate—hyperactive, charming, articulate and an outstanding administrative officer, he was nevertheless too "high strung" to stand the stresses of war. In the low budget years prior to WWII, submarine operations were insufficiently extensive to test this characteristic in this type of man. Today's intensive nuclear submarine operations, however, should more readily disclose this type of weakness.

A second type of CO who proved inadequate was a product of the slow rates of promotion which prevailed prior to WWII. This resulted in many COs being over 40 years of age at the start of the war. Thus, some were likely to need early relief due to physical exhaustion, lack of sleep, discomfort due to poor submarine habitability, lack of exercise, etc. Today, the ages of nuclear submarine COs are climbing and war would pose this problem for some of them. However, their greater operating experience and better shipboard living environment should make age a less important factor in adapting to wartime conditions.

A third type of inadequate CO was again the result of low budgets. The variety of operations and functions carried out by peacetime pre-war skippers was low. Competition between COs was based largely on appearance of self, crew and boat. Hence a tendency was fostered to have a submarine present a best appearance in any of the rare operations conducted—meaning that the CO tended to always put the most experienced officer, himself, in charge of every function.

The result was that when war came, such officers proved readily overworked and exhausted from war action. Today's far more extensive operations, improved submarines and greatly improved methods of training and delegation of jobs should make patrol exhaustion less of a factor in a war. Additionally, the rapid force expansion experienced in WWII submarines, with Reserves, and the greatly increased training load they inflicted on submarine COs is not so likely in a nuclear powered force which is far less susceptible to rapid expansion.

Perhaps the CO most susceptible to failure was the one who worried too much about the unknown. The scarcity of information on the enemy at the start of WWII is hard to imagine in today's environment of a seemingly overwhelming amount of information about everything. The profile of the Japanese naval man was ill-defined and most derogatory. The characteristics were only too frequently badly exaggerated. Aircraft, for example, were felt to be far more of a threat than they actually proved. And the enemy waters where U.S. submarines fought were poorly described. Obsolete Dutch charts for the Borneo area, for example, were the only navigational charts available. Sonar was primitive and of little help to the CO in the assessment of a situation. Radar was very erratic or didn't exist. The bathythermograph arrived later in the war. Effective evasion tactics could only be guessed at. In fact, early detection of enemy threats was unlikely and hence a skipper's imagination could easily run riot if he concentrated too much on the possible dangers close around his submarine. At the same time, the WWII CO in transition was stressed by an uncertainty about the performance of his submarine's power plant, the diesel engine, and a great uncertainty about his weapons, mainly the torpedo. The HOR engines were an example of the former material problem. Known as "the Kaisers revenge" these diesel engines with a high horsepower per pound ratio, rarely ran for five hours without failure of the myriad of oil lines needed for their functioning. Why such an abortion could be accepted by the Navy was evident when I checked the peacetime correspondence and logs on the engines of the submarines I served on.

Although there was much evidence of trouble with the engines, the correspondence extolled the theoretical advantages of the compact design of the engines and made little attempt to condemn them. It seemed evident from the correspondence that most submariners didn't want to risk disfavor and promotion by criticizing their material. The torpedoes proved to be the same sort of political problem. Even when their faulty performance was observed and reported, correspondence indicated that the higher commands tended to credit poor performance to the operator's fire control failures, personnel errors or failures to properly maintain the torpedoes. The let-down suffered by a CO when the torpedoes he used in a highly dangerous approach on an enemy target failed to run true or explode on impact, may have been a major cause for the worries which incapacitated some of the COs at the start of the war.

What has been said so far can be brought into better focus by the observations of one of those COs who transitioned to WWII war operations—Vice Admiral Robert Rice, USN (Ret). Although he was a highly effective wartime CO and not one who failed to adapt, he passed along a few thoughts to me which clarify some of the points just made:

I'm sure now as I look back, that my age, over 40, was too old for a good submarine skipper. There were some skippers in those days who overly centralized their boats to "look good"—we all know of several, one of whom turned his submarine over to his exec and incarcerated himself. By and large, there's no doubt in my mind that the comparative lack of success of the early skippers stemmed from horrible torpedo performance (depth, magnetic exploders, etc.). Remember we had no radar, except the very first model SD which turned out to be a most effective beacon to attract Jap planes while we charged batteries at night. My second ship, Paddle, was cursed, along with her class of boats, with the HOR engine which was uniformly a flop.

To these thoughts of Sellars, [Capt. Mike Sellers, at right] I would add that the good wartime skipper, in my experience, didn't necessarily adhere to doctrine if innovative actions appeared to have greater payoff. For example, remaining at periscope depth during an entire day's submerged patrol was an innovation which created more target opportunities while taking a (greatly exaggerated) risk of being sighted by aircraft.

The good CO knew that war was dangerous and couldn't be satisfactorily pursued if an attempt was made to reduce all risk in a situation. Moreover, the good CO acted promptly, even if there was a possibility of error from his actions. (Long study of the problem and excessive checking of alternatives invariably seemed to lead to missed opportunities.) What seems to need consideration for those COs who might enter a World War III is that:

- In this age of specialization, great care must be taken to insure (sic: ensure) that COs will acquire the necessary command qualities and skills in addition to their technical specialties;
- Risk taking by COs should receive special mention and credit whereas the tendency towards non-risk taking should be discouraged;
- An appreciation of history, and particularly of the shortcomings of COs in their transition to war in WWII, seems necessary. This would also lead to a recognition of the probability of the unexpected and a developed mind-set to accept this factor as part of war; the age factor must be taken seriously and younger men trained, to throw into CO positions at the start of a big war;
- The torpedo fiasco of WWII may be replayed, or another part of a weapon system, the computer for example, may prove the Achilles heel, if an unexpected enemy technology or tactic is introduced which has not been programmed for or a computer outage exists without recognition;
- The demands on a CO's intelligence are far greater today than in WWII and will increase with time. The use of that intelligence for innovating should be encouraged and rewarded. Today, recognition of this factor on a man's fitness report can be a great stimulus to a CO's warfighting effectiveness;
- The CO must know his own weapons well, and their use, as well as the character of his potential enemies and how they are likely to fight. These are the first requirements of a warrior and their development needs encouragement. (The Air Force's Project Warrior recognizes this need in today's peacetime environment.)

Such generalizations are easily, if not casually, developed by a retired submariner with World War II experience and some awareness of the CO problems in modern submarines. Perhaps their only value is in creating an awareness of some factors which were eventually recognized at great cost in WWII and need not be repeated for WWIII.

Another submariner who saw the transition to WWII, Captain Mike Sellers, summarized the characteristics of many pre-WWII peacetime COs. He describes them:

- "He was so cautious that everything had to be first double checked, and he took the time to do it. He wasn't about to take a chance of making an error;
- "He blindly followed stereotyped training procedures year after year with few suggestions for improvement;
- "He had to go by the book and do well in competition at all costs;
- "He was either hesitant to, or was incompetent to, speak out on new ideas for improvements. "He didn't rock the boat;
- "He would rarely if ever take a chance. One didn't take chances in submarines because it was not worth the price of failure, promotion or command;
- "And he wasn't allowed to have the experience of seeing and hearing his warshot torpedoes hit and explode in a target, if only a dummy target."

If today's COs of submarines are like this, then expect the same sort of problems in transitioning to war. Mike Sellers also gives his ideas of the characteristics for a good wartime CO:

- "The vigours (sic: rigors) of submarine war patrols demand a youthful man;
- "The CO had to develop a certain 'devil may care' attitude;
- The CO had to have confidence in himself and his crew and rely on his younger officers, both to train them fast for more senior jobs as well as to spread the load. This was a recognized risk that had to be taken;
- The WWII CO was accustomed to taking the 60:40 chance of success in most of his actions. (He knew that high risks led to big payoffs.) This sort of risk-taking was unheard of in peacetime;
- "He generally emphasized training on a daily basis, i.e., underway to and from patrols, daily battle problems generated by dummy runs on the TDC, emergency drills, etc. as opposed to the once a week drills conducted prior to WWII;
- "He normally encouraged questions and suggestions, including ones related to his actions and decisions—no matter how frivolous. He in turn said what he thought and used facts to help train his officers in decision making;
- "And he didn't let red tape or bureau rules inhibit him. (When Bu C and R rules did not apply to wartime procedures, we disregarded them although that would have been a heinous crime in peacetime days.)"

by Carsten Fries, Naval History and Heritage Command, Communication and Outreach Division

5 HISTORICAL INNOVATIONS in SUBMARINE LETHALITY

Development of submarine lethality has been a matter of debate—often heated—since David Bushnell's *Turtle*. However, once separated from specific programs or platforms, the concept often becomes somewhat amorphous. In a sense, increasing lethality means increasing the warfighting effectiveness of naval forces, which is exactly what Bushnell had in mind as he hand-cranked his submersible barrel across the Hudson River in 1776.

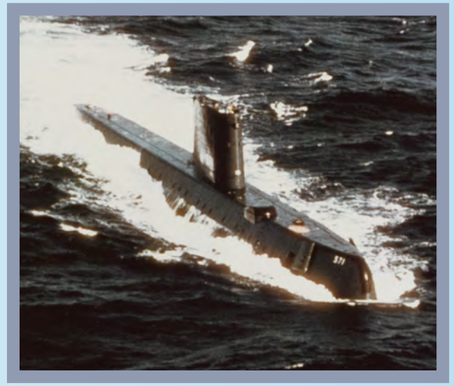
This article seeks to identify specific milestones in the development of submarine lethality since the beginning of the 20th century. In any such endeavor, no list can be complete to the satisfaction of all readers, so visit *UNDERSEA WARFARE Magazine*'s Facebook page (www.facebook.com/USWMagazine) and share historic developments in subamarine lethality we left out. Extra credit will be awarded to those who provide not just an innovation but a historical example of its use or effect.

1 Hull Design

The basic hull profile of early operational submarines was limited by diesel-electric propulsion systems. Despite the additions of periscopes and rudimentary escape trunks, World War I-era submarines in many ways remained surface vessels adapted to submersible operations. Despite increases in capacity, speed, and cruising range, necessity to surface forced retention of some construction features of surface vessels, invariably placing limits on a boat's operational flexibility and survivability. The hull design of the late-World War II German Type XXI and XXIII U-boats, both equipped with snorkels, began to erode this paradigm and was adopted in the U.S. Navy's innovative post-war *Tang* class, the *Barracuda* class with its specialized sonar array, and the *Sailfish*-class of radar-picket boats. During the early Cold War period, both NATO and Soviet navies followed suit.

In 1953, two years before construction began on the Navy's *Skate* class, an evolution of the *Tangs* and the service's first nuclear-powered boats, a fully streamlined teardrop hull design was tested with the diesel-electric USS *Albacore* (AGSS 569). This was to lead to the single-screw "body-of-revolution" hull design and sail-mounted dive planes of the nuclear-powered *Skipjack* class in 1956. The nuclear-powered Soviet *Alfa*-class (Project 705) attack submarine, first conceptualized in 1957, represented another leap forward. Despite some loss of surface maneuverability, the teardrop hull vastly heightened underwater performance.

The United States, Britain, France, Russia, China, and India have since successfully adapted the nuclear-powered teardrop-shaped hull to a variety of operational and strategic missions. To some extent, navies solely equipped with modern, conventionally powered submarines have followed suit.



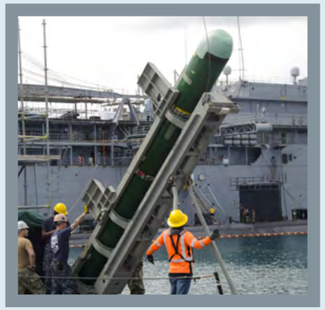
2 Propulsion

Despite the attempts of individual inventors to find a satisfactory alternative to a combined combustion-electrical propulsion system, diesel-electric propulsion had become institutionalized in modern navies by World War I. As noted above, despite ongoing modernization of submarine design, this type of propulsion inevitably imposed limits on operations.

In 1954, the launch of USS *Nautilus* (SSN 571), the first nuclear-powered submarine, represented a quantum leap forward in this regard. Hand in hand with the consistently high degree of operational reactor safety practiced by the U.S. Navy, nuclear propulsion has freed our submarines—as well as those of potential adversaries—from many previous operational boundaries. It will be interesting to see if the still-evolving air-independent propulsion systems will similarly revolutionize non-nuclear navies.

3 Weapons Systems

Until the advent of submarine-launched ballistic and cruise missiles, the evolution of the torpedo as a submarine weapon was illustrative of submarines' expanding operational role. Improvements in torpedo propulsion, fuses, warheads and, ultimately, sensors have spanned the gamut from Robert Whitehead's simple compressed-air design to the highly accurate Japanese World War II–era Type 95 "Long Lance" to the U.S. Navy's Mark 48 Advanced Capabilities weapon with its sophisticated guidance system, depth adaptability, and counter-countermeasures.



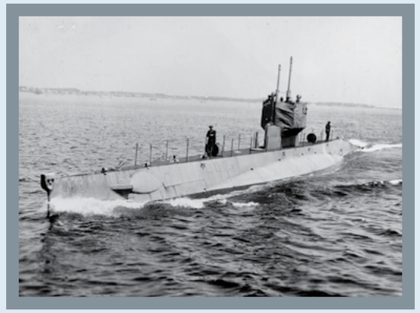
Arming nuclear-propelled submarines with ballistic nuclear missiles and giving these platforms a strategic mission arguably changed the nature of the Cold War confrontation between the United States and the former Soviet Union. The creeping retirement of some U.S. land-based strategic strike systems gives continued relevance to our SSBNs' mission.

Although the U.S. Navy armed submarines with cruise missiles as early as 1958 with the Regulus, regular combat deployment of these weapons (today's Tomahawk Land-Attack Missiles) is a relatively recent addition to the mission profile of U.S. missile and attack boats, beginning with the Gulf War in 1991. Nonetheless, the addition of these weapons to the Submarine Force's arsenal has greatly increased both operational flexibility and lethality of U.S. submarines.

4 Mission

Before World War II, limits in range, capacity, and endurance relegated the submarine to a coastal defense mission or tethered it to operating areas in relative proximity to its base. However, German development of true ocean-going boats just prior to and during World War I demonstrated the potential of the submarine in a commerce-raiding role—and as a growing threat to surface navies.

During the inter-war period, schools of thought concerning a submarine force's mission(s) varied, leading to such anamolies as the "cruiser-submarines" employed by the British and French navies, and the very variegated submarine fleet developed by the Imperial Japanese Navy. Although takeaways from the Naval War College war games carried out during this interval contributed much to the Navy's development of aircraft carriers and their central role in the then still notional future Pacific War, insights regarding submarines were few, in some instances merely relegating the boats to scouting.



