

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

Submarining in the Asia-Pacific

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UNDERSEAWARFARE

THE OFFICIAL MAGAZINE OF THE U.S. SUBMARINE FORCE

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Naval Aircrewman 2nd Class Dusty Bartell, Helicopter Sea Combat Squadron Four, maintains control of a hoist cable while lowering priority repair parts to Canadian submarine HMCS *Victoria* (SSK 876) during Rim of the Pacific (RIMPAC) 2012.

Photo by MC2 Derek R. Sanchez

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FORCE COMMANDER'S CORNER

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



Greetings from Norfolk! This edition of *UNDERSEA WARFARE* Magazine focuses on our Asia-Pacific Submarine Partners. A few years ago, I served as the Commander for Submarine Group SEVEN. During that time, I had the honor and privilege to work with some of the best Submariners in the world. As we are all aware, Asia's rising powers are investing in submarine capabilities at unprecedented levels, and the nature of this investment is fundamentally changing the region's subsurface environment. While this trend is certainly part of a broader regional investment in naval power, the subsurface aspects of these investments are particularly significant due to the unique attributes and capabilities of submarines.

It is for these reasons that we must develop partnerships among all undersea stakeholders, to include joint and coalition partners. In many cases their capabilities complement our own, and in some cases our partners will have superior technology.

In the past few years, we have conducted coordinated submarine operations in exercises like RIMPAC in which Australia, Canada, Japan, and the Republic of Korea have participated. These exercises have advanced our ability to safely and effectively operate together in the Pacific. We have been supported by Pacific partners Australia and Canada during our Submarine Command Course. When deployed, our submarines have worked with undersea forces from Australia, India, Japan, Korea, and Singapore. We have trained with allies and encouraged new partners as more nations have entered the business of submarine operations.

Moving forward across warfare communities and with international partners requires effort to build trust, sharing both technology and experience whenever possible. The emergence of new undersea capabilities is necessary for our national security, but future resource constraints dictate that it must be a coordinated effort to ensure that we achieve the maximum combat effectiveness.

I am excited that this edition includes some articles from our Pacific Rim allies such as Admiral Yano, Admiral Sang, Admiral Pramono, and others. I know we still have much to learn from all our partnerships.

We will continue to expect a lot from our people—more perhaps than we have in the past. We are sustaining high OPTEMPO due to worldwide demand. We are diversifying our mission set and, despite our best attempts to plan and predict, we know that the future is unpredictable. Therefore, we will rely on our ultimate strength and the initiative, judgment, and courage of our people. If we are to expect more of them, it is only fair that they should expect more from us. We owe them world-class equipment, a predictable schedule when possible, a maintenance commitment that ensures their safety, and a willingness to listen to the incredibly talented people on whom we depend so much.

I am proud of you all.

“The emergence of new undersea capabilities is necessary for our national security, but future resource constraints dictate that it must be a coordinated effort to ensure that we achieve the maximum combat effectiveness.”

A handwritten signature in black ink that reads "M. J. Connor".

M. J. Connor



DIVISION DIRECTOR'S CORNER

Rear Adm. Rick Breckenridge, USN
Director, Undersea Warfare Division

It's great to be back! Following a very rewarding assignment at Group TWO working alongside our awesome Atlantic attack submarine crews, I have returned to the "second best job" in the Navy—forging the future of our undersea forces on the OPNAV staff in the Pentagon. A lot has changed since I left the Pentagon less than two years ago—the budget process is in a high state of turmoil with sequestration storm clouds thundering overhead. Constant disruption and uncertainty has become the order of the day within a landscape of continuing resolutions (inability of passing a budget on time), and the stark reality of dramatically reduced budget authority pressurizes our ability to operate our force and satisfy urgent undersea military requirements. So as you can see, your fellow submariners on shore duty at N97 are involved in sporty "trench warfare" in the vaunted halls of the Pentagon.

The good news is that our undersea force is very well postured to weather this fiscal storm. The positive recognition of the unique, asymmetric military capability of our force has only intensified in the last two years. We enjoy a singular

"Our leaders increasingly value the critical contribution provided by our attack submarines and guided missile submarines in peacetime and the overwhelming combat power and asymmetric advantage that we would leverage in war."

advantage in the undersea domain as in no other, allowing us to influence our adversaries and reassure our allies. And our leaders increasingly value the critical contribution provided by our attack submarines and guided missile submarines in peacetime and the overwhelming combat power and asymmetric advantage that we would leverage in war. They know they can depend with confidence on the quiet, reliable 24/7/365 strategic deterrent provided by our ballistic missile submarines, the most survivable leg of the strategic triad. It is clear to me that this deep-rooted respect is a direct reflection of your skillful employment of our frontline attack and ballistic missile submarines as you tenaciously provide the crux of our conventional and strategic deterrent—keep up the great work!

Secondly, it is also recognized in these tough fiscal times that we provide great "bang for the buck," offering more capability at less cost based on our lean and lethal operating force. The eye-watering success of our *Virginia*-class program builds confidence on Capitol Hill that undersea forces represent a sound investment in tough fiscal times. This is due to the consistent track record of building these incredibly complex warships ahead of schedule and under budget; our two newest ships, USS *Mississippi* (SSN 782) and PCU *Minnesota* (SSN 783), each were delivered a full year before their contracted delivery date! This sterling testimony speaks highly of our people and our industry partners—so much so that Congress has committed to building these ships at a rate of two per year.

A final important trend is the growing appreciation of the undersea domain by our potential adversaries, as evidenced in both capability and numbers. It is clear that other nations recognize the military leverage that comes with undersea power, and they seek to encroach on U.S. advantage. Make no mistake: the undersea edge that we carved out during the decades of the Cold War and have since exploited to vital deterrent effect cannot ever be taken for granted. Our collective hard work and determination will be crucial to maintaining overmatch for the future while safeguarding the security of our nation.

I look forward to the months ahead as we engage in a dialogue about the bright future of our undersea forces, as we explore innovative ways to extend our warfare influence from the undersea. Rest assured we remain on a steadfast course as the gale winds of the fiscal hurricane kick up the seas here in our nation's capital—and slightly ahead of PIM at that.

R. P. Breckenridge

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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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

Readers continue to connect, post additional information, and ask questions about posts on the *UNDERSEA WARFARE* Magazine Facebook page. You can also follow us on Twitter to get historical and current submarine-related information throughout the day. Or you can drop us a line to give us your thoughts on articles that appear in the magazine.

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SAILORS FIRST



A sailor assigned to the *Los Angeles*-class attack submarine USS *Providence* (SSN 719) is welcomed home by his family after a scheduled seven-month deployment.

Photo by Lt. j.g. Jeff Prunera



Working with our Asia-Pacific Submarine Partners

By Rear Adm. Phillip G. Sawyer
Commander Submarine Group 7
Commander Task Force 54/74

It's a great time to be a Submariner in the Pacific!

In this issue of *UNDERSEA WARFARE* Magazine, we focus on submarine forces in the Asia-Pacific region. As articulated in *Undersea Warfighting*, the companion document to our Design for Undersea Warfare, "The importance of undersea forces to the national security of the United States and its allies grows with each passing year." Arguably, this is nowhere more true than in the Asia-Pacific region.

From the early submarines of the Civil War to the *Holland*-class submarines in the early 20th century; from the diesel boats that carried us through successful undersea engagements in WWI and WWII to the advent of nuclear power with USS *Nautilus* (SSN 571) in 1954 and throughout nearly 4,000 SSBN strategic deterrent patrols; our submarine industry and the warriors who take our boats to sea have relentlessly pushed the boundaries of design creativity, operational ingenuity, and tactical innovation.

Starting from humble beginnings, our Pacific Submarine Force began operations in direct support of U.S. Pacific Fleet with the arrival of four *F*-class boats in Hawaii in 1914. These first four boats were soon replaced by four *K*-class and six *R*-class submarines, and the U.S. Pacific Submarine Force was formally established three years later. By WWII, we had 51 submarines in the Pacific, 22 of them homeported at Pearl Harbor. Today, 41 of our nation's submarines operate as members of Submarine Forces, U.S. Pacific Fleet.

As Commander, Submarine Group 7, I am honored to lead our forward-deployed undersea forces and to work with our many allies and partner Submarine Forces. Together, we are a tremendously capable undersea force that contributes significantly to peace and stability in the Asia-Pacific region.

The articles you will read in this edition of *UNDERSEA WARFARE* were written by some of my counterparts and close friends – leaders of the submarine forces of the Japan Maritime Self Defense Force, Republic of Korea Navy, Royal Australian Navy, Republic of Singapore Navy, and Indonesian Navy. You will read about some of the oldest and newest submarine forces in the Asia-Pacific region, about their histories, and about how we work together to build important partnerships in submarine operations.

Driven by a unique bond of mutual respect and concern for the safety of all who operate in the often harsh and challenging undersea environment, we cooperate with submarine forces throughout the region in two vital areas—submarine escape and rescue and managing safe submarine operations in our shared waterspace.

Held annually, the Asia Pacific Submarine Conference (APSC) and exercise Pacific Reach (PACREACH) bring Submariners from every navy in the region together to share technologies, procedures, and lessons learned and to advance our collective capability in the

critical mission of submarine escape and rescue.

APSC is attended by representatives from nearly every Submarine Force in the Asia-Pacific region. This year, Commander, Submarine Flotilla 9 of the Republic of Korea Navy hosted submarine warriors from 22 nations, including the United States, Russia, China, Australia, Malaysia, India, Pakistan, Singapore, Thailand, and Vietnam during APSC in Busan, Korea. APSC focuses on submarine rescue assets and capabilities of partner nations, enabling valuable discussion among submarine partners with a common interest—ready assets, personnel, protocols, and procedures to rapidly respond in the event that fellow Submariners require rescue from their submerged and disabled submarine.

Exercise PACREACH takes all of the great work from APSC and puts it into practice; testing, assessing, and improving on our collective ability to rescue Submariners in distress. Shared equipment and procedural standards, established through the International Submarine Escape and Rescue Liaison Office (ISMERLO) and Naval Sea Systems Command (NAVSEA), are tested to ensure interoperability of various platforms and clear understanding of coordination, communication, and rescue execution processes. Through PACREACH, we positively demonstrate and build confidence in our international response capability for submarine rescue.

Along with submarine escape and rescue, prevention of mutual interference during submerged operations is another area of common interest. Today, well over 200 submarines operated and maintained by more than a dozen countries deploy from ports throughout the Asia-Pacific region, and the number is growing at a remarkable pace every year. The increasing density of submarines in the region makes our operations progressively more challenging and compels us to work together to mitigate the risks posed by operating quiet, often undetectable, submarines in the same body of water. Through mutual understanding of waterspace allocation procedures, we are able to operate safely in our shared undersea environment.

I would like to thank my submarine counterparts who contributed to this issue of *UNDERSEA WARFARE*. Their articles highlight our shared legacy as Submariners, the importance of our international relationships, and the tremendous value of our close and enduring partnerships. I am deeply committed to strengthening these friendships at every opportunity.

I would also like to thank the many Sailors of our forward-deployed Submarine Force. I am exceptionally proud of your incredible contributions and operations in support of SEVENTH Fleet warfighting readiness, building important relationships and capabilities with our allies and partners, and enhancing peace, stability, and our national security in the Asia-Pacific region.



The Australian Submarine Force

By Commodore Gregory J. Sammut, CSC, RAN
Director General Submarine Capability

Introduction

Six years after becoming established as a nation in 1901, Australia's Government of the day considered plans for a navy based on a flotilla of submarines and destroyers. Unsurprisingly, much debate followed, and plans were adjusted. By 1909, it was agreed that Australia's first Fleet Unit would include three submarines. Although Australia's senior naval officer at the time, Captain William Creswell, thought submarines would be expensive to maintain and difficult to crew, eventually two submarines were acquired.¹

So began Australia's consideration of its submarine capability, which also gave birth to recurrent themes that arose in subsequent debates at various stages throughout the history of our nation's submarine force.

Notwithstanding, as we approach the centenary of Australia's submarine force in 2014, our submariners and submarines have long become firmly established as a vitally important arm of the Australian Defence Force. Moreover, they are destined to remain so with the strongest support of Navy's highest leadership.

History

Following deliberations as to whether Australia should build or assemble its first submarines in country, they were ordered from Britain in late 1910. The *E*-class submarines *AE1* and *AE2* ('A' for Australian) arrived in Sydney in May 1914, having completed what was the longest submarine transit of the times.

At the outbreak of the First World War, *AE1* and *AE2* were sent to German New Guinea as part of the Australian Naval and Military Expeditionary Force. On 14 September 1914, a day after the official German surrender of the colony, *AE1* failed to return from patrol in the area; its fate and that of the entire crew is still undiscovered.²

AE2, commanded by Lieutenant Commander H.S. Stoker, achieved fame after successfully penetrating the Dardanelles — the first allied submarine to do so — on 25 April 1915. *AE2* remained at large in the Sea of Marmara for five days, until the ship sustained irreparable damage in action and Captain Stoker was forced to scuttle her. He



Photo by LSTS Yuri Ramsey © Commonwealth of Australia

HMAS *Collins* arrives in Sydney Harbour

and his crew remained in Turkish captivity for the rest of the war.³

Although there were efforts to replace *AE1* and *AE2* during the war, it was not until 1919 that new submarines arrived in the form of six surplus British *J*-class submarines. However, amid increasingly tight fiscal circumstances and Navy's priority to keep its surface ships, the *J*-class submarines were laid up in 1921. Deemed obsolete and expensive, they were sold for scrap the following year.⁴

Soon afterwards, the Australian Government ordered two new *O*-class submarines from Britain. The first of these, *Oxley* and *Otway*, were plagued by delays and mechanical failures. When they were eventually ready in mid-1929, the consequences of the emerging world depression resulted in their return to the Royal Navy.⁵

Australia did not possess submarines throughout the Second World War, although many allied submarines, predominantly those of the U.S. Navy, operated from bases in Fremantle and Albany on the west coast and Brisbane on the east coast. In fact, Fremantle was the largest submarine base in the southern hemisphere and submarines operating from Australia played a crucial role in achieving victory in the Pacific. While we did not have submarines, we did have many Submariners. Among the most notable were Vice Admiral Sir Ian Macintosh DSO, DSC, our most successful Australian-born WWII submarine commander, and Lieutenant Commander Max Shean DSO and bar, who operated X-craft midget submarines of the Royal Navy.

