

UNDERSEAWARFARE

U. S. S U B M A R I N E S . . . B E C A U S E S T E A L T H M A T T E R S

SUBMARINE RESCUE From Early Devices to Deep Sea Rescue



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30 years young

Undersea Rescue Command

Sub crews visit New Mexico

Submarine Group 7



SUBMARINE RESCUE

From Early Devices to Deep Sea Rescue

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Machinist Mate 1st Class Kris Wotzka and Damage Control Man 3rd Class Kenneth McCollum attached to the Deep Submergence Unit at Naval Air Station (NAS) North Island, assist launching Lt. Cmdr. Keith Lehnhardt in an Atmospheric Dive Suit (ADS) into a training pool for evaluation. The primary use of the ADS is for Submarine rescue missions.

Photo by Photographer's Mate 2nd Class Prince Hughes III

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FORCE COMMANDER'S CORNER

Vice Adm. Michael J. Connor, USN
Commander, Submarine Forces



Happy Holidays! As 2014 enters the history books, we set our eyes on maintaining undersea dominance in 2015 and setting the foundation of excellence for the future. I hope those of you who were home for the holidays had some time to spend with family and friends; and to those who were underway, we thank you for your service and sacrifice.

This edition of *UNDERSEA WARFARE* Magazine focuses on an extremely important aspect of submarine safety: submarine rescue. It is an area that we must continuously strive to improve and keep the discussion fresh. Our low mishap rate can lead us to lower our guard on safety measures we hope to never need. We cannot let that happen.

Since the tragic losses of USS *Thresher* (SSN 593) and her crew in April of 1963 and USS *Scorpion* (SSN 589) in May of 1968, submarine escape and rescue has been a high priority for the U.S. Navy. We demand consistent training, rigorous qualifications, and ever evolving submarine rescue capabilities to maintain our crews' safety.

From training and equipping our crews with the most advanced escape and survival equipment to maintaining state-of-the-art rescue vessels, our community is committed to doing everything in our power to save lives in the unfortunate event of a tragedy at sea involving any of our submarines or our partners and allies around the world.

We are concentrating on providing as many deep rescue capabilities as possible. From transferring Sailors from deep depths and high pressure through a decompression chamber to using the most modern pressurized rescue systems, state-of-the-art deep diving rescue systems and decompression systems, we are ensuring interoperability with our partner nations that have similar rescue techniques.

We will always remember and learn from past tragedies such as *Thresher* and *Scorpion* and continue to strive for perfection in saving lives. Rest assured we are working hard at keeping submarine rescue in the forefront of undersea operations. It is truly amazing how far we have come, and the future of submarine rescue looks wide open with today's scientific and technical advancements.

I want everyone to remember how important each and every one of our Submariners and family members are to the submarine community. I want to thank you all for doing what it takes to keep our Sailors safe this holiday season. Undersea warfare dominance would not be possible without you! I am extremely proud of all of you, and I hope everyone had a safe, happy, and healthy holiday season.

"I want everyone to remember how important each and every one of our Submariners and family members are to the submarine community. I want to thank you all for doing what it takes to keep our Sailors safe this holiday season."

A handwritten signature in black ink that reads "M. J. Connor". The signature is fluid and cursive.

M. J. Connor



DIVISION DIRECTOR'S CORNER

Rear Adm. Joseph E. Tofalo, USN
Director, Undersea Warfare Division

Undersea Warriors,

As 2014 comes to a close, it is fitting to pause and look back at the past year, and all we have accomplished. Congratulations on a fantastic year!

In October we commissioned USS *North Dakota* (SSN 784), the first of the *Virginia*-class Block III and the 7th straight *Virginia* to be delivered ahead of schedule despite a 20% redesign over previous blocks. Block III submarines are being built with the Virginia Payload Tube, which replaces the 12 individual vertical launch tubes with two 87-inch diameter tubes that house six Tomahawks each, and has the potential to expand payload possibilities. Block III also includes the Large Aperture Bow Array, replacing the traditional Spherical Array.

“Not only do we continue to deliver new submarines to the fleet, but we are making our current submarines go beyond their originally designed service lives.”

This year we christened the first *Virginia*-class to be homeported in Norfolk, Va., USS *John Warner* (SSN 785), and laid the keel of two other *Virginia*-class submarines, USS *Illinois* (SSN 786) and USS *Washington* (SSN 787). We also awarded the contract for 10 Block IV submarines, the largest shipbuilding contract in history at \$18 billion. This is only possible because of the sustained success of each and every person involved in the *Virginia*-class program.

Not only do we continue to deliver new submarines to the fleet, but we are making our current submarines go beyond their originally designed service lives. We have extended the service lives of multiple SSNs this year and celebrated a significant milestone with USS *Henry M. Jackson* (SSBN 730) surpassing her originally intended service life of 30 years. In this issue you will read about the hard work and dedication of our Sailors and civilians to keep *Henry M. Jackson*

at sea and operating out to an unprecedented 42 years. Keeping *Ohio*-class submarines at sea for 42 years is critical as we prepare for the transition to the Ohio Replacement.

Also in this issue you will read about the outstanding team of active duty, contractors, and reservists at Undersea Rescue Command who are always on call to respond around the globe in the event of a submarine casualty. Not only are they redefining submarine rescue for the United States, they also have partnerships and agreements with approximately 40 other countries around the world.

It's this type of hard work and dedication by our men and women that make us the most powerful and successful Submarine Force in the world. I am proud of each and every one of you, I thank you for outstanding work in 2014, and look forward to serving you in 2015.

A handwritten signature in black ink, reading "J. E. Tofalo". The signature is stylized and cursive.

J. E. Tofalo

UNDERSEAWARFARE

The Official Magazine of the U.S. Submarine Force

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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



Silver Inkwell Award Winner

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.

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FROM THE EDITOR

Stay connected, stay informed, and keep learning.

If you don't already follow us on Facebook and Twitter, now is the time to start!

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Sailors First Has a New Home!

If you turned to this page expecting to see the customary Sailors First photo, we are pleased to announce Sailors First has a new location on page 23 and is joined by a variety of news items and other information that we hope will be of interest to the enlisted Submariner.



Photo courtesy of NavSource



HENRY Celebrates 30

On Oct. 6, 2014, the Blue and Gold crews of USS *Henry M. Jackson* (SSBN 730) celebrated the sub's 30th anniversary with a ceremony at the Naval Base Kitsap-Bangor, becoming the first *Ohio*-class SSBN to go beyond its originally planned 30-year service life.

The ceremony was hosted by the boat's crews and Anna Marie Jackson-Laurence, the sub's sponsor and daughter of the late Sen. Henry M. Jackson. The senator served as the ranking member on the Senate Armed Services Committee and aggressively supported the Trident submarine program. Sen. Jackson was born in Everett, Wash., May 31, 1912, served 42 years in Congress, and ran for president in 1972 and again in 1976.

Photo by Sonar Technician (Submarine) 2nd Class Will Blackshear



Photo by Linda Skonieczny



Photo courtesy of Vice Adm. Konezmi

M. JACKSON Years of Service



Anna Marie-Laurence, her husband Richard Laurence and son Daniel Laurence during a tour of the ship as part of the 30th anniversary.

“Thirty years ago, then Ms. Anna Marie Jackson had the esteemed honor of bringing this warship into service, and today she’s here to help us enter an uncharted era in the *Ohio*-class SSBN fleet,” said Cmdr. Edward Robledo, *Henry M. Jackson* Gold crew commanding officer. “It is our responsibility to the citizens of this great nation to ensure we maintain USS *Henry M. Jackson* as the premier strategic asset until its planned inactivation in 2027.”

Other guests in attendance included Jackson’s son-in-law, Richard Laurence, and grandson, Daniel Laurence, city of Everett official Pat McClain, and several members of local Navy Leagues.

“I know my father would be very proud of the crews of USS *Henry M. Jackson* for their expertise, hard work, and sacrifice in the defending of our country,” said Jackson-Laurence. “As the submarine’s sponsor, thank you for letting me be a symbolic part of this great team.”

When *Henry M. Jackson* was commissioned Oct. 6, 1984, it was anticipated the service life would be 30 years. In 1990, however, after an exhaustive engineering analysis, Navy leadership extended the service life to 42 years.

To meet this challenge and to ensure that equipment aboard *Henry M. Jackson* is capable of operating past the ship’s original 30-year designed lifespan, the crews are maintaining an aggressive preventive and corrective maintenance program using a phased maintenance strategy to maximize operational availability. This process allows the ship to be maintained using shorter-duration maintenance availabilities and refit periods as opposed to longer-duration overhauls. Occasionally an extended refit period will be scheduled to accomplish maintenance that cannot be conducted during a normal refit availability. Both normal

Photos by Chief Mass Communication Specialist Ahron Arendes

and extended refit periods are built into the ship's operating cycle.

"The *Ohio*-class submarines of today have proven to be stealthy, flexible, and capable of patrolling in vast open ocean areas well beyond the reach of any potential adversary, making them the world's most effective and credible deterrent force over their entire service life," said commander of Submarine Group 9 Rear Adm. David M. Kriete. "Though boats like the *Henry M. Jackson* are getting up there in age, they are still highly effective, well-maintained

platforms that can deliver incredible second-strike capability from anywhere in the world.

"This is a very important point in our nation's history as we begin the road to replace the *Ohio*-class SSBN," said Kriete. "It's still in its early stages of design, so it's only through the skill and engineering of the folks who design and maintain these *Ohio*-class submarines that have allowed our Navy to extend their service lives by 40 percent beyond what it was originally designed for."

Though *Jackson* has proven that the *Ohio*-class SSBN can continue to provide our nation

critical strategic deterrence beyond what it was originally designed for, the new class of ballistic missile submarines is on the forefront of the minds of our Navy's leadership.

The entire world has benefited from the continued sacrifice of so many Sailors, civilians and families who have either patrolled on an *Ohio*-class boomer or served in other ways to enable and support those who have. This includes the technical staffs, repair personnel, shipyard workers, trainers, personnel experts, and many others who have contributed their brainpower and sweat to

What it takes to keep the aging Ohio-class at Sea

What does it take to ensure that equipment aboard the Navy's aging *Ohio*-class ballistic missile submarines is capable of operating past the boat's original 30-year lifespan? The Blue and Gold crews aboard USS *Henry M. Jackson* (SSBN 730) are leading the way by maintaining an aggressive preventive and corrective maintenance program using a phased maintenance strategy to maximize operational availability. This process allows the ship to be maintained using shorter maintenance availabilities and refit periods as opposed to longer overhauls. Occasionally an extended refit period will be scheduled to accomplish maintenance that cannot be conducted during a normal refit period. Both normal and extended refit periods are built into the ship's operating cycle.

Henry M. Jackson's extended lifecycle from commissioning to end of life in 2027 consists of two operating cycles, each approximately 250 months in duration with an engineered refueling overhaul in between. One such program that is unique to the *Ohio*-class is the Trident Planned Equipment Replacement (TRIPER) program. TRIPER identifies shipboard equipment that, were it to fail, would require significant maintenance that is either beyond the capability of Ship's Force or would significantly impact the ship's operating schedule and replaces it with a refurbished asset prior to its end of expected lifespan. Diligent management of the TRIPER program has allowed for equipment to be replaced before it fails, helping to ensure the overall reliability of the boat and maintaining overall mission readiness.

The boat also has its own preventive maintenance program that uses a computer-based program called SKED. SKED allows work center supervisors to plan and schedule preventive maintenance within required periodicities that are specific to each piece of equipment. SKED also documents maintenance completion, providing not only a written record but also a database that can be used for trend analysis.

TRIPER and SKED work together to keep aging *Ohio*-class submarines serving beyond their originally designated lifespan. Using a car for comparison, TRIPER would remind you at 59,000 miles to replace your tires because their tread life is 60,000 miles while SKED would remind you periodically to check your tire pressure to prevent avoidable or uneven tire wear.

On another front, the importance of cleanliness and preservation in the extension of a submarine's designed lifespan cannot be overstressed. Corrosion is a significant threat to both the interior and exterior of the submarine and can attack the ship's hull, topside, and bilge areas, causing major damage in a very short period of time if aggressive corrective action is not taken. The crew makes every effort to keep the bilges clean and dry while underway and to correct and prevent further corrosion of painted surfaces while in port. The hull of the submarine is susceptible to marine growth and fouling, which can

lead to increased corrosion, damage to the ship's protective hull coating, and decreased maneuvering characteristics and stealth. After a thorough cleaning, the hull will be closely inspected and all deficiencies incorporated into a painting and preservation plan that is executed prior to undocking.