Until 1943, when development of antisubmarine warfare (ASW) tactics and weapons became centralized functions in the U.S. (with the establishment of the Tenth Fleet) and British navies, the German submarine force severely impacted the Allied war effort in the Atlantic. The early-war successes of the Kriegsmarine U-boats and the maximum pressure applied against the Japanese surface navy and mercantile fleet that U.S. Navy submarines eventually brought to bear amply demonstrated the potential of the undersea forces.

Aside from targeting adversaries' surface vessels, most navies also used submarines for other missions such as minelaying, special operations, search and rescue, and surveillance—harbingers of what most modern boats are capable of today. Expanding mission profiles helped power improved innovative design, improved construction techniques, and employment of better search radar, sonar, dedicated communications systems, and rudimentary electronic countermeasures. In turn, all of these contributed much to the growing operational versatility and lethality of submarines into the Cold War era.

The decades-long confrontation with the Soviet Union and its allies had the effect of applying various degrees of mission specificity to submarine types. To some extent, this approach hastened obsolescence for certain platforms as illustrated by the post-Soviet Russian navy's submarine boneyards. However, the relatively few classes of U.S. submarines commissioned by the Navy since the dawn of the nuclear era speak both for the design quality as well as excellent adaptability to Cold War and post-Cold War operational realities. A 2006-2008 case in point is the modification of four *Ohio*-class ballistic missile boats to carry both cruise missile vertical launch systems and lockout chambers for special operations missions—both features indicative of evolving mission roles within the changing nature of conflict.

5 Submariners

Any discussion of our Submarine Force's quality must take into account the professionalism of each and every U.S. Navy Submariner, volunteers within an all-volunteer force. Ever since the steep learning curve experienced and overcome by crews of the World War I–era "pig boats," consummate technical expertise, adaptability, and not a small dose of personal courage have been called for.

Submariners of all nations have progressed from a distant era in which the survivability of their boats was very low through the period when rescue vehicles and apparatuses were essentially experimental (rescue of USS *Squalus* (SS 192) in 1939, Momsen escape lung, etc.) to the high level of survivability today. However, constant maintenance of this standard has always required difficult training unique to the Submarine Force—and the professional dedication of each and every Submariner.

The loss of the Argentine navy's ARA *San Juan* (S-42) last year, as well as the tragic saga of the Russian navy's "Oscar II" *Kursk* (K-141) in 2000, only serve to underline this point. If the U.S. Navy did not identify and continually develop the high caliber of personnel serving as Submariners, submarines would not fill the key mission roles they do and, in the end, not be the lethal platforms they are.

Conclusion

Two important contributing elements to the five innovations raised in the article make U.S. submarines the dominant lethal force they are. First are the engineers, planners and builders generating cutting-edge technology and giving form and substance to ideas and plans. Second are the Submariners themselves, who are historically known for their ability to work together to find inventive solutions to overcome challenges. Innovation has made the U.S. Submarine Force a stabilizing influence on the world stage since the Cold War, and it is continued innovation that will enable it to be that stabilizing force going forward.

by Cmdr. Scott McGinnis

TEACHING SUBMARINE LEADERSHIP:

The Common Characteristic of Successful Combat Submarine Captains

> *"Drive yourself and lead others. Make others feel good about themselves and they'll outperform your expectations."*[1]
>
> —Adm. Eugene Fluckey (Ret.)

Although we have not fired a torpedo in combat since World War II, our main responsibility as a submarine force remains to prepare for—to be ready for—undersea combat. While we typically look at the commanding officer (CO) as the personification of the characteristics we want a combat submarine crew to adopt, the CO's personal characteristics seem less important than the CO's ability to inspire collaboration, build a cohesive team, and foster a supportive environment. This environment typically results in the submarine displaying the qualities that we know are valuable for undersea combat such as innovation, aggressiveness, and ethics.

Our WWII statistics show that teams with the same equipment can have dramatically different outcomes. The July 2011 Commander, Submarine Forces (SUBFOR) document titled "Undersea Warfighting" outlines:

Of the 465 submarine COs who served during World War II, it was the top performing 15 percent who accounted for more than half of the ships sunk. Out of these 70 COs, only four were killed in action (Morton, Dealey, MacMillan and Gilmore) and only four of their ships were lost while they were in command (Wahoo, Harder, Thresher and Tang). This means the most successful COs and their crews as a group had a much higher survival rate than the submarine force as a whole. The submarines under the most successful 15 percent COs were three times as likely to return safely from patrol as were the submarines under the other 85 percent. Competence in pressing home the attack tended to co-exist with competence in surviving to return home again.[2]

Assuming the WWII COs, like our current COs who graduate from the Submarine Command Course (developed as a result of WWII), all had a base level of tactical competence, how were the 70 most successful COs in WWII different and how can we use this knowledge today?

Let's begin by referencing the same SUBFOR document, "Undersea Warfighting," which outlines seven characterizations of a professional undersea warrior. Two of these seven characteristics are highlighted below and combined with a third characteristic from Adm. Stockdale's writing on combat leadership. These characteristics are then demonstrated using practical examples from Adm. Fluckey and USS *Barb* (SS 220). Overall, Fluckey's writing in "Thunder Below" shows that, while he was in charge aboard, he knew he did not have a monopoly on good ideas and that, by routinely taking a "quick trip through the boat to feel the pulse,"[3] he received substantial recommendations, pulled the team together, and fostered a feeling of unity. Fluckey's engagement with his team showed that he understood that, just as the crew cannot increase the number of torpedo tubes they go to war with, the CO cannot change the environment he goes to war with overnight. The CO must build that environment over time and work hard post combat commencement to maintain it. In other words, the team-building aspect of warfare must be practiced and gun-drilled prior to combat operations. The top 15 percent of WWII COs recognized this and began fostering a positive, collaborative environment that resulted in success in the attack and a safe return home.

Innovation

In general, operators do not have a choice in the hardware they are using; however, innovation in tactics and material solutions to that hardware is one of the three most important characteristics of a successful wartime team. If you look at *Barb*'s battle flag carefully, you will find at the bottom center a picture of a train, which is unique among WWII submarine battle flags. The train symbol is for a 16-car train blown up by men sent ashore who placed one of our self-scuttling charges underneath the tracks. On Fluckey's final wartime patrol, a series of events led to his team blowing up the train, impacting Japan's wartime logistics.

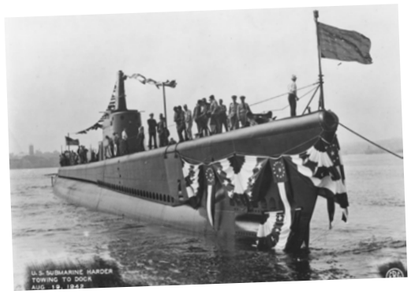
"In general, operators do not have a choice in the hardware they are using; however, innovation in tactics and material solutions to that hardware is one of the three most important characteristics of a successful wartime team."

If we break down the series of events leading up to the train's demise, we see that they were not a result of luck or fate. These innovations were direct results of the way Fluckey motivated his crew, created an environment of shared prosperity, and had a supportive chain of command above him. To the casual observer, the *Barb*'s train attack may seem more providence than a seized opportunity. However, *Barb*'s attack was the result of deliberate planning and, in Fluckey's words, the existence of an "environment where serendipity can be quickly identified and exploited."[4] Serendipity occurs to overcome a problem with unbounded solutions inside of a supportive environment.

The *Barb*'s crew, on their 12th war patrol, loaded rockets and launchers (a submarine first) in order to attack Japan's infrastructure. This provided a problem that needed to be creatively solved. It encouraged the crew to experiment because there were no tactics, techniques or procedures associated with the new hardware. Fluckey had early established a philosophy onboard of "we don't have problems, only solutions."[5] Ashore, due to earlier successes in four previous war patrols, Fluckey's chain of command was supportive and allowed him to take risks, even if success was not guaranteed.

When there were no more train ferries to sink, Fluckey was faced with the challenge of continuing to bring the enemy's logistics to a halt. He accessed the creativity of the crew by leveraging the collaborative environment he had already fostered. In this case, after unsuccessfully polling his wardroom, he engaged his chief gunners mate who helped design the attack using a ship scuttling charge and activation switch. Once the call for ideas was passed through the boat, an electrician who had worked on the railroad suggested using a microswitch from the radar to activate the charge using the train's own weight to complete the switch's circuit. As a result of Fluckey's positive demeanor with his crew, the crew had humanely treated their POW, "Kamikaze"; therefore, the POW was willing to assist in the operational planning for the mission and translation of Japanese charts. Both of these aspects were vital to the mission's success. To understand Fluckey's approach to his demolition landing party, he selected men based foremost on diversity of thought and talent. Strength, experience, and skills were his metrics. He looked at his crew as an experience base to leverage, not a collection of collar devices to organize.

Every current-day submarine deployment and patrol results in some story of an incredible, against-all-odds Sailor solution to a material problem that kept the boat on station. Whether it's using the ice machine and Tygon® tubing as a replacement heat exchanger for a cooling system or a torpedo room roller nut to replace the dishwasher's rotary gimbal, we all know this spirit still exists and is mandatory to retain the operational autonomy we require. From Fluckey's example and our current experience, we can see that this type of ingenuity requires a



problem, time constraint, and a supportive environment that fosters innovation. To prepare your team for combat, how are you encouraging collaboration across your divisions, departments and boat? When Sailors bring you unfavorable news, do you have the emotional discipline to take it in stride and allow them the opportunity to correct the issue? When necessary, will you be able to leverage the creativity of the entire crew?

For the command decisions that provide the opportunity for the team to weigh in, some commanding officers go around the table and require everyone at a minimum to physically turn his or her thumb up or down. They also require those who disagree with the decision to say why they disagree. By making everyone weigh in, the team buys in. By encouraging dissent, you remove group think and expand the solution set. Innovation comes from a team, led by someone who allows for innovation, not merely an innovative leader whom everyone just follows. How do you build your teams (watchteams, divisions, or departments)?

Aggressiveness

The COs at the beginning of the war were not aggressive enough and took "extreme stealth precautions" to the point of hindering their boats' performance. Aggressiveness is the cornerstone of undersea warfighting. As is apparent from the WWII CO statistics quoted above, those COs who were aggressive were more likely to accomplish the mission and get their team back safely. While this is true, it may be more nuanced than just that the new COs had a spirit of aggressiveness. The new COs were unencumbered by a peacetime culture that rewarded being overly conservative. If we believe that being a submarine CO is (and was) the definition of a successful career, then the earlier COs valuing stealth to a fault may demonstrate that the skills required to be successful in a peacetime navy, may not be the same as the ones that make you successful in a wartime navy. If we look at today's peacetime deployments, some may define success to be no liberty incidents, no incident reports, and at least an average on inspections. While these are valuable metrics to ensure access to foreign ports and a healthy materiel condition, they may not be as valuable in combat. While additional specifics on what defines a successful peacetime deployment today may be a topic for a future issue of *UNDERSEA WARFARE Magazine*, the lesson remains: we should ensure that the metrics that make us successful in combat are the same ones we value in peacetime.

Using another example from "Thunder Below," the *Barb*'s U.S.-issued charts were not accurate enough to have allowed the Barb to get in close enough to send Sailors ashore. Fluckey had both the risk tolerance and a willing, aggressive Sailor to recover 17 charts from the sinking pilot house of a 1,000-ton enemy cargo ship that they had recently disabled. Additionally, when the *Barb* carried out the attack on this cargo ship, she used a new homing torpedo that required the submarine to be below 150' for safety due to the torpedo arming above 100'. During the approach, however, the *Barb* could not get below 135' due to a negative temperature gradient. Despite the safety restriction, Fluckey gave the order to fire. This demonstrates two aspects of successful aggressiveness. First, the fine line between recklessness and aggressiveness is separated by a deep understanding of a requirement's basis. Second, significant preparation is required before aggressively attacking the target. An aggressive leader inspires their team to perform the detailed planning ahead of time so that, when faced with a difficult challenge, it is seen as an opportunity, not something insurmountable.

As with innovation, we like to personify the trait of aggressiveness in the personality of the CO but, by looking deeper into what made Fluckey successful, it may not be his personal aggressive attribute but rather his discipline in preparation and engagement with his crew that allowed him, when challenged, to know that his team was prepared. Aggressiveness as a ship attribute is fostered by the environment aboard. How much risk are individuals allowed to take? How much autonomy does the team know that they have? How does the command team react when it perceives that Sailors are taking too much risk? Aggressiveness as a submarine trait is without question required for combat, but how you get your team aggressive is much more than an example of bravado. Each decision, reaction, and engagement you have with your team will build (or destroy) an environment that rewards measured risk and inspires preparation.

Ethics

Let's start this part of the discussion by revisiting Adm. Stockdale's view on leadership and morality:

"In all that I've been saying, I've made the points that leaders under pressure must keep themselves absolutely clean morally. They must lead by example, must be able to implant high-mindedness in their followers, must have competence beyond status, and must have earned their followers' respect by demonstrating integrity."[6]

Leaders know this intrinsically, but based on unfortunate, recent examples, some might not fully understand the connection between integrity, combat, and efficiency of orders. To reiterate Stockdale's two points above: (1) leadership in combat cannot be transactional and (2) the virtue of positional authority will not carry the water to efficiently deliver and execute orders. In our daily peacetime operations, transactional leadership, or the giving and following of orders, seems infallible but, in combat (or under pressure as Stockdale describes it), transactional leadership "finds itself floundering." He says that "inputs" are needed from the leader in these circumstances. What he found is that the leader needs to inspire his team to remove their self-centered goals, inspire in them a higher purpose, and persuade them to become their better selves. To be effective in combat, therefore, a CO's positional authority must not be viewed as sufficient to eliminate the need for these inputs. The CO needs to work on these inputs before combat begins.

Fluckey understood this reality of warfare. From his actions in combat, we can ascertain what he taught his team. He emphasizes in "Thunder Below" that he took extra risk by staying on the surface to look for survivors; he treated all people floating on the sea as humans, not distinguishing between enemy or ally. He displays empathy throughout the war: "All our hearts bleed for our mission of mercy... All of our hearts bleed for the poor wretches, wherever they may be, imprisoned on their flotsam for this their sixth day."[7] Contrast this with the actions of the USS *Dubuque* (LPD 8),[8] whose captain failed to save Vietnamese refugees stranded at sea in June of 1988, and the poor treatment of prisoners at Abu Ghraib. The message is quite clear: how you treat people in garrison filters down to the way your team treats people on the battlefield. Fluckey gives us one more view of how he sees humanism in warfare. After many of his friends died at the hands of the Japanese, Fluckey wrote, "I do not hate Japanese Naval personnel. They served their country well and proudly the same as I, as professional warriors whom I admire."[9] He viewed his enemies the same way he viewed his own crew—as passionate people acting on their beliefs in a professional manner.