After the Second World War, a flotilla of Royal Navy submarines was based in Australia for a period of time. It was not until the late 1950s that Australia considered re-establishing its submarine force. The then-Minister for the Navy, John Gorton, led the debate. Overcoming the reluctance of the Minister for Defence and some members of the Naval Board, he announced in 1963 that Cabinet had approved the acquisition of four *Oberon*-class submarines from Britain to be delivered between 1966 and 1968. In 1971, another two *Oberon* submarines were ordered, which were delivered in 1977 and 1978.⁶

The *Oberon* fleet marked a turning point in the nation's understand-

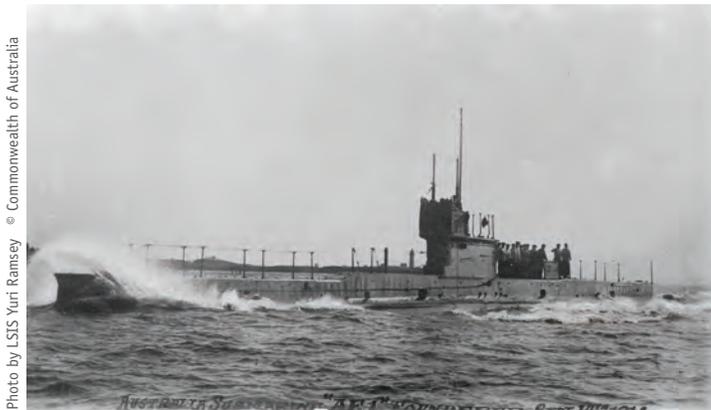


Photo by LSTS Yuri Ramsey © Commonwealth of Australia

HMAS *AE 2*



Photo courtesy of Michael W. Pocock and www.maritimequest.com



HMAS Onslow (SS 60)

Four Australian *Oberon*-class boats were commissioned initially: HMAS *Oxley* (March 1967), HMAS *Otway* (March 1968), HMAS *Ovens* (April 1969) and HMAS *Onslow* (December 1969). HMAS *Orion* and HMAS *Otama* were commissioned in 1977 and 1978. HMAS *Oxley*'s arrival in Sydney coincided with the commissioning of the submarine base—HMAS Platypus—at Neutral Bay, Sydney.

ing of the importance of a submarine force. Although initially acquired to support anti-submarine warfare training for the Royal Australian Navy, they proved very capable submarines and reversed the standing opposition of many, which had been shaped by experiences with previous classes.⁷

The increasing proficiency of *Oberon* operations at sea was matched by growth in the sophistication of submarine support arrangements ashore. Cockatoo Island Dockyard developed the foundations and skills to competently refit the submarines. The Submarine Warfare Systems Centre was also established, and led an ambitious submarine weapon update program. This achieved a substantial upgrade of the *Oberon* sonar, tactical, and weapon control systems, as well as the replacement of old straight-running Mk 8 torpedoes with the US Mk 48 Mod 4 torpedo and the incorporation of sub-launched Harpoon missiles. Largely indigenous, this program was highly successful, and along with the quality of refit work undertaken at Cockatoo Island Dockyard, demonstrated the capacity within Australia to support its own submarine capability. The improved capabilities of the *Oberon* class also emphasized the valuable role our submarines could fulfill as strategic defense assets, with the capacity to deter as well as respond to aggression—a role that endures.

Today's Fleet

Apart from the *J*-class—originally acquired as surplus British submarines—the acquisition of all other submarines in Australia had been attended by debate as to whether they could have been constructed in country. As the debate continued when contemplating replacements for the *Oberon* class, a new reality emerged: modern military-off-the-shelf conventional submarines were not designed to meet the requirements of Australia's submarine force, which call for a submarine with reach, endurance, and commensurate payload capacity. Such requirements are borne of the dominance of the maritime

environment in Australia's geo-strategic circumstances, characterised by an ever-growing dependence on the sea and expansive maritime domain that connect our country to the world.

Following the success of efforts in maintaining the *Oberons*, and with growing confidence in national industrial capacity, the six *Collins*-class submarines of today's fleet were built in Australia and commissioned into the Royal Australian Navy over the period 1996 to 2003.

Though derived from existing Swedish designs, the *Collins* class is essentially a unique submarine. At the time of construction, it was the largest conventional submarine in the world. It also became the first complex capability solely owned and operated by Australia, providing us with many salutary lessons on our new role as the parent nation of our submarine force. Along with this came a growing and increasingly strong relationship between the submarine forces of the United States and Australia, exemplified today by ongoing joint development of a shared tactical and weapon control system and heavyweight torpedo, as well as a broad and highly valuable range of combined exercise opportunities.

Collins-class submarines

HMAS <i>Collins</i> (SSG 73)	HMAS <i>Dechaineux</i> (SSG 76)
HMAS <i>Farncomb</i> (SSG 74)	HMAS <i>Sheean</i> (SSG 77)
HMAS <i>Waller</i> (SSG 75)	HMAS <i>Rankin</i> (SSG 78)

FEATURES

- Diesel-electric propulsion
- High capability battery, long range and high endurance
- High performance hull form, automated controls and exceptional manoeuvrability
- High shock resistance, optimal noise suppression and low magnetic signature
- State-of-the-art combat system
- Efficient weapons handling and discharge systems

The Future

In testament to the vital role submarines will continue to hold, Australia's Government announced in 2009 its intention to commence planning for the replacement of the *Collins* class with 12 highly capable future submarines. This is destined to be the largest defense program ever undertaken in Australia. Work has begun on assessing options that will again have to meet the requirements imposed by Australia's unique geo-strategic circumstances while contributing ongoing weight to the inevitably maritime strategy for the defense of our interests and nation.

1 P. Yule, D. Woolner, *The Collins Class Submarine Story—Steel, Spies and Spin*, (Melbourne, Cambridge University Press, 2007), 4.
 2 "http://www.awm.gov.au/encyclopedia/ww1_navy/ae1_ae2/"
 3 *ibid*
 4 Yule and Woolner, *The Collins Class Submarine Story*, 7
 5 *ibid*, pg 8
 6 *ibid*, pg 11-18
 7 *ibid*, pg 18



The History of the Indonesian Submarine Squadron

By Rear Adm. Agung Pramono, S.H., M. Hum
Indonesian Navy

Indonesia is the world's largest archipelagic state, comprising more than 17,000 islands and large areas of water linking them together as one unity and making Indonesia one of the most influential maritime nations. A strong national defense, achieved by reinforcing naval capabilities, is critical to defending Indonesian sovereignty and ensuring the stability of Indonesian territorial seas.

As a military institution that is responsible for defending the country, the Indonesian Navy requires human resources and weapons systems to bolster its function and to accomplish the mission. The Indonesian Navy has more than 140 warships of various types and classes, which are divided into two fleets and one military sealift command. The Eastern and Western Fleets are composed of several squadrons, including one submarine squadron in the Eastern Fleet.

The Indonesian Navy has long experience in operating submarines. For a significant period in the 1960s and 1970s, Indonesia operated the most powerful submarine force in the Asia-Pacific region, excepting the Cold War superpowers: 12 *Whiskey*-class submarines, two torpedo retrievers, and one submarine tender, all purchased from the Soviet Union. By comparison, no other Southeast Asian nation possessed a submarine force of any size, and in 1967 the Royal Australian Navy had only six submarines, of the *Oberon* class.

The Indonesian Navy received its first submarine, KRI *Tjakra* (401), from the USSR on 12 September 1959. This first submarine was commanded by Commander O.P. Koesno. Its delivery was a milestone in the creation of the Indonesian Submarine Force, and 12 September was designated as the Indonesian Submarine Squadron Day to commemorate the date that the Indonesian Navy began operating these advanced war machines with both strategic value and deterrent effect.



Indonesian *Whiskey*-class submarines

During the 1960s, in the heyday of the *Whiskey* class, these superb underwater units were used to regain West Papua from Dutch colonial control. There were three submarine deployments during the military operation—called JAYA WIJAYA 1—against the Dutch forces in the West Papua. KRI *Nagabanda* (403), KRI *Trisula* (402), and KRI *Tjandrasa* (408) successfully launched an attack on the Dutch forces in the West Papua area; in operation TJAKRA II, *Tjandrasa* managed to infiltrate the enemy's area to land a group of Indonesian Special Forces on the island. For the success of that operation, the Indonesian Government awarded *Tjandrasa* and her crew with the prestigious "Bintang Sakti" medal. To the present day, *Tjandrasa* is the only naval vessel to have been awarded the medal. In April 1963, in operation VISHNU MUKTI, KRI *Nagarangsang* (404),

were used to regain West Papua from Dutch colonial control. There were three submarine deployments during the military operation—called JAYA WIJAYA 1—against the Dutch forces in the West Papua. KRI *Nagabanda* (403), KRI *Trisula* (402), and KRI *Tjandrasa* (408) successfully launched an attack on the Dutch forces in the West Papua area; in operation TJAKRA II, *Tjandrasa* managed to infiltrate the enemy's area to land a group of Indonesian Special Forces on the island. For the success of that operation, the Indonesian Government awarded *Tjandrasa* and her crew with the prestigious "Bintang Sakti" medal. To the present day, *Tjandrasa* is the only naval vessel to have been awarded the medal. In April 1963, in operation VISHNU MUKTI, KRI *Nagarangsang* (404),



Photo courtesy of Indonesian Navy

KRI *Nanggala* (402) during Passing Exercise with USS *Oklahoma City* (SSN 723)

KRI *Tjundamani* (411), and KRI *Alugoro* (406) again conducted a 'show of force' in West Papua waters.

Thanks to those 12 submarines, the Indonesian Navy at that time was considered to be one of the most powerful naval forces in the Asia-Pacific region—making Indonesia a regional power and serving as a source of pride and self-confidence for her people.

The declining relationship between the Republic of Indonesia and the Soviet Union in 1965—resulting from Indonesian government action against the rebellion of the Indonesian Communist Party—led to the spare parts crisis in the Navy, which affected the submarines. To maintain an operational force, the Indonesian Navy decommissioned several submarines and used their parts to repair the remaining vessels. Since then, the number of the Navy's submarines declined steadily. The last remaining *Whiskey*-class submarine, KRI *Pasopati* (410), was decommissioned on 25 January 1990 and now serves as a submarine museum in downtown Surabaya.

In 1978, prior to the decommissioning of *Pasopati*, Indonesia procured two Type 209/1300 submarines from West Germany—KRI *Cakra* (401) and KRI *Nanggala* (402)—to maintain the security of Indonesian territorial waters. These two German submarines have been overhauled several times in Germany, South Korea, and Indonesia.

As an archipelagic country with vast areas to cover, Indonesia requires a large number of naval vessels, including submarines, to maintain national security and sovereignty in and around its waters. Having learned from its previous experiences, the Indonesian Navy has planned to gradually increase the size of its submarine force in the years to come. To begin, it has ordered three Type 209/1500 submarines from South Korea. The Navy expects to restore the glory of its naval forces, including its submarine squadron.

The original 12 *Whiskey*-class submarines

- | | |
|-------------------------------|-----------------------------|
| KRI <i>Tjakra</i> (401) | KRI <i>Nanggala</i> (407) |
| KRI <i>Trisula</i> (402) | KRI <i>Tjandrasa</i> (408) |
| KRI <i>Nagabanda</i> (403) | KRI <i>Wijayadanu</i> (409) |
| KRI <i>Nagarangsang</i> (404) | KRI <i>Pasopati</i> (410) |
| KRI <i>Hendrajala</i> (405) | KRI <i>Tjundamani</i> (411) |
| KRI <i>Alugoro</i> (406) | KRI <i>Bramasta</i> (412) |



Dongame: Japan's Submarine History and Challenges



By Vice Admiral Kazuki Yano, JMSDF
Commander, Fleet Submarine Force

The Japanese Maritime Self Defense Force (JMSDF) and its predecessor, the Imperial Japanese Navy (IJN), have long used the term *dongame* (“languid turtle”) to encapsulate the unique nature of conventional submarines. They possess the contrasting characteristics of offensive strength combined with poor underwater maneuverability. Japanese Submariners have continued to use the term with great pride and lighthearted self-deprecation. Of course, conventional submarines and antisubmarine platforms have continued to evolve; notably, there are significant gaps in undersea maneuverability and detection capability between conventional and nuclear powered submarines. In this article, I would like to briefly explain *dongame*, the evolution of the Japanese submarine force, and our future challenges.

The History of Dongame

The IJN Submarine Force took its first step in 1905, four years after the birth of the U.S. Submarine Force. The Japanese Navy purchased materials for five *Holland*-class submarines from a U.S. company, Electric Boat, for service in the Russo-Japanese War, which had broken out the previous year. The submarines were quickly assembled at the Yokosuka shipyard and all were commissioned in October 1905. However, the war ended before they could take part in any action. The first U.S. submarines were also of the *Holland* class; the U.S. and Japanese Submarine Forces evolved from the same point of origin. Subsequently, the IJN made progress by absorbing technologies from England, France, and Germany.

During the Pacific War, submarine warfare was waged relentlessly and IJN operational submarine doctrine contributed by attriting the adversary's principal combat power. However, operational errors were committed which led to the loss of lives and no consideration was given to technological reforms or submarine production. The tactics, technology, and production capacity of the Allies' antisubmarine platforms decisively overwhelmed Japan. Despite these aggressive Allied antisubmarine warfare (ASW) efforts and chronic equipment



Photo courtesy of JMSDF

JDS *Harushio* (SS 583)

shortages in the IJN Submarine Force, Japanese Submariners fought well by leveraging the unique characteristics of the submarine.

Established seven years after the end of the war, in 1952, the JMSDF was tasked initially with an ASW mission. In January 1955, Japan acquired one submarine from the United States for service as a target ship. A crew composed primarily of former IJN submariners was sent to New London, Connecticut for training. Having been trained, the crew transferred to the *Gato*-class submarine ex-USS *Mingo* (SS 261), which was re-christened JDS *Kuroshiro* (SS 501). With the safe arrival of the crew and the submarine in Japan, the history of the Japanese Submarine Force resumed after the 10-year gap following World War II.

Soon after, Japan started to domestically produce submarines. In 1960, Kawasaki Heavy Industries (Kobe), a pre-war submarine manufacturing company, built JDS *Ōshio* (SS 561), the first domestically produced submarine since the end of the war. Mitsubishi Heavy Industries (Kobe) also produced submarines. Together the two companies strengthened and maintained Japan's domestic submarine production capability, building approximately 50 submarines up to the present day. The 1977 Defense Guideline called for 16 submarines for the defense of critical straits. To meet this requirement in 1971, with remarkable advances made in underwater detection and maneuverability, the JMSDF commissioned its first teardrop-shaped submarine, JDS *Uzushio* (SS 566), modeled after the U.S. Navy's *Barbel* class. Successively, the JMSDF continued to make advances one step at a time, including improved quieting on the *Harushio* class, side arrays for improved detection on the *Oyashio* class, and Stirling AIP propulsion for improved maneuverability on the *Soryu* class.