Finally, the most important factor in taking a ship like *Jackson* past 30 years of service is the crew members and their ability to function as a high-performing team. Perhaps one of leadership's greatest challenges is to properly design teams with the correct skill sets and assigning meaningful work to enable the creation of a crew that has complete buy-in, functions effectively, and adopts the cultural values found onboard. Driven from the top down, a culture of pride, professionalism, and a sense of ownership at the deck-plate level is strong among the crews and is clearly articulated in the command mission statement:

We will fulfill our sworn oaths to the citizens of the United States by maintaining USS *Henry M. Jackson* operational during our watch to ensure she reaches her planned inactivation of 2027. If called upon to execute our primary mission, we will be ready to act as the premier submarine strategic asset without fail.



this mission. The SSBN mission is also made possible thanks to the gracious support we receive from elected officials, local leaders and the communities where these ships are stationed in Bangor and Kings Bay, Ga.

“The Secretary of the Navy Ray Mabus and the Chief of Naval Operations Adm. Jonathan Greenert have acknowledged the Ohio Replacement and an effective sea-based deterrent capability remains the number 1 priority for the Navy,” Kriete said. “The first of at least 12 of the Ohio Replacement SSBNs is currently projected to go on patrol

in 2031. Until the lines are cast off for that mission, the Sailors and civilians supporting the strategic deterrence mission will keep boats like the USS *Henry M. Jackson* at the highest state of readiness, quietly lurking in defense of our nation and its allies.”

During a speech given on the Senate floor after Senator Jackson’s death at the age of 71, he was referred to as a defender of freedom. Today, these same words have become the ship’s motto and can be found on her command insignia. USS *Henry M. Jackson* – Defender of Freedom!



The mission statement further supports this goal by laying out three key focus areas: mission success as warfighting and technical Submariners, professional pride as a Submariner in everything we do, and taking care of our Navy family. Compelling direction and strong communication skills by senior leadership aboard *Henry M. Jackson* have proven extremely beneficial in uniting the crews to achieve the command vision, mission, and goals. The command vision is passed down through the chain of command, ultimately making its way to the leaders of the painting, preservation, maintenance, and planning teams. Through this process, leadership is shared by the chain of command and opportunities are created for senior Submariners to teach junior Submariners not only how to perform the job but why it is important and how their efforts as individual Submariners can make a direct impact on the overall outcome of the project. This process enables buy-in from the most junior levels of any given team aboard *Jackson* and facilitates the ownership piece, which is recognizable when Submariners feel that their contribution is important; they are committed to the objective and are willing to make whatever personal sacrifices necessary for the crew to accomplish its mission.

By Lt. j.g. Philip N. Robinson and Ens. Nathan P. Nusz, *Henry M. Jackson*

Evolution of the Ohio-class Lifecycle



SUBMARINE RESCUE: ANYTIME. ANYWHERE.

Losses in early submarine history inevitably led to the need for being able to rescue submarine crew members trapped in a distressed submarine (DISSUB) on the ocean floor. From the earliest diving-bell rescue vessel, submarine rescue has grown into its own command. Today, the United States Navy coordinates submarine rescue efforts with several other countries' navies to provide global rapid-response submarine rescue capabilities to any nation whose crew members are trapped in a DISSUB. In this article we also look at the Navy's continuing efforts to develop new submarine rescue technologies.





U.S. Navy Submarine Rescue Chambers Flyaway System (SRCFS) is loaded on board an U.S. Air force C-17 during a training exercise, conducted at Naval Air station North Island.

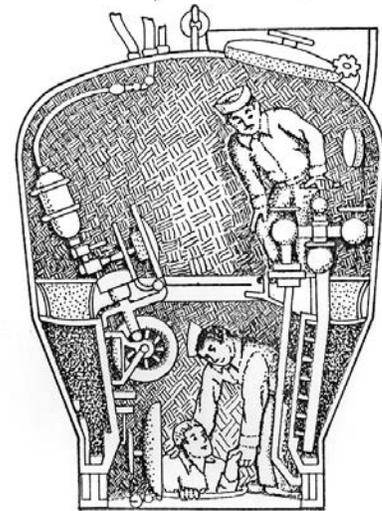
Photo by Electronics Technician Charles T. Grandin

The Birth of Submarine Rescue

Submarines in combat have been documented back to the Revolutionary War when the *Turtle* was designed to attach explosives to moored British ships. As submarines became increasingly abundant, the unfortunate loss of life in the early stages of submarine development made the necessity for submarine rescue capabilities increasingly apparent.

Following the losses of USS *S-51* (SS 162) in 1925 and USS *S-4* (SS 109) in 1927, Submariner and eventual Vice Adm. Charles Momsen began thinking of ways to rescue Sailors who were trapped on sunken submarines and conceived the idea of a diving bell. Under the guidance of eventual Vice Adm. Allan McCann, the diving bell was completed and christened as a submarine rescue chamber (SRC) in late 1930 and was produced as the McCann Rescue Chamber.

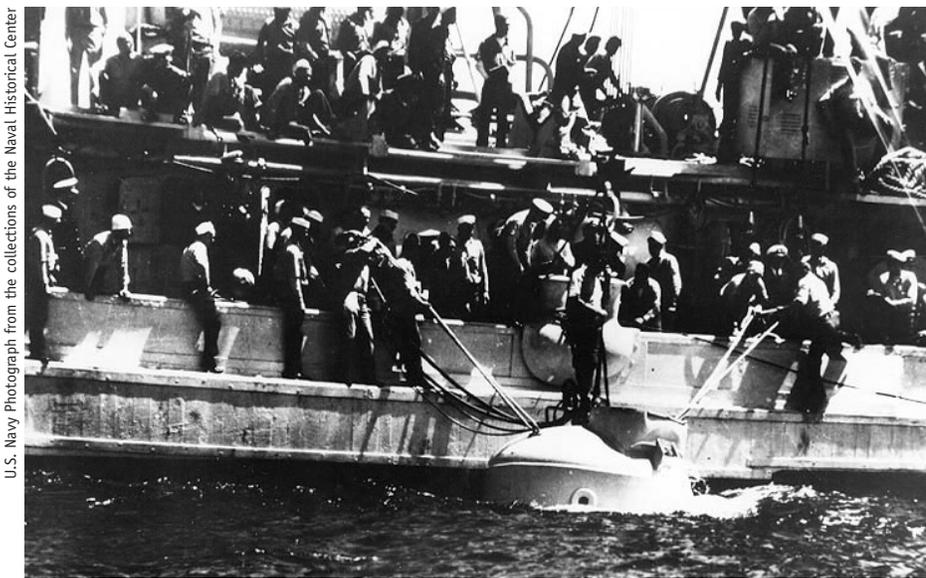
In 1939, USS *Squalus* (SS 192) sank due to mechanical failure, sitting at a depth of 243 feet. The SRC made its debut, with both Momsen and McCann observing rescue operations. After 13 hours and four dives, the lives of 33 of the 59 Sailors were saved, marking the first successful submarine rescue and paving the way for the future of submarine rescue.



Cutaway drawing of McCann Rescue Chamber

When USS *Thresher* (SSN 593) was lost with all hands in 1963, and the wreckage was found at depths up to 8,000 feet, which far exceeded the capability of the SRC's 850-foot depth, the Navy knew it needed something with greater dive and rescue capabilities.

"The Navy recognized our old idea of having submarine rescue ships with submarine rescue chambers didn't work out very well for a modern navy," said Cmdr. Andy Kimsey, commanding officer of Undersea Rescue Command (URC). This need for a deep-rescue capability initiated the Navy's Deep Submergence Rescue Vehicle (DSRV) design and procurement.



U.S. Navy Photograph from the collections of the Naval Historical Center

McCann Rescue Chamber in water alongside USS *Falcon* (ASR-2) during the rescue of 33 men still alive and trapped in the sunken submarine *Squalus* off the New Hampshire coast, circa May 24-25, 1939

At the same time, the Navy also needed an area from which to base and launch rescue efforts. Thus the Submarine Rescue Unit (SRU) was born. Located on the northern side of Naval Air Station North Island in San Diego (NASNI), SRU became home to the DSRV units *Mystic* and *Avalon* and the improved SRCs.

In 1989, the Navy changed SRU's name to Deep Submergence Unit (DSU) until 2012, when it became today's URC and was transferred from Submarine Development Squadron 5 and added as a tenant command of Commander, Submarine Squadron 11 (CSS-11), located across the channel at Naval Base Point Loma. In 2013, Rear Adm. Phil Sawyer, Commander Submarine Force, U.S. Pacific Fleet, assumed overall responsibility for submarine survivability, escape and rescue matters. "Undersea rescue is a complex evolution and a capability that I pray we never need to employ to rescue either a United States or foreign submarine", said Sawyer. "We have placed a large emphasis on the continuous improvement of our operators, equipment and procedures. I have confidence in our capability to successfully perform this mission if necessary."



Sailors prepare to submerge a Submarine Rescue Chamber (SRC).
Photo courtesy of Undersea Rescue Command



Photo by MCS 2C Kyle Carlstrom

(Above) Undersea Rescue Command (URC) sits at the northern end of Naval Air Station North Island. URC is the Navy's only submarine rescue command and has multiple submarine rescue assets.

(Right) The HOS *Dominator* moored pier side at Naval Air Station North Island. *Dominator* is a vessel of opportunity, contracted by the Navy and used for submarine rescue training and submarine sea trials coverage.



Photo by MCS 2C Kyle Carlstrom

Submarine Rescue Today

URC is manned by approximately 145 personnel: 45 active duty officers and enlisted, 35 contractors, and about 65 reservists.

“Our only focus is submarine rescue,” said Cmdr. Kimsey. “We operate and maintain our equipment so that within 24 hours of notification of a submarine going down, we can fly anywhere in the world, mobilize a system, and then up to three days later be on top of a submarine starting to rescue.”

The location of the command is crucial to being able to respond in the event of a casualty.

“The synergy of NASNI with the airfield and port facility right here, provides what we need to be effective with our mission,” said Kimsey. “There’s a C-5-capable runway here that is our usual transit mode for the systems

we operate. We also have easy access to a port for our at-sea training as opposed to being on a submarine base or on a large air base somewhere. That’s why we’re here on NASNI.”

URC’s submarine response and rescue capabilities can be broken down into three categories: shallow-water rescue, deep-water rescue, and intervention.

The shallow-water system is composed of two SRCs and support equipment that make up the Submarine Rescue Chamber Flyaway System (SRCFS). The SRCFS can be packaged up and loaded onto an Air Force C-5 or two C-17s for rapid worldwide mobility. The SRCs themselves are relatively unchanged from the original design by Lt. Cmdr. Allan Rockwell McCann in the 1930s. The SRC is capable of diving to 850 feet and is operated

by two internal attendants to retrieve six passengers at a time from a disabled submarine.

For deep-water rescue, the primary asset is the Pressurized Rescue Module (PRM-1) *Falcon*, which is a remotely operated tethered vehicle that is lowered into the water from a vessel of opportunity. Two attendants man the vehicle to facilitate rescue efforts and control and monitor life support functions. Designed for submerged transit to a depth of 2,000 feet, the PRM has a capacity to rescue 16 personnel at a time.

Integral to the design of the PRM is the transfer skirt attachment that assists the PRM in mating to the disabled submarine.