The time to inspire your people to a higher purpose and persuade them to become their better selves is now. Once you're in combat, there is no time to discuss ethics, and the example you provide while preparing for combat is all that your team will be left with. How you handle your team today will determine how they act on the battlefield. The more transactional you are today, the less effective your team will be in combat tomorrow.

Conclusions

There are obvious ways that our submarines can be used effectively in combat. What may not be so obvious, however, is that, while the traits that bring about success in combat are thought to be personified in the CO, they actually reflect the CO's engagement with the crew and the environment aboard. Just as we shift the time burden of warfare from the point of engagement by gun drilling, we must also front load the building of an environment that supports collaboration, innovation, and risk taking. Today is the day to analyze whether your daily interactions with your team foster aggressiveness and creative ideas. Through Command Management Equal Opportunity surveys, submarine cultural assessments, and squadron rides, we spend a lot of time trying to understand our environment. We know that crews who are treated like equipment will not aggressively achieve the boat's goals, will not be innovative, and are more likely to compromise their integrity. Conversely, we know we get the best results in warfare when we challenge our crews with problems and allow them to experiment. We have an incredibly rich heritage to pull from; a heritage of passionate people acting on their beliefs in a professional manner. Shift the time burden of warfare to today, drive yourself to engage your crew, and your crew's attributes in warfare will reflect those of our most successful WWII COs.

Recommendations:

- COs, review the 2011 COMSUBFOR document "Undersea Warfighting" as a training topic with your wardroom and chief's quarters. Make your dolphin qualifiers lead the discussion on one of the attributes or the history lessons presented throughout.
- COs, use the Army's Center for the Army Profession and Ethic case study on My-Lai or the USNA Hugh Thompson's "Moral Courage in Combat" as a CPO selectee case study. Cover this with your team during "integrity/ethics" training as an example of how some will use combat as an excuse to justify immorality.
- N1's, focus part of our Submarine Cultural Workshops and assessments as a way to measure collaboration aboard.
- Squadrons, prioritize feedback to command triads on their environment aboard, evaluate those attributes that reward peacetime success versus wartime success, identify operations that we need to do in wartime but don't take the risk of doing in peacetime (i.e., post-sunset harbor movements).
- Continue to align deployment and patrol metrics to those attributes outlined in "Undersea Warfighting" and the "Design for Undersea Warfare."
- NLEC, SOAC, and SOBC, focus a portion of the course on how to foster a collaborative environment.
- PCOIs, evaluate and provide feedback to PCO/PXO students on their ability to inspire collaboration, develop crew talent, and allow risk taking among the crew.
- COs, consider, when operationally feasible, requiring all people weighing-in (thumbs up or thumbs down at a minimum) on operational decisions, possibly at ops briefs.
- COs, read L. David Marquet's "How do we give people more control?"[10] and practice it.
- UWDC, continue to encourage experimentation in tactics to maintain the spirit of innovation.
- School houses, continue to hold "fight clubs" in the Submarine Multi-Mission Team Trainer to inspire warfighting or gain the capability to do so.

References

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2 "Undersea Warfighting," July 2011, Commander Submarine Forces, p. 5.

3 Fluckey, Eugene, "Thunder Below," University of Illinois Press, 1992, p. 374.

4 Pamphlet accompanying signed copy of "Thunder Below," 1992.

5 Fluckey, "Thunder Below," p. 369.

6 Stockdale, Vice Adm. James B. (Ret.), "A Vietnam Experience: Ten Years of Reflection, Machiavelli, Management and Moral Leadership," p. 44.

7 Fluckey, "Thunder Below," p. 133.

8 UPI Archives, "Navy captain's court-martial set in refugee case," Feb. 9, 1989, https://www.upi.com/Archives/1989/02/09/Navy-captains-court-martial-set-in-refugee-case/2224603003600.

9 "Shipmate," January/February 1993, p. 35.

10 Marquet, David L., "How Do We Give People More Control," https://www.linkedin.com/pulse/how-do-we-give-people-more-control-l-david-marquet?articleId=6419578036747853824#comments-6419578036747853824&trk=prof-post

19th Annual Photo Contest Winners

Each year, the Naval Submarine League (NSL) and *UNDERSEA WARFARE Magazine* team up to sponsor a photo contest. The winter 2018 issue of the magazine announced this year's 19th Annual Photo Contest and the response was outstanding.

The photo contest winners are not only excellent examples of the photographers art; they bring to mind some of the things that keep our Submarine Force looking good in every respect.

Kudos to this year's winners and to all those who participated!

Photo by FTCS (SS) Vien Nguyen.
Moment captured during a swim call awarded by CO of USS *Olympia* (SSN 717) after a sucessful harpoon shot and a live ADCAP warshot.

Photo by Victoria Guillerault.
USS *Virginia* (SSN 774) returning to sea immediately after Christmas 2017 port call in Scotland.

Photo by Lt. Michael Hughes.
USS *New Mexico* (SSN 779) leaving on deployment from New London Conn.

Photo by Jonathan Beck.
At Bremerton for the last homecoming of USS *Bremerton* (SSN 698), moment captured as crew left the boat and met up with their families.

THE ULTIMATE SACRIFICE:

A Submariner's Service in Afghanistan

In keeping with the warfighting theme of this issue of *UNDERSEA WARFARE Magazine*, the following article is presented in honor of the only Submariner to have made the ultimate sacrifice in ground fighting in the Global War on Terror (GWOT).

Lt. Jeffrey Ammon
June 16, 1970–May 20, 2008

From 2003 to 2011, as the wars in Iraq and Afghanistan periodically intensified, manpower requirements exceeded the availability of Soldiers and Marines to fill overseas billets. To help mitigate shortfalls, all the military services provided additional personnel to the Global War on Terrorism (GWOT) through the Individual Augmentation (IA) process. For the Navy, eligible personnel were limited to those serving in non-critical shore duty billets. In some cases, Sailors would show up to their well-deserved shore duty after three to five years on sea duty only to find out they were "nominated" and accepted for a 12-month IA to the Middle East. While the experiences were unique and potentially career-enhancing, the threat "outside the wire" was real.

Lt. Jeffrey Ammon of Orem, Utah enlisted in the Navy in 1988 as a nuclear machinist mate. After completing the nuclear training pipeline as an Engineering Laboratory Technician (ELT), he applied for and was accepted as a staff member where he continued to train enlisted and officer students. After two years at prototype, he reported to his first submarine, USS *Ohio* (SSBN 726). During his first sea tour he qualified in submarines and was selected for the Nuclear Enlisted Commissioning Program. In 2001 he completed a bachelor degree in Nuclear Engineering from Oregon State University. Returning to the Navy as a commissioned officer, he completed his nuclear officer training and reported to his second boat, USS *Alabama* (SSBN 731).

Reporting to shore duty in 2007, Lt. Ammon was selected for IA to Afghanistan where he worked to rebuild economic infrastructure through micro-loans. He helped small businesses with restocking, buying business equipment, repairing damage to shops, and hiring employees.

"He felt like he was making a difference," said his mother, Kathleen Ammon. "He really wanted to try a little bit longer to make a difference."

On May 23, 2008, Lt. Jeffrey Ammon died from injuries caused by a road-side Improvised Explosive Device. Formally attached to Commander Navy Region Northwest, he was on his second tour serving as a member of Provincial Reconstruction Team Ghazni, Aband District, Afghanistan.

"Ammon was a loving, caring man who loved going hiking and camping and the outdoors," said Jim Edwards, Ammon's brother-in-law.

He is survived by his wife and two children.

Navy Announces Updates to Uniform Policies

Navy announced updates to uniform policy, grooming standards and the launch of a uniform working group in NAVADMIN 233/18, Sept. 21.

Highlights of the changes include:

- Completion of fittings and wear tests for new, improved female officer and chief petty officer slacks and skirts, scheduled to be available for purchase by the end of 2018
- Announcement of the improved general safety boot (I Boot 4) with enhanced comfort and durability features, expected to be available for purchase in October 2018
- CO approval for the wear of coyote brown ball cap with coveralls and flight suits
- CO authorization of command logos on t-shirts worn with Navy Working Uniform (NWU) Type I, II and III, coveralls and flight suits
- Fingernail grooming standards for men and women, including guidance on length, shape and color of nails
- Lock hairstyle standards for wear, size, length and guidance for wear in uniform
- Wear guidance and changes to the allowed material for rings and bracelets
- Announcement for Sailors assigned to Marine Corps units, who must now abide by Marine Corps grooming standards when wearing Marine Corps uniforms
- Authorization and wear guidance for the optional simultaneous wear of the Post-Tour Command at Sea and Command Ashore/ Project Manager insignia

Navy has launched a uniform policy working group to provide a forum for direct Fleet feedback on uniform wear and regulations. Commands interested in having a crew member participate in a future working group can submit a command-endorsed request with the name, rank, rate and availability of the Sailor to the "Ask The Chiefs" email list at umo_cmc@navy.mil.

Sailors can provide feedback and recommendations on Navy uniforms and the Navy Uniform App at any time via the "Ask The Chiefs" email, on the Navy Uniform Matters Office website at www.npc.navy.mil, or a link available on the Uniform App.

Read NAVADMIN 233/18 in its entirety for details and complete information on all of the announced uniform changes, updates and guidelines at www.npc.navy.mil.

SailorsFirst

Deployability Assessment and Assignment Program

This program will ensure the timely disposition, processing, and accountability of all Active Component, Full Time Support, and Selected Reserve Sailors who are either medically, legally or administratively limited from deployment.

"The Navy the nation needs is a talented, ready and lethal active and reserve force, and we need deployment-ready Sailors to accomplish the mission," said Rear Adm. Jeff Hughes, DCNP. "While command leadership is responsible for overall personnel readiness, our Sailors bear the ultimate responsibility for their individual readiness and deployability status, and this new program is designed to help our force successfully achieve both goals."

Starting October 1, 2018, Sailors who have been non-deployable for 12 consecutive months will be notified of mandatory processing for administrative separation or referral to the Disability Evaluation System (DES), as appropriate. The policy applies to all Sailors, regardless of current duty type (operational or non-operational).

Military treatment facilities and Sailors' commands will make deployability assessments by determining a Sailor's ability to perform appropriate military duties commensurate with his or her office, grade, rank, or skill in light of ongoing medical treatment or administrative limitations.

Commands will use written counseling and performance evaluations to document a Sailor's knowing failure to comply with responsibilities to maintain individual readiness (e.g., missing medical or dental appointments or intentional failure to disclose status affecting deployability). Sailors who fail to comply with this policy could ultimately receive administrative separation.

"Sailors who receive notifications will have the opportunity to be considered for retention by the Secretary of the Navy," said Capt. Chris Harris, director, distribution management division, career management department, Navy Personnel Command. "All retention determinations will be made on a case-by-case basis."

Pregnant and post-partum Sailors are exempt from this policy. No other Sailors are exempt, but special categories for retention consideration include combat wounded members, Sailors who will be non-deployable for 12 months or longer due to administrative reasons, and Sailors who have attained such years of creditable service so as to be within three years of qualifying for retirement.

This policy supports SECDEF guidance to maximize the lethality and readiness of the joint force, and the release of DoD Instruction 1332.45.

More information on deployability can be found at the following websites:

http://www.public.navy.mil/bupers-npc/career/LIMDU/Pages/default.aspx

https://www.med.navy.mil/sites/nmcp/Branch/SitePages/Norfolk/DeploymentHealth.aspx

Read NAVADMIN 239/18 on the NPC website at www.npc.navy.mil.

Welcome Home!

Sailors greet loved ones at Naval Submarine Base New London in Groton, Conn., during the return of the *Virginia*-class fast-attack submarine USS *California* (SSN 781). *California* was on deployment for a routine patrol.

Photo by Mass Communication Specialist 3rd Class Tristan B. Lotz

SailorsFirst

Navy Updates Post-9/11 GI Bill Benefit Transfer Request Process

The Navy released a new electronic form for completing the Statement of Understanding (SOU) needed to submit Post-9/11 GI Bill Transfer of Education Benefits (TEB) requests, and a new policy allowing Purple Heart recipients to transfer education benefits, in NAVADMIN 236/18, Sept. 24.

Starting Oct. 1, Sailors will be able to complete the required SOU online via My Navy Portal, or the My Education web site at https://myeducation.netc.navy.mil/webta/home, instead of the paper "page 13" that must be processed before submitting an initial TEB request.

Sailors should verify their current email information to ensure prompt feedback on TEB applications. After completing the SOU, Sailors will receive a link to the Defense Manpower Data Center (DMDC) milConnect portal where they can complete the application.

Sailors who are unable to complete the SOU or TEB application online may contact the Navy Personnel Command GI Bill Office (PERS-311) to request assistance with their application.

The new process does not impact Sailors who already have an approved TEB request in milConnect, or the process for adding a dependent or modifying benefits allocated to dependents on approved TEB requests.

The NAVADMIN also announced that Purple Heart recipients are immediately eligible to transfer their unused education benefits to their dependents without the requirement for six years of service and agreement to serve four additional years. Purple Heart recipients are also eligible if their total military service exceeds 16 years.

All other Sailors requesting transfer of education benefits must have served at least six years and have at least four years remaining on their service commitment, as outlined in NAVADMIN 170/18.

Effective July 12, 2019, any Sailor who has more than 16 years of total service will no longer be eligible to transfer education benefits to their dependents, unless they are a Purple Heart recipient. Take action now to avoid losing this opportunity!

All Sailors who are or will be eligible to transfer their Post-9/11 GI Bill education benefits should discuss their options with their command career counselor.

For detailed information on transferring Post 9-11 GI Bill education benefits, read NAVADMIN 236/18 at www.npc.navy.mil.

UNDERSEA WARFARE **Magazine has created this section in recognition of the enlisted Submariner—but we want you to get involved in the success of this effort. We would like you to send us "Community Outreach," or "Liberty" photos, and/or "Homecoming" photos of families being re-united as the crews return.**

Send your submissions to the Military Editor via email to: underseawarfare@hotmail.com

Photo by Mass Communication Specialist 3rd Class Tristan Lotz

Gerard Butler, Don Keith and George Wallace answer audience questions following "Hunter Killer" screening.