In 1981, the Submarine Force was formed with two submarine groups and a Submarine Training Center (STC); it was the only Force in the JMSDF to have a fleet school. STC was charged with training and tactical development along with submarine training support and combat systems integration. In this way, the STC sustains the foundation of the Submarine Force. Operationally, we

Photo by Mass Communication Specialist 2nd Class Ronald Gutridge



JDS *Uzushio* (SS 566)



have maintained a strong partnership with the U.S. Navy since 1963, dispatching a submarine each year to Hawaii to receive training and mentorship. Since 1986, Japanese submarines have participated in RIMPAC. Furthermore, we conduct passing exercises (PASSEX) in the waters surrounding Japan, as well as various other training exercises that enhance our great partnership.

Challenges for *Dongame*

As we have seen, the JMSDF Submarine Force was established with wide-ranging support from the U.S. Navy Submarine Force, and we continue to mature with their operational and technological support.

Nevertheless, technological support from the U.S. Submarine Force will necessarily be limited, as it specializes in nuclear submarines. The JMSDF Submarine Force will, in some ways, have to depend on domestic support for its further development.

At the end of the last fiscal year, a decision was made in the Japan Defense Guidelines to increase the number of submarines from 16 to 22. Considering the current fiscal environment in Japan, for this plan to go forward without debate is extraordinary. I interpret this as the people of Japan placing confidence in their Submarine Force. For this reason, the Submarine Force must commit the whole Force to this endeavor to meet mission requirements. Going from 16 to 22 submarines will increase our footprint by 40 percent, clearly enhancing operational freedom. Even the increase to 22 submarines may not be enough considering the size of our area of operation. The current national security environment in which Japan finds itself requires submarines with enhanced capability. Without capability improvements, a simple increase in force structure will be insufficient. Obviously, the increase will pose challenges in the critical area of crew training and development. We are implementing policies to accelerate promotion for those wearing dolphins, and STC is well postured for training new students. We are strongly committed to addressing these issues and keeping our Sailors aware of them.

There are myriad other issues that need to be solved from the acquisition of new ammunition, to improving supply and mooring facilities, to ensuring higher operational availability by standardizing maintenance. The development of the *Soryu*-class next-generation submarine also presents us with a predicament. We must consider the kind of capability required for the next generation submarine and how and where it will operate with U.S. Navy submarines. The Submarine Force needs to come together, give serious consideration to these issues as military professionals, and think about what we must ask of our scientists and engineers.

We will maintain close relationships with domestic institutions such as weapons/submarine producers, shipyards, the Dive/Hyperbaric Medicine Unit, and the Technical Research and Development Institute. We have seen good things come from these relationships, as well as some negative impacts, but undeniably they have helped improve the Japan Fleet Submarine Force. The military professionals of the Submarine Force recognize that these domestic partners are all on the *dongame* team. As such, uniformed, civilian,

and private and public sector personnel need to come together in order to exchange candid views, foster good relations, and face these challenges in a unified effort.

Conclusion

Our modern Submarine Force is a product of the hard lessons learned by the IJN Submarine Force in World War II as well as the continued support of the U.S. Navy. We teach the students at STC to make every decision as if they were in combat. In addition, at the entrance of STC is a motto borrowed from the U.S. Navy —“Know Your Boat”—and a reminder: “We are at the Center of Battle.” Energized by these mottoes, we also take pride in the fact that during the Cold War Japan was one of the few nations in Asia to gain experience in submarine operations.

The current Submarine Force has inherited the DNA of those past *dongame*. An illustrious past will not always lead to success in the future, but our foundation is unshakable. Submarining is a challenging business, and many challenges still exist in submarine operations, systems, and training. The undersea warfare potential of the JMSDF Submarine Force will remain strong as long as we sincerely acknowledge these issues and continue to put forth the effort to make improvements and innovations to our submarines. I believe that sustaining these efforts and enhancing combat capability will play an important role in our national security and moreover are prerequisites to maintaining a close partnership with the U.S. Navy’s Submarine Force.

Japanese Maritime Self-Defense Force Submarines in Operation

<i>Soryu</i> class	JDS <i>Soryu</i> (SS 501)
	JDS <i>Unryu</i> (SS 502)
	JDS <i>Hakuryu</i> (SS 503)
	JDS <i>Kenryu</i> (SS 504)
	JDS <i>Zuiryu</i> (SS 505)
<i>Oyashio</i> class	JDS <i>Oyashio</i> (SS 590)
	JDS <i>Michishio</i> (SS 591)
	JDS <i>Uzushio</i> (SS 592)
	JDS <i>Makishio</i> (SS 593)
	JDS <i>Isoshio</i> (SS 594)
	JDS <i>Narushio</i> (SS 595)
	JDS <i>Kuroshio</i> (SS 596)
	JDS <i>Takashio</i> (SS 597)
	JDS <i>Yaeshio</i> (SS 598)
	JDS <i>Setoshio</i> (SS 599)
JDS <i>Mochishio</i> (SS 600)	



Republic of Korea Navy Submarine Force: Another Story of the Korean Miracle



By Rear Adm. Youn Jeong Sang, ROKN
Commander, Submarine Flotilla 9

“Dive one hundred times, surface one hundred times”—a vision once set forth by an infant submarine force—has become the creed of daily operations of the ROK Navy submarine flotilla. For 20 years, this creed has been the basis of successful clandestine operations and the homing beacon for submarines to navigate safely. The same passionate motivation and impetus that lifted Korea from the devastation of the Korean War to the ranks of Organisation for Economic Co-operation and Development (OECD) member states has driven the ROK Navy Submarine Force to success. Even more impressive is that, while it took the Korean economy over 50 years to reach its current status, it took the submarine force only 20.

The Beginning and Rise of the Submarine Force

The submarine force began as a submarine squadron subordinate to the Component Flotilla. With the addition of submarine assets, the squadron was upgraded to a submarine flotilla on October 1st, 1995. Four submarine squadrons and one education and training squadron were established later as subordinate units of the flotilla.

In 1992, the ROK Navy introduced its first Type 209-class submarine, the ROKS *Chang Bogo* (SS 061), manufactured in Germany. According to the initial plan to obtain the technology to domestically manufacture future submarines, the construction of subsequent Type 209-class submarines took place in Korean shipyards. As a result, the Submarine Flotilla today has about a dozen submarines of Type 209 class and Type 214 class combined.

ROKS *Lee Chun* (SS 062) was the second Korean submarine and the first to be built in Korea.

Up to now, Korea has deployed submarines overseas to participate in a total of 19 combined exercises with allied and friendly forces. Through such events, the ROK Navy was able to confirm its clandestine operation capabilities and promote interoperability with allied forces.

Meanwhile, the capability and facilities for maintenance and repair were also considered a vital part of operating a submarine



Photo courtesy of Republic of Korea Navy

The delivery of ROKS *Lee Chun* (SS 062), the second Korean submarine and first built in Korea

force. Today, Korean submarines receive maintenance and repairs on a regular basis at the naval shipyard as well as going to the shipyards of domestic shipbuilding companies for more technical repairs.

A submarine is only as good as its crew. For a country starting from scratch, we had to rely on the support and coordination of advanced submarine-operating navies to receive basic submarine education and training. Selecting the best and the brightest, the ROK Navy sent a team to Germany for 18 months to receive education and training. Meanwhile, back home, submarine recruits went through a similar course which adopted parts of the German course model. In addition, the ROK Navy invited retired U.S. Navy submarine commanding officers as instructors. Such efforts in the initial phase of building a submarine force established a firm foundation for the ROK Navy to further develop by adding and applying Korean ingenuity and effort.

The Importance of Education and Training

Cultivating a crew who will act both as the spear and as the shield is essential because they are the pride of the submarine force and the ‘invisible power’ of the navy. Therefore, education and training aimed to make every Submariner an expert in submarines has always been a top priority. A Submariner undertakes six months basic submarine education and training and six months onboard training in order to gain submarine qualification.

By applying its accumulated knowledge on Type 209-class submarines, the Submarine Flotilla has become the only country in the world that has a complete Type 209-class submarine tactical and control training facilities. This is an impressive advancement if we look back to the days when we relied on foreign navies to train submarine recruits.

Moreover, the ROK Navy is now capable of providing submarine training and education for other navies. In 2011, a submarine crew of the Indonesian Navy completed the basic submarine course at the Education & Training Squadron. As a country that received support from advanced submarine-operating countries, it is a duty and a mission for Korea to do the same for navies that need our support.

Photo by Photographer P01 Takahiro Ito © JMSDF



ROKS *Nae Dyong* (SSK 069) underway during RIMPAC 2012



The Way Ahead

For the past 20 years, the ROK Navy submarine force has developed with the support of friendly forces and the application of Korean effort and creativity. The Submarine Flotilla's future focus can be described as the pursuit of the following:

- (1) The ROK Navy submarine force takes on new challenges to maintain peace and stability in Northeast Asia. The upgrade of the flotilla to a submarine force command in 2015 will be a robust kick-off for this effort. With the introduction of mid-sized submarines, the ROK Navy will gain enhanced capabilities that will surely benefit interoperability among friendly forces in the region.
- (2) It is committed to regional cooperation in rescuing distressed submarines and continues to develop the cooperative system for submarine rescue among allied forces in the region. Korea had the honor of hosting the 12th Asia Pacific Submarine Conference in September 2012, a discussion forum that included international experts in submarine safety, escape, and rescue.
- (3) The ROK Submarine Flotilla will continue to strengthen ties and cooperation with friendly countries in the region, supporting friendly navies that ask for the provision of submarine education and training at our Type 209-class submarine training facilities. We also look forward to supporting our allies with education



Photo courtesy of Republic of Korea Navy

ROK Submariners on control training

and training on the flotilla's Type 214-class submarine training facilities, which are pending completion.

In 2011, the ROK Submarine Flotilla celebrated ROKS *Chang Bogo's* impressive record of navigating 200,000 miles accident-free. The flotilla slogan 'Dream, Challenge and Creation' has been the engine of such progress and will act as the guideline for the future too. The Submarine Flotilla will continue its dedication to the peace and prosperity of Korea and its commitment to creating a new chapter in the history of submarines.

Definite and Serious—The RSN's Commitment to Submarine Rescue



By Col. Ngong Boon Kheng, RSN
Commanding Officer, 171 Squadron

Incapacitated, alone and under the menacing depths of the vast sea, the only protection from the unforgiving pressures outside is the submarine steel hull some inches thick. These are the harsh realities Submariners will face in the unfortunate event of a distressed submarine (DISSUB) incident. Submariners should operate with a peace of mind borne of the assurance that no rescue effort will be spared should an emergency occur. Understanding the importance of submarine rescue, the Republic of Singapore Navy (RSN) has placed considerable emphasis in developing our Submarine Escape and Rescue (SMER) capabilities and advancing regional interoperability in SMER.

Building the RSN's Organic Submarine Rescue Capability

The RSN's submarine history, though relatively short, has been a fruitful one. Our first submarine, RSS *Conqueror*, entered service in 2000, and this was followed by the commissioning of the remaining *Challenger*-class submarines. RSS *Archer* and RSS *Swordsman*, the first two *Archer*-class submarines, were commissioned in 2011 and 2013, respectively, and are the latest additions to the local

submarine fraternity. Over the past decade, our Submarine Force has also gained much operational experience through participation in various RSN, bilateral and multilateral exercises, a number of which are SMER-related in nature. The knowledge and experience learned reinforced the RSN's fundamental belief in the need for building a viable organic submarine rescue capability to respond more swiftly to contingencies.

This vision was realized in 2009 when we operationalized our submarine rescue system by leveraging available commercial expertise under a public-private collaboration with Singapore Technologies Marine and James Fisher Defence. Comprising an 85-metre submarine support vessel, MV *Swift Rescue*, and a 9.6-metre rescue submersible, Deep Search and Rescue 6 (DSAR 6), this fully integrated system is able to operate continuously for 28 days at sea and conduct rescue operations to a depth of 500 metres, even in harsh sea conditions of up to sea state 5.

MV *Swift Rescue* possesses a wide range of capabilities to conduct SMER operations. Its dynamic positioning capability enables the vessel to hover at a particular geographical position to conduct rescue operations, without the need for mooring. Together with a custom-built launch and recovery system on-board, it is able to launch the DSAR 6 within 15 minutes of arrival at the scene of the DISSUB.



Constant atmospheric pressure is maintained throughout the rescue operations; such a transfer-under-pressure protocol reduces the risk of decompression illness arising from sudden pressure changes. Pressure in the free-swimming DSAR 6 will be adjusted to match the DISSUB's internal pressure before mating. DSAR 6 is capable of rescuing up to 17 submariners at a time. Upon recovery on-deck, the rescued submariners will be transferred from DSAR 6 to MV *Swift Rescue's* 40-man recompression chambers (RCC) via a Deck Transfer Lock (DTL). They will be triaged and attended to by personnel specially trained in hyperbaric and diving medicine. Those who require intensive medical care can also be closely monitored in the high-dependency ward on-board, while others who require urgent surgery or further treatment at a tertiary hospital can be heli-evacuated to medical facilities ashore via the vessel's helipad.

The rescue system is further supported by established shore-based medical facilities. The RSN's Navy Medical Service (NMS) operates the Naval Hyperbaric Centre, which specializes in underwater medicine and provides recompression therapy for decompression illness on a 24/7 basis. This is complemented by civilian medical resources at the Hyperbaric and Diving Medicine Centre (HDMC) in the Singapore General Hospital (SGH), which was opened in

2009. Through close collaboration with SGH's HDMC, the RSN is able to combine our experience and expertise in underwater medicine with SGH's clinical expertise in critical care and holistic patient management, thus providing the best possible medical care for any rescued submariner.

Sharing and Collaboration — Emphasizing the Importance of Multinational Cooperation

Beyond building a submarine rescue capability, the RSN strongly believes in the need to build and maintain a strong network for multilateral submarine rescue collaboration as more countries in the region acquire or enhance their submarine capabilities. Globally, there has been a strengthened focus on submarine rescue, partly due to the tragic loss of the Russian submarine *Kursk* (K 141) in August 2000 and the successful multilateral rescue of the Russian *Priz*-class mini-submarine *AS-28* five years later. A significant lesson gleaned from these two incidents was the value of a robust, multi-agency, multinational submarine rescue ecosystem premised not just upon infrastructural, platform, and operational compatibility but, more crucially, upon mutual trust and understanding.

These relationships can only be built up through regular

Singapore Navy
Deep sea rescue

The evacuation of trapped submariners calls for swift and effective Submarine Escape and Rescue operations. The Singapore Navy shows how this can be done with its integrated rescue system, MV *Swift Rescue*, and its submersible craft, Deep Search and Rescue 6 (DSAR 6).