“The unique thing about the transfer skirt of the PRM is that it has the capability to rotate up to a 45-degree angle so we can

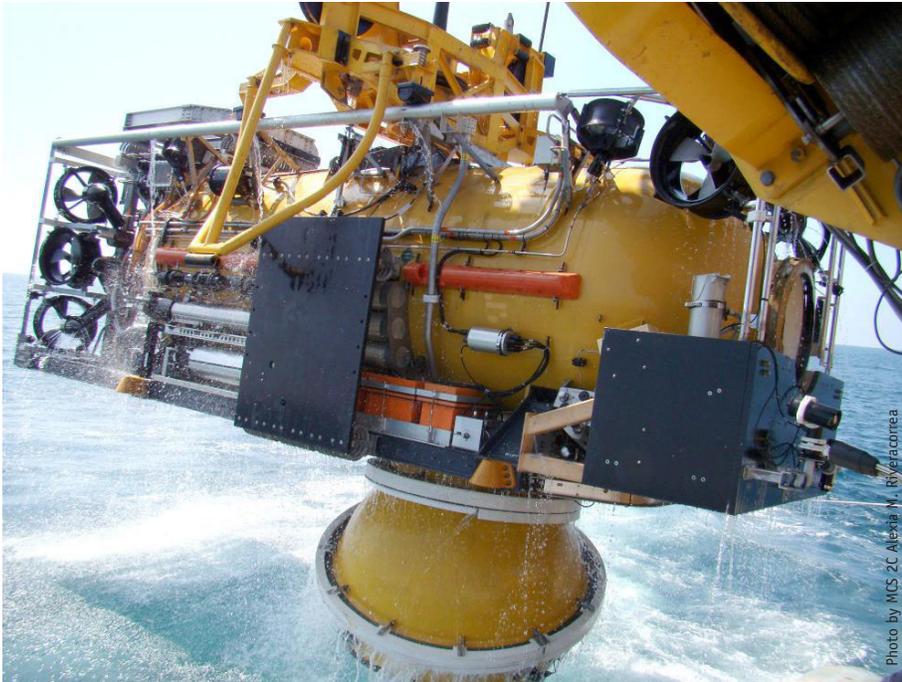


Photo by MCS-2C Alexia N. Riverabrea

A Pressurized Rescue Module is hoisted from the water after performing a submarine rescue exercise with the Chilean Submarine CS *Simpson* in the Pacific Ocean off the coast of San Diego, Calif.

keep the PRM horizontal and mate with the submarine up to a 45-degree angle on the bottom,” said Kimsey. “It’s the only transfer skirt of its kind in the world. Other rescue systems can put wedges and other parts to change the angle, or they can ballast down a little bit. We’re the only ones who can stay horizontal and on the spot, rotate our transfer skirt to get to the angle.”

The PRM is part of the overall Submarine Rescue Diving and Recompression System (SRDRS) at URC. Another leg in SRDRS is the Assessment/Underwater Works System (AUWS), which includes the Atmospheric Diving System (ADS). ADS is essentially a suit worn by a diver and is used as an intervention piece. The ADS interior remains at one atmosphere, allowing the pilot to operate at depths to 2,000 feet for extended periods and return directly to the surface without the attendant costs and risks associated with decompression. ADS provides a rapid response capability for DISSUB localization and assessment, hatch clearance, and emergency life support stores replenishment. For

A Deeper Look into Navy Divers

The Navy has a rich history of using divers for a variety of purposes, from searching and salvaging to welding and rescue. In 2006, the Navy officially established the Navy Diver rating, which operates under the Navy Special Operations community. Along with Navy Special Operations/Special Warfare commands, Navy Divers also participate in Marine Corps dive teams, rescue/salvage and repair diving detachments, saturation diving commands, and diving research and development.

At URC, approximately 30 Navy Divers are the underwater operators and experts for the submarine rescue elements.

The divers at URC alternate between the SRC, ADS and PRM throughout the year qualifying in specific roles. They spend time training as supervisors and operators as well as learning system setups.

“It’s a very task-oriented process; it takes a long time to learn it,” said Senior Chief Navy Diver Trey Williams, URC’s master diver and senior enlisted leader. “It’s probably a good year before divers get their feet underneath them and understand what’s really going on due to the complexity of each system.”

“Qualifying on the equipment can be complex. When we come here, we really haven’t seen these things before,” said Williams. As for most of the systems, they need to be at sea, and it takes several underway periods just to get operator qualified.

While in port, the divers train in a 15-foot-deep pool, which can be used for the PRM. However, a lot of the time is used piloting the ADS.

“The pool at URC is a huge advantage, especially for the ADS,” said Williams. “We can put a pilot who has no experience in the ADS in the pool with unlimited visibility. From topside, you can see everything he does. We actually make it a requirement to gain five hours of time in the pool before being able to use the ADS out at sea.”

For the three years divers are assigned to URC, it’s all about hitting the books hard, learning each system and its different nuances, and then operating each system safely at sea.

“It’s a great opportunity for our guys to come here, to see the complexity of these systems, and to qualify on these systems,” said Williams. “I think it’ll make their careers better overall, leaving here and having this in their tool bag for later use.”

By Mass Communication Specialist 2nd Class Kyle Carlstrom, Submarine Squadron 11 Public Affairs

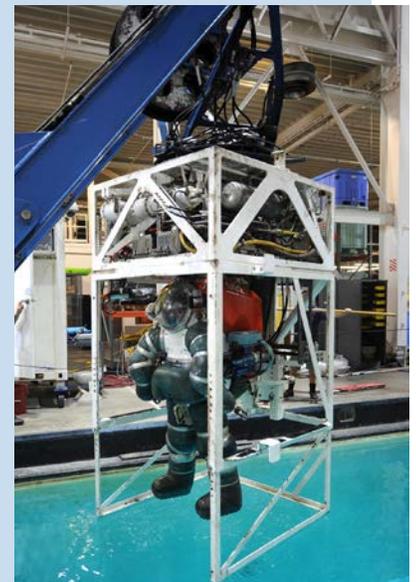


Photo by Mass Communication Specialist 2nd Class Kyle Carlstrom

A Navy Diver is craned out of the water while inside an Atmospheric Diving System Suit (ADS 2000).

specific use with SRC, ADS is one way to attach the downhaul cable to the submarine from the SRC. From there, the SRC uses the downhaul cable to drive down to the submarine to then mate and complete rescue operations.

International Engagement

Submarine rescue is the primary mission of URC and, whether it's a U.S. submarine or a foreign country's submarine, URC is ready to respond.

"We view submarine rescue as an apolitical mission," said Kimsey. "Our job is to rescue human beings that are on the ocean floor and can't get up. It's independent of politics, it's independent of international relations, and it's independent of whatever mission that submarine was doing."

What makes URC so open to international engagements is the fact that they operate at the unclassified level, allowing anyone to gain access and insight to what URC is capable of accomplishing.

Furthermore, URC conducts regular exercises with various nations. Every three years, URC performs an exercise in Europe with the NATO Submarine Rescue System (NSRS) and other international systems. In addition, URC operates every three years

with Pacific-based nations in a submarine rescue exercise called Pacific Reach. And almost annually, URC conducts exercises with Chile as part of the Diesel-Electric Submarine Initiative (DESI) program.

"[The Chileans] always ask for a bilateral exercise and we're more than happy to provide for that," said Kimsey. "It does two things: it opens up for them the expectation of what happens in a rescue, and it gives us experience of actually mating with a submarine that we normally don't get in our training operations."

Many foreign countries that currently have or are interested in procuring a submarine force understand that submarine rescue is a vital component. Building their own submarine rescue capability can be costly and inefficient, so these nations seek to create relationships with those that already have the assets and expertise. URC has created a



Sailors from the U.S. Navy and Indian Navy speak aboard a vessel of opportunity during exercise INDIAEX 2012.

Photo by Chief Mass Communication Specialist (EXW/SW) Daniel Ball



U.S. and Indian navies conduct exercise INDIAEX 2012, a bilateral exercise designed to demonstrate interoperability between U.S. submarine rescue systems and Indian conventional submarines.

Photo by Chief Mass Communication Specialist (EXW/SW) Daniel Ball



Lt. Gregory Cotten and a delegation from the Vietnam People's Navy sit inside the Pressurized Rescue Module during a Submarine Rescue Subject Matter Expert Engagement (SMEE).

Photo courtesy of Undersea Rescue Command

strong reputation of being one of the top submarine rescue capabilities in the world, and through submarine rescue subject matter expert engagements, they continue to expand that capability globally.

"When we have foreign countries visit us, they're looking for a variety of things," said Lt. j.g. Shawn Branske, CSS-11 URC maintenance officer. "The first is trust. It's a key element because they have to be able to trust in us that our equipment is capable of rescuing their personnel in the event of a problem. The second is our system capabilities and whether or not they're compatible with their submarines. Once they're satisfied with what they see, that's where our relationship begins and future exercises and engagements can be planned."

According to Lt. Brian Sisk, URC's operations officer, URC currently has partnerships and agreements with approximately 40 countries, almost all the NATO countries and some non-NATO countries.

"More countries are getting subs and we're reaching out to work with all countries," said Lt. Sisk.

In September 2014, a delegation from the Vietnam People's Navy (VPN) conducted an initial visit to URC as part of its search for a backup rescue system (VPN already has a signed agreement with Singapore for submarine rescue).

“Just like us, if our sub goes down, we’ll call as many people as we can to help; [the VPN] want the same capability,” said Sisk. “They have agreements with other countries, and they’d also like to have an agreement with us so not just one country is trying to help; they can call multiple people to help and assist. We’re still working with them.”

The next planned engagement with Vietnam is scheduled to take place in Da Nang next spring.

The Future of Submarine Rescue

Since its inception more than 80 years ago, the idea of submarine rescue has grown into a robust capability that provides those nations with undersea vessels a solution to potential mishaps underneath the water.

However, there are still “uncharted” technologies and advancements, and URC continues to make improvements to adapt to current operational demands and expand its mission skill sets. In particular, URC is



Lt. Cmdr. Patrick Oliveri, Undersea Rescue Command’s Transfer Under Pressure (TUP) integration officer, sits inside one of the 32-man Submarine Decompression Chambers. TUP will be used for future submarine rescue missions, decompressing Sailors who have become pressurized while trapped in a disabled submarine.

SRS/TUP Configuration

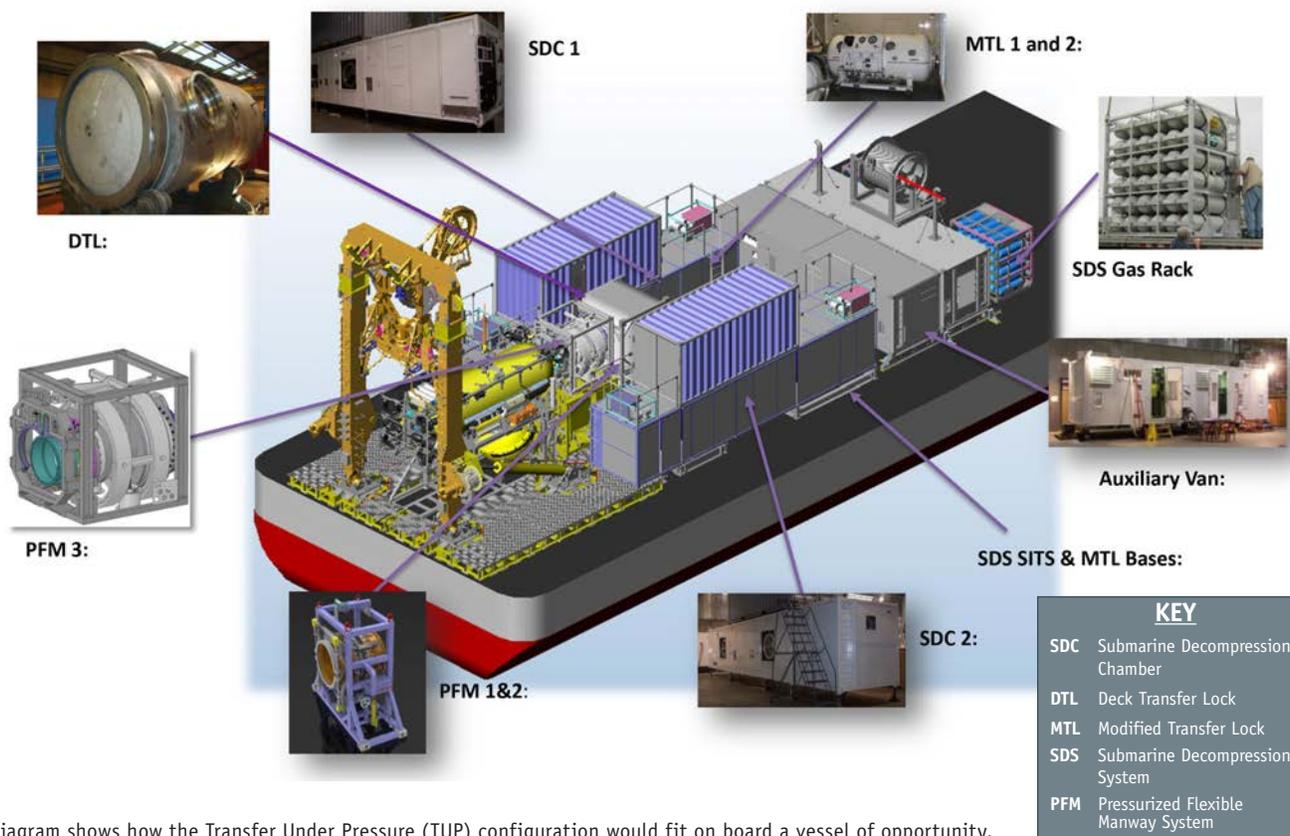


Diagram shows how the Transfer Under Pressure (TUP) configuration would fit on board a vessel of opportunity.

currently conducting testing, evaluations, and training on the Navy's newest addition to undersea rescue: Transfer Under Pressure (TUP), which can be characterized both as a capability and a system.