New Sub film gets advance screening at SUBASE

Naval Submarine Base (SUBASE) New London had the privilege of holding an advance screening of the Lionsgate's film "Hunter Killer" at the Dealey Center Theater, Oct. 20.

The screening was attended by the star of the film, Gerard Butler and the movie's director, Donovan Marsh.

Before the movie premier, Butler and Marsh met with Sailors from each of SUBASE's homeported submarines and tenant commands.

"We filmed a lot of the scenes on actual submarines," said Marsh. "There are real Sailors in the background. I want you to look closely during the film and see if you can tell the Sailors from the actors."

When the film concluded and the credits began to roll, the more than 1,300 Sailors and family members in attendance gave a standing ovation and cheered, all turning to face Butler himself, who was seated in the balcony above, to applaud him directly.

"Hunter Killer" is based on the 2012 novel "Firing Point" by author and war historian Don Keith and retired submarine commander, George Wallace.

MyNavy Career Center Open for Business 24/7

Delivering on a promise to provide Sailor-focused customer service and around-the-clock assistance, Navy Personnel Command (NPC) opens the MyNavy Career Center (MNCC) contact center.

Opened Sept. 24, the contact center represents an evolution in Navy pay and personnel services delivery by providing Sailors a tiered system, available 24 hours a day, seven days a week, to handle their queries and transactions. Tier Zero is the service member's self-service option through MyNavy Portal (MNP), my.navy.mil. Tier One is communication with one of our agents by phone and email. If a Sailor's inquiry or transaction cannot be handled by a customer service agent, they will be escalated to Tier Two, where a subject matter expert will take appropriate action.

"This is good for everyone; Sailors, because they will have 24/7 access through a single point of entry for answers to questions, current information, and responsive support to their transaction needs. This returns time and energy to Sailors to focus on the mission and their families," said Hughes.

This MNCC contact center launch is just the beginning. It is an incremental step toward an evolving development effort where we will field modern and industry standard telephony and customer relationship management tools later next year to enhance our ever-expanding list of services offered.

For questions regarding pay and personnel issues, reach out to the MNCC contact center at 833-330-MNCC (6622) or askmncc@navy.mil.

Changes of Command

COMSUBFOR
Vice Adm. Charles Richard relieved
Vice Adm. Joseph Tofalo

PEO Submarines
Rear Adm. David Goggins relieved
Rear Adm. Michael Jabaley

Undersea Warfighting Dev. Ctr.
Rear Adm. Butch Dollaga relieved
Rear Adm. James Pitts

COMSUBGRU 7
Rear Adm. James Pitts relieved
Rear Adm. Richard Correll

COMSUBRON 6
Capt. Martin Muckian relieved
Capt. Carl Hartsfield

COMSUBRON 7
Capt. Paul Davis relieved
Capt. Robert Roncska

COMSUBRON 12
Capt. David Youtt relieved
Capt. Ollie Lewis

COMSUBRON 15
Capt. Timothy Poe relieved
Capt. David Schappert

COMSUBRON 21
Capt. Sean Muth relieved
Capt. Enrique Panlilio

Submarine Learning Center
Capt. Aaron Thieme relieved
Capt. Andrew Jarrett

Fleet Anti-Submarine
Warfare Training Center
Capt. Brandon Bryan relieved
Capt. Ron Toland

USS *Boise* (SSN 764)
Cmdr. Kristopher Lancaster relieved
Cmdr. Christopher Osborn

USS *Chicago* (SSN 721)
Cmdr. Chance Litton relieved
Cmdr. Brian Turney

USS *Columbia* (SSN 771)
Cmdr. Tyler Forrest relieved
Cmdr. Dave Edgerton

USS *Hawaii* (SSN 776)
Cmdr. Sterling Jordan relieved
Cmdr. John Roussakies

USS *Helena* (SSN 725)
Cmdr. Andy Cain relieved
Cmdr. Jason Pittman

PCU *Hyman G. Rickover* (SSN 795)
Cmdr. Thomas Niebel assumes command

USS *Indiana* (SSN 789)
Cmdr. David Grogan relieved
Capt. Jesse Zimbauer

USS *Jefferson City* (SSN 759)
Cmdr. Steven Dawley relieved
Cmdr. Kevin Moller

USS *Indiana* Commissioned

Photo by Senior Chief Mass Communication Specialist Leah Stiles

The crew of the *Virginia*-class attack submarine USS *Indiana* (SSN 789) salute after bringing the ship to life during the boat's commissioning ceremony. *Indiana* is the U.S. Navy's 16th *Virginia*-class fast-attack submarine and the third ship named for the state of Indiana.

USS *John Warner* (SSN 785)
Cmdr. Will Wiley relieved
Cmdr. Bert Canfield

USS *Maryland* (SSBN 739) (G)
Cmdr. Michael Paisant relieved
Cmdr. Chris Horgan

USS *Mississippi* (SSN 782)
Cmdr. Heath Johnmeyer relieved
Cmdr. Eric Rosek

USS *Nebraska* (SSBN 739) (B)
Cmdr. James Lembo relieved
Cmdr. Jason Geddes

USS *Rhode Island* (SSBN 740)
(crew split)
Cmdr. Jeremy Miller assumes command of Blue
Cmdr. Jason Anderson assumes command of Gold

PCU *South Dakota* (SSN 790)
Cmdr. Craig E. Litty relieved Capt. Ronald L. Withrow

USS *West Virginia* (SSBN 736) (G)
Cmdr. Jay Bijeau relieved
Cmdr. Timothy Clark

Naval Submarine Support Command
Cmdr. John Killila relieved
Cmdr. Christopher Lindberg

Qualified for Command in Submarines

Lt. Cmdr. Mathew Bridwell
STRATCOM Joint Elect. Warfare Cent.

Lt. Cmdr. Louis DeMarco
USS *Kentucky* (SSBN 737) (B)

Lt. Cmdr. Stephen Emerson
FFC Nuclear Propulsion Exam Board

Lt. Cmdr. John Gilligan
NPTU Ballston Spa-GST

Lt. Cmdr. Collin Hedges
USS *Kentucky* (SSBN 737) (B)

Lt. Cmdr. Kevin Henderson
Student Marine Corps Univ.

Lt. Cmdr. Joshua Hricik
USS *West Virginia* (SSBN 736) (G)

Lt. Cmdr. Damiean Johnson
UUVRON 1

Lt. Cmdr. Vincent Kahnke
COMSUBLANT

Lt. Cmdr. Farrokh Kapadia
DIRSSP Washington DC

Lt. Cmdr. Richard Kuss
USS *Pennsylvania* (SSBN 735) (G)

Lt. Cmdr. Christopher Lindahl
HQ MARCOM

Lt. Cmdr. Vincent McCall
USS *Nebraska* (SSBN 739) (B)

Lt. Cmdr. Anthony Nebel
USS *West Virginia* (SSBN 736) (B)

Lt. Cmdr. Jonathan Ovren
USS *Scranton* (SSN 756)

Lt. Adam Parkinson
USS *Minnesota* (SSN 783)

Lt. Cmdr. John Patrick
SOC EUR Theater Spec. Op. Comm.

Lt. Cmdr. Robert Perris
USS *Maryland* (SSBN 738) (B)

Lt. Cmdr. Mark Rostedt
COMSUBGRU 7

Lt. Cmdr. Alexander Sayers
USS *Tennessee* (SSBN 734) (B)

Lt. Cmdr. Chad Tella
S NSTCP PH HI

Lt. Cmdr. Keith Turnbull
COMSEVENTHFLT

Qualified in Submarines

Lt. Ian Balczewski
USS *Asheville* (SSN 758)

Lt. Jonathon Casey
USS *Key West* (SSN 722)

Lt. Tyler Cox
USS *Greeneville* (SSN 772)

Lt. j.g. Michael Ebeling
USS *Scranton* (SSN 756)

Lt. j.g. Neil Flattery
USS *Scranton* (SSN 756)

Lt. Christopher Kenison
USS *Illinois* (SSN 786)\

Lt. j.g. Henry Kincaid
USS *Scranton* (SSN 756)

Lt. j.g. Riley Merrick
USS *Olympia* (SSN 717)

Lt. j.g. Devin Mulcahy
USS *Boise* (SSN 764)

Lt. James Neigel
USS *Rhode Island* (SSBN 740) (B)

Lt. Kenneth Piech
USS *Wyoming* (SSBN 742) (G)

Lt. j.g. Matthew Williams
USS *Delaware* (SSN 791)

Lt. William Woltman
USS *Michigan* (SSGN 727) (B)

Lt. j.g. Samuel Zarn
USS *Alaska* (SSBN 732) (B)

Lt. j.g. Andrew Bates
USS *Tennessee* (SSBN 734) (G)

Lt. Brock Burdyl
USS *Kentucky* (SSBN 737) (B)

Lt. j.g. Christopher Cole
USS *Providence* (SSN 719)

Lt. j.g. Lee Kaufman
USS *Ohio* (SSGN 726) (G)

Lt. j.g. Robert Kent
USS *Providence* (SSN 719)

Lt. j.g. Megan Lewis
USS *Maine* (SSBN 741) (G)

Lt. j.g. Vigneshwar Manickam
USS *Indiana* (SSN 789)

Lt. j.g. Benjamin McFarland
USS *South Dakota* (SSN 790)

Lt. j.g. Matthew Silberberg
USS *Washington* (SSN 787)

Lt. j.g. Daniel Tucker
USS *Illinois* (SSN 786)

Lt. Korey Whitaker
USS *Connecticut* (SSN 22)

Lt. Theja Chadalawada
USS *Pasadena* (SSN 752)

Lt. j.g. Brett Evans
USS *Cheyenne* (SSN 773)

Lt. James Frazier
USS *Pasadena* (SSN 752)

Lt. Margaret Gilroy
USS *Michigan* (SSGN 727) (G)

Lt. j.g. Carson Goldman
USS *Wyoming* (SSBN 742) (B)

Lt. j.g. Nicholas Hoffman
USS *Hawaii* (SSN 776)

Lt. j.g. Akshat Patel
USS *Hawaii* (SSN 776)

Lt. j.g. Justin Peabody
USS *Helena* (SSN 725)

Lt. j.g. Dustin Swanson
USS *Pasadena* (SSN 752)

Lt. j.g. Elizabeth Terino
USS *Wyoming* (SSBN 742) (B)

Lt. j.g. William Trettin
USS *Maine* (SSBN 741) (B)

Lt. j.g. Jakob Yeager
USS *Delaware* (SSN 791)

Lt. j.g. Dustin Kuchenbecker
USS *Wyoming* (SSBN 742) (G)

Lt. j.g. Collin Parry
USS *Pasadena* (SSN 752)

Lt. j.g. Jarod Scott
USS *Tennessee* (SSBN 734) (G)

Lt. j.g. Edward Young
USS *Buffalo* (SSN 715)

Lt. j.g. Bradley Hooker
USS *Greeneville* (SSN 772)

Lt. j.g. Louis Nabors
USS *Toledo* (SSN 769)

Lt. Rohika Wagner
USS *Greeneville* (SSN 772)

Qualified Nuclear Engineering Officer

Lt. Curtis Allen
USS *Cheyenne* (SSN 773)

Lt. Payton Alsup
USS *New Mexico* (SSN 779)

Lt. Ian Balczewski
USS *Asheville* (SSN 758)

Lt. j.g. Samantha Barszowski
USS *Florida* (SSGN 728) (B)

Lt. j.g. Andrew Bates
USS *Tennessee* (SSBN 734) (G)

Lt. Reston Bishop
USS *Colorado* (SSN 788)

Lt. j.g. Andrew Blank
USS *Ohio* (SSGN 726) (B)

Lt. David Bohannon
USS *New Hampshire* (SSN 778)

Lt. John Bolchoz
USS *South Dakota* (SSN 790)

Lt. Scott Bolstad
USS *Tucson* (SSN 770)

Lt. Robert Bostock
USS *Henry M. Jackson* (SSBN 730) (G)

Lt. Richard Bradley
USS *Colorado* (SSN 788)

Lt. j.g. Jack Brault
USS *Pennsylvania* (SSBN 735) (B)

Lt. Ari Brown
DNI/DDNI NISS

Lt. j.g. Douglas Brown
USS *Georgia* (SSGN 729) (B)

Lt. j.g. Thomas Buffone
USS *Kentucky* (SSBN 737) (B)

Lt. Brock Burdyl
USS *Kentucky* (SSBN 737) (B)

Lt. Matthew Burnett
TTF Bangor

Lt. j.g. Joseph Carbone
USS *Alexandria* (SSN 757)

Lt. Jonadel Caro
SLCDET SD FLT TT

Lt. j.g. Patrick Celestine
USS *Alabama* (SSBN 731) (B)

Lt. Joshua Clark
USS *Louisville* (SSN 724)

Lt. Justin Clark
USS *Henry M. Jackson* (SSBN 730) (G)

Lt. j.g. Seth Cochran
USS *San Juan* (SSN 751)

Lt. j.g. Zachary Coleman
USS *Oklahoma City* (SSN 723)

Lt. Tyler Cox
USS *Greeneville* (SSN 772)

Lt. Matthew Curtis
NSSC Bangor

Lt. Tracy Daniels
USS *San Francisco* (SSN 711)

Lt. Carolyn Davis
USS *Louisiana* (SSBN 742) (G)

Lt. George Davis
USS *Nevada* (SSBN 733) (B)

Lt. Vincenzo Delvillano
USS *Toledo* (SSN 769)

Lt. j.g. Karl Destefano
USS *Alabama* (SSBN 731) (B)

Lt. John Dickmann
USS *Tucson* (SSN 770)

Lt. Christopher Dinelli
USS *Rhode Island* (SSBN 740) (B)

Lt. j.g. Jamieson Dodge
USS *John Warner* (SSN 785)

Lt. j.g. John Donovan
USS *Virginia* (SSN 774)

Lt. Micah Dose
USS *West Virginia* (SSBN 736) (G)

Lt. Ryan Duffy
USS *Mississippi* (SSN 782)

Lt. j.g. Matthew Dwyer
USS *Greeneville* (SSN 772)

Lt. j.g. Michael Ebeling
USS *Scranton* (SSN 756)

Lt. Joel Elenbaas
USS *Scranton* (SSN 756)

Lt. j.g. Mark Esposito
USS *Hartford* (SSN 756)

Lt. j.g. Brett Evans
USS *Cheyenne* (SSN 773)

Lt. j.g. Christina Faraci
USS *Louisiana* (SSBN 743) (B)

Lt. Colin Feiter
USS *Louisville* (SSN 724)

Lt. John Fillmore
USS *Henry M. Jackson* (SSBN 730) (G)

Lt. j.g. Neil Flattery
USS *Scranton* (SSN 756)

Lt. Ethan Foster
USS *Maine* (SSBN 741) (G)

Lt. Ryan Fritz
LSFO OPCON CTR

Lt. Robert Gacki
USS *Kentucky* (SSBN 737) (G)

Lt. Forrest Garrison
USS *Santa Fe* (SSN 763)

Lt. j.g. Matthew Ginelli
USS *Texas* (SSN 775)

Lt. j.g. Carson Goldman
USS *Wyoming* (SSBN 742) (B)

Lt. Joshua Gray
USS *Virginia* (SSN 774)

Lt. William Gregory
USS *Colorado* (SSN 788)

Lt. Brent Grenda
USS *New Mexico* (SSN 779)

Lt. Matthew Gustafson
NROTC University of Florida

Lt. Matthew Hait
Student Post Grad. MIT CAM Mass.