1 LAUNCH
MV *Swift Rescue* learns of a submarine in distress and an underwater rescue is determined to be required. Upon reaching the site of the distressed submarine, the DSAR 6 can be launched within 15 minutes. Depending on the depth at which the submarine is at, help can arrive within 30 minutes from launch.

2 MATING
While the crew of the distressed submarine provides information on the condition of the vessel and her crew, the DSAR 6 begins the mating process. The interior of the DSAR 6 is first pressurised to match the submarine's internal pressure. It then aligns its bottom hatch to the escape hatch of the submarine. The trapped submariners are then transferred via the connected hatches into the DSAR 6. Up to 17 trapped submariners can be rescued at a time.

3 RECOVERY
Once all the submariners are moved to the DSAR 6, it returns to the surface and is hoisted back onto MV *Swift Rescue*. The submariners are then transferred straight from the DSAR 6 to a recompression chamber. A constant atmospheric pressure is maintained up till the chamber as a sudden change could cause decompression sickness or even result in fatalities due to conditions related to decompression sickness.

4 TREATMENT
A critical component of such operations is the administration of immediate and specialised medical treatment. The Navy's medical personnel, trained especially in the field of hyperbaric medicine, will be on hand to assess the well-being of the rescued submariners, before providing recompression therapy where necessary. Heli evacuation will be considered for severe casualties who require urgent surgery or other hospital-based treatment.

Photo courtesy of Republic of Singapore Navy

A fully integrated submarine rescue system, the MV *Swift Rescue* and DSAR 6 are able to perform rescue, medical treatment and heli-evacuation of casualties.



Photo courtesy of Republic of Singapore Navy



Observers witnessing the launch of the DSAR 6 from MV *Swift Rescue*

interactions such as exercises and exchanges. One such exercise is Exercise Pacific Reach, the region's equivalent to NATO's Exercise Bold Monarch¹. This series of exercises has been very useful in providing participants with a good opportunity to collectively discuss submarine safety-related issues and practise SMER-related evolutions, thereby promoting trust and confidence among the participating navies.

The RSN hosted the inaugural exercise in 2000, and we continued our participation in the subsequent exercises.² We hosted this exercise again in 2010, which saw the participation of navies from Australia, Japan, the Republic of Korea, Singapore, and the United States and military observers from 13 other countries.³ A key focus in 2010 was exercising the interoperability between submarine rescue vessels and DISSUBs. During the exercise, the RSN's DSAR 6 successfully mated with the participating submarines. A medical symposium as well as a simulated evacuation and treatment of personnel from the DISSUB were also conducted.

The RSN's other involvements towards promoting regional SMER cooperation includes participation in professional forums, such as the annual Asia Pacific Submarine Conference (APSC), which provides a platform for participants to exchange ideas and experiences on SMER. The RSN hosted the APSC in 2009 and co-hosted the event with the United States Navy in 2010. In addition, we participate in NATO's Submarine Escape and Rescue Working Group (SMERWG) meetings⁴ to remain updated on the latest SMER developments and share our experiences in the Asia Pacific with international submarine-operating navies.

The RSN organised the inaugural Submarine Rescue Course in 2012 to promote SMER knowledge amongst regional submarine operators. The eight-day course was attended by 29 international participants⁵ and comprised a mix of classroom lessons, table-top exercises, and medical and SMER demonstrations. Topics covered included the Allied Tactical Publication (ATP) 57 on submarine search and rescue, and the use of the ISMERLO website.

The RSN is working towards establishing bilateral submarine rescue arrangements with other submarine-operating navies who operate in the region. In July 2012, such an arrangement was

signed with the Indonesian Navy (TNI AL) laying the foundation between the RSN and the TNI AL in submarine rescue support and cooperation.

Bringing together leaders of regional submarine-operating navies and the practitioners of submarine rescue, the APSC is the premier forum for SMER dialogue and collaboration in the region.

In Concert and with Purpose – Towards Multinational Submarine Rescue Collaboration

Safety of lives at sea is paramount, and the urgency of a DISSUB incident means that the importance of submarine rescue cannot be over-emphasized. Submarine rescue transcends international boundaries and there remains the pertinence for collective security in the field of SMER. To achieve the synergies and interoperability required in a multinational SMER effort, there is a need for regional collaboration and mutual trust and understanding between submarine operators and the SMER community. In our journey thus far, we have understood and experienced first-hand the importance of submarine rescue and multinational cooperation in SMER, and the RSN is now ready to join the larger SMER fraternity in a concerted and purposeful commitment towards the growth of submarine rescue in the region.

- 1 Exercise Bold Monarch is a triennial SMER exercise organized by NATO.
- 2 Exercise Pacific Reach was hosted by Singapore in 2000, Japan in 2002, Korea in 2004, Australia in 2007 and Singapore in 2010.
- 3 Observer nations included: Canada, China, France, India, Indonesia, Italy, Malaysia, Pakistan, South Africa, Sweden, Thailand, the United Kingdom and Vietnam.
- 4 The RSN attends the NATO-based SMERWG meetings as an invited participant.
- 5 The Submarine Rescue Course participants included military personnel from Australia, Indonesia, Malaysia, Singapore, Thailand, the United States and Vietnam.



Education and dialogue are important aspects of submarine rescue. Inaugurated in May 2012, the Submarine Rescue Course aims to be a leading regional forum in the sharing of submarine rescue knowledge amongst SMER practitioners. Photo courtesy of Republic of Singapore Navy



Over the last two years, the U.S. Navy's submarine tenders, USS *Frank Cable* (AS 40) and USS *Emory S. Land* (AS 39), have successfully integrated Military Sealift Command civilian mariners into their crews of active duty Sailors, expanding the ships' mission capabilities and achieving continued success in their support to the Submarine Force.

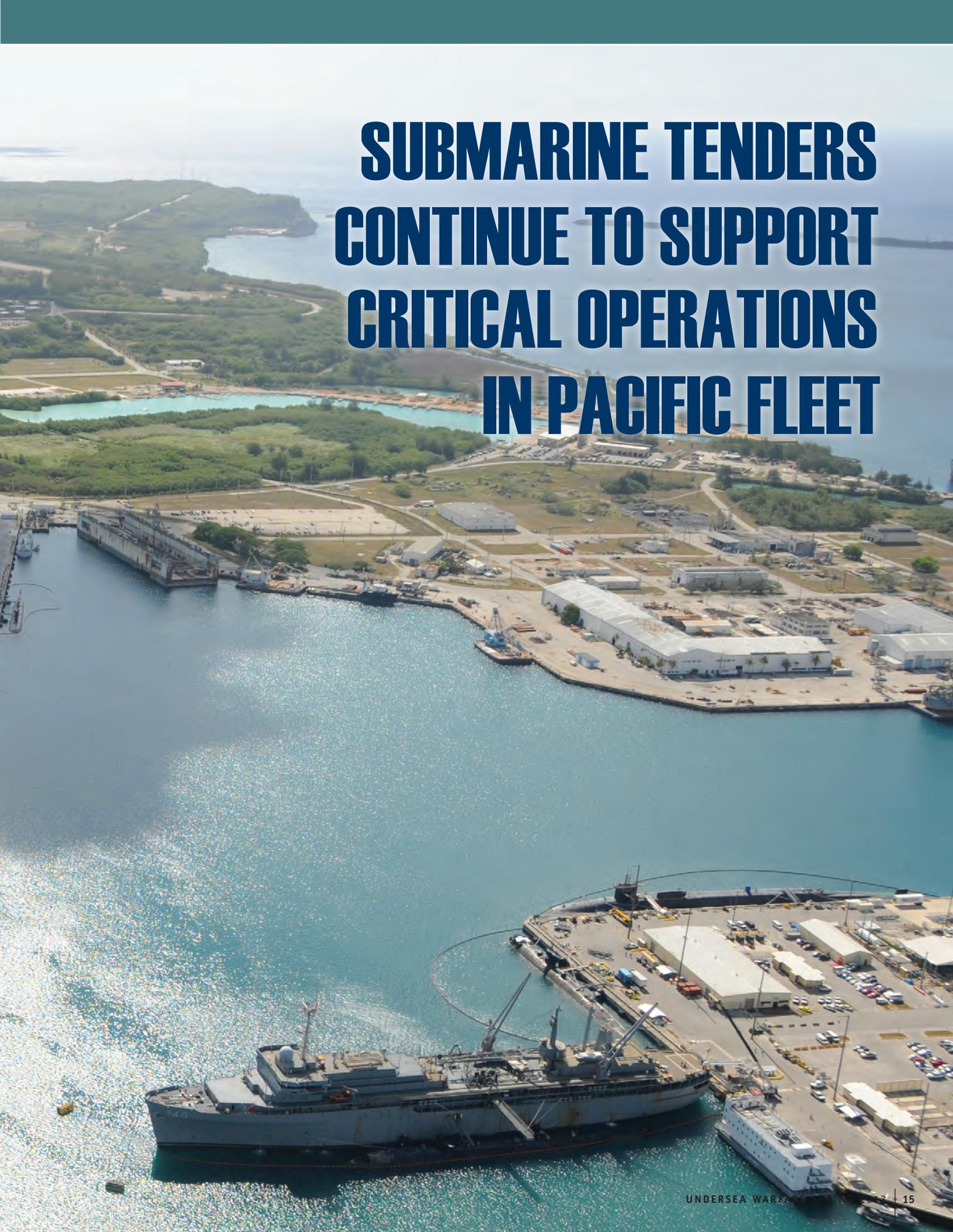
"With all the hard work our Sailors have done, now more than ever, we have the ability to repair submarines wherever the operational commander requires, and in a contingency situation that may call us away from Guam," said *Frank Cable's* current commanding officer, Capt. Pete Hildreth.

Responsibility for both tenders' navigation, deck operations, engineering and food services lies with MSC personnel, while Sailors handle the ships' support structures and the repair missions. Both Sailors and civil service mariners share responsibility for supply and damage control. *Frank Cable* is also tasked to provide fully trained Sailors for expeditionary manning to *Emory S. Land*, forward-deployed to Diego Garcia in the British Indian Ocean Territory, so that the ship can successfully maintain her repair and weapon repair mission capabilities.

"*Land's* hybrid crew of permanent party Sailors, the MSC component and expeditionary manning presents a unique workforce," said Capt. Glenn W. Pendrick, *Emory S. Land's* commanding officer. "This expeditionary manning allows us to harness the strengths of our sister ship *Frank Cable*, and put capable Sailors into work centers to train others while producing results. When you put these factors together, we are able to provide first rate service to the fleet."



SUBMARINE TENDERS CONTINUE TO SUPPORT CRITICAL OPERATIONS IN PACIFIC FLEET





Sailors from the submarine tender USS *Frank Cable* (AS 40) and Republic of the Philippines Navy share engineering and maintenance knowledge while visiting the Philippine Navy Frigate BRP *Gregorio Del Pilar* (PF 15). *Frank Cable* Sailors are taking the opportunity to provide technical assistance and conduct training with the crew of *Gregorio Del Pilar* during a port visit.

At the end of January 2011, *Frank Cable* executed a successful port visit to Sepanggar, Malaysia—her first port visit since the shipyard period in which she was converted to a U.S. Navy/MSC hybrid ship. The tender took the *Los Angeles*-class submarine USS *Houston* (SSN 713) alongside. This visit focused on developing our partnership with the Royal Malaysian Navy (RMN). During her time in port, *Frank Cable* hosted a reception and tours of the ship for the RMN and encouraged interaction between Sailors of both navies, including a soccer game.

Capt. Tom Stanley, *Frank Cable*'s then-commanding officer, said his goal was for his Sailors to realize how much they have in common with the RMN and the people of Malaysia. "We all have a great deal of national pride, and we all want the best for our country, families and friends," Stanley said at the time.

Frank Cable followed up her visit in Malaysia with two more successful port visits in Hong Kong in May 2011, and Subic, Republic of Philippines that July, where she offered tended support to the *Los Angeles*-class submarines USS *Hampton* (SSN 767) and USS *Santa Fe* (SSN 763). While in Subic Bay, *Frank Cable* also underwent repairs to replace fittings, handrails and parts of the hull.

"Using local contractors was a great

opportunity for us to work on *Frank Cable* while we supported *Santa Fe*'s visit, which for them was mostly a liberty port, but we did do some minor repairs too," Hildreth said looking back two years at his first port visit with *Frank Cable*. "It was a good visit for our crew because we also did some great community service projects."

Throughout that year, *Frank Cable*'s

repair department demonstrated the importance of the operational expansion of sub tenders in the Western Pacific. Her Sailors completed seven continuous maintenance availabilities, 52 unscheduled and scheduled voyage repair availabilities, and 14 remote-site fly away team repairs. In all, *Frank Cable* completed 3,200 jobs with over 235,000 man-hours for repairs to submarines and surface ships in both the 5th and 7th Fleet. These exploits would eventually lead to the ship receiving the Chief of Naval Operation's nomination for the 2011 Secretary of Defense Maintenance award.

"If you look back at the summer of 2011, we sent welders to Darwin, Australia to repair some steam piping on USS *Cleveland* (LPD 7), and we had diver fly-away teams to Bahrain. We've done work in Singapore and we've sent guys to Okinawa to support maintenance over there," Hildreth said. "The work is usually critical, and usually required to get that submarine or surface ship back into the fight, back into the mission."

Frank Cable also saw the restoration of several mission-critical elements that were lost over the last six years such as the capability to perform motor generator commutator and periscope repairs; the use of the dive chamber; the restoration of the port and starboard traveling cranes; and the 30 ton repair and boat crane recertification.

"The periscope repair capability is a big deal because we've always had the ability to



Photo by Mass Communication Specialist 3rd Class Corey Hensley

Sailors assigned to *Frank Cable* lower a missile tube extension loader into the vertical launch system aboard the *Los Angeles*-class fast attack submarine USS *Oklahoma City* (SSN 723).

take periscopes on and off ships, and then package them and ship them back to the in-service engineering agent. We can now do some of those repairs ourselves on board, and that can save the government quite a bit of money,” Hildreth said. “The operational dive chamber really does give us flexibility to support diving operations, in Guam as well as in any port where the tender is located.”

Also with the homeporting of *Los Angeles*-class submarine USS *Oklahoma City* (SSN 723) in Guam, the requirement to establish a submarine Tomahawk VLS repair capability was paramount. *Frank Cable*'s crew was up for the challenge and executed the first repairs to a SSN VLS system ever performed in the Western Pacific. By the end of 2011, she also successfully loaded live submarine Capsule Launch System (CLS) Tomahawk missiles onto *Oklahoma City* in Guam.

The end of 2011 also brought a temporary changing to the guard as *Emory S. Land* arrived in Guam to relieve *Frank Cable* as the primary maintenance activity in the 7th Fleet so *Cable* could prepare for an upcoming dry dock period in Portland, Oregon.