To speak to the capability, there is a significant possibility that the internal pressure of a DISSUB will be pressurized in excess of one atmosphere due to flooding or an air bank rupture, resulting in the crew on board being pressurized, very much like a deep diving scuba diver. Once rescued, these personnel would have a high likelihood of decompression sickness and related conditions that are potentially fatal if untreated. TUP provides the quick and safe decompression solution that these personnel require. Once certified, TUP will allow rescues to be conducted in environments greater than 1.6 atmospheres, which is the current maximum limit.

As a system, TUP, also referred to as the Submarine Decompression System (SDS), includes a portable hyperbaric facility. This is the primary functional element and consists of two submarine decompression chambers capable of holding 32 personnel each and providing the means for controlled decompression and hyperbaric treatment of personnel who have been rescued or escaped from a pressurized DISSUB.

Furthermore, according to Lt. Cmdr. Patrick Oliveri, URC's TUP system integration officer, the PRM-1 *Falcon* recently underwent upgrades designed to integrate with TUP as part of the overarching Submarine Rescue Diving Recompression System (SRDRS) and enable conducting rescues while pressurized up to five atmospheres.

Rescue and safe decompression of 155 personnel from a DISSUB may take more than 100 hours and require 95 personnel for rescue, decompression operations, medical treatment, and command and control. The SDS uses accelerated decompression treatment profiles designed specifically for submarine rescue where both the timing to decompress and personnel throughput are optimized.

"Once PRM is on site, it takes about six hours round trip—from hatch shut, ready to dive, descend, rescue 16 personnel, return, unload, and then hatch shut and ready to dive again," said Sisk. "So with two trips with the PRM, we can fill up one [submarine decompression chamber], and with two more trips, we can fill up the other chamber. The concept is that, by the time the PRM makes the fifth trip with personnel that are pressurized, the first

Submarine Escape Immersion Equipment

The primary goal in the event of a distressed submarine is survival of the crew. If for some reason the crew cannot be rescued by an SRC, they have another option: the Submarine Escape Immersion Equipment (SEIE). The SEIE is an escape suit, encompassing the entire body that inflates, carrying the crew member to the surface, and provides both protection from hypothermia and a separately inflatable single-person life raft. The SEIE may be employed in an "abandoned ship" scenario from the surface or during an escape from underwater.

The first device designed for individual escape from a distressed submarine was the Momsen Lung. It was developed in the 1930s by later Vice Adm. Charles Momsen and used soda lime to remove carbon dioxide from exhaled air so that it could be re-breathed. The Momsen Lung was used only once, aboard USS *Tang* (SS 306) during WWII, which had sunk in 180 feet of water.

An improvement on the Momsen Lung was the Steinke Hood, developed in 1961, which is an inflatable life vest with a hood that completely encompasses the head, trapping a bubble of breathable air. As the escapee rises through the water, water pressure decreases, causing additional breathable air to move into the hood.

The biggest drawback of these two systems was the lack of thermal protection for the escapees once reaching the surface to await rescue. To address this concern, a British company, Beaufort Air-Sea, developed the SEIE in 1997.

The SEIE enables submarine crew members to escape a DISSUB from as deep as 600 feet, nearly doubling the depth from which the Steinke Hood could be used. The air inside the suit propels the escapee upward through the water at about 10-12 feet per second. Using the SEIE, eight to ten people can escape to the surface from a DISSUB per hour.

Each crew member must don the suit and step into the escape trunk. The escape trunk is then flooded and pressurized to match the external water pressure, at which point the external hatch can be opened. The buoyancy of the suit propels the crew members to the surface, and the suit then protects them from exposure to the elements.

Converting submarines to use the SEIE required both crew training and reconfiguring the escape trunks. Today the SEIE is standard equipment on all U.S. submarines.

The Navy saw renewed interest in individual rescue systems in part because U.S. submarines are operating in the shallower littoral areas more than they did during the Cold War. This means that, if there is a DISSUB incident, there is increased likelihood that it could happen at depths from which an individual rescue system would be viable. In the event of such an emergency, the SEIE may just be what saves the lives of our Submariners.



chamber is decompressed, emptied, cleaned out, and ready to receive the next set of personnel."

"It's an exciting capability we're looking at fielding sometime late Fiscal Year 2016," said Kimsey. "There are other systems like it in the world, but we're excited to get the capability because it will be key to what we do."

Aside from the system and capability upgrades within URC, the command is also seeking to make modifications to its compound to better support its mission.

Built in the 1970s and covering about 32,000 square feet, the URC compound was originally designed for the DSRVs. However, since the vehicles' deactivation in 2008, URC has been looking to alter the interior layout of the building and find a way to house everything under one roof.

"Right now we have people spread out throughout the compound," said Kimsey. "We had two DSRVs and some support equip-

ment, and we replaced them with 300 tons of equipment. Most of [the current equipment] sits outside unprotected, so we're also looking to have a second building that will provide covering and storage for all the other systems about three to five years down the road. It is the number-two priority for the Submarine Force in terms of infrastructure."

Due to the complexity of submarine operations and the unforgiving deep ocean environments, all navies still require capabilities, such as TUP, to save their greatest assets: their Sailors. Submarine rescue is an international problem, and nearly all submarine-capable countries are networked for submarine rescue support.

"None of us wants [a DISSUB] to happen again," said Kimsey. "That's why we keep it unclassified, that's why we keep open lines of communication with other navies, and that's why we exercise frequently with other navies."



SUBMARINERS SURFACE IN NEW MEXICO

The state of New Mexico has had a longstanding tradition with the U.S. Navy and its ships. More than 40 Navy ships have had the honor of being named after the state, its cities, counties, Native Americans, and even some of its rivers. Three of the Navy's nuclear powered submarines have kept this tradition alive and well: the *Los Angeles*-class USS *Albuquerque* (SSN 706), the improved *Los Angeles*-class USS *Santa Fe* (SSN 763), and the *Virginia*-class USS *New Mexico* (SSN 779). Sailors from all of these submarines were together for a unique triple namesake visit Oct. 11–13, 2014.

All photos courtesy of Rick Carver

According to USS Santa Fe Committee Chairman Rick Carver, the three-sub crew visit was in the planning stages for about six months and really started to come to fruition after all three COs compared their operating schedules and confirmed that it was possible. With significant coordination and support from the various committees, including the New Mexico Navy League, a packed schedule was set for each of the crews. The main focus was to show the crews a great time, to raise more awareness of the submarines, and to give a final salute to USS *Albuquerque*, which is scheduled to be decommissioned fall of 2015.

“The citizens of New Mexico are very proud that the Navy has bestowed such great honors to the state,” said Dick Brown, USS *New Mexico* Committee Chairman. “This visit was especially important to the city of Albuquerque, which has supported the officers and crew of USS *Albuquerque* ever since her launching and commissioning more than 32 years ago.”

Part of USS *Albuquerque*'s visit included a lunch for its CO, Cmdr. Trent Hesslink, with Greater Albuquerque Chamber of Commerce CEO Terri Cole, USS *Albuquerque* Committee Chair Jim King, and Albuquerque Mayor Richard Berry.

“It's a tremendous privilege to be here and have the opportunity to represent USS *Albuquerque*,” said Hesslink. “We thank the Chamber and the Navy League of New Mexico for their hospitality.”



All photos courtesy of Rick Carver



The three crews participated in various individual and combined events, including a cultural experience at Tesuque Pueblo Indian Cultural Center; school visits in both Albuquerque and Santa Fe; the Navy Birthday Ball at Sandia Pueblo's resort near Albuquerque, with the three COs as the honored guest speakers; the Albuquerque International Balloon Fiesta; receptions at Santa Fe Community College and the New Mexico History Museum; a visit to the rotunda in the state capitol building; and a chuck wagon-style BBQ at the Bonanza Creek Movie Ranch.

“The ranch visit was a real hoot,” said Carver. “Our sub skippers were dressed in Old West style. Since 1955, the ranch has served as the location for numerous western movies and TV series, from *Butch Cassidy and the Sundance Kid* to *Lonesome Dove*.”

USS *Santa Fe* Submariners participated in various community relations projects throughout the city of Santa Fe, including a meeting at Santa Fe City Hall with Mayor Javier Gonzales, visits with patients at the Santa Fe Cancer Clinic, and a visit at an American Legion Post.



Cmdr. Poe, Cmdr. Moore and Cmdr. Hesslink toasting at the Bonanza Creek Saloon.



Cmdr. Timothy Poe and Chief of the Boat Juan Gonzalez visit with patients and the Santa Fe Cancer Clinic



All photos courtesy of Rick Carver

Of particular importance to USS *Santa Fe*'s crew was a return visit to Kitchen Angels, with which the crew has a special connection.

"This is our adopted charity in Santa Fe," said USS *Santa Fe* CO Cmdr. Timothy Poe. "This was the third time we have been able to contribute to Kitchen Angels and, to date, we have contributed \$4,200."

The crew presented a check for \$1,200 to the volunteer organization, which provides meals to people facing life-challenging conditions.

"Working at Kitchen Angels was one of the best things we did, and the people there and what they do are just incredible," said Lt. Darren Kurt. "The fact they plan each person's individual needs and provide high-quality food is just flat out amazing."

For one USS *Albuquerque* Submariner, he enjoyed this trip for a different reason.

"It's always nice to come back home," said Chief Fire Control Technician Ramon Escalante, a graduate of West Mesa High School in Albuquerque. "I love that I am able to come back to the city where my career began and share my life in the Navy."

Lt. Nathaniel Pelletier, assigned to USS *New Mexico*, had similar thoughts.

"Returning home reminded me how much I have learned since joining," he said. "The Navy has given me many opportunities, and being able to return home and share my experiences was great. I also got to see my niece. She was 1 the last time I saw her and now she's starting kindergarten."

"The Navy has given me many opportunities, and being able to return home and share my experiences was great."

On the final morning of the visit, the COs spent an hour answering questions from callers on the "Bob Clark Morning Show" on radio station KKOB AM770.

"Our radio call-in show provided a great venue to shed some light on life aboard a submarine," said USS *New Mexico* CO Cmdr. Todd Moore. "The nature of the Silent Service's mission challenges one to explain the vital services submarines provide. However, in New Mexico, we found an enthusiastic and well-informed public."

"It was a great opportunity to share the airwaves with my fellow commanding officers," said Hesslink. "As a group, we were better able to answer the questions and give the listeners a real feel for the work that we do."

"It was a pleasure to be able to discuss the history and importance of the three namesake submarines," said Poe. "I was impressed at the support northern New Mexico has for the military, as evident from the calls and the people we met during the trip."



Cmdr. Timothy Poe of USS *Santa Fe*, Cmdr. Todd Moore of USS *New Mexico*, Bob Clark of KKOB AM radio and Cmdr. Trent Hesslink of USS *Albuquerque* pose outside the studio.

Some might consider celebrating the Navy's birthday in New Mexico as unusual, and it was a new experience for the Submariners in attendance.

"Being in the middle of a landlocked state for the Navy Ball was different," said Machinist's Mate 2nd Class Dante Pulliam, assigned to USS *Santa Fe*. "I enjoyed seeing Sailors from all over the country, from retired to fleet returnees. One man was even more than 80 years old and had plenty of stories to tell."