Lt. j.g. Alex Hansen
USS *Columbus* (SSN 762)

Lt. James Harris
USS *Pennsylvania* (SSBN 735) (G)

Lt. j.g. Alexander Hayden
USS *North Dakota* (SSN 784)

Lt. j.g. Matthew Hitchcock
USS *Kentucky* (SSBN 737) (G)

Lt. j.g. Nicholas Hoffman
USS *Hawaii* (SSN 776)

Lt. j.g. Riley Hoffmann
USS *Pennsylvania* (SSBN 735) (B)

Lt. j.g. Duncan Howard
USS *Michigan* (SSGN 727) (B)

Lt. Steven Hucks
COMSUBGRU 10

Lt. j.g. Kevin Hutto
USS *Connecticut* (SSN 22)

Lt. j.g. Christopher Johnson
USS *Connecticut* (SSN 22)

Ens. Vincent Kahnke
COMSUBLANT

Lt. Jeffery Karr
USS *Kentucky* (SSBN 737) (B)

Lt. j.g. Stephen Keehan
USS *Jefferson City* (SSN 759)

Lt. Christopher Kenison
USS *Illinois* (SSN 786)

Lt. j.g. Ryan Kennedy
USS *North Carolina* (SSN 777)

Lt. Curtis Khol
USS *Virginia* (SSN 774)

Lt. j.g. Henry Kincaid
USS *Scranton* (SSN 756)

Lt. Phoebe Kotlikoff
USS *Ohio* (SSGN 726) (G)

Lt. Matthew Kwasnik
USS *Seawolf* (SSN 21)

Lt. Peter Lailepage
COMPHIBRON 11

Lt. Matthew Lanoue
USS *Texas* (SSN 775)

Lt. Daniel Lee
COMDESRON 23

Lt. Doyoung Lee
USS *Nebraska* (SSBN 739) (G)

Lt. j.g. Samantha Lee
USS *Ohio* (SSGN 726) (B)

Lt. Erica Leinmiller
USS *Florida* (SSGN 728) (B)

Lt. Kyle Leonard
USS *John Warner* (SSN 785)

Lt. Justin Liedel
USS *San Juan* (SSN 751)

Lt. Samuel Lilek
USS *Jimmy Carter* (SSN 23)

Lt. Christopher Linich
S NWARCOL Newport R.I.

Lt. Kyle Lynch
USS *Nebraska* (SSBN 739) (B)

Lt. j.g. Zachary Lynn
USS *Boise* (SSN 764)

Lt. j.g. Vigneshwar Manickam
USS *Indiana* (SSN 789)

Lt. Tilford Mansfield
CNR NORTHWEST

Lt. j.g. Ronald Marciszyn
USS *Boise* (SSN 764)

Lt. Courtney Martin
USS *Georgia* (SSGN 729) (G)

Gold Star families and fallen service members honored

Photo by Mass Communication Specialist 3rd Class Tristan Lotz

Among the local community gathered with Sailors and civilians of Navy Team New London, were 21 Gold Star family members. Gold Star families are those who carry the weight of a lost loved one who died while on active duty service.

The names of lost loved ones were read aloud by Capt. Paul Whitescarver, commanding officer, SUBASE New London. After each name, a bell was tolled, followed by a brief moment of silence. After all of the names were read, four bells were rung to honor the names of the fallen not spoken aloud, but just as dearly remembered.

"Many have made the ultimate sacrifice," said Whitescarver. "Their actions attest not only to the depth of their devotion, but also to a belief in their country so profound that they were willing to give their very lives for it."

The "star" tradition began in WWI when white service flags were displayed from homes, business, schools, and churches. The flags indicated by the use of a blue star, each active service member in the U.S. Military. A gold star stitched over a blue star showed the nation those who had given their lives for their country, and it highlighted the devotion and pride of those left behind.

Lt. Elizabeth Martinelli
USS *Florida* (SSGN 728) (B)

Lt. j.g. Patrick McDonald
USS *Pennsylvania* (SSBN 735) (B)

Lt. j.g. Benjamin McFarland
USS *South Dakota* (SSN 790)

Lt. Glenn McKenna
TTF Bangor TT

Lt. Quinilan Melvin
USS *Colorado* (SSN 788)

Lt. j.g. Riley Merrick
USS *Olympia* (SSN 717)

Lt. j.g. Talaave Meyers
USS *Maryland* (SSBN 738) (G)

Lt. Trevor Moheit
USS *Jefferson City* (SSN 759)

Lt. Donald Montemarano
USS *Bremerton* (SSN 698)

Lt. Timothy Moore
USS *Toledo* (SSN 769)

Lt. j.g. Devin Mulcahy
USS *Boise* (SSN 764)

Lt. j.g. Mitchell Murphy
USS *Minnesota* (SSN 783)

Lt. Robert Murphy
OPNAV MCIS/GCCS

Lt. j.g. Chekote Naden
USS *Indiana* (SSN 789)

Lt. James Neigel
USS *Rhode Island* (SSBN 740) (B)

Lt. Nicholas Nguyen
USS *Santa Fe* (SSN 763)

Lt. j.g. Luke Nicol
USS *Jacksonville* (SSN 699)

Lt. Michael Nielson
LSFO OPCON CTR

Lt. Nahi Nofal
USS *Texas* (SSN 775)

Lt. j.g. Ryan Nulsen
USS *Nevada* (SSBN 733) (B)

Lt. Derek Oesterheld
USS *Missouri* (SSN 780)

Lt. Christopher Patterson
USS *Alexandria* (SSN 757)

Lt. j.g. Justin Peabody
USS *Helena* (SSN 725)

Lt. Kenneth Piech
USS *Wyoming* (SSBN 742) (G)

Lt. Mary Pummill
USS *Louisiana* (SSBN 743) (G)

Lt. Mason Rabalais
USS *Mississippi* (SSN 782)

Lt. Michael Raynes
COMDESRON 28

Lt. Christopher Reynolds
USS *Topeka* (SSN 754)

Lt. Shawn Roades
USS *Minnesota* (SSN 783)

Lt. Benjamin Robinson
USS *Albany* (SSN 753)

Lt. Peter Roemer
USS *Tucson* (SSN 770)

Lt. Josiah Ross
USS *Olympia* (SSN 717)

Lt. j.g. Gregory Russi
USS *Maryland* (SSBN 738) (G)

Lt. Stephen Ryker
USS *Alabama* (SSBN 731) (B)

Lt. Steven Salva
USS *Annapolis* (SSN 760)

Lt. Jonathan Samuel
USS *West Virginia* (SSBN 736) (G)

Lt. j.g. Jarod Scott
USS *Tennessee* (SSBN 734) (G)

Lt. Dakota Sicher
COMSUBRON 21

Lt. j.g. Matthew Silberberg
USS *Washington* (SSN 787)

Lt. David Smith
USS *Illinois* (SSN 786)

Lt. j.g. Isaac Smith
USS *Topeka* (SSN 754)

Lt. j.g. Justin Smith
USS *Louisville* (SSN 724)

Lt. j.g. Raphael Sofaer
USS *Springfield* (SSN 761)

Lt. j.g. Michael Sokol
USS *Minnesota* (SSN 783)

Lt. Michael Spotts
USS *Colorado* (SSN 788)

Lt. Robert Stanton
USS *Maryland* (SSBN 738) (G)

Lt. j.g. Jacob Stevenback
USS *Alaska* (SSBN 732) (B)

Lt. Blake Stout
USS *Hampton* (SSN 767)

Lt. James Strane
USS *Helena* (SSN 725)

Lt. Ian Sugg
USS *Columbia* (SSN 771)

Lt. j.g. Michael Sullivan
USS *Tennessee* (SSBN 734) (G)

Lt. j.g. David Swanson
USS *Key West* (SSN 722)

Lt. j.g. Elliot Sykora
USS *Tennessee* (SSBN 734) (G)

Lt. j.g. Elizabeth Terino
USS *Wyoming* (SSBN 742) (B)

Lt. j.g. Joel Thomas
USS *Columbus* (SSN 762)

Lt. Tyler Thomas
USS *Tucson* (SSN 770)

Lt. Emanuel Towns
USS *Annapolis* (SSN 760)

Lt. j.g. William Trettin
USS *Maine* (SSBN 741) (B)

Lt. j.g. Daniel Tucker
USS *Illinois* (SSN 786)

Lt. Justin Vagts
U.S. Naval Academy

Lt. Kyle Vassallo
USS *Columbia* (SSN 771)

Lt. Bryan Walker
USS *Nevada* (SSBN 733) (G)

Lt. Matthew Waterman
USS *Pittsburgh* (SSN 720)

Lt. j.g. Aleksander Weismantel
USS *Annapolis* (SSN 760)

Lt. Nicholas Wendrych
USS *Bremerton* (SSN 698)

Lt. Korey Whitaker
USS *Connecticut* (SSN 22)

Lt. Trevor Whitney
USS *Olympia* (SSN 717)
Lt. James Wilkerson
USS *Jimmy Carter* (SSN 23)

Lt. Isaac Wilson
USS *Jefferson City* (SSN 759)

Lt. Albert Wong
USS *Olympia* (SSN 717)

Lt. Derrick Woodfield
USS *Rhode Island* (SSBN 740) (B)

Lt. Marisa Zahn
USS *Michigan* (SSGN 727) (B)

Lt. j.g. Samuel Zarn
USS *Alaska* (SSBN 732) (B)

Lt. Andrew Zellman
USS *Seawolf* (SSN 21)

Qualified Engineering Department Master Chief

ETNCS Nathaniel W. Abel
TTF Bangor TT

EMNCS Antonio T. Aguinaldo
PH SMMS

MMNC Michael R. Allen
USS *Indiana* (SSN 789)

ETNCM Robert L. Amerman
NSTCCPACPHFLT TT

EMNC Christopher E. Anderson
PCU *Delaware* (SSN 791)

MMNCS Jonathan L. Andrews
NPTU Charleston BOS

MMNC Steven K. Andrews
PH SMMS

EMNCM Dean Anton
S NUFLDASCOL SC

ETNC Joshua R. Argo
U.S. Naval Academy

EMNCS Eric L. Armbrister
USS *Florida* (SSGN 728)

ETNCS Kevin R. Audrain
SUBTRAFAC NORFLT

EMNC Jonathan T. Baggett
NPTU Charelston GST

EMNCM Brent E. Bagwell
USS *Michigan* (SSGN 727) (B)

MMNCS Aaron K. Bailey
S NPTU Ballston Spa

EMNC Matthew B. Bailey
USS *Ohio* (SSGN 726) (G)

EMNCM John M. Bale
COMSUBRON 11

MMNCS Samuel K. Barfuss
COMSUBRON 1

EMNC John A. Barnett
S NPTU Charleston S.C.

ETNC Keith C. Bauer
NPTU Ballston Spa MARF

EMNCM Christopher M. Bean
COMSUBRON 1

ETNCS Joshua J. Bean
USS *Maine* (SSBN 741) (G)

MMNCS Tommy J. Beman
SUBDEVRON 5 STAFF

ETNCM James P. Berhalter
NETPDC Pensacola

MMNCS Paul E. Bermingham
USS *Asheville* (SSN 758)

MMNCM David J. Blake
NRMD MD New London

EMNCS Matthew J. Blankenship
COMSUBRON 12

MMNC Richard T. Bolton
TTF Bangor TT

MMNCS Darrin D. Bostater
USS *Georgia* (SSGN 729) (G)

MMNCS Nicholas W. Bottoms
USS *Rhode Island* (SSBN 740) (B)

MMNCS Robert D. Bowen
USS *Alabama* (SSBN 731) (G)

EMNCS Matthew R. Brake
USS *New Mexico* (SSN 779)

MMNCM Joel C. Brandt
NPTU Charleston D MTS

EMNCM Stephen V. Brooke
COMSUBLANT

MMNC Tommy G. Brooks
NRMD Point Loma

MMNCM Michael W. Brougher
COMSUBGRU 9

MMNC Timothy A. Brown
USS *Pennsylvania* (SSBN 735) (B)

MMNCS Joseph L. Buehring
USS *Emory S. Land* (AS 39) M/SC

ETNCM Robert M. Burns
NPTU Charleston GST

MMNCM Brandon R. Busch
DIRDIVOFNREACDOE

MMNCM Matthew J. Campanile
PCU *Montana* (SSN 794)

MMNC Nicholas B. Carriger
USS *Louisville* (SSBN 743) (B)

EMNC Shane T. Cary
USS *San Juan* (SSN 751)

MMNCS Joseph R. Cefaratti
USS *North Dakota* (SSN 784)

MMNCM Ronald T. Cervone
DIRDIVOFNREACDOE

ETNCS Leon Chen
USS *Jefferson City* (SSN 759)

ETNCS Damian C. Chenot
USS *Kentucky* (SSBN 737) (G)

ETNCS Patrick B. Childs
NPTU Ballston Spa BOS

MMNCS Andrew P. Chupashko
USS *Illinois* (SSN 786)

MMNCM Darrin J. Clarke
TTF Kings Bay FLT TT

MMNCM Jason A. Clough
COMSUBRON 17

ETNC Kenneth A. Cochran
USS *San Juan* (SSN 751)

MMNCS Cory A. Codd
SMMS PMT Kings Bay

EMNCM Aaron Coffey
COMSUBLANT

EMNCS Aaron C. Coffey
USS *Maine* (SSBN 741) (B)

MMNCS Michael J. Coffman
COMSUBLANT

ETNCS Timothy J. Coleman
USS *Nevada* (SSBN 733) (B)

MMNCS Chase R. Connell
COMSUBRON 11

MMNC Anthony M. Conner
USS *Asheville* (SSN 758)

MMNC Aaron C. Cook
USS *Greeneville* (SSN 772)