Emory S. Land, too, saw significant events and changes happen in 2011. It was her first full year being forward deployed to her new homeport in Diego Garcia and her second year, like *Frank Cable*, working with an MSC integrated crew.

In the first half of the year, *Emory S. Land* saw two voyage repair periods in port in Jebel Ali, United Arab Emirates; inspections and audits; and other port calls to Mina Salman, Bahrain and Goa, India. In the first of her two port visits to Bahrain, *Emory S. Land* tended USS *Hampton* (SSN 767). While in India, she tended another *Los Angeles*-class submarine, USS *La Jolla* (SSN 701), and hosted a reception for the Royal Indian Navy.

Through multiple port visits, *Emory S. Land*, supported *Los Angeles*-class submarines USS *Bremerton* (SSN 698), USS *Springfield* (SSN 761), USS *Dallas* (SSN 700), USS *Columbia* (SSN 771); *Ohio*-class submarine USS *Georgia* (SSGN 729), and *Virginia*-class submarine USS *Texas* (SSN 775).

“We are a forward-deployed expeditionary floating maintenance activity capable of providing a dynamic array of repair services to keep forces afloat, back into the fleet, and back to the pointy tip of the spear,” Pendrick said.

Like *Frank Cable*, *Emory S. Land* also spent time in Sepanggar, Malaysia, participating in theater security cooperation with the RMN, and hosting a reception. She also traveled to Subic Bay, Philippines, to conduct another voyage repair period. *Emory S. Land* spent 77 percent of the year deployed before she arrived in Guam in November 2011 to begin turnover with *Frank Cable*.

Once *Frank Cable* left for Portland for

her Regular Overhaul and Dry Docking availability in early January 2012, *Emory S. Land* integrated most of her sister ship's crew, almost 750 Sailors, to assist in carrying out her new responsibilities as the primary maintenance activity on Guam and in the 7th Fleet area of responsibility.

Emory S. Land was kept busy. In June 2011, she had six submarines in port for maintenance; this was the first time this had

Emory S. Land-class Submarine Tender History

On March 2, 1976, the keel was laid on the first of three *Emory S. Land*-class submarine tenders. A little over three years later on July 7, 1979, the namesake USS *Emory S. Land* (AS 39) was commissioned as a U.S. Naval ship. She was followed less than a year later on Feb 5, 1980, by USS *Frank Cable* (AS 40). By August 15, 1981, with the introduction of the USS *McKee* (AS 41), all three *Emory S. Land*-class submarine tenders were officially in commission.

The sub tenders' mission was simple in concept: to act as floating repair facilities for U.S. Navy submarines deployed throughout the world. They would provide electricity, water, spare parts, medical, dental, disbursing, mail, legal services, submarine ordnance, and other services. Each tender had repair shops for tasks like carpentry, lagging, pipe fitting, sheet metal production, and machinery repair.

Submarine tenders supported a variety of operations critical to the Navy's mission. In the 1980s, *Emory S. Land* acted as a supply ship for forces involved in Persian Gulf operations. *McKee* enjoyed many sub tender firsts, including being the first tender to visit Adak, Alaska, since World War II, where she conducted nuclear submarine maintenance in the area for the first time. She was also the first tender certified to handle and support the Vertical Launch System (VLS). *McKee* performed the first at-sea weapons transfer to a submarine since WWII, to the *Ohio*-class ballistic missile submarine USS *Ohio* (SSBN 726). *Frank Cable*, meanwhile, spent most of the 80s and 90s as the primary maintenance activity for Submarine Squadron 4 in Charleston, South Carolina.

During the 1990s, *McKee* continued her tradition of firsts. She was the first Pacific Fleet tender to complete an underway fuel replenishment, which would prepare her for deployment to the Persian Gulf, where she would support Operation DESERT STORM. *McKee* finally said goodbye to the fleet on Oct. 1, 1999, when she was decommissioned and moved to the Naval Inactive Ship Maintenance Facility in Portsmouth, Virginia.

By the late 90s, *Emory S. Land* was homeported at La Maddalena, Italy, as the only permanent vessel in Submarine Force, U.S. Atlantic Fleet's Submarine Group 8. She remained there from 1999 until the base closed in 2007. The ship then set sail for Bremerton, Wa., where she was converted into a hybrid U.S. Navy/Military Sealift Command (MSC) ship. After almost three years in the shipyard, she left in June 2010 for the island of Diego Garcia, British Indian Ocean Territory, home to a U.S. Naval Support Facility.

In 1996, *Frank Cable* had begun decommissioning in what was seemingly the beginning of the end for the submarine tender in the Navy. However, shortly after, *Frank Cable* was re-activated and refitted as a replacement for the *Hunley* class submarine tender USS *Holland* (AS 32) in Guam. She relieved *Holland* in May of 1996 as the 7th Fleet's forward-deployed submarine tender.

Following arrival in Guam, *Frank Cable* regularly deployed from Guam two to three times each year to support Forward Deployed Naval Forces surface ship maintenance in Yokosuka and Sasebo, Japan, while also servicing and supporting deployed submarines. In April 2003, Commander Submarine Squadron 15 was re-established and USS *City of Corpus Christi* (SSN 705), the first of three of *Los Angeles*-class submarines to come, arrived in Guam.

The arrival of homeported submarines in Guam marked a change in the mission of *Frank Cable* from directly supporting deployed submarines and Japan-based surface ships to primarily supporting the Guam-based submarines, while continuing support to deployed submarines with voyage repairs and fly-away teams.

In 2006, *Frank Cable* completed the first guided missile submarine voyage repair period on the USS *Ohio* (SSGN 726). She would continue to execute these repair periods on *Ohio* and USS *Michigan* (SSGN 727) during their deployments. In 2009, *Frank Cable* received the Secretary of Defense Maintenance Award for a field level activity for the outstanding work and achievements accomplished that year.

In early 2011, *Frank Cable* completed her Military Sealift Command (MSC) conversion availability in Guam Shipyard.



The Los Angeles-class fast attack submarine USS Hampton (SSN 767) moors alongside Frank Cable.

occurred in Guam's Apra Harbor since 2002. *Emory S. Land* tended Los Angeles-class fast attack submarines USS *Topeka* (SSN 754), USS *Tucson* (SSN 770), USS *Buffalo* (SSN 715), USS *Chicago* (SSN 721), USS *Columbus* (SSN 762), and *Ohio*-class guided missile submarine USS *Michigan* (SSGN 727).

According to then-commanding officer Capt. Paul Savage, *Emory S. Land* "could never have accomplished this level of maintenance without the repair and supply support from all the Sailors that are temporarily assigned to us from *Frank Cable*."

Late July saw *Frank Cable* return to Guam During her time in dry dock. Significant improvements were made to the ship which would be crucial to her continuing maintenance support to submarines in the Pacific. Improvements to the ship were designed to maintain mission effectiveness for the next several years.

"We restored the hull and, from a material condition standpoint, that was a huge win," said Hildreth. "We made refinements in the propulsion plant. We put in improved boiler automation controls and improved controls on the steam auxiliary, which means we are much more fuel efficient. I burn less gas going faster than I did before, and that increases our operational flexibility."

After *Frank Cable's* return from Portland, the crew immediately set about returning to business as usual as the repair department restored capabilities that lay idle during the availability. The crew completed three continuous maintenance availabilities,

14 unscheduled voyage repair availabilities, and remote-site fly away team repairs completing 1,100 jobs with over 50,000 man-hours of work.

In September, the ship returned to Subic to support the *Virginia*-class submarine USS *Hawaii* (SSN 776). Sailors took the opportu-

nity to engage with people from the local area through community relations (COMREL) projects and assisted the Philippine Navy with a recently acquired asset.

"That was a pretty dynamic port visit," Hildreth said. "We had COMRELS, we had the submarine alongside, and we did some diving work on that unit. Also, at the invitation of the embassy, we were asked to go over to the Philippine Navy's flagship, BRP *Gregorio Del Pilar* (PF 15), and indentified things we could fix for a reasonable cost."

Several Sailors volunteered to assist *Del Pilar* with maintenance, technical assistance, and training. *Del Pilar* is the former USCGC *Hamilton* (WHEC 715), which was transferred to the Republic of the Philippines Navy in May 2011 under the Excess Defense Articles Act and Foreign Assistance Act.

"I think it really demonstrated the flexibility of a tender and the workforce we have. I think it was a great exchange of ideas, and my impression was that they really appreciated our help getting their ship back out to sea," Hildreth said.

Adding to *Frank Cable's* growing set of mission-critical capabilities was the installation of several major pieces of equipment in



Sailors assigned to *Frank Cable* teach Ilwas Elementary School children to perform different exercises during a community service project.

the ship's machine shop: two HAAS ST-20 lathes, a FLO-JET waterjet machine, two Weiler Precision manual lathes, and two Monarch small part precision lathes.

The upgrade to the ship's ability to repair submarines has the crew excited about the possibilities of completing jobs faster and with greater precision. According to Machinery Repairman 1st Class James Garrison, machines like the waterjet make short work of test flanges, equipment-specific spanner wrenches, and all manner of brackets.

"The automated machinery is a welcome addition because it's repeatable and drastically cuts down on machine time," Garrison said. "For instance, a pump shaft that would take an experienced machinist four days to manually machine — the combination of automated lathe and mill can knock that down to less than 12 hours of total machine time."

Frank Cable finished up 2012 with another port visit to Hong Kong in late November, and by exercising the ability to handle MK 48 Advanced Capability (ADCAP) torpedoes and submarine-launched Tomahawk missiles to and from submarines moored alongside the tender in Guam. The MSC crane operators, civilian mariners, and weapons department military personnel flawlessly carried out this weapons loading evolution proving the tender's capability to load these weapons anywhere in the world.

"It's really all about being able to tend submarines. By exercising the capability to reload alongside both VLS and torpedo tube launched missiles, and doing the first ever forward deployed SSGN reload, we've proven that we can do that" Hildreth said. "We just have to continue to exercise those capabilities so those skills stay sharp and expand where appropriate."

Emory S. Land, meanwhile, finished up the year with an extended port visit to Subic in October, where she continued the work begun by *Frank Cable*; working with the crew of *Del Pilar*. Sailors coordinated with Naval Sea Systems Command and conducted almost 1,000 hours of repair work and training on *Del Pilar*, improving relations between the United States Navy and the Republic of the Philippines Navy in the process. After a port visit to Singapore, *Emory S. Land* returned to Subic in December to resume repair and training efforts with *Del Pilar*.

This year has brought even more achievements for the submarine tenders.

After returning to CENTCOM, *Emory S. Land* carried out over 3,200 man-hours of services to one submarine and 15 surface ships in Bahrain. The crew repaired lagging, lockers, and pure water delivery systems and fabricated sheet metal lockers, Naugahyde, and Plexiglas for various vessels. They also performed ship-to-shop and in-place meter calibration, relief valve testing, welding, and brazing services.

"We provide a one-of-a-kind opportunity to the fleet through service; it's a boundless mission model and an even greater experience," said Pendrick.

"We provide a one-of-a-kind opportunity to the fleet through service; it's a boundless mission model and an even greater experience."

Frank Cable started the year off by conducting a port visit to Saipan in the Marianas Islands, where she took *La Jolla* alongside and conducted repairs. *Frank Cable* also conducted a six-week underway that saw her return to Malaysia. Although most of the old crew was now gone, the impression they had left behind was evident as the RMN welcomed back the ship with open arms.

Also during the short deployment, *Frank Cable* made a port call in Thailand and a first-ever visit to Cebu, Philippines, where the mission was liberty.

"Looking back at the history of *Frank Cable*, the real thing that strikes me as different is the Sailors and the crew. How diverse the crew is, the importance of making sure you set the right tone and the right environment so that this large team of surface guys, submarine guys, nukes, CivMars [civilian mariners], that whole organization, can be effective and work together to accomplish the mission," Hildreth said about being part

of the ship's legacy.

Much has changed since the introduction of the *Emory S. Land*-class submarine tenders in 1976. The tenders have proven to be flexible and capable and are critical to maintaining the robust forward presence of our attack submarine force in the Indo-Asia-Pacific.



The submarine tender USS *Emory S. Land* (AS 39) performs a coordinated mooring behind the Navy's only other submarine tender, *Frank Cable*. *Emory S. Land*, homeported in Diego Garcia, was on an extended deployment in Guam to temporarily relieve *Frank Cable* as the primary afloat maintenance activity in the U.S. 7th Fleet area of responsibility.

Photo by Mass Communication Specialist 2nd Class Elizabeth Fray

USS NEWPORT NEWS:

Assessing Fire Response in Industrial Environments



As Damage Control Assistant (DCA) onboard USS *Newport News* (SSN 750) in an Engineered Overhaul (EOH) at Norfolk Naval Shipyard, news of the USS *Miami* (SSN 755) fire was sobering. My Commanding Officer (CO), Cmdr. J. Carl Hartsfield, strategically outlined the development of a simple assessment strategy that would measure our ability to discover a major casualty and improve our readiness to fight it. Major constraints were that the program must have minimal impact to shipyard production during intrusive maintenance and be random in nature to truly measure a watchstander's engagement around the clock.

Depot-level maintenance made this challenge unique as a majority of the ship's normally installed damage control (DC) equipment was removed and replaced with functional but less robust systems. Additionally, our crew shifted habitability from the boat to a nearby living barge, meaning that during sleeping hours the only means of fire detection onboard were roving watchstanders and periodic supervisor tours. To complicate things further, shipyard work requires a myriad of routed temporary systems to include water, air, and electrical connections through hatches and hull cuts. These conditions can quickly become overwhelming on a submarine, where space is always at a premium.

Even the smallest fire with the least amount of fuel can become uncontrollable if the crew does not understand the importance of their continuous presence onboard. Assessing the crew's presence and engagement required a tool that was capable of performing randomized spots checks over the entire ship. Essentially, the tool needed to help measure and maintain the deck plate engagement necessary to detect and contain a small to medium fire in its initial stages after prevention fails but before evacuation of the ship becomes necessary (Figure 1).



U.S. Navy photo by Jim Cleveland

Method of Assessment

To accomplish the CO's goals, the ship instituted a CODE RED program using a small, flashing red LED light to represent fire. The time and location of drill initiation by supervisors in the duty section were assigned randomly up to a week in advance. The end result was a drill, unpredictable by watchstanders, set to occur multiple times a day in various spaces. The drill schedule was approved by the CO weekly and executed by duty section supervisors. Our official study spanned about six months, though this drill regime is still being executed onboard.