For Electronics Technician 3rd Class Joshua Sutherland, assigned to USS *Santa Fe*, this was the first Navy Ball he had attended.

"I enjoyed the Navy Ball, especially since it was the first one I have attended," he said. "This one set the bar pretty high for all Navy Balls I will attend in the future."

The three-crew visit was capped off with a reception at the residence of New Mexico Governor Susana Martinez. The COs presented ship's plaques to the governor, and Army Brig. Gen. Juan Griego, New Mexico Deputy Adjutant General, read a governor's proclamation designating Oct. 13 as "New Mexico Submarine Fleet Day," which just so happened to also be the Navy's birthday.



"Meeting the governor was a great experience that really showed how important the three submarines are to the state of New Mexico," said Kurt. "All the people at the estate were extremely interested in the boats."

Each crew returned to its respective homeport with a new outlook and appreciation for the cities and state they represent.

"I was, and still am, amazed at how much involvement the committees and residents have in the Navy and their support of all three submarine crews and their families," said USS *New Mexico* Chief of the Boat, Master Chief Electronics Technician Steven Fritzler. "It was a great opportunity to show the residents of New Mexico their namesake submarines and crews are the best in the world."

Hesslink made namesake visits before to New Mexico and was always impressed with its citizens.

"I hope the residents took away the true appreciation we have for their support and an understanding of how special it is for their state to be so prominently represented in the Submarine Force," he said. "The citizens of New Mexico are wonderfully patriotic, supportive, and they should be proud of their contribution."

A USS *Santa Fe* Submariner took his experiences from the trip with him back to his boat.

"I felt as if the people welcomed all the Sailors with open arms and high spirits and treated us as if we were finally home," said Electronics Technician 3rd Class Mathew Inniss. "It filled me with pride knowing when USS *Santa Fe* departs for deployment to fight for our country's freedom, the people will be here at home rooting us on and awaiting our safe return."

The trip was the first simultaneous visit for these three submarine crews, and it was also likely the last where all three submarines will be represented at the same time, as USS *Albuquerque* is scheduled to be decommissioned in the coming years.

"We think we may have made history here in New Mexico as we doubt any other state has ever had a simultaneous visit of all its namesake ships," said Brown. "And from a submarine standpoint alone, we know other states have three or more subs, but doubt they visited all at the same time."

Carver was pleased with the visit and believed everyone involved made lasting memories.

"What we hope the crews will take away is New Mexicans are extremely proud and supportive of our undersea warriors," he said. "We may not have an ocean, but we do have three submarines!"

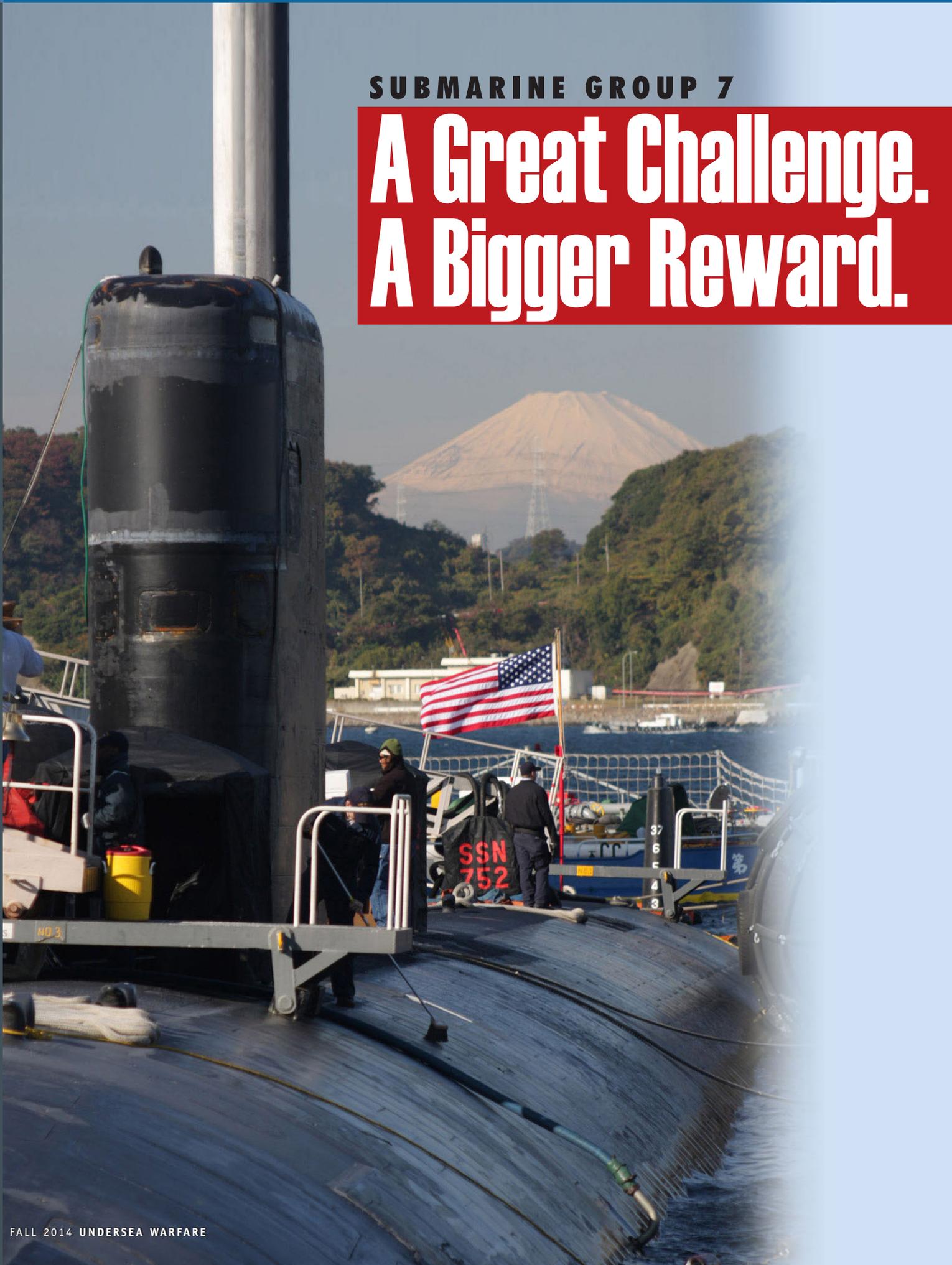
"What we hope the crews will take away is New Mexicans are extremely proud and supportive of our undersea warriors,"



All photos courtesy of Rick Carver

SUBMARINE GROUP 7

A Great Challenge. A Bigger Reward.



It's hard to describe a typical day at Submarine Group 7 (CSG 7). Leading 75% of our Submarine Force's deployed operations, CSG 7 Sailors see the full range of undersea capabilities and missions on a regular basis.

It's not a typical submarine command as it executes the full spectrum of undersea operations. This diverse command has members of nearly every warfare community working together on missions of national importance across nearly half of the globe.

CSG 7 is known by a number of names based on the wide mission areas it covers. As Commander, Task Force 54 and Commander, Task Force 74 (CTF 54/74), the staff coordinates and controls submarine activities over a vast expanse ranging from the Western Pacific to the Indian Ocean. CTF 54/74 directs all the submarine operations and mission tasking requirements in the 5th & 7th Fleet areas of responsibility (AOR). As the submarine movement advisory authority, CTF 54/74 deconflicts submarine movements of allied and friendly submarines in the Western Pacific and Indian Ocean. CTF 54/74 is also responsible for staff briefing, provisions, and repairs for those submarines operating in 7th Fleet.

CSG 7 also leads the Navy Area Commanders Communication Center in training and preparing to respond to a wide variety of contingencies.

As the theater anti-submarine warfare (ASW) commander for 5th & 7th Fleets, it exercises tactical control of theater ASW sub-surface, surface, and air assets, coordinates allied submarine movements and employment throughout the AOR, and



USS *Columbia* (SSN 771) moors at Commander, Fleet Activities Yokosuka during a deployment to the Indo-Asia-Pacific. Photo by Lt. Cmdr. Aaron Kakiel

acts as the submarine-generated search area coordinating authority.

CSG 7 is composed of the Guam-based tender USS *Frank Cable* (AS 40), submarines USS *Chicago* (SSN 721), USS *Key West* (SSN 722), and USS *Oklahoma City* (SSN 723), the Diego Garcia-based tender USS *Emory S. Land* (AS 39), several special mission ships, and submarines that forward deploy to the 5th and 7th Fleets. CSG 7 also maintains tactical control of all surface towed-array surveillance ships and survey ships operating in the Western Pacific.



Rear Adm. Stuart Munsch, IT1(IDW/SW) stands with Sailors of the Year, Christopher Graham, IS2 (SW) Kevin Key, IS3 Cheyene Marchner, and CMDCM (SS) John Perryman.

History of CSG 7

Submarine Group 7 was established during the Korean Crisis in the 1950s as Submarine Group Western Pacific, serving as squadron commander and administrative coordinator for submarines in the Western Pacific. In August 1961, the command was renamed Submarine Flotilla 7. In June 1973, when the command was elevated to Task Force level subordinate to Commander 7th Fleet, its present status as Commander Submarine Force 7th Fleet/Commander Task Force 74 reporting to Commander Submarine Force, U.S. Pacific Fleet was established.

Submarine Group 7 was activated as Commander Task Force 157 on October 15, 1992 to direct all submarine operations and mission tasking requirements in the Central Command area of responsibility, including the Red Sea and Arabian Gulf. On July 1, 1995, upon establishment of U.S. 5th Fleet in that same area of responsibility, Commander Task Force 157 was redesignated as Commander Task Force 54.



Staff of Commander Task Force 54 at Naval Support Activity Bahrain.

By the time of this printing, CTF 54, Detachment Bahrain will have stood up as Commander, Submarine Squadron 21. It facilitates the execution of effective submarine operations and theater ASW plans based on the capabilities of deployed platforms and the theater ASW threat.

The staff of CSG 7 consists of approximately 300 Sailors, civilians, and contractors

forward-deployed to Yokosuka, Japan. While the majority of the staff are Submariners, as would be expected, there are billets for officers and enlisted from nearly every community. Surface warfare officers and enlisted Sailors add valuable expertise and leadership in support of theater ASW. They are augmented by maritime patrol reconnaissance and helicopter pilots, naval flight officers, and members of the Information Dominance Corps. Periodically they are supplemented by special operations forces personnel, reservists of all communities, and others from allied nations.

“Each member of the team brings a unique background and set of experiences that helps CSG 7 provide the best possible coverage for transiting high-value units and tracking of potential adversary submarines,” said Rear Adm. Stuart Munsch, Commander, CSG 7.

Professionals from the Information Dominance Corps provide vital intelligence, cryptologic, communications, and meteorological support to deployed submarines, keeping them well informed and connected to the fleet.

There are plenty of opportunities for professional development. With a small staff, every member is essential to the success of the missions. As such, great authority and responsibility are afforded to even the most junior of Sailors. Sailors assigned to CSG 7 are expected to qualify a watch station



Seventeen Japanese Self Defense Force Sailors pose in a group photo with 17 U.S. Navy Sailors assigned to Commander, CSG 7 at Mt. Fuji 5th Station Komitake Shrine after completing a climb to the summit.

in addition to their normal duties. This qualification process helps to improve their overall knowledge and understanding of fleet operations.

“Forward-deployed Sailors like those at CSG 7 are some of the best in the Navy,” said Command Master Chief John Perryman, CSG 7 Command Master Chief. “These Sailors are asked to perform well above their pay grade and consistently outperform those expectations.”

In addition to qualifying watches and

warfare specialties, many Sailors pursue their associate’s, bachelor’s, and master’s degrees through the three colleges available on Fleet Activities Yokosuka, in addition to the availability of additional programs offered online.