MMNC Brian Wl Cooper
SUBTRAFAC NORFLT

MMNCM Jason R. Cox
COMSUBRON 20

MMNC Seth A. Crain
COMSUBRON 15

MMNC Ian P. Cross
NPTU Charleston GST

MMNCS Justin M. Daggett
NSUBSUPF New London

ETNCS John E. Daigle
COMSUBRON 4

ETNC David M. Danby
USS *Cheyenne* (SSN 773)

MMNC Aaron K. Dankof
USS *West Virginia* (SSBN 736) (G)

ETNCS Evan R. Davis
USS *Virginia* (SSN 774)

MMNCS Robbie L. Davis
NSSC Kings Bay

EMNCM Johnny Dawes
COMSUBRON 7

MMNCS Arthur D. Dearmond
USS *Ohio* (SSGN 726) (G)

ETNC Alexander D. Delisle
USS *Florida* (SSGN 728) (B)

ETNCM Keith M. Deliteris
NUFLDASCOL Charleston

EMNC Charles I. Delp
USS *Pittsburgh* (SSN 720)

ETNCS Daniel G. Denault
COMSUBRON 19

MMNCM Joseph L. Devore
USS *Santa Fe* (SSN 763)

ETNCS Shaun P. Dewar
NPTU Ballston Spa MARF

EMNCS Derek E. Diener
PSBFOROPS COMP

MMNCM Jason W. Dill
USS *Buffalo* (SSN 715)

MMNC Craig J. Double
S SUBTRAFAC Norfolk

MMNCS David J. Drury
(SSN 571) Nautilus Museum

MMNCM Ryan T. Dwyer
NPTU Ballston Spa BOS

ETNCS Hunter L. Dyer
USS *Oklahoma City* (SSN 723)

EMNCS Christopher M. Echeandia
NPTU Charleston D MTS

MMNC James J. Echtle
USS *Buffalo* (SSN 715)

EMNCS Michael A. Edwards
USS *Columbia* (SSN 751)

MMNC Kalani K. Eli
NSTCPACPHCFLT TT

MMNCM Eric L. Emrick
COMSUBLANT

MMNCS Jeremy W. Erickson
COMSUBRON 7

MMNCM Christopher J. Farrell
PSBFOROPS COMP

EMNCM David A. Field
PCU *Oregon* (SSN 793)

EMNCS Christopher C. Fisher
COMSUBRON 7

ETNCM Brad J. Flemmons
USS *Jacksonville* (SSN 699)

ETNCM Gregory S. Foerster
SHPYD REP Portsmouth

USS *Wahoo* 75th Anniversary ceremony at SUBASE

The heroic sacrifice of USS *Wahoo* (SS 238), its Sailors and its Commanding Officer Cmdr. Dudley "Mush" Morton, were honored with a ceremony held in Naval Submarine Base (SUBASE) New London's Morton Hall Gymnasium Oct. 11.

The 75th anniversary of *Wahoo*'s loss was commemorated with Morton's family including his own daughter, Edwina Morton Thirsher.

Wahoo was a *Gato*-class submarine with a reputation for bringing the fight to the Japanese with a tight-knit crew and a fearless commander to match. It snuck into a Japanese harbor and sank ships in "down the throat" shots. Wahoo was finally sunk in the Sea of Japan by a contingent of antisubmarine ships and aircraft on Oct. 11, 1943.

Wahoo was one of the most distinguished submarines during World War II, earning the Presidential Unit Citation for its wartime actions. *Wahoo* sank three quarters of a century ago, but its legacy endures.

Photo by Mass Communication Specialist 3rd Class Tristan Lotz

Lt. Cmdr. Bradley Boyd, speaks of the legacy of Cmdr. Dudley "Mush" Morton, commanding officer of USS *Wahoo* (SSN 238), during a ceremony held onboard Naval Submarine Base (SUBASE) New London in recognition of the 75th anniversary of *Wahoo*'s sinking during WW II, earning the Presidential Unit Citation for its wartime actions.

EMNCS Anthony G. Fortner
SMMS PMT Kings Bay

EMNCS Sean Fortney
COMSUBRON 17

ETNCM Adam M. Foster
USS *Boise* (SSN 764)

MMNCM William V. Foutz
COMSUBGRU 8

MMNC Nicholas E. Francis
COMSUBRON 4

EMNCS Cory L. Frazier
USS *Chicago* (SSN 721)

ETNC Kevin R. Frey
SUBTRAFAC NORFLT

MMNCS John P. Fronek
NPTU Charleston BOS

MMNC Victor M. Fuller
NPTU Charleston D MTS

MMNCS Bruce W. Fullmer
CSPR W C SMMS/PM

EMNC James R. Gagnon
SUBTRAFAC NORFLT

EMNCM Angelo H. Galindo
CNAVPERSCOM MILL

ETNCS Zachary N. Gallegos
USS *North Carolina* (SSN 777)

ETNC John J. Garcia
NPTU Charleston GST

MMNCM Franklin K. Gardner
DIRDIVOFNREACDOE

EMNC Michael V. Garland
USS *New Hampshire* (SSN 778)

ETNCM Craig M. Garner
USS *Florida* (SSGN 728)

MMNC Christopher R. Gatlin
USS *Henry M. Jackson* (SSBN 730) (G)

ETNCS David C. Gaughan
COMSUBGRU 8

MMNCM Joshua J. Geasey
NPTU Charleston BOS

ETNCM James R. Gerow
USS *Rhode Island* (SSBN 740) (B)

EMNC John E. Gibbons
USS *Alaska* (SSBN 732)

MMNC Robert D. Gilkerson
USS *Kentucky* (SSBN 737) (G)

MMNCM Matthew L. Glisson
COMSUBGRU 10

MMNC Christopher J. Godt
COMSUBRON 15

EMNC Patrick A. Golub
COMSUBRON 16

ETNC Raymond Gomez
USS *Pennsylvania* (SSBN 735)

ETNC Edwardo Gonzalez
USS *Oklahoma City* (SSN 723)

ETNC Matthew R. Goodwin
USS *Alabama* (SSBN 731) (B)

ETNCM James P. Gorman
COMSUBLANT

EMNCS Nathan L. Gottsch
USS *Columbus* (SSN 762)

EMNCS Matthew M. Gowan
TRIREFAC Kings Bay

MMNC Alex C. Gozzola
USS *Minnesota* (SSN 783)

MMNCS Brian P. Green
COMSUBRON 12

EMNC Robert L. Green
USS *Alaska* (SSBN 732) (B)

EMNCS Theodore W. Griffith
COMSUBRON 4

MMNCS Dominick A. Grimaldi
USS *Providence* (SSN 719)

EMNCM Derek G. Gruell
NPS Charleston BOS

ETNC Michael S. Halajian
USS *Charlotte* (SSN 766)

ETNC Jimmy D. Hall
NUFLDASCOL Charleston

EMNCS Randy N. Hall
PSBFOROPS COMP

ETNC Matthew C. Hallbauer
USS *Buffalo* (SSN 715)

MMNCM Michael G. Haraburda
PSBFOROPS COMP

ETNC Brian P. Harrison
USS *Jacksonville* (SSN 699)

MMNCS Ryan P. Harrison
USS *West Virginia* (SSBN 736) (B)

MMNCS Paul J. Harton
NPTU Ballston Spa GST

ETNCM Corey R. Haseler-Hansen
NSTCP SITE FTT

MMNCS Todd J. Hatch
USS *Scranton* (SSN 756)

MMNCM William W. Haussler
COMSUBRON 12

MMNCS Jason S. Hays
COMSUBRON 15

EMNCM David D. Hefel
NPTU Charleston BOS

MMNCM Scott A. Heinchon
SHPYD REP Newport News

EMNCS Craig A. Heinzeroth
USS *San Francisco* (SSN 711)

EMNCS Todd E. Hennon
NPTU Charleston GST

MMNC James R. Henrie
SMMS PMT NL

MMNCM Bryan A. Henry
MTS *La Jolla* (SSN 701)

EMNCS Adrian B. Hilderbrand
USS *Louisiana* (SSBN 743) (G)

MMNCS Christopher B. Hisey
USS *Alabama* (SSBN 731) (G)

EMNCM Robert E. Hitchcock
USS *Frank Cable* (AS 40)

ETNCS Donovan E. Hixson
USS *Newport News* (SSN 750)

MMNC Matthew V. Hoff
COMSUBRON 12

MMNC James S. Hoffmeyer
USS *Maryland* (SSBN 738) (G)

Shane D. Hollander
PCU *Delaware* (SSN 791)

ETNC Matthew G. Holman
COMSUBRON 15

EMNCS Richard M. Holtmeyer
USS *California* (SSN 781)

MMNCM Gerry M. Hooker
SUBTRAFAC NORFLT

ETNCS Zane A. Hornsby
SUBSCOL FLT TT

EMNCM Mark L. Hubble
SUBDEVRON 5 STAF

ETNCS Kevin T. Hudson
TTF Kings Bay FLT TT

EMNC Jeremy L. Hughes
USS *John Warner* (SSN 785)

MMNC Gregory R. Hunt
NUFLDASCOL Charleston

ETNCS Justin L. Huntley
USS *Seawolf* (SSN 21)

EMNCS James M. Hutchinson
COMSUBRON 6

ETNCS Edward A. Jackson
USS *Washington* (SSN 787)

MMNCS Paul E. Jackson
USS *Alabama* (SSBN 731) (B)

MMNCM Lynn E. Jacobson
COMSUBRON 7

MMNCS Jesse D. Jelinek
NRMD Kings Bay

MMNC Wayne R. Jenkins
NAVSUBSCOL Groton

MMNCM Charles W. Johnson
PH NSYD & IMF

MMNCS Roy W. Johnson
USS *Kentucky* (SSBN 737) (B)

MMNCS Steven E. Johnson
NRMD PAC

MMNCS Michael H. Johnston
TTF Bangor TT

MMNCM Hans P. Jones
NPTU Charleston BOS

ETNC Jonathan B. Jones
USS *Jefferson City* (SSN 759)

MMNC Gary J. Kalapinski
COMSUBRON 16

EMNC Curtis J. Kammerer
PCU *South Dakota* (SSN 790)

MMNCS Timothy S. Kenny
COMSUBRON 19

MMNCS Ronald J. Kielbasa
USS *Jimmy Carter* (SSN 23)

ETNC Scott E. Kimbler
S NPTU Charleston

MMNCS John T. King
USS *West Virginia* (SSBN 736) (B)

ETNCS Alan J. Kinman
USS *Tennessee* (SSBN 734) (B)

ETNCM Joshua Knauer
SHPYD REP Groton

EMNC Scott P. Koenig
USS *Jimmy Carter* (SSN 23)

MMNCM Christopher K. Konopka
COMSUBRON 6

ETNCS Joshua D. Kornmann
SUBDEVRON 5 STAF

MMNCS David J. Labreche
USS *Key West* (SSN 722)

MMNCS George P. Landsberger
NPTU Charleston GST

MMNCS Jeffrey J. Larrabee
NPTU Charleston BOS

MMNC Michael F. Ledestich
USS *Georgia* (SSGN 729) (G)

MMNCS Elton G. Lee
USS *San Juan* (SSN 751)

MMNC Joshua G. Leeds
NPTU Charleston GST

ETNC Kurtis J. Liberacki
USS *Alaska* (SSBN 732) (B)

ETNCM Anthony R. Liss
NRMD MD New London

ETNCS Christopher J. Little
NUFLDASCOL Charleston

EMNC Matthew A. Looney
USS *Tennessee* (SSBN 734) (G)

MMNCM James D. Lucky
BUPERS

EMNC Steven H. Luley
COMSUBRON 17

EMNC Daniel B. Macomber
NUFLDASCOL Charleston

EMNCS Mitch E. Mahan
USS *Louisville* (SSN 724)

ETNCS Nicholas B. Manning
USS *Nebraska* (SSBN 739) (B)

MMNC Justin M. Marchione
COMSUBRON 1

ETNCS Thomas A. Marsland
USS *Connecticut* (SSN 22)

ETNCM Frank Mason
USS *Charlotte* (SSN 766)

MMNC Christopher M. Matter
USS *Illinois* (SSN 786)

MMNCM Matthew J. Matteson
CNR Arlington

ETNCS Bradley R. May
USS *Henry M. Jackson* (SSBN 730) (G)

MMNCM Wayne A. Maynor
USS *La Jolla* (MTS 701)

ETNCS Ethan P. Mayo
USS *Texas* (SSN 775)

ETNCS Anthony T. Mazza
NPTU Charleston D MTS

MMNCS Edward F. McGuire
USS *Georgia* (SSGN 729) (B)

ETNCS Brian J. McInvale
USS *Missouri* (SSN 780)

MMNCS Stephen M. McKinley
USS *Nebraska* (SSBN 739) (G)

ETNCM Thomas P. McKinney
COMSUBLANT

MMNCM Michael A. McMurtray
SHPYD REP NNSY

ETNCS Ryan B. McVeigh
USS *Indiana* (SSN 789)

ETNCS Ronald V. McVicker
USS *Minnesota* (SSN 783)

EMNCM James W. Meador
NUFLDASCOL Charleston

MMNCS David M. Medert
USS *Topeka* (SSN 754)

MMNCS Jeffrey H. Mejia
USS *Olympia* (SSN 717)

EMNCS Michael L. Mercer
USS *Tennessee* (SSBN 734) (G)

ETNCS Lyle Q. Milner
FSC Great Lakes

EMNC Bradley A. Monell
COMSUBRON 15

EMNCM Zachary T. Montello
SR ENL ACAD

ETNCS John F. Moran
USS *La Jolla* (MTS 701)

ETNCM Scott A. Morgan
CSP SHPYD REP PS

EMNCS Michael C. Morris
USS *La Jolla* (MTS 701)

MMNCS Randall D. Morris
NPTU Charleston D MTS

MMNCS Michael W. Mrsny
USS *Alexandria* (SSN 757)

MMNC Kenneth J. Murray
USS *Annapolis* (SSN 760)

ETNCM Richard D. Nantell
PCU *South Dakota* (SSN 790)

MMNCS Ben D. Narkis
COMSUBRON 20

EMNC Wayne A. Neufeld
USS *Alabama* (SSBN 731) (G)

MMNCS Joshua A. Newcomb
NPTU BALLSSPABOS

MMNCS Jonathan E. Noll
DIRDIVOFNREACDOE

MMNC Nicholas L. Northrup
USS *Pittsburgh* (SSN 720)

MMNCS Matthew D. Noury
USS *New Hampshire* (SSN 778)

MMNCS Michael R. Nutt
USS *Pennsylvania* (SSBN 735) (B)