A goal of 15 minutes was chosen for an acceptable response time. Although no formal studies have been conducted to prove the validity of 15 minutes, it remains a reasonable assumption for the time at which a fire cannot be attacked without evacuation to regroup and re-equip in heavy firefighting gear. Furthermore, our target response time was driven by the fact that, without airline supplied breathing masks, we must attack a fire swiftly before smoke spreads early in the growth stage and guarantees a fully involved casualty. Fire readiness can prove challenging, especially at night when onboard manning is minimal.

A submarine in dry dock can have as few as three watchstanders in-hull with the remaining crew asleep on the living barge. Two roving watchstanders (one forward, one aft) must cover the entire boat, take log readings, spot any danger, inform the crew,

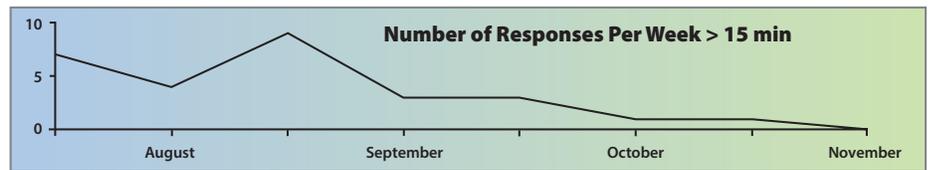
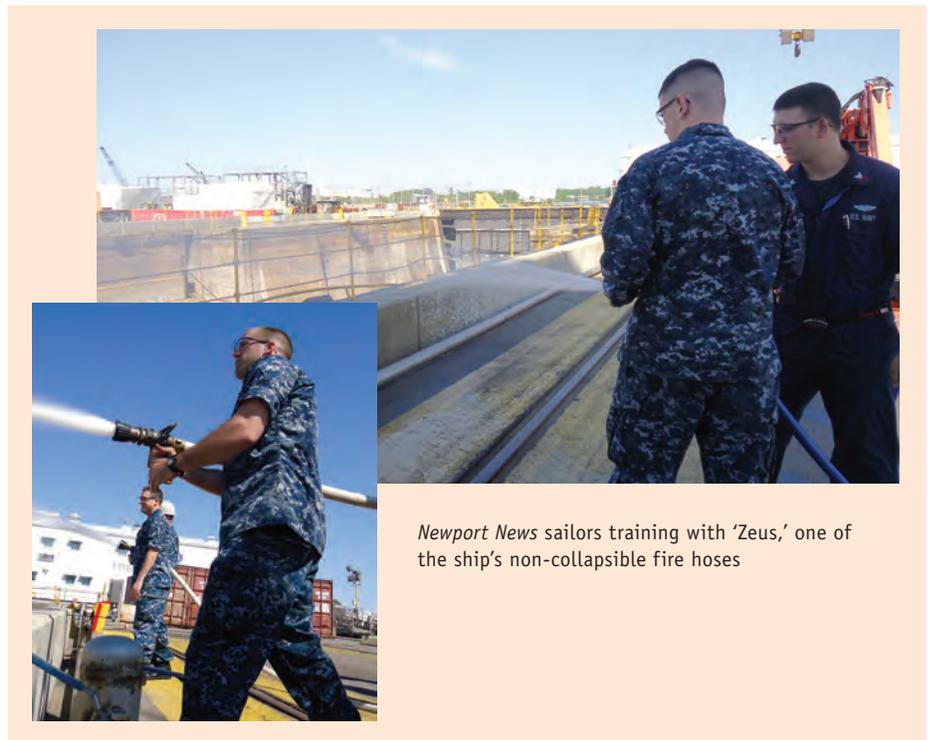


Figure 2



Newport News sailors training with 'Zeus,' one of the ship's non-collapsible fire hoses

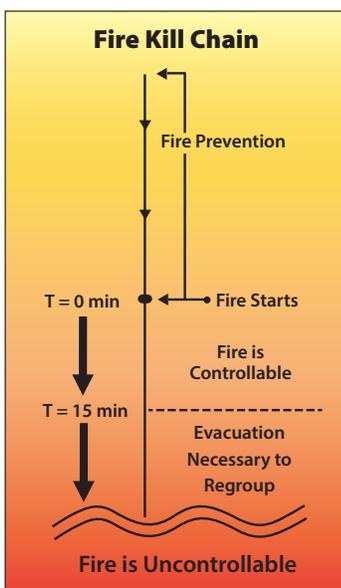


Figure 1

and respond. The drill response desired was to find the light, simulate calling for help, and walk through the actions to put extinguishing agent on the fire.

Each drill was secretly initiated and monitored by one of four deckplate supervisors on shift that day, allowing safe muscle memory practice of this critical skill set under a trained and watchful eye. The extent and randomness of the drills ensured that all watchstanders got multiple events over the course of a month. For CODE REDs that exceeded 15 minutes, immediate training was expected. Monthly, the CO and I analyzed the collected data in a dashboard format, looking for weaknesses by ship location, time of day, watch section, or watch station.

Results

Data gathered through our CODE RED study included more than 175 drill events from July to November of 2012. Figure 2 shows how many times per week the

15-minute limit was exceeded over the course of the study. As training progressed, procedures improved, and the crew clearly understood expectations, a clear downward trend in unsatisfactory responses emerged.

There were also occasions where a flashing light would not be discovered in a reasonable amount of time (nominally about 45 minutes), and the drill had to be suspended. These responses were essentially considered "infinite" and, although rare, were particularly troubling since this mock fire would have certainly gotten out of control. One might argue that visible smoke or acrid odor would have alerted the watchstander prior to reaching 45 minutes; however, margin to safety is increased by driving down average response time and completely eliminating these infinite occurrences.

The most dangerous "infinities" occurred between the hours of midnight and 0600 when most of the duty section was asleep on the barge. Figures 3 and 4 show a before

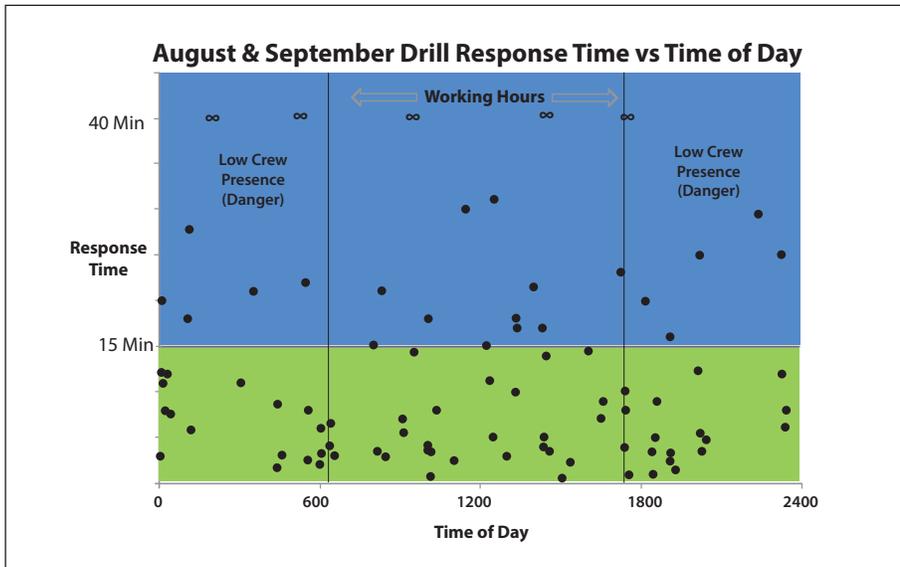


Figure 3

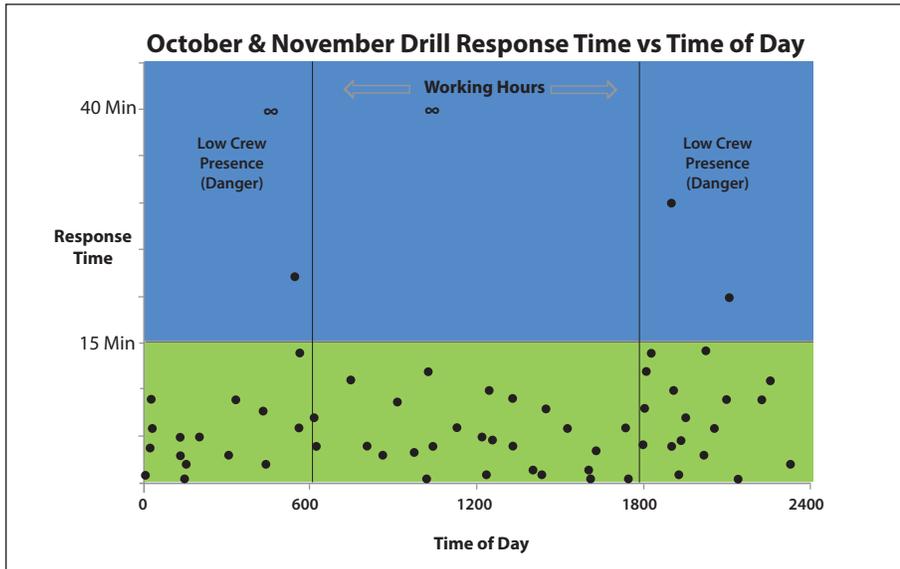


Figure 4

and after scatter plot of the drills as these rare but unacceptable data points were reduced, and completely eliminated in November and December (infinite response times are indicated by an ∞ symbol).

To date in 2013, more than 60 sessions of detailed, hands-on fire fighting training have been held on the deckplates to feed back the results of over 350 individual drills. Additionally, we have used these methods to match higher risk shipyard work with crew presence. Counter-intuitively, low presence times can even occur during the work day when meetings and watch turnovers stack up while higher fire-risk industrial work occurs.

Armed with this study, our CO also sought the design and employment of two quick-

deployable, reel-type, non-collapsible (NC) fire hoses to help our initial responders put more extinguishing agent on a fire sooner. These innovative, low-cost, shipyard-supplied reels serve to bridge the gap between rapid responders with fire extinguishers and fully dressed fire teams with traditional collapsible hoses.

Average response time for the NC hose to arrive on scene is less than two minutes, making a continuous chain of extinguishing agent now possible. Other lessons learned from our continuously improving program include:

- Communicating the safety threat to a well trained crew with clearly established expectations and data-based improvement metrics can empower a culture of

deckplate ownership that asymmetrical-ly improves readiness in multiple areas

- Simple, low-impact techniques can be devised, even in an industrial environment, to test day-to-day readiness and help strategically steer training and equipping plans
- In the shipyard, just as at sea, smart, well trained crew members who each proudly own their watchstation provide the biggest margin to safety from shipboard disaster

Though this command study was initiated by our CO, it was “owned” by the crew. Supervisors down to the Second Class Petty Officer level provided meaningful suggestions on how to improve the ship’s overall fire response plan. Supervisors were fully engaged in preventing pre-alertment of the drills and conducting on-the-spot training for any response that was sub-standard. The crew took criticism well and worked hard to improve. No watchstander who performed poorly was ever singled out or disqualified; peer pressure and competition were enough to correct individuals and prevent a trend in poor performance.

Analysis of results over time led to some significant strategic changes in how we planned for major casualties—changes that were neither obvious nor mandated by procedure when the ship drydocked. Our response in drills and the few small casualties that we have experienced has improved dramatically and will hopefully continue to improve as we continue aggressive assessment strategies throughout our extended shipyard availability and beyond.



Photo By Mass Communication Specialist 3rd Class Luis Fiallos

Change of Command

COMSUBGRU 2

Rear Adm. Ken Perry relieved
Rear Adm. Rick Breckenridge

COMSUBGRU 7 CTF 54/CTF 74
Rear Adm. Stuart B. Munsch relieved
Rear Adm. Phillip G. Sawyer

Regional Support Group Groton
Capt. Richard E. Verbeke relieved
Capt. Mark S. VanYe

Naval Ocean Processing Facility
(NOPF) Dam Neck
Cmdr. Jeff "Jake" Jacoby relieved
Cmdr. Dan McGuiness

Naval Ocean Processing Facility
(NOPF) Whidbey Island
Cmdr. Sean Bartlett relieved
Cmdr. Jason Vogt

Naval Submarine Support Center
(NSSC) New London
Cmdr. Wayne Grasdock relieved
Cmdr. Tim Kollmer

Navy Submarine Support Command
Pearl Harbor
Cmdr. Larry Ollice relieved
Cmdr. Brett Fillmore

Navy Submarine Torpedo Facility
(NTSF) Yorktown
Cmdr. Eric Mason relieved
Cmdr. Eugene LaCoste

USS *Alabama* (SSBN 731) (G)
Cmdr. Brody Frailey relieved
Cmdr. Kevin Schultz

USS *Buffalo* (SSN 715)
Cmdr. Brian Tothero relieved
Cmdr. Richard Seif

USS *California* (SSN 781)
Cmdr. Shawn Huey relieved
Cmdr. Dana Nelson

USS *Hawaii* (SSN 776)
Cmdr. William Patterson relieved
Cmdr. Steven Mack

USS *Henry M. Jackson* (SSBN 730) (B)
Cmdr. Jon Moretty relieved
Cmdr. Matt Terwilliger

USS *Key West* (SSN 722)
Capt. Mark Benjamin relieved
Cmdr. Curtis Duncan

USS *La Jolla* (SSN 701)
Cmdr. Kevin Roach relieved
Cmdr. Jeff Bernard

USS *New Hampshire* (SSN 778)
Cmdr. Sean Fujimoto relieved
Cmdr. John McGunnigle

USS *Michigan* (SSGN 727) (B)
Capt. Erik A. Burian relieved
Capt. James E. Horten

USS *Mississippi* (SSN 782)
Cmdr. Tory Swanson relieved
Capt. John McGrath

USS *Nevada* (SSBN 733) (B)
Cmdr. James McIver relieved
Cmdr. Alan Schrader

USS *Nevada* (SSBN 733) (G)
Cmdr. Chad Hennings relieved
Cmdr. Pete Hudson

USS *Ohio* (SSGN 726) (B)
Capt. George Norman relieved
Capt. Brian Humm

USS *Pasadena* (SSN 752)
Cmdr. Mark E. Cooper relieved
Cmdr. Luis Molina

USS *Seawolf* (SSN 21)
Capt. Broderick Berkhout relieved
Cmdr. Daniel Packer

USS *Virginia* (SSN 774)
Cmdr. Steven Antcliff relieved
Capt. Richard E. Verbeke

Qualified for Command

Lt. Cmdr. Larry Ar buckle
COMSUBRON 7

Lt. Cmdr. Patrick Alfonso
COMSUBRON 11

Lt. Samuel Bell
USS *Maryland* (SSBN 738)

Lt. Michael Brown
COMSUBRON 7

Lt. Cmdr. Benjamin Brumm
USS *Mississippi* (SSN 782)

Lt. David Burke
COMSUBDEVRON 5

Lt. Jonathan Cantor
USS *Mississippi* (SSN 782)