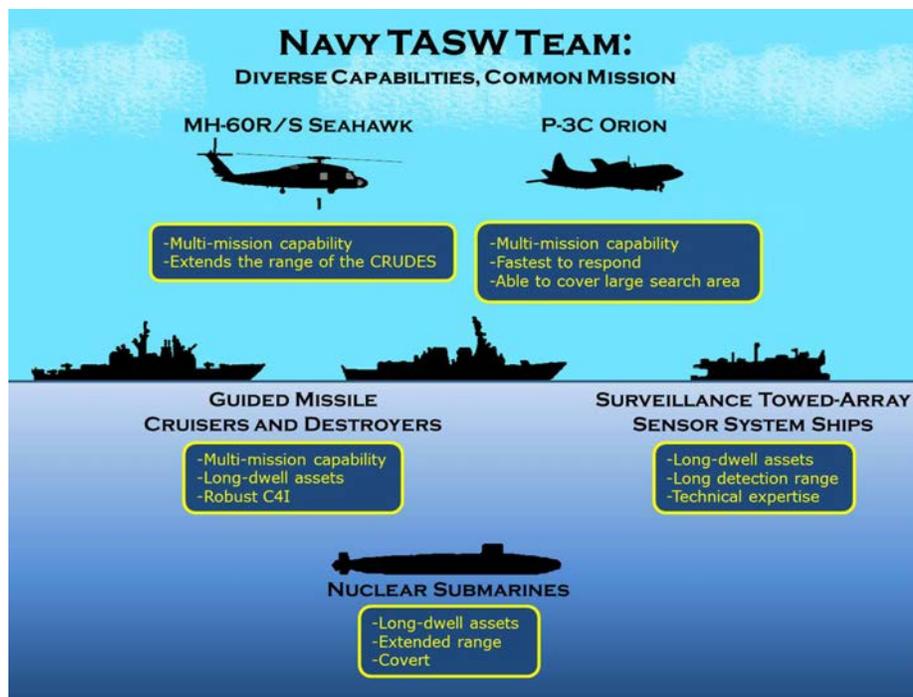
Another avenue for personal development is the opportunity for participating in a foreign culture. Being forward-deployed in Japan provides the Sailors of CSG 7 the chance to live and learn from daily exposure to Japanese culture.

In addition to opportunities to immerse in the Japanese culture, duty in Japan offers a great location for other excursions around the Asia-Pacific region. Fleet Activities Yokosuka is located just 30 miles south of Tokyo, which offers two international airports and high-speed train lines to most of Japan.

The quality of life in Yokosuka is one of the factors contributing to Fleet Activities Yokosuka being consistently named one of the best bases to be stationed at.

“While there are many reasons to choose duty at CSG 7, perhaps the greatest reason is to ensure the success of deployed forces in the vital missions we conduct here,” said Munsch.

“CSG 7 Sailors are held to a high standard and consistently perform at some of the most demanding tasks in the Submarine Force. Duty in a forward-deployed environment is fast paced but provides the rare reward on a daily basis of knowing in detail the ‘anything-but-typical’ accomplishments by our undersea forces in the forward operating areas,” concluded Munsch.



Submarine Group Seven has tactical control over many nuclear submarines (SSNs) and submarine tenders, and as CTF-74, is responsible for conducting TASW in the Western Pacific area of operations.

FMS—7 Things Sailors Should Know

This spring, based on fleet feedback, Navy revised the Final Multiple Score (FMS), the weighted formula used to select Sailors for advancement.

The new formula rewards sustained superior performance and increases the role of the command triad in the advancement of Sailors, officials said Sept. 25.

Changes to the formulation were made to achieve the right balance between technical skill proficiency, as measured by the test, and on-the-job performance as gauged by chain-of-command input through the evaluation process. It also places less emphasis on longevity-based elements.

This fall's petty officer advancement results will be the first use of the new formula.

Here are seven things Sailors should know about FMS:

1. FMS is a weight-based calculation used to rank Sailors eligible for advancement.
2. The advancement examination is the largest factor considered for advancement to E4 and E5, increasing in weight by eight percentage points, going from 37 percent to 45 percent.
3. For E6 and E7, Performance Mark Average (PMA) becomes the largest factor in determining Sailors' FMS. For advancement to E6, PMA increased three percentage points and now counts for 50 percent of the FMS calculation. For advancement to E7, PMA increased 10 percentage points to count for 60 percent of the total FMS.
4. Sailors who pass the advancement exam but do not advance due to quota limitations are eligible to receive Pass Not Advanced (PNA) points; however, the new policy limits PNA points to the top 25 percent of Sailors - 1.5 PNA points go to the top 25 percent of Sailors by test score, and 1.5 go to the top 25 percent by PMA. However, for the next five test exams, those who have PNA points will have those points carried over.
5. Total PNA points in the FMS are determined from a Sailor's last five advancement cycles for a maximum of 15 possible points.
6. Service in Pay Grade has been reduced from 7 percent to a weight of 1 percent of FMS for advancement to E4 through E6.
7. The Good Conduct Medal and the Reserve Meritorious Service Medal will no longer contribute award points in the FMS.

SailorsFirst



Fall Sports Champions Crowned

Team members of the Naval Submarine Base New London (SUBASE) flag football team "The Monstars" stand for a photo, Nov. 18. Despite an outside temperature of only 29 degrees, the team defeated "3rd Downs for What," after a double-header, to win the title of base champions for the season.

Undersea Warfare magazine has created this new 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 reunited as the crews return. Send your submissions to the Military Editor via email to: underseawarfaremagazine@hotmail.com

Submarine Force Pacific Sailors of the Year Recognized

The staff Sailors of the Year for FY 2014 assigned to Commander, Submarine Force, U.S. Pacific Fleet (COMSUBPAC) were recognized at an awards ceremony aboard the historic Lockwood Hall on Joint Base Pearl Harbor-Hickam, Nov. 6.

Awardees are Information Systems Technician 3rd Class Beau Daniels, named the Bluejacket of the Year; Information Systems Technician 2nd Class Matthew Johnson, the Junior Sailor of the Year; and Information Systems Technician 1st Class Angela Fiorucci, the Senior Sailor of the Year.

Recognized for her sustained superior performance, inspirational leadership and excellent customer service, Fiorucci, from Davison, Mich., serves as the administrative assistant to the director of communications and information systems, and is the assistant Drug and Alcohol Program advisor (DAPA) at COMSUBPAC.

Fiorucci will go on to compete with other Pearl Harbor-area Sailors in the Shore Sailor of the Year competition early next calendar year.

Johnson was awarded a Navy Achievement Medal while Daniels received a Flag Letter of Commendation for their respective selections.

The Sailor of the Year program recognizes the top senior, junior, and Bluejacket Sailors at each command who best represent the large number of dedicated professionals assigned throughout the fleet. Sustained superior performance, proven leadership, self-improvement, command and community involvement, self-expression, military bearing, and appearance are all key facets of the best all-around Sailors.



Welcome Home!

Machinist's Mate 2nd Class Arrell Cavanaugh is greeted by his wife, Genevieve, and newborn daughter Ea Chistine Cavanaugh, who was born Dec. 15. There were three babies born during the USS *Missouri's* deployment.

Photo by Lt. j.g. Phillip Chitty

SailorsFirst

SUBASE hosts Second Annual "Pumpkin Chunkin" competition

Three teams participated and more than 100 Sailor and civilian employee spectators witnessed Naval Submarine Base New London's (SUBASE) second annual "Pumpkin Chunkin" competition at the base's Alpha parking lot, Nov. 6.

The competition marked the end of the Navy New London Halloween season as pumpkins were launched from innovatively designed catapults into the wildlife and wetland area adjacent to the Alpha lot to provide deer, birds, and other animals a winter meal.

The "SUBASE Chiefs" team which included SUBASE Command Master Chief (SS) Jay Gladu and Chief Master at Arms (SW) Christopher Gregg, entered a slingshot design while the "MSRA Bulls" from NSSF's Module Screening Repair Activity, created a modified slingshot design, resembling a missile launcher on the back of a pickup truck, and last year's winners from Submarine Technical Support Center Performance Monitoring Team (PMT) crafted the "Wicked Chucka," a more traditional, trebuchet design.



Photo by EM3 Jan Scott Davis

Jay Gladu and Christopher Gregg prepare to launch a pumpkin during the 2nd annual "Pumpkin Chunkin" competition.

"We did a lot," said Machinist Mate 1st class Jayson Davis, assigned to PMT. "We probably put in about 100 man hours of work. We had done two weeks of research on the internet, searched for the ideal design, and had three planning meetings, which covered who was going to be there for the build and who would donate the materials. We had to re-design what we had last year, since we had to take that machine apart. This year, we used better lumber in the form of composite treated wood, vice landscape timbers."

The defending champions from PMT and their "Wicked Chucka" took home the trophy, shattering last year's record of 81 yards, with this year's furthest launch measuring 123 yards.

USS Olympia Thankful Port Visit to Yokosuka

The *Los Angeles*-class fast-attack submarine USS *Olympia* (SSN 717) arrived at Fleet Activities Yokosuka Nov. 20 for a visit as part of its on-going deployment to the Western Pacific.

Olympia continues to conduct a multitude of missions while showcasing the latest capabilities of the submarine fleet.

Several of *Olympia's* Sailors are brand new to Western Pacific deployments.

Culinary Specialist Seaman Casslee Farmer checked aboard only a month ago. This is his first Navy assignment, bringing with it both excitement and anxiety, while he adjusts to underway life.

Regarding his expectations for Yokosuka, Farmer said, "My first priority to get out [into Japan] and taste the food, which I can't wait to do. On board the days go by quick. We eat, work, study, sleep, and the best thing to do is look forward to port visits."

USS Columbia Returns from Deployment

Family and friends lined the submarine piers of Joint Base Pearl Harbor-Hickam Nov. 21 for a warm aloha welcome as the *Los Angeles*-class fast attack submarine USS *Columbia* (SSN 771) returned from a deployment to the Western Pacific.

Columbia participated in several multinational exercises, which supported ongoing security theater objectives.

Over the course of the deployment, 13 enlisted Sailors and 3 officers of the 150-man crew became submarine qualified and are now able to wear their coveted dolphins.

Ashore, the crew enjoyed visits to Sasebo and Yokosuka, Japan and Singapore.

"Singapore was an especially exotic place with a very different culture from America," said Sonar Technician Submarines Seaman Angelo Cosentino, of Winchendon, Mass. "There were many different customs, and it was a very diverse population with different tastes."

Friedman commended the crew on their conduct while in other nations as well. "They were exemplary ambassadors of the United States and represent the best the country has to offer," said Friedman.

Submarine Learning Center Names 2014 Instructors of the Year

The Submarine Learning Center (SLC) in Groton, Conn., announced Nov. 24 the top instructors from its submarine training sites as the 2014 Instructors of the Year (IOY).

The SLC Sailors will next compete in the annual Naval Education and Training Command (NETC) IOY competition in Pensacola, Fla.



MMC (SS) Royce Glenn
Trident Training Facility
SLF Senior Instructor of the Year



STS1 (SS) Alexis Helwig
Submarine (NTSCP)
Enlisted Instructor of the Year



MM2 (SS) Alberto Najjar, Jr.
Submarine (SLF) Norfolk, Va.
Junior Enlisted Instructor of the Year

Submarine Learning Center Sailor of the Year

Machinist Mate 1st Class (Submarines) Stephen Lowman Leading Petty Officer, Fire Fighting and Damage Control Instructor and Auxiliary Division Instructor at the Submarine Learning Facility (SLF), Norfolk, Virginia, is Submarine Learning Center's 2014 Sailor of the Year.