MMNCS Alex J. O'Connor
COMSUBRON 11

EMNCM Shawn R. Olmstead
USS *Vermont* (SSN 792)

MMNCS David M. Olsen
USS *Springfield* (SSN 761)

MMNC Cody P. Olson
USS *Scranton* (SSN 756)

EMNC Peter A. Olson
USS *Minnesota* (SSN 783)

MMNCM Jacob A. Orlowski
COMSUBRON 4

MMNCM Edward T. Oskorep
USS *Pittsburgh* (SSN 720)

MMNC Jeffrey M. Owen
NRMD MD New London

MMNCM Steven D. Owens
TTF Bangor TT

MMNCS James L. Oxendine
USS *Minnesota* (SSN 783)

MMNCS Dustin A. Palmer
SUBDEVRON 5 STAF

MMNCS Jonathon P. Parks
SUBTRAFAC NORFLT

EMNC Trent M. Parrish
COMSUBRON 6

MMNCM Ryan D. Parsons
COMSUBRON 19

ETNC Jeremy P. Patin
USS *Bremerton* (SSN 698)

ETNCM Matthew T. Payne
COMSUBGRU 9

MMNC Apollo S. Pedersen
SMMS PMT Kings Bay

MMNCS David A. Pefley
USS *Pasadena* (SSN 752)

EMNCS Brett J. Percich
COMSUBRON 19

MMNCS Robert L. Perry
USS *Hampton* (SSN 767)

ETNCS Joshua B. Peterson
COMSUBRON 12

MMNC Glen C. Phillips
USS *John Warner* (SSN 785)

ETNCM Eric R. Playdon
PSBFOROPS COMP

EMNCS Donte T. Polson
USS *Cheyenne* (SSN 773)

ETNC Jason M. Polzin
PH NSYD & IMF

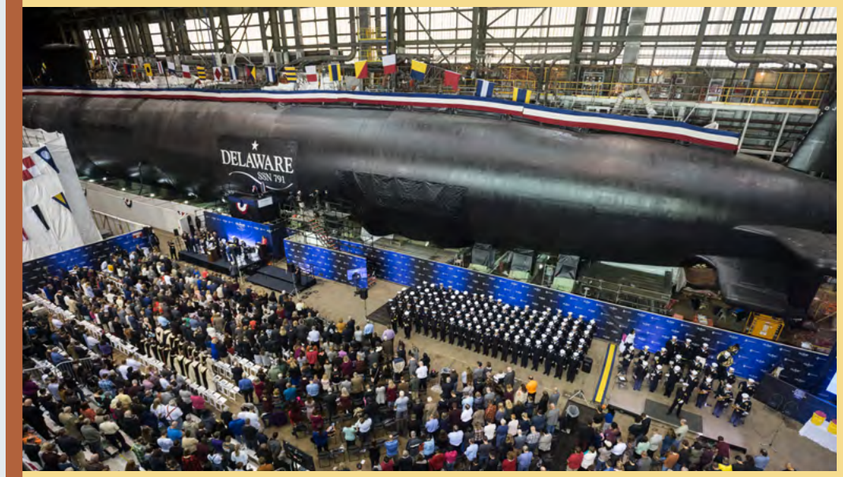


Photo by Newport News Shipbuilding 2018/Matt Hildreth

Huntington Ingalls Industries christened the *Virginia*-class submarine *Delaware* (SSN 791) on Saturday, Oct. 20, 2018 at the company's Newport News Shipbuilding division. Jill Biden, the former Second Lady of the United States and the ship's sponsor, smashed a bottle of sparkling wine against the hull, celebrating the latest milestone of the newest U.S. Navy vessel prior to its launch.

MMNC Brian D. Ponder
USS *Pennsylvania* (SSBN 735) (G)

MMNC Joseph T. Powell
COMSUBRON 19

ETNCM Gregory E. Prichard
NETPDC Pensacola

MMNC John W. Primm
TTF Kings Bay

EMNC Michael T. Proskine
SUBTRAFAC NORFLT

EMNCS Michael W. Quackenbush
USS *Toledo* (SSN 769)

MMNCM James T. Qualls
USS *Michigan* (SSGN 727) (G)

EMNCS Travis J. Radzyminski
USS *Oklahoma City* (SSN 723)

ETNCS Steven J. Ralph
USS *Hartford* (SSN 768)

MMNCS Nathaniel R. Ranck
SHPYD REP Newport News

MMNC William K. Ransdell
NRMD Kings Bay

EMNC Jonathan D. Ray
USS *Maryland* (SSBN 738) (B)

EMNC Jesse L. Rayburn
USS *Louisiana* (SSBN 743) (G)

ETNC Robert L. Reed
TRIREFAC Kings Bay

EMNC Justin W. Reese
USS *Henry M. Jackson* (SSBN 730) (G)

EMNCS Jason D. Reifsnyder
USS *Maryland* (SSBN 738) (B)

EMNCS Michael S. Reuss
USS *Hawaii* (SSN 776)

MMNCS Alan E. Rice
CSP SHPYD REP PS

EMNC Charles W. Rivers
NRMD Kings Bay

MMNCM Courtney C. Roach
NPTUBALL SPA GST

EMNCS James F. Robinson
USS *West Virginia* (SSBN 736) (G)

EMNCM Andrew L. Rockman
USS *Alaska* (SSBN 732) (B)

MMNCS Anthony J. Romano
SHPYD REP Groton

EMNC James M. Ross
COMSUBRON 20

MMNCS Michael S. Rossow
NPTU Charleston GST

MMNCS Jason P. Rubenstein
USS *Ohio* (SSGN 726) (B)

MMNCS Steven L. Rueschenberg
USS *Mississippi* (SSN 782)

ETNC Aaron T. Ruffin
USS *New Hampshire* (SSN 778)

ETNCS Steven B. Rush
COMSUBRON 11

MMNCS John P. Russo
USS *Rhode Island* (SSBN 740) (G)

ETNCM Justin M. Ryman
USS *Maryland* (SSBN 738) (G)

MMNC Arnoldo Saenz
Bangor SMMS PMT

ETNC Michael A. Schaefer
USS *Louisiana* (SSBN 743) (B)

ETNCS Todd R. Schaefer
NRMD Kings Bay

ETNCS Darby K. Schaff
SLCDET SD FLT TT

MMNCM Brian J. Schlapkohl
USS *Henry M. Jackson* (SSBN 730) (B)

MMNC Robert G. Schmitz
COMSUBRON 6

ETNC Justin W. Schow
COMSUBRON 20

ETNCM Eric S. Schroeder
USS *Maine* (SSBN 741) (B)

EMNCS Eric R. Schulte
USS *Tucson* (SSN 770)

MMNCS Benjamin T. Schulz
USS *Colorado* (SSN 788)

EMNCS Steven A. Schulz
USS *Bremerton* (SSN 698)

EMNC Kevin D. Schwalbach
COMSUBRON 15

ETNC Zachary C. Scott
USS *Indiana* (SSN 789)

MMNC Daniel A. Selby
USS *Nevada* (SSBN 733) (B)

MMNCS Shane T. Shadrick
NNPTC Charleston

EMNCS Joseph M. Shaffner
USS *Greeneville* (SSN 772)

ETNCS Robert L. Shawver
COMSUBRON 17

EMNCM Jonathan P. Sheldon
SUBSCOL FLT TT

MMNCM John K. Shingleton
COMSUBRON 16

EMNCS Heath M. Shirley
CNAVSAFECEN NORV

MMNCS Wesley M. Shuman
NRMD Point Loma

ETNC Joseph W. Simecek
NUFLDASCOL Charleston

EMNCS Bitt O. Sims
USS *Santa Fe* (SSN 763)

EMNCS Michael E. Sims
USS *Pasadena* (SSN 752)

MMNCM Charles E. Skelton
NPTU Charleston BOS

EMNCS Jerome M. Smallwood
USS *Montpelier* (SSN 765)

EMNCS Alexander T. Smerz
PH NSYD & IMF

ETNCS Colin A. Smith
COMSUBRON 19

EMNCS Daniel P. Smith
SLC Groton

ETNCS Matthew C. Smith
USS *John Warner* (SSN 785)

ETNCS Randy M. Sparks
USS *Annapolis* (SSN 760)

ETNCS Dustin L. Spicer
USS *Hampton* (SSN 767)

MMNC David A. Spisak
COMSUBRON 4

MMNC Eric B. Stanton
USS *New Mexico* (SSN 779)

EMNC Randell C. Stark
SUBTRAFAC NORFLT

MMNCS Jason M. Statler
USS *Nevada* (SSBN 733) (B)

MMNCM Aaron M. Stein
SUBTRAFAC NORFLT

ETNCS Jonathan M. Stephens
NPTU BALL MARF

MMNCS Scott S. Stephenson
SLC Groton

EMNCS Mark W. Steward
USS *Louisiana* (SSBN 743) (B)

EMNCS Robert A. Stough
USS *Pennsylvania* (SSBN 735) (G)

EMNC Jonathan A. Sword
USS *Illinois* (SSN 786)

MMNC Scott A. Tadevich
COMSUBRON 1

MMNC Albert D. Taylor
USS *Santa Fe* (SSN 763)

MMNCM Glenn A. Teter
S NPTU Ballston Spa

MMNC Bryan J. Thebo
COMSUBRON 16

EMNC Richard T. Thompson
USS *Montpelier* (SSN 765)

ETNCS Ivan R. Tirona
SLCDET SD FLT TT

MMNCM Christopher L. Tolliver
CNAVPERSCOM MILL

EMNCS Nathaniel L. Toole
DIRDIVOFNREACDOE

ETNC Joel A. Tortoriello
PCU *Oregon* (SSN 793)

ETNC Bradley A. Tracy
NPTU Charleston D MTS

MMNCS Eric W. Turner
USS *Missouri* (SSN 780)

ETNCS Terrance S. Tyson
COMSUBRON 15

EMNC Matthew C. Vance
NPTU Charleston D MTS

MMNCS Gary D. VanDyk
USS *Maryland* (SSBN 738) (B)

MMNCS Jason T. VanGorden
NSSC OTH Bangor

EMNC Anthony J. Vezina
SUBDEVRON 5 STAF

MMNCS Craig A. Vivian
USS *Alaska* (SSBN 732) (G)

MMNC Joshua G. Walton
TTF Kings Bay

ETNCM Anthony J. Waters
COMSUBRON 16

EMNCM Michael S. Watson
PSBFOROPS COMP

MMNC Walter R. Webb
NUFLDASCOL Charleston

EMNCS David A. Welch
USS *Nevada* (SSBN 733) (G)

EMNCS Travis S. White
USS *San Francisco* (SSN 711)

ETNC Austin D. Whitmer
NNPTC Charleston

MMNCS Christopher V. Wilkerson
SHPYD REP Portsmouth

EMNCS Carl L. Will
NPTU Charleston D MTS

MMNC Joshua P. Willett
USS *Oklahoma City* (SSN 723)

MMNCS Joseph C. Winn
USS *Helena* (SSN 725)

ETNCS Joseph P. Wisniewski
USS *West Virginia* (SSBN 736) (B)

EMNC Peter N. Woelkers
NIMF PACNORWEST

MMNCS Benjamin A. Woellert
NPTU Ballston Spa BOS

ETNCM Leonard B. Wolf
PCU *Hyman G. Rickover* (SSN 795)

ETNCS David L. Wright
COMSUBRON 7

MMNCS Joseph B. Wright-McGee
COMSUBRON 7

ETNCS Andrew J. Yates
USS *Wyoming* (SSBN 742) (B)

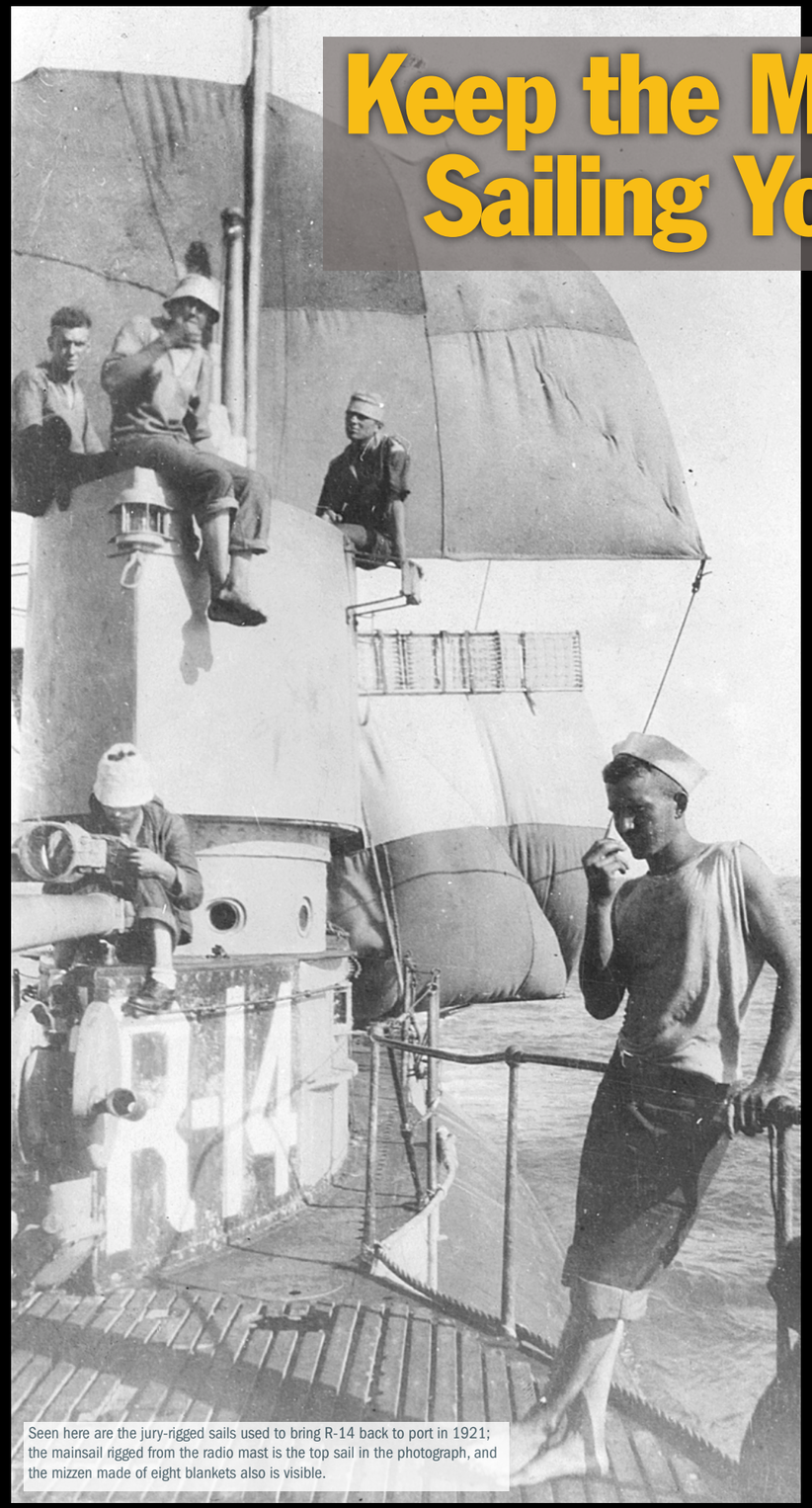
MMNCS Timothy R. Zenner
USS *Mississippi* (SSN 782)

MMNC Jason N. Zerweck
S NPTU Charleston

Battenberg Cup Awarded

Vice. Adm. Charles "Chas" Richard, Commander, Submarine Forces, presents the 2017 Battenberg Cup Award to Cmdr. Matthew Fanning, commanding officer of the *Los-Angeles* class fast-attack submarine USS *Hartford* (SSN 768), and his crew during the 2017 Battenberg Cup Award presentation ceremony. The Battenberg Cup is presented annually to the best all-around ship or submarine in the Atlantic Fleet on the amassing of the crew's success.