Lt. Cmdr. Gregory Chapman
COMSUBPAC

Lt. Cmdr. William Cunningham
COMSUBRON 1

Lt. Lance M. Denham
USS *Boise* (SSN 764)

Lt. Cmdr. Robert Edmonson
USS *Wyoming* (SSBN 742) (B)

Lt. Cmdr. Peter R. Fanno
USS *New Hampshire* (SSN 778)

Lt. Cmdr. Tyler Forrest
COMSUBDEVRON 12

Lt. Charles G. Gallagher
USS *Alaska* (SSBN 732) (B)

Lt. Cmdr. Charles Gaston
USS *Rhode Island* (SSBN 740) (B)

Lt. Cmdr. Preston Gilmore
USS *California* (SSN 781)

Lt. Joel I. Holwitt
USS *New Mexico* (SSN 779)

Lt. Jacob Jones
COMSUBRON 15

Lt. Carlos Jorge
COMSUBRON 11

Lt. Jeffery Kahn
USS *Mississippi* (SSN 782)

Lt. Benjamin Keeter
COMSUBRON 7

Lt. Douglas Kramer
COMSUBRON 17

Lt. Cmdr. James McClure
COMSUBRON 7

Lt. Cmdr. Michael McLaine
USS *Ohio* (SSGN 726) (B)

Lt. Nicholas Meyers
USS *Alaska* (SSBN 732) (G)

Lt. Cmdr. Lester Patterson
COMSUBRON 17

Lt. Cmdr. Lewis Patterson
COMSUBRON 17

Lt. Cmdr. Matthew Pianetta
COMSUBRON 17

Lt. Cmdr. Reginald Preston
COMSUBRON 15

Lt. Cmdr. Joseph Pisoni
COMSUBRON 19

Lt. James T. Prosek
USS *Virginia* (SSN 774)

Lt. Matthew Rehberg
USS *Hartford* (SSN 768)

Lt. Cmdr. Seth Rumler
COMSUBRON 11



US Navy Photo

USS *Hartford* to Receive the 2012 Arleigh Burke Fleet Trophy Award

The *Los Angeles*-class attack submarine USS *Hartford* (SSN 768) has been named the Atlantic Fleet's recipient of the prestigious Arleigh Burke Fleet Trophy. The announcement was made by Adm. Jonathan Greenert, Chief of Naval Operations, May 17.

The Arleigh Burke Fleet Trophy, named after the famous destroyer squadron commander and former chief of naval operations (1955-61), is presented annually to the ship or aviation squadron in both the Atlantic and Pacific Fleets that has achieved the greatest improvement during the previous year based on the Battle Efficiency Competition. The competition encompasses operational readiness, inspections, and retention.

Greenert stressed that 'the performance of *Hartford* consistently and measurably improved in every warfare area and achieved on-time certification for one of COMSUBFOR's most challenging deployments.'

Cmdr. Steve Wilkinson, commanding officer, was pleased with the hard work and dedication of the crew.

"This award is about deckplate leadership. It is easy to win the World Series when you are given an all-star team," said Wilkinson.

Lt. Samuel Scovill
USS *Florida* (SSBN 728) (B)

Lt. Cmdr. Joseph Spinks
COMSUBDEVRON 12

Lt. Cmdr. Sean Stein
USS *Pittsburgh* (SSN 720)

Lt. Garth W. Storz
USS *New Hampshire* (SSN 778)

Lt. Cmdr. James G. Tuthill
USS *Virginia* (SSN 774)

Lt. James Wendler
USS *Dallas* (SSN 700)

Qualified Nuclear Engineer Officer

Lt. j.g. Justin Adams
USS *Tennessee* (SSBN 734) (G)

Lt. j.g. Jason Aepli
USS *Boise* (SSN 764)

Lt. George Ash
USS *Nebraska* (SSBN 739) (G)

Lt. j.g. Nathaniel Backstrom
USS *La Jolla* (SSN 701)

Lt. j.g. Jared Bayne
USS *Tucson* (SSN 770)

Lt. j.g. Nicholas Benzbushling
USS *Wyoming* (SSBN 742) (B)

Lt. j.g. Derek Bergren
USS *Toledo* (SSN 769)

Lt. j.g. John Beveridge
USS *Houston* (SSN 713)

Lt. j.g. Jeffrey Bohme
USS *Boise* (SSN 764)

Lt. j.g. Richard Bowie
USS *West Virginia* (SSBN 736) (B)

Lt. j.g. Louis Calabrese
USS *Norfolk* (SSN 714)

Lt. j.g. Steven Choi
USS *Miami* (SSN 755)

Lt. j.g. Nicholas Cichucki
USS *Chicago* (SSN 721)

Lt. j.g. Patrick Clague
USS *California* (SSN 781)

Lt. j.g. Jared Clark
USS *Tennessee* (SSBN 734) (B)

Lt. j.g. Mark Collins
USS *Key West* (SSN 722)

Lt. Paul Colwell
USS *Topeka* (SSN 754)

Lt. j.g. Sean Comer
USS *Florida* (SSBN 728) (G)

Lt. j.g. Zachary Cooper
USS *Texas* (SSN 775)

Lt. j.g. Thomas Curtis
USS *Tucson* (SSN 770)

Lt. j.g. Johnnie Deboe
USS *Columbia* (SSN 771)

Lt. j.g. Leonard Deprisco
USS *Alabama* (SSBN 731) (G)

Lt. j.g. Nathaniel Doane
USS *Henry M. Jackson* (SSBN 730) (B)

Lt. j.g. Christopher Dodd
USS *Columbia* (SSN 771)

Lt. j.g. Christopher Donnelly
USS *La Jolla* (SSN 701)

Lt. j.g. Trevor Elison
USS *Pennsylvania* (SSBN 735) (G)

Lt. Michael Eyer
USS *Norfolk* (SSN 714)

Lt. j.g. Jeffrey Feldmann
USS *Oklahoma City* (SSN 723)

Lt. j.g. William Fenniman
USS *Virginia* (SSN 774)

Lt. j.g. Frank Ferrell
USS *Greeneville* (SSN 772)

Lt. j.g. Alexandro Follador
USS *Newport News* (SSN 750)

Lt. j.g. Richard Fraenkel
USS *Hartford* (SSN 7680)

Lt. j.g. Daniel Gladfelter
USS *Columbus* (SSN 762)

Lt. j.g. Charles Gore
USS *San Juan* (SSN 751)

Lt. j.g. Sander Gossard
USS *Alaska* (SSBN 732) (B)

Lt. j.g. Michael Gillette
USS *Tucson* (SSN 770)

Lt. j.g. Addison Greaves
USS *Kentucky* (SSBN 737) (B)

Lt. j.g. Tyler Gustafson
USS *Maine* (SSBN 741) (G)

Lt. j.g. David Guthmann
USS *Newport News* (SSN 750)

Lt. j.g. Christopher Hall
USS *Tucson* (SSN 770)

Lt. j.g. Benjamin Hankin
USS *Miami* (SSN 755)

Lt. j.g. Justin Hare
USS *Hampton* (SSN 767)

Lt. j.g. Christopher Hart
USS *Albany* (SSN 753)

Lt. j.g. John Hartzog
USS *Norfolk* (SSN 714)

Lt. j.g. Thomas Hastings
USS *Dallas* (SSN 700)

Lt. j.g. Jonathan Hill
USS *Alaska* (SSBN 732) (B)

Lt. j.g. Patrick Hooper
USS *Connecticut* (SSN 22)

Lt. j.g. Joseph Innerst
USS *Missouri* (SSN 780)

Lt. j.g. Justin Jacks
USS *Florida* (SSBN 728) (B)

Lt. j.g. Robert Jackson
USS *West Virginia* (SSBN 736) (G)

Lt. j.g. Johnathan Jessen
USS *Hawaii* (SSN 776)

Lt. j.g. Mark Johnson
USS *Charlotte* (SSN 766)

Lt. j.g. Paul Johnson
USS *Michigan* (SSBN 727) (B)

Lt. Philip Johnson
USS *Kentucky* (SSBN 737) (B)

Lt. j.g. Karl Kjono
USS *Olympia* (SSN 717)

Lt. j.g. Benjamin Krawczyk
USS *Nevada* (SSBN 733) (G)

Lt. j.g. Charles Kreuzberger
USS *Rhode Island* (SSBN 740) (G)

Bank Creates Float Representing USS *North Dakota* Submarine

A United States Navy submarine named after the state of North Dakota was replicated as a float for this year's Independence Day Parade in Mandan, N.D.

Accompanying the float were naval personnel as well as American Bank Center employees who handed out candy.

The submarine replica float also will be used in parades in Medora and the North Dakota State Fair in Minot this year, as well as seven or eight parades next year.

The float, built in Minnesota, is 29 feet long and 12 feet high. It is expected to withstand two to three years of parades.

The submarine is the first ship to be named after the state since 1910, according to Bob Wefald, chairman of the USS *North Dakota* Committee. The first USS *North Dakota*, a battleship, was in commission from 1910 to 1923. The nuclear-powered submarine USS *North Dakota* is scheduled to be christened in September.



On the float is the Chief of the Boat, Electronics Technician Master Chief Petty Officer Tim Preabt and his wife, Linda. Preabt is a graduate of Mandan High School and is the only North Dakotan in the crew.

Lt. j.g. Charles Laspe
USS *Alabama* (SSBN 731) (G)

Lt. j.g. Jeffrey Leshner
USS *Rhode Island* (SSBN 740) (B)

Lt. Scott Lord
USS *North Carolina* (SSN 777)

Lt. j.g. Joseph Lucido
USS *City of Corpus Christi* (SSN 705)

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

Lt. j.g. Matthew Marsh
USS *Miami* (SSN 755)

Lt. j.g. Benjamin Massengale
USS *Houston* (SSN 713)

Lt. j.g. John Matusek
USS *Helena* (SSN 725)

Lt. j.g. Kyle McFadden
USS *Wyoming* (SSBN 742) (G)

Lt. j.g. Thomas Miller
USS *Michigan* (SSGN 727) (G)

Lt. j.g. James Montgomery
USS *Newport News* (SSN 750)

Lt. j.g. Thomas Mulqueen
USS *Alabama* (SSBN 731) (B)

Lt. j.g. Garold Munson
USS *Nevada* (SSBN 733) (G)

Lt. j.g. Tyler Netherland
USS *Rhode Island* (SSBN 740) (G)

Lt. j.g. Craig Noltensmeyer
USS *Mississippi* (SSN 782)

Lt. j.g. William Olena
USS *Jefferson City* (SSN 759)

Lt. j.g. Michael Olin
USS *Greeneville* (SSN 772)

Lt. j.g. Kevin OMalley
USS *Louisiana* (SSBN 743) (B)

Lt. j.g. Justin Pace
USS *Tucson* (SSN 770)

Lt. j.g. Harrison Palmer
USS *Oklahoma City* (SSN 723)

Lt. j.g. Matthew Pasquinelli
USS *Louisville* (SSN 724)

Lt. j.g. Mark Paulson
USS *Dallas* (SSN 700)

Lt. j.g. Benjamin Perkins
USS *Virginia* (SSN 774)

Lt. j.g. Americo Perez
USS *Columbus* (SSN 762)

Lt. j.g. James Petersen
USS *Buffalo* (SSN 715)

Lt. j.g. Austin Pfannenstiel
USS *Nebraska* (SSBN 739) (G)

Lt. j.g. Cory Pleasanton
USS *Rhode Island* (SSBN 740) (B)

Lt. j.g. Donald Redding
USS *Pittsburgh* (SSN 720)

Lt. j.g. Eric Regnier
USS *Olympia* (SSN 717)

Lt. j.g. Brian Rizez
USS *Boise* (SSN 764)

Lt. j.g. Sean Rocha
USS *Hampton* (SSN 767)

Lt. j.g. Seth Romo
USS *Michigan* (SSGN 727) (G)

Lt. j.g. Derik Rothchild
USS *New Hampshire* (SSN 778)

Lt. j.g. Grant Rotunda
USS *Topeka* (SSN 754)

Lt. j.g. Michael Sanchez
USS *Seawolf* (SSN 21)

Lt. j.g. James Santelli
USS *Florida* (SSBN 728) (G)

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

Lt. j.g. Christopher Scheider
USS *West Virginia* (SSBN 736) (B)

Lt. j.g. Jesse Schrader
USS *Michigan* (SSBN 727) (B)

Lt. j.g. Conor Shippee
USS *Florida* (SSBN 728) (B)

Lt. j.g. Mark Simmons
USS *West Virginia* (SSBN 736) (G)

Lt. j.g. Christopher Slaughter
USS *Louisiana* (SSBN 743) (G)

Lt. j.g. Darrell Smith
USS *Toledo* (SSN 769)

Lt. j.g. Justin Smith
USS *Pittsburgh* (SSN 720)

Lt. j.g. Evan Spence
USS *Olympia* (SSN 717)

Lt. j.g. Garrett Sterling
USS *Connecticut* (SSN 22)

Lt. j.g. Eric Stinson
USS *Tennessee* (SSBN 734) (B)

Lt. j.g. William Strobel
USS *Wyoming* (SSBN 742) (B)

Lt. j.g. Ryan Sullivan
USS *Missouri* (SSN 780)

Lt. j.g. Stephen Sweeney
USS *Pennsylvania* (SSBN 735) (B)

Lt. j.g. Kyle Szatkowski
USS *Bremerton* (SSN 698)

Lt. David Taweel
USS *Greeneville* (SSN 772)

Lt. j.g. Jorge Tellez
USS *Louisiana* (SSBN 743) (B)

Lt. j.g. Alan Terwey
USS *Nebraska* (SSBN 739) (G)

Lt. j.g. Richard Thiel
USS *Kentucky* (SSBN 737)

Lt. j.g. Drew Thompson
USS *Henry M. Jackson* (SSBN 730) (G)

Lt. j.g. Matthew Ugarph
USS *Seawolf* (SSN 21)

Lt. j.g. Jeremy Van Gelder
USS *Houston* (SSN 713)

Lt. j.g. Christopher Vittorio
USS *Maryland* (SSBN 738)

Lt. j.g. Bryan Watson
USS *Louisville* (SSN 724)

Lt. j.g. Robert Wilson
USS *Pennsylvania* (SSBN 735) (G)

Lt. j.g. Douglas Wozniak
USS *Hawaii* (SSN 776)



Logistics Specialist 2nd Class Jared Sainz, a tour guide aboard the *Los Angeles*-class attack submarine USS *Jefferson City* (SSN 759), explains the ship's control center to members of the U.S. Naval Sea Cadet Corps (NSCC).