Change of Command

COMSUBRON 6
Capt. Paul Snodgrass relieved
Capt. Blake Converse

COMSUBRON 16
Capt. John Spencer relieved
Capt. John Carter

COMSUBRON 19
Capt. Brian Humm relieved
Capt. Charles Logan

NSSC New London
Cmdr. Mike Burianek relieved
Cmdr. Wayne Grasdock

USS *Dallas* (SSN 700)
Cmdr. Ed Byers relieved
Cmdr. Jack Houdeshell

USS *Nebraska* (SSBN 739)
Capt. Jason Geddes relieved
Capt. Jeffrey Joseph

USS *Norfolk* (SSN 714)
Cmdr. Chris Polk relieved
Cmdr. Greg Zettler

USS *Rhode Island* (SSBN 740) (G)
Cmdr. Matthew Gille relieved
Cmdr. Sean Muth

USS *Scranton* (SSN 756)
Cmdr. Ron Stowe relieved
Cmdr. Seth Burton

USS *Springfield* (SSN 761)
Cmdr. Dan Lombardo relieved
Cmdr. Chris Williams

USS *Wyoming* (SSBN 742) (G)
Cmdr. Ken Curtin relieved
Cmdr. Chris Nash

USS *Emory S. Land* (AS 39)
Capt. Robert Clark relieved
Capt. Edward Herrington

Qualified for Command

Lt. Bradley Boyd
USS *Bremerton* (SSN 698)

Lt. Cmdr. Trevor Conger
COMSUBRON 1

Lt. Cmdr. Caleb Cramer
COMPACFLT

Lt. Jeremy Dawson
USS *Jefferson City* (SSN 759)

Lt. Thomas Futch
USS *Houston* (SSN 713)

Lt. Ryan Gielegem
USS *Jefferson City* (SSN 759)

Lt. Robert Gillis
USS *Wyoming* (SSBN 742) (G)

Lt. Steven Halle
USS *Missouri* (SSN 780)

Lt. Randall Leslie
COMSUBRON 7

Lt. Cmdr. Jesse Lorenzen
USS *Missouri* (SSN 780)

Lt. Kyle McVay
COMSUBRON 1

Lt. Cmdr. Timothy Rochholz
USS *Jefferson City* (SSN 759)

Lt. Jonathan Wallace
USS *City of Corpus Christi* (SSN 705)

Lt. Michael Yle
USS *Buffalo* (SSN 715)

Qualified in Submarines

Lt. j.g. James Allen
USS *Key West* (SSN 722)

Lt. j.g. Jeremy Ball
USS *New Mexico* (SSN 779)

Lt. j.g. Bryan Boldon
USS *Cheyenne* (SSN 773)

Lt. j.g. Mikal Brewer
USS *New Mexico* (SSN 779)

Lt. j.g. Casey Caprin
USS *Annapolis* (SSN 760)

Lt. j.g. Sean Croghan
USS *Key West* (SSN 722)

Lt. Justin Devillar
USS *Jimmy Carter* (SSN 23)

Lt. j.g. Anthony Giampa
USS *Houston* (SSN 713)

Lt. j.g. Taylor Goode
USS *Chicago* (SSN 721)

Lt. j.g. Matthew Herber
USS *Asheville* (SSN 758)

Lt. Wesley Jahraus
USS *Jimmy Carter* (SSN 23)

Lt. Dennis Kee
USS *Annapolis* (SSN 760)

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

Lt. j.g. Steven Malinoski
USS *Pittsburgh* (SSN 720)

Lt. j.g. Andrew Mauldin
USS *Providence* (SSN 719)

Lt. j.g. James McCarty
USS *Louisville* (SSN 724)

Lt. j.g. Zachary McIntyre
USS *Hawaii* (SSN 776)

Lt. j.g. Timothy Mendoza
USS *Toledo* (SSN 769)

Lt. j.g. William Mikels
USS *Maine* (SSBN 741) (G)

Lt. j.g. Christopher Novitch
USS *Pennsylvania* (SSBN 735) (G)

Lt. j.g. Lee Patterson
USS *Albany* (SSN 753)

Lt. Patrick Pick
USS *Bremerton* (SSN 698)

Ens. Anthony Read
USS *Pennsylvania* (SSBN 735) (B)

Lt. Kayla Sax
USS *Maine* (SSBN 741) (G)

Lt. j.g. Paul Schuppner
USS *Dallas* (SSN 700)

Lt. j.g. Nicholas Shanker
USS *Santa Fe* (SSN 763)

Lt. j.g. Tyler Siedschlag
USS *Boise* (SSN 764)

Lt. j.g. Steven Snow
USS *Norfolk* (SSN 714)

Lt. j.g. Joshua Straka
USS *Alexandria* (SSN 757)

Lt. j.g. Andrew Treat
USS *Houston* (SSN 713)



Submarine Veterans Commemorate Veterans Day

Submarine veterans, active-duty military, and family and friends of the Pacific Submarine Force came together at the USS *Parche* Submarine Park and Memorial on Joint Base Pearl Harbor-Hickam, Nov. 11 to honor all Americans who have served in the military on Veterans Day.

With an emphasis on submarine veterans, the ceremony's guest speaker, Capt. John Russ, chief of staff of Submarine Force, U.S. Pacific Fleet, spoke of honoring American veterans past and present, including Sailors aboard deployed submarines, and those aboard submarine tenders, maintaining, repairing, resupplying and supporting the fleet, to the families that are always sacrificing in their own way in service to the nation.

The ceremony included a posting of the 50 state flags by the Radford High School Naval Junior Reserve Officers Training Corps, postings of colors by the National Sojourners, a tolling of the bells for the 52 submarines and their crews that were lost in World War II, and a series of wreath presentations by the Bowfin Base, Pearl Harbor U.S. Submarine Veterans and others. A special lei presentation was also held in honor of Hawaii's state submarine, USS *Growler* (SSN 215). The ceremony also included a rifle volley by the Joint Base Pearl Harbor-Hickam Ceremonial Guard.

Others groups in attendance included the Pacific Fleet Submarine Memorial Association; U.S. Submarine League, Aloha Chapter; and the Pearl Harbor Submarine Officers' Spouses Association.

Photo by Mass Communication Specialist 1st Class Steven Khor

Lt. j.g. Rafael Vargas
USS *Providence* (SSN 719)

Lt. j.g. Viet Vo
USS *Pennsylvania* (SSBN 735) (G)

Lt. j.g. Alexander Wunderlich
USS *San Juan* (SSN 751)

Lt. j.g. Michael Zurbrick
USS *Pennsylvania* (SSBN 735) (G)

Qualified Nuclear Engineering Officer

Lt. j.g. Eric Anderson
USS *Texas* (SSN 775)

Lt. j.g. Ryan Baldwin
USS *West Virginia* (SSBN 736) (G)

Lt. Jeremy Ball
USS *New Mexico* (SSN 779)

Lt. j.g. Jakub Bialek
USS *Tucson* (SSN 770)

Lt. j.g. Nicholas Blair
USS *Kentucky* (SSBN 737) (B)

Lt. j.g. Kaitlyn Bower
USS *Louisiana* (SSBN 743) (G)

Lt. Steven Brinkley
USS *Hampton* (SSN 767)

Lt. Lisa Brodsky
USS *Maine* (SSBN 741) (G)

Lt. j.g. Andrew Brooks
USS *Buffalo* (SSN 715)

Lt. Matthew Divittore
USS *Louisiana* (SSBN 743) (G)

Lt. j.g. Colin Doherty
USS *Henry M. Jackson* (SSBN 730) (B)

Lt. j.g. Wesley Dunham
USS *Jefferson City* (SSN 759)

Lt. j.g. Ryan Ferrao
USS *Wyoming* (SSBN 742) (G)

Lt. Jason Fewkes
USS *Pennsylvania* (SSBN 735) (G)

Lt. j.g. Anthony Finigan
USS *Alabama* (SSBN 731) (G)

Lt. j.g. Matthew Frantz
USS *Santa Fe* (SSN 763)

Lt. j.g. Shawn Garner
USS *Alaska* (SSBN 732) (B)

Lt. j.g. Jarret Griesemer
USS *Connecticut* (SSN 22)

Lt. j.g. Scott Grondahl
USS *Springfield* (SSN 761)

Lt. j.g. Matthew Hakes
USS *Missouri* (SSN 780)

Lt. j.g. Bradley Harden
USS *Louisville* (SSN 724)

Lt. j.g. Thomas Harrison
USS *Henry M. Jackson* (SSBN 730) (G)

Lt. j.g. Jonathan Holton
USS *Wyoming* (SSBN 742) (G)

Lt. j.g. Robert Hummel
USS *Jefferson City* (SSN 759)

Lt. j.g. Hole
USS *Alaska* (SSBN 732) (G)

Lt. j.g. David Johnson
USS *Pittsburgh* (SSN 720)

Lt. Jarred Johnson
USS *Missouri* (SSN 780)

Lt. j.g. Alexander Kinney
USS *Jacksonville* (SSN 699)

Lt. j.g. Andrew Kramer
USS *Charlotte* (SSN 766)

Lt. Kyle Krieger
USS *Buffalo* (SSN 715)

Lt. j.g. Michael Lewis
USS *Olympia* (SSN 717)

Lt. Mikel Lewis
USS *Miami* (SSN 755)

Lt. j.g. Cody Little
USS *Jimmy Carter* (SSN 23)



USS North Dakota Commissioned

USS *North Dakota* (SSN 784) officially became the Navy's newest addition to the Submarine Force following a commissioning ceremony held Oct. 25, at Naval Submarine Base New London.

North Dakota is the 11th *Virginia*-class attack submarine to join the fleet and the first of eight Block III *Virginia*-class submarines to be built. The Block III submarines are being built with new Virginia Payload Tubes designed to lower costs and increase missile-firing payload possibilities.

The 10 current *Virginia*-class submarines have 12 individual 21-inch diameter vertical launch tubes able to fire Tomahawk Land Attack Missiles (TLAMS). The Block III submarines being built will have two-larger 87-inch diameter tubes able to house six TLAMS each.

As the most modern and sophisticated attack submarine in the world, the submarine can operate in both littoral and deep ocean environments and presents combatant commanders with a broad and unique range of operational capabilities. *North Dakota* will be a flexible, multi-mission platform designed to carry out the seven core competencies of the Submarine Force: anti-submarine warfare, anti-surface warfare, delivery of special operations forces, strike warfare, irregular warfare, intelligence, surveillance and reconnaissance, and mine warfare.

Capt. Douglas Gordon is *North Dakota's* first commanding officer. He leads a crew of about 136 officers and enlisted personnel.

"The crew has been looking forward to commissioning from day one of their arrival," said Gordon. "Since we first began manning the ship in October 2011, our crew has progressed through numerous milestones, which has culminated in our commissioning," said Gordon. "For the first time the ship got underway for sea trials in August, and this sea time permitted the crew their first opportunity to finally see how their hard work and preparation had paid off."

"I know they are all as thrilled as I am in commissioning *North Dakota*, joining the fleet and eventually deploying," said Gordon. "We will operate the ship at sea over the next nine months or so while conducting training, trials, certifications, and testing. Following a post-shakedown availability, the *North Dakota* will begin a normal operations cycle for working towards its first deployment."

Lt. Thomas Magnuson
USS *Virginia* (SSN 774)

Lt. j.g. Aaron Marchant
USS *Seawolf* (SSN 21)

Lt. Robert Martin
USS *Greeneville* (SSN 772)

Lt. j.g. Andrew Marvel
USS *Topeka* (SSN 754)

Lt. j.g. Andrew Mauldin
USS *Providence* (SSN 719)

Lt. j.g. Brendan McCook
USS *Scranton* (SSN 756)

Lt. j.g. Nicholas Munns
USS *Jacksonville* (SSN 699)

Lt. j.g. James Nevins
USS *Helena* (SSN 725)

Lt. Timothy Omlor
USS *Hartford* (SSN 768)

Lt. j.g. Albert Perry
USS *City of Corpus Christi* (SSN 705)

Lt. Robert Piazza
USS *Louisville* (SSN 724)

Lt. j.g. Christopher Pope
USS *Jacksonville* (SSN 699)

Lt. Zachary Prefontaine
USS *San Juan* (SSN 751)

Lt. Nicholas Preston
USS *Montpelier* (SSN 765)

Lt. j.g. Dante Ross
USS *Columbus* (SSN 771)

Lt. j.g. Michael Roumanos
USS *West Virginia* (SSBN 736) (B)

Lt. j.g. Landon Sharrett
USS *Nebraska* (SSBN 739) (B)

Lt. j.g. Jerd Smith
USS *North Carolina* (SSN 777)

Lt. j.g. Lucas Stone
USS *Cheyenne* (SSN 773)

Lt. j.g. Eric Stromme
USS *Missouri* (SSN 780)

Lt. Michael Tipton
USS *Nevada* (SSBN 733) (G)

Lt. j.g. Kevin Tirohn
USS *Alabama* (SSBN 731) (G)

Lt. Andrew Treat
USS *Houston* (SSN 713)

Lt. Andrew Tribble
USS *Louisiana* (SSBN 743) (G)