Photo by Mass Communication Specialist 1st Class Steven Hoskins



Seen here are the jury-rigged sails used to bring R-14 back to port in 1921; the mainsail rigged from the radio mast is the top sail in the photograph, and the mizzen made of eight blankets also is visible.

Keep the Magazine Sailing Your way!

We hope you enjoy reading *UNDERSEA WARFARE Magazine* as much as we enjoy providing you with wide ranging information on the U.S. Submarine Force and other undersea warfare releated topics.

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What types of articles interest you most (historical, technical, event coverage, or other?

What types of topics would you prefer to see more of in the magazine?

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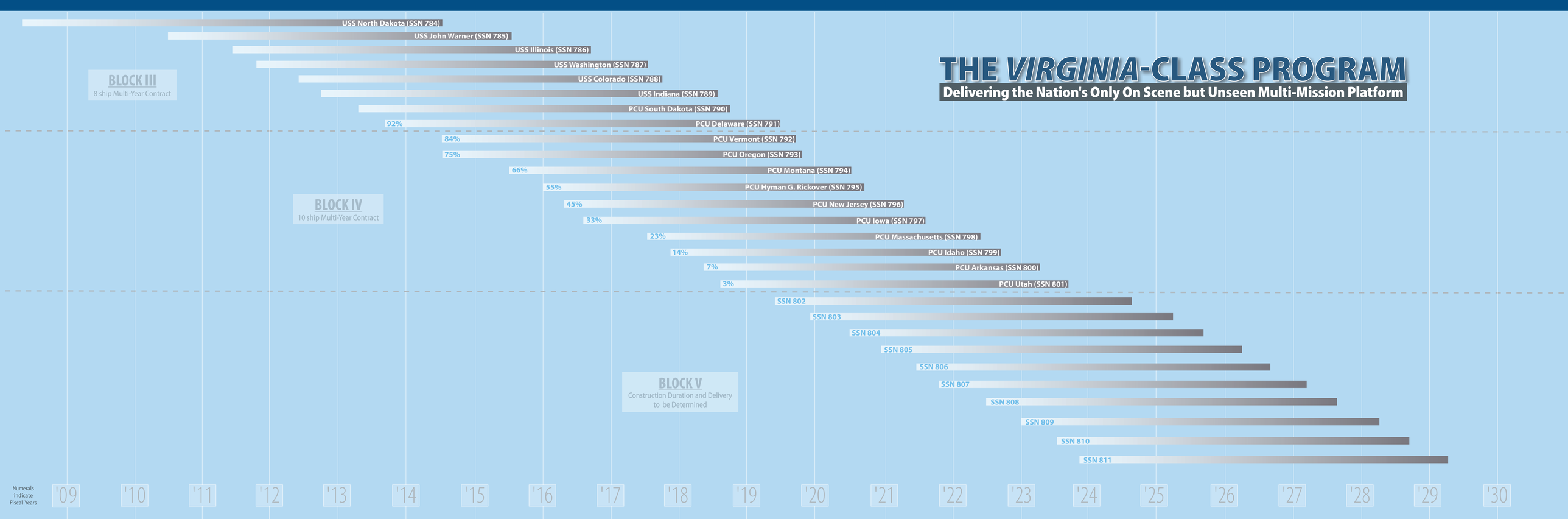
Delivering the Nation's Only On Scene but Unseen Multi-Mission Platform



PACIFIC SUBMARINE FORCE ORGANIZATION

SUBDEVRON 5
Capt. Stephen Mack

Seawolf (SSN 21)*	Cmdr. Christopher George
Jimmy Carter (SSN 23)	Cmdr. Keith Floyd

Puget Sound Naval Shipyard

Connecticut (SSN 22)	Cmdr. Carl Trask

SUBRON 19
Capt. Michael Lewis

Ohio (SSGN 726) (B)	Capt. David Soldow
Ohio (SSGN 726) (G)	Capt. William Johnson
Michigan (SSGN 727) (B)	Capt. Bradley Terry
Michigan (SSGN 727) (G)	Capt. James Belz
Maine (SSBN 741)	Cmdr. Kelly Laing

**located in Bremerton, Wash.*

SUBRON 11
Capt. Christopher Cavanaugh

Pasadena (SSN 752)	Cmdr. Corey Poorman
Scranton (SSN 756)	Cmdr. Aaron Peterson
Alexandria (SSN 757)	Cmdr. Todd Santala
Annapolis (SSN 760)	Cmdr. John Witte
Hampton (SSN 767)	Cmdr. Phillip Sylvia, Jr

SUBRON 1
Capt. Richard Seif

Bremerton (SSN 698)	Cmdr. Travis Zettel
Jacksonville (SSN 699)	Cmdr. Steven Faulk
Buffalo (SSN 715)	Cmdr. Micah Maxwell
Charlotte (SSN 766)	Cmdr. Timothy Yanik
Greeneville (SSN 772)	Cmdr. Terry A. Nemec
Texas (SSN 775)	Cmdr. Michael Dolbec
North Carolina (SSN 777)	Cmdr. Matthew Lewis
Missouri (SSN 780)	Cmdr. George Howell
Mississippi (SSN 782)	Cmdr. Heath Johnmeyer
Illinois (SSN 786)	Cmdr. Neil Steinhagen
Pearl Harbor Naval Shipyard	
Hawaii (SSN 776)	Cmdr. Sterling Jordan

Manama, Bahrain

SUBRON 21
Capt. Sean Muth

Bangor, Wash.

SUBRON 17
Capt. Nicholas Tilbrook

Henry M. Jackson (SSBN 730) (B)	Cmdr. John Frye
Henry M. Jackson (SSBN 730) (G)	Cmdr. Kevin Macy
Alabama (SSBN 731) (B)	Cmdr. Jeff Yackeren
Alabama (SSBN 731) (G)	Cmdr. Matthew Chapman
Nevada (SSBN 733) (B)	Cmdr. Ryan Heilman
Nevada (SSBN 733) (G)	Cmdr. Edward Fulz
Pennsylvania (SSBN 735) (B)	Cmdr. Hans Fosser
Pennsylvania (SSBN 735) (G)	Cmdr. Roger Ferguson
Kentucky (SSBN 737) (B)	Cmdr. Kenneth Roman
Kentucky (SSBN 737) (G)	Cmdr. James Hurt
Nebraska (SSBN 739) (B)	Cmdr. James Lembo
Nebraska (SSBN 739) (G)	Cmdr. Jake Wadsley
Louisiana (SSBN 743) (B)	Cmdr. Chimi Zacot
Louisiana (SSBN 743) (G)	Cmdr. Martin E. Sprague

San Diego, Calif.

ARCO (ARDM 5)	Lt. Cmdr. Zachary Harry
Undersea Rescue Command	Cmdr. Mark Hazenberg

Pearl Harbor, Hawaii

SUBRON 7
Capt. Paul Davis

City of Corpus Christi (SSN 705)	Cmdr. James Thorp
Houston (SSN 713)	Cmdr. Andrew Ring
Chicago (SSN 721)	Cmdr. Chance Litton
Louisville (SSN 724)	Cmdr. Robert Rose
Jefferson City (SSN 759)	Cmdr. Steven Dawley
Columbus (SSN 762)	Cmdr. Albert Alarcon
Portsmouth Naval Shipyard	
Santa Fe (SSN 763)	Cmdr. Christopher Hedrick
Tucson (SSN 770)	Cmdr. Chad Hardt
Columbia (SSN 771)	Cmdr. Tyler Forrest
Cheyenne (SSN 773)	Cmdr. John T. Gonser
Pearl Harbor Naval Shipyard	
Olympia (SSN 717)	Cmdr. Ben Selph

Santa Rita, Guam

SUBRON 15
Capt. Timothy Poe

Key West (SSN 722)	Cmdr. J. Grady Hill
Oklahoma City (SSN 723)	Cmdr. Thomas O'Donnell
Topeka (SSN 754)	Cmdr. Steven Tarr III
Asheville (SSN 758)	Cmdr. Jeremy Pelstring
Emory S. Land (AS 39)	Capt. Michael Luckett
Frank Cable (AS 40)	Capt. Andrew St. John

[AS OF NOVEMBER 2018]

ATLANTIC SUBMARINE FORCE ORGANIZATION

Groton, Conn.

SUBRON 4
Capt. Brian Sittlow

Montpelier (SSN 765)	Cmdr. Brad Swanbeck
Virginia (SSN 774)	Cmdr. Jeffery Anderson
California (SSN 781)	Cmdr. Dave Payne
Minnesota (SSN 783)	Cmdr. Brian Tanaka
North Dakota (SSN 784)	Cmdr. Mark Robinson
Illinois (SSN 786)	Cmdr. Neil Steinhagen
PCU *Colorado* (SSN 788)	Cmdr. Reed Koepp
PCU *South Dakota* (SSN 790)	Cmdr. Ronald Winthrow

SUBRON 12
Capt. David Youtt

Providence (SSN 719)	Cmdr. Jason Grizzle
Pittsburgh (SSN 720)	Cmdr. Jason Deichler
San Juan (SSN 751)	Cmdr. Ravi Desai
Springfield (SSN 761)	Cmdr. Brent Spillner
Hartford (SSN 768)	Cmdr. Matthew Fanning
Toledo (SSN 769)	Cmdr. Orville Cave
New Hampshire (SSN 778)	Cmdr. Brandon Todd
New Mexico (SSN 779)	Cmdr. Daniel Reiss

Naples, Italy

CTF 69
Capt. Roger Myer

Norfolk, Va.

SUBRON 6
Capt. Martin Muckian

La Jolla (SSN 701)	Cmdr. James Crosley
San Francisco (SSN 711)	Capt. Daniel Caldwell
Helena (SSN 725)	Cmdr. Andy Cain
Newport News (SSN 750)	Cmdr. Michael Grubb
Albany (SSN 753)	Cmdr. Thomas Aydt
Boise (SSN 764)	Cmdr. Kris Lancaster
John Warner (SSN 785)	Cmdr. William Wiley
Washington (SSN 787)	Cmdr. Gabe Cavazos
Indiana (SSN 789)	Cmdr. David Grogan
PCU *Delaware* (SSN 791)	Cmdr. Brian P. Hogan

Kings Bay, Ga.

SUBRON 16
Capt. Eric Nash

Florida (SSGN 728) (B)	Capt. Brett Moyes
Florida (SSGN 728) (G)	Capt. Greg Kercher
Georgia (SSGN 729) (B)	Capt. George Perez
Georgia (SSGN 729) (G)	Capt. Douglas Jordan
Norfolk Naval Shipyard	
Rhode Island (SSBN 740) (B)	Cmdr. Jeremy Miller
Rhode Island (SSBN 740) (G)	Cmdr. Jason Anderson

SUBRON 20
Capt. Robert E. Wirth

Alaska (SSBN 732) (B)	Cmdr. David P. Brooks
Alaska (SSBN 732) (G)	Cmdr. Eric Cole
Tennessee (SSBN 734) (B)	Cmdr. Paul Seitz
Tennessee (SSBN 734) (G)	Cmdr. Jon Schaffner
West Virginia (SSBN 736) (B)	Cmdr. Jared Wyrick
West Virginia (SSBN 736) (G)	Cmdr. Jay Bijeau
Maryland (SSBN 738) (B)	Cmdr. Jesse Pruitt
Maryland (SSBN 738) (G)	Cmdr. Michael Paisant
Wyoming (SSBN 742) (B)	Cmdr. Christopher Gilmore
Wyoming (SSBN 742) (G)	Cmdr. Kenneth Curtin Jr.

USS *Swordfish* (SS 193)

USS *Swordfish* began her first war patrol from Manila the day after the attack on Pearl Harbor. On December 9 *Swordfish*'s crew attacked their first enemy merchant ship. Having heard an explosion, they believed they had sunk it. This was the first attack of the war by a U.S. submarine on an enemy merchant ship.

Swordfish's first confirmed sinking came on December 16th. Her crew spotted a merchant convoy and they fired three torpedoes at the lead merchant ship, sinking the *Atsutasan Maru*.

Swordfish's first war patrol, resulting in four freighters sunk and a fifth damaged, was a tremendous success, particularly in light of the then-unknown Mk14 torpedo problems, the general climate of risk aversion among submarine skippers, and submarine tactics untested in combat.

During her 12th war patrol, *Swordfish* was lining up for an attack on a guarded convoy. A destroyer became aware of the submarine's presence and rapidly zig-zagged in *Swordfish*'s direction. At a distance of only 1,200 yards, *Swordfish* fired four Mk18 torpedoes at the destroyer and went deep. Two torpedoes struck the destroyer *Matsukaze*, sinking it.

Swordfish went missing during her 13th war patrol. The boat received three Navy unit commendations and eight battle stars.

According to JANAC, *Swordfish* sunk 11 non-combatant vessels, one of which was a converted gunboat, and one combatant vessel, the destroyer *Matsukaze*, for a total of 47,928 tons. Another source claims that *Swordfish* sunk 18 non-combatants and the *Matsukaze* and damaged 10 others for a total, sunk or damaged, of 130,362 tons.

The image above, taken in 1944, was painted on the side of the boat's conning tower. The flag shows that *Swordfish* had sunk 20 merchant vessels and two combatant vessels.