Lt. j.g. Dominik Wermus
USS *Ohio* (SSBN 726) (G)

Lt. Daniel Wheaton
USS *Springfield* (SSN 761)

Supply Officer Qualified in Submarines

Lt. Justin Cunningham
USS *Kentucky* (SSBN 737) (G)

Ens. Christopher Koenig
USS *Jefferson City* (SSN 759)

Lt. j.g. David Laughlin
USS *La Jolla* (SSN 701)

Qualified Surface Warfare Officer

Lt. Alan Bush
USS *Frank Cable* (AS 40)

CW04 George Williams
USS *Frank Cable* (AS 40)

Qualified Surface Warfare Medical Officer

Daniel Sanford
USS *Frank Cable* (AS 40)

Qualified Surface Warfare Dental Officer

Kevin Ryan
USS *Frank Cable* (AS 40)

Qualified as Strategic Weapons System Master Chief

MTC (SS) Jason Bergeron
USS *Nebraska* (SSBN 739) (B)

MTC (SS) Joshua Carl
USS *West Virginia* (SSBN 736) (G)

MTC (SS) John Mathews
USS *Louisiana* (SSBN 743) (B)

Qualified for Major Command

Capt. Paul J. Bernard
JCS WASH DC

Capt. Nonito V. Blas (LDO)
PH NSYD & IMF

Capt. Douglas A. Bradley
OSD

Capt. Dearly P. Davis
CPFLT NPEB

Capt. John W. Fancher
CTF 69

Capt. Sam R. Geiger
USS *San Juan* (SSN 751)

Capt. Steven K. Hall
COMSUBGRU 10

Capt. Jack E. Houdeshell
COMSUBRON 4

Capt. Ian L. Johnson
COMSUBRON 7

Capt. Douglas A. Jordan
COMOPTEVFOR

Capt. Andrew J. Kimsey
UNSEARESCOM SD

Capt. Michael D. Luckett
USS *Missouri* (SSN 780)

Capt. Richard N. Massie
COMSUBRON 19

Capt. Brett D. Moyes
COMUSFLTFORCOM

Capt. Christopher A. Nash
COMSUBGRU 10

Capt. James E. Oharra
COMSUBRON 1



Photo courtesy of Newport News Shipbuilding by Dar Mook

Newport News Shipbuilding Hosts Keel-laying for USS *Washington* (SSN 787)

Newport News Shipbuilding, a division of Huntington Ingalls Industries, hosted a keel-laying ceremony November 22nd for the future *Virginia*-class submarine USS *Washington* (SSN 787).

The initials of the submarine's sponsor, Elisabeth Mabus, daughter of Secretary of the Navy Ray Mabus, were welded onto a steel plate that will be permanently affixed to the submarine as a symbol of her relationship with the boat and its builders and crew.

"I look forward to watching this boat come together from steel and skill," Elisabeth said. "I look forward to christening it, I look forward to commissioning it, but most of all I look forward to meeting the men and women who will make up the crew."

Other ceremony participants included the keynote speaker, Secretary Mabus; Vice Adm. William Hilarides, commander, Naval Sea Systems Command; Vice Adm. Michael J. Connor, commander, Submarine Forces; Matt Mulherin, president, Newport News Shipbuilding; and Jeffrey Geiger, president, General Dynamics Electric Boat.

In Secretary Mabus' address, he acknowledged the shipbuilders and supplier base dedicated to constructing the future USS *Washington*. "Their dedication, their expertise, their incredibly hard work will fashion from steel and wire and electronics the premier platform that will be the *Washington*," he said. "We build the best warships in the world."

Washington will be the 14th *Virginia*-class submarine and the seventh to be delivered by Newport News. Construction began in September 2011, marking the beginning of the two-submarines-per-year build plan between Newport News and Electric Boat. The submarine is roughly 70 percent complete and is on track to complete next summer.



Photo by Mass Communication Specialist 2nd Class Diana Quinlan

Submariners Recognized During 54th Sea Service Awards Luncheon

Seven submarine personnel from Pacific Submarine Force were recognized at the 54th Annual Sea Service Awards luncheon sponsored by the Honolulu Navy League, held Nov. 14 at the Ala Moana Hotel in Waikiki.

This year's award recipients included officers and enlisted crew from the Pearl Harbor-based *Los Angeles*-class fast attack submarines USS *Cheyenne* (SSN 773), USS *Buffalo* (SSN 715) and USS *Asheville* (SSN 758), as well as Sailors assigned to the staff of Commander, Submarine Force, U.S. Pacific Fleet (COMSUBPAC).

The Navy League presents the annual Sea Service Awards to officer and enlisted service members as well as civilian members of the Navy, Marine Corps, Coast Guard and Merchant Marine for outstanding personal contributions that advance the logistic readiness and competence of the sea services. Award recipients include those Sailors that not only do their job exceptionally well, but who also involve themselves in service opportunities outside of work, including efforts with organizations like Habitat for Humanity, Little League Baseball and the USO.

This year's awardees for the Pacific Submarine Force included Lt. Andrew Faulkner of *Cheyenne*; Lt. Richard Griffith and Machinist's Mate 1st Class Trevor Thurman of *Buffalo*; Machinist's Mate 1st Class Timothy Hill of *Asheville*; and Electronics Technician 1st Class Matthew Eliason, Information Systems Technician 1st Class Paul Giron and Information Systems Technician 2nd Class Matthew Johnson of COMSUBPAC.

Capt. Adam D. Palmer
USS *West Virginia* (SSBN 736) (B)

Capt. Edward A. Schrader
DIRSSP WASH DC

Capt. Lee P. Sisco
COMSUBRON 7

Capt. David S. Soldow
USSTRATCOM CMSA

Capt. Bradley B. Terry
USS *Alabama* (SSBN 731) (B)

Capt. Steven R. Wilkinson
COMSUBDEVRON 5

Capt. Robert E. Wirth
COMSUBRON 20

Capt. David A. Youtt
COMSUBGRU 7

Major Program Manager

Michael J. Boone
PEO Submarines

Eugene D. Lacoste
PEO Submarines

Timothy A. Salter
STRATCOM JFCCISR

Major Command Ashore

Cmdr. Gregory E. McRae
COMSUBRON 6

LDO Command Ashore

Cmdr. Rosario D. McWhorter
CNAVSAFECEN NORV

LDO Command Ashore (Alt.)

Cmdr. Thomas A. Gorey
USS *Frank Cable* (AS 40)

Cmdr. Jeffrey D. Grisham
NUWC DKST IMA HI

Cmdr. Kurt E. Stronach
SUBASE New London

Drydock Commanding Officer (Alt.)

Lt. Cmdr. Michael B. Jensen
USS *Frank Cable* (AS 40)

Lt. Cmdr. Tommy L. Tinny
NPTU Charleston

Lt. Cmdr. Michael A. Woodcock
NSWG 3 LOGSU

Drydock Executive Officer

Lt. Cmdr. Patrick J. Blotzer
USS *John C. Stennis* (CVN 74)

Drydock Executive Officer (Alt.)

Lt. Cmdr. Andrew J. Palas
PRESINSURV SD

Lt. Cmdr. Jeffrey T. Smith
NSWG3 DCS UET

Strategic Weapons Officer

Lt. Ricardo Lopez
NSUBSUPF NLON CT

Strategic Weapons Officer (Alt.)

Lt. Tanner W. Feistner
USS *Tennessee* (SSBN 734) (B)

Lt. Travis S. Garland
USS *Wyoming* (SSBN 742) (B)

Lt. James R. McCarty
COMSUBRON 17

Submarine Force Commemorates 4,000th Strategic Deterrent Patrol

Commander, Submarine Force Atlantic and Commander, Submarine Force, U.S. Pacific Fleet, in conjunction with Commander, U.S. Strategic Command, commemorated the Submarine Force's 4,000th strategic deterrent patrol Sept. 19, 2014 by conducting dual ceremonies in Bangor, Wash., and Kings Bay, Ga. that featured Adm. Cecil D. Haney and Vice Adm. Michael Connor.

“The ballistic missile submarine force and the capability it offers is as important and relevant in today's uncertain world as it was when the first deterrent patrols were conducted more than five decades ago. Commemorating the 4,000th patrol allows us to honor not only the Submariners who have achieved this milestone, but also to pay homage to the men and women of our strategic forces who are on watch every day providing our nation with a safe, secure, and effective nuclear deterrent against those who might think to do us harm.”

— Adm. Cecil D. Haney, Commander, U.S. Strategic Command.

The first nuclear ballistic-missile submarine (SSBN), *USS George Washington* (SSBN 598), was commissioned December 30, 1959 and completed the inaugural deterrent patrol in January 1961. Since then, 58 more SSBNs have been commissioned. Having patrolled the waters worldwide, these boats have established themselves as the most survivable, credible, and efficient element of our nuclear deterrent triad.

“Today, we celebrate a very special milestone in the undersea warfare community as we commemorate the 4,000th strategic deterrent patrol conducted by our fleet ballistic missile submarines. Strategic deterrence has been the sole mission of the fleet ballistic missile submarine since its inception. As the sea-based leg of U.S. strategic deterrent forces, the current 14 Trident SSBNs carry more than 50 percent of the total U.S. strategic warheads. Today's concept of strategic deterrence seeks to deter attacks on the U.S. or its allies, dissuade adversaries from actions counter to stability and peace, and assure allies of the United States' commitment to their security.”

—Vice Adm. Michael Connor, Commander, Submarine Forces.

As the current fleet of *Ohio*-class SSBNs sail past their originally planned 30 years of service to an unprecedented 42 years, they must be replaced by a new class of SSBN to meet our future strategic commitments.

“The Sailors have done their part to ensure peace, and the ships have done their part as they now start to serve well beyond their originally designed service life. Now the country must do the same to continue to ensure the peace for our children and our children's children. We must build *Ohio*'s replacement. There is no more important or more effective use of our National Defense spending than to ensure that we build the 12 boats that will enable exceptional Sailors like you to guarantee the peace for future generations.”

—Vice Adm. Michael Connor



Submarine Museums and Memorials



USS *Dolphin* (AGSS 555) San Diego, Calif.

USS *Dolphin*, Auxiliary Research Submarine (AGSS) 555, was the seventh ship in the Navy to bear the name and is responsible for many firsts during her nearly 40 years of service. Her unique, extreme deep-diving capability sets her apart and has continually placed the vessel at the forefront of undersea naval research during her entire career.

Since the boat's commissioning in August 1968, it has amassed a startling record of scientific and military accomplishments. That November she set a depth record for operating submarines with a test depth in excess of 3,000 feet that still stands. In August 1969, she launched a torpedo from the deepest depth that one has ever been fired. Employed by both Navy and civilian researchers, the submarine was equipped with an extensive and impressive instrumentation suite that can support multiple missions, and was designed to be easily modified both to allow the installation of research and test equipment. An example of this modification for research and development was *Dolphin's* test run of a sonar system for the U.S. Navy.

Dolphin was the last diesel-electric, deep-diving, U.S. Navy fleet submarine. She could carry scientific payloads of over 12 tons, a considerably greater capacity than any other deep-diving research vessel. *Dolphin* was designed to test advanced submarine structures, sensors, weapons, communications, and machinery systems.

In over 20 years of operations, *Dolphin* has proven most successful in assessing the overall Anti-Submarine Warfare (ASW) significance of deep-diving submarines and exploiting the limits of present technology in designing for deep depths. Her operations have been broad based and far reaching, and they include development of operational concepts and testing of advanced engineering design features, weapons, launcher and fire control systems, and deep ocean acoustics.

The single most significant technical achievement in the development of *Dolphin* is the pressure hull itself. It is a constant-diameter cylinder, closed at its ends with hemispherical heads, and uses deep frames instead of bulkheads. The entire design of the pressure hull has been kept as simple as possible to facilitate its use in structural experiments and trials. Hull openings were minimized for structural strength and minimum hull weight, in addition to eliminating possible sources for flooding casualties.

Dolphin's capabilities provided a unique blend of past lessons learned and the most advanced technology of her day. Her contributions to research and development significantly influenced the design of 21st Century submarine sonar, weapon, communications, and engineering systems.

Decommissioned in January 2007, *Dolphin* was donated to the Maritime Museum of San Diego, Calif., on September 18, 2008 and is now open to the public.