Sea Cadets Tour Submarine at Point Loma

Participants from the U.S. Naval Sea Cadet Corps toured the *Los Angeles*-class attack submarine USS *Jefferson City* (SSN 759) at Naval Base Point Loma Jan. 12 to see what life is like aboard a U.S. Navy submarine.

Submariner tour guides taught the students how the submarine moves through the water and how it stays balanced, heated, and defensive, along with how the crew lives.

"I enjoy telling people what we do," said Logistics Specialist 2nd Class Jared Sainz, one of *Jefferson City's* appointed tour guides. "Most people don't understand what happens in a submarine or how a submarine works on a basic level."

Twenty-three children ranging in age from 11 to 17 toured the vessel along with their chaperones in an effort to better understand what a career as a submariner would be like.

The tour allowed the visitors to see virtually all of the unclassified spaces on the nuclear-powered submarine including the control center, sleeping quarters, galley, torpedo space, and wardroom.

Since 1958, the Naval Sea Cadet Corps has been committed to providing American youth with a drug-free and alcohol-free environment to foster their leadership abilities, broaden their horizons through hands-on training, and guide them to becoming mature young adults.

Photo by Mass Communication Specialist 1st Class Christopher Okula

NSB Kings Bay Commemorates 35th Anniversary

The month of May is the 35th anniversary of Naval Submarine Base (NSB) Kings Bay. The celebration was highlighted by a Memorial Day Remembrance and 35th Anniversary ceremony at the Submarine Veterans of World War II Pavilion, outside Trident Training Facility, May 23.

“I am proud to say that nowhere in the Navy is there a community that is more supportive of its base and of the Sailors, Marines, and Coast Guardsmen who serve there, as well as their families,” said Capt. Harvey Guffey Jr., NSB Kings Bay commanding officer.

Guest speakers included Vice Adm. Al Konetzni (Ret.), former commodore, SUBRON 16, and Rear Adm. John “Jack” Scorby, Commander, Navy Region Southeast.

“Our community takes pride in our history,” said Konetzni. “There is no community in the United States of America that has come together like this one. I want to thank this base and all of the service members for what they do for the USA.”

The Ceremony included a wreath laying in observance of Memorial Day, a 21-gun salute, and the singing of “Anchors Aweigh” by the Camden County High School choir.

“This community does an absolutely tremendous job of supporting our military men and women and their families, not just on patriotic holidays or times of crisis, but every day of the year,” said Admiral Scorby. “That support is so vital that we couldn’t do our job without you.”



Capt. Harvey Guffey Jr.

Photo by Mass Communication Specialist 1st Class Christopher Okuda

Lt. j.g. Kyle Zink
USS *Rhode Island* (SSBN 740) (B)

Lt. j.g. Joshua Zimmer
USS *Mississippi* (SSN 782)

Lt. j.g. Kevin Zimmerly
USS *Maryland* (SSBN 738) (G)

Line Officer Qualified in Submarines

Lt. j.g. Santiago Alvarez
USS *Key West* (SSN 722)

Lt. j.g. Joshua Anderson
USS *Santa Fe* (SSN 763)

Lt. j.g. William Arnest
USS *La Jolla* (SSN 701)

Lt. j.g. Matthew Bellington
USS *Nebraska* (SSBN 739) (G)

Lt. j.g. John Beveridge
USS *Houston* (SSN 713)

Lt. j.g. Jonathon Bice
USS *Alabama* (SSBN 731) (B)

Lt. j.g. Megan Bittner
USS *Ohio* (SSGN 726) (G)

Lt. j.g. Joshua Bladen
USS *Tennessee* (SSBN 734) (B)

Lt. j.g. Matthew Bouwense
USS *Nebraska* (SSBN 739) (G)

Lt. j.g. Matthew Brady
USS *Toledo* (SSN 769)

Lt. j.g. Kyle Behbehani
USS *Nebraska* (SSBN 739) (B)

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

Lt. j.g. Owen Brooks
USS *Key West* (SSN 722)

Lt. j.g. Bradley Bromlow
USS *Ohio* (SSGN 726) (G)

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

Lt. j.g. Matthew Burchill
USS *La Jolla* (SSN 701)

Lt. j.g. Louis Calabrese
USS *Norfolk* (SSN 714)

Lt. j.g. Scott Carper
USS *Dallas* (SSN 700)

Lt. j.g. Bryan Chapman
USS *Mississippi* (SSN 782)

Lt. j.g. Jared Clark
USS *Tennessee* (SSBN 734) (B)

Lt. j.g. Matthew S. Clement
USS *Topeka* (SSN 754)

Lt. j.g. Jason Cloyd
USS *Nebraska* (SSBN 739) (B)

Lt. j.g. Sean Comer
USS *Florida* (SSBN 728) (G)

Lt. j.g. Steven Connell
USS *New Mexico* (SSN 779)

Lt. j.g. Patrick Cooper
USS *Tennessee* (SSBN 734) (G)

Lt. j.g. Zachary Cooper
USS *Texas* (SSN 775)

Lt. j.g. Marten Coulter
USS *Alexandria* (SSN 757)

Lt. j.g. Freeman W. Davenport
USS *Topeka* (SSN 754)

Lt. j.g. Andrew C. Dale
USS *Springfield* (SSN 761)

Lt. j.g. Christopher Del Vecchio
USS *Albany* (SSN 753)

Lt. j.g. Paul Deren
USS *Annapolis* (SSN 760)

Lt. j.g. Samuel Donovan
USS *Jimmy Carter* (SSN 23)

Lt. j.g. Brendan Dougherty
USS *San Juan* (SSN 751)

Lt. j.g. Matthew Duffey
USS *Michigan* (SSBN 727) (B)

Lt. j.g. Vanessa Esch
USS *Ohio* (SSBN 726) (B)

Lt. j.g. William Fenniman
USS *Virginia* (SSN 774)

Lt. j.g. Dennis Flores
USS *Hawaii* (SSN 776)

Lt. j.g. Rodrigo Flores
USS *Texas* (SSN 775)

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

Lt. j.g. Matlack Gillin
USS *Maryland* (SSBN 738)

Ens. Jared Givens
USS *Alaska* (SSBN 732) (G)

Lt. j.g. Bryan Glock
USS *Hawaii* (SSN 776)

Lt. j.g. Andrew Gomez
USS *Dallas* (SSN 700)

Lt. j.g. Christian Grau
USS *Maine* (SSBN 741) (G)

Lt. j.g. Jeffrey Guise
USS *Louisiana* (SSBN 743) (B)

Lt. j.g. Daniel Hagen
USS *Louisville* (SSN 724)

Lt. Austin Hancock
USS *Hampton* (SSN 767)

Lt. j.g. Jacob Hartsfield
USS *Jimmy Carter* (SSN 23)

Lt. j.g. Shann Heddleson
USS *Alexandria* (SSN 757)

Lt. j.g. Corey Hodges
USS *Dallas* (SSN 700)

Lt. j.g. Brian Huff
USS *Maine* (SSBN 741) (G)

Lt. j.g. Andrew Hutchinson
USS *North Carolina* (SSN 777)

Lt. j.g. Fielding Isaacs
USS *Kentucky* (SSBN 737)

Lt. j.g. William Jenkins
USS *Providence* (SSN 719)

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

Lt. j.g. Jonathan L. Johnson
USS *Mississippi* (SSN 782)

Lt. j.g. Mark Johnson
USS *Charlotte* (SSN 766)

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

Lt. j.g. Adam Kulczycky
USS *Maine* (SSBN 741) (G)

Lt. j.g. Matthew Kelly
USS *Alexandria* (SSN 757)

Lt. j.g. Daniel Kemp
USS *Florida* (SSBN 728) (G)

Lt. j.g. Jordan Keough
USS *Mississippi* (SSN 782)

Lt. j.g. John Koury
USS *Michigan* (SSGN 727) (G)

Lt. j.g. Justin Kramer
USS *Pasadena* (SSN 752)

Lt. j.g. Erienne Kriesch
USS *Ohio* (SSGN 726) (G)

Lt. j.g. Russell Kropp
USS *New Hampshire* (SSN 778)

Lt. j.g. Nicholas Laine
USS *Michigan* (SSGN 727)

Lt. j.g. Eric Larson
USS *Nebraska* (SSBN 739) (G)

Lt. j.g. Grant Lee
USS *Henry M. Jackson* (SSBN 730) (G)

Lt. j.g. Brian Lefler
USS *New Mexico* (SSN 779)

Lt. j.g. Rachel Lessard
USS *Ohio* (SSGN 726) (B)

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

Lt. j.g. Brian Linville
USS *Springfield* (SSN 761)

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

Lt. j.g. Scott MacAdams
USS *Michigan* (SSGN 727) (G)

Lt. j.g. Andrew Mamroth
USS *Dallas* (SSN 700)

Lt. j.g. Laura Martindale
USS *Maine* (SSBN 741) (G)

Lt. j.g. Joshua Matter
USS *Ohio* (SSGN 726) (G)

Lt. j.g. Shawn McBlain
USS *Providence* (SSN 719)

Lt. j.g. Aaron McKeen
USS *Florida* (SSGN 728)

Lt. j.g. Ryan P. McNichols
USS *Pasadena* (SSN 752)

Lt. j.g. Johnathon Miller
USS *Alexandria* (SSN 757)

Lt. j.g. Gregory Mosley
USS *New Hampshire* (SSN 778)

Lt. j.g. Eric Moore
USS *Nevada* (SSBN 733)

Lt. j.g. Matthew Murrian
USS *Virginia* (SSN 774)

Lt. Tyler Netherland
USS *Rhode Island* (SSBN 740) (G)

Lt. j.g. Craig A. Noltensmeyer
USS *Mississippi* (SSN 782)

Lt. j.g. Thomas Nowrey
USS *Charlotte* (SSN 766)

Lt. j.g. Michael OConnor
USS *Michigan* (SSBN 727) (G)

Lt. j.g. Daniel Olson
USS *Pittsburgh* (SSN 720)

Lt. j.g. Bryan Ortiz
USS *Bremerton* (SSN 698)

Lt. j.g. Kenneth Parsons
USS *Albany* (SSN 753)

Lt. j.g. Kevin Pate
USS *Kentucky* (SSBN 737)

Lt. j.g. Merritt Pearson
USS *Oklahoma City* (SSN 723)

Lt. Benjamin T. Perkins
USS *Virginia* (SSN 774)

Lt. j.g. James Petersen
USS *Buffalo* (SSN 715)

Lt. j.g. Paul Piavis
USS *Louisiana* (SSBN 743) (B)

Lt. j.g. Ryan Pifer
USS *Maryland* (SSBN 738)

Lt. j.g. Leroy Pimental
USS *Henry M. Jackson* (SSBN 730) (B)

Lt. j.g. Karl Plank
USS *Florida* (SSBN 728) (G)

Lt. j.g. Eric Quirk
USS *Tennessee* (SSBN 734) (G)

Lt. j.g. Jeffrey Rauen
USS *New Hampshire* (SSN 778)

Lt. j.g. John Reeves
USS *Nevada* (SSBN 733) (B)

Lt. j.g. Mathieu Roa
USS *Michigan* (SSGN 727) (G)

Lt. j.g. Mathew Rockwell
USS *Pittsburgh* (SSN 720)

Lt. j.g. Kimberly Roe
USS *Georgia* (SSBN 729) (G)

Lt. j.g. Benjamin Sandman
USS *New Hampshire* (SSN 778)

Lt. j.g. Michael Schambach
USS *Maryland* (SSBN 738) (B)

Lt. j.g. Saunak S. Shah
USS *Mississippi* (SSN 782)

Lt. j.g. Joseph D. Sheffield
USS *Springfield* (SSN 761)

Lt. j.g. Joshua Shishkoff
USS *Hawaii* (SSN 776)

Lt. j.g. Joel Sholar
USS *Maine* (SSBN 741) (G)

Lt. j.g. Darrell Smith
USS *Toledo* (SSN 769)

Lt. j.g. Matthew Smith
USS *Olympia* (SSN 717)

Lt. j.g. Stephen Smith
USS *Miami* (SSN 755)

Lt. j.g. Tabitha Strobel
USS *Georgia* (SSBN 729) (G)

Ens. Eric Stromme
USS *Missouri* (SSN 780)

Lt. j.g. Michael Sullivan
USS *Missouri* (SSN 780)

Lt. j.g. Timothy Swanson
USS *Maine* (SSBN 741) (G)

Lt. j.g. Ryan Tillman
USS *Texas* (SSN 775)

Lt. j.g. Justin Tworek
USS *Annapolis* (SSN 760)

Lt. j.g. John Underhill
USS *Tucson* (SSN 770)

Lt. j.g. Coleman Ward
USS *Houston* (SSN 713)

Lt. j.g. Joshua F. Zimmer
USS *Mississippi* (SSN 782)

Lt. j.g. Kevin Zimmerly
USS *Maryland* (SSBN 738) (B)

**Qualified as
Engineering Department
Master Chief**

EMC David B. Chechile
USS *Montpelier* (SSN 765)

EMC Nicholas W. Clemons
NSTCPAC

EMC Michael A. Edwards
USS *Greenville* (SSN 772)

ETC Stephen C. Geis
USS *Montpelier* (SSN 765)

EMC Nathan L. Gottsch
USS *Charlotte* (SSN 766)

MMC Dominick A. Grimaldi
USS *Ohio* (SSGN 726) (B)

MMC Dwayne T. Guillot
USS *Alaska* (SSBN 732) (G)

MMC Sterling B. Guyton
NRMD MD New London

MMC Todd J. Hatch
USS *Tucson* (SSN 770)

MMC Jason S. Hays
USS *Buffalo* (SSN 715)

EMC Shayne L. Hicks
USS *Maine* (SSBN 741) (B)

MMC Paul E. Jackson
USS *Alaska* (SSBN 732) (B)

ETC Christopher D. Lawrence
USS *Charlotte* (SSN 766)

EMC Tony J. Layher
USS *North Dakota* (SSN 784)

EMC Harry L. Leiser
USS *Wyoming* (SSBN 742) (B)

ETC Bradley R. May
USS *Pennsylvania* (SSBN 735) (B)

MMC David M. Medert
USS *New Mexico* (SSN 779)

MMC Jeffrey H. Mejia
USS *Santa Fe* (SSN 763)

MMC Jesse R. Miller
NRMD Point Loma

EMC Delbert L. Parrish
USS *Nevada* (SSBN 733) (G)

MMC Ryan D. Parsons
USS *Hawaii* (SSN 776)

MMC Jeffrey R. Picerno Jr.
USS *Toledo* (SSN 769)

EMC Donte T. Polson
USS *Connecticut* (SSN 22)

EMC Michael W. Quackenbush
USS *Providence* (SSN 719)

EMC Travis J. Radzyninski
USS *Newport News* (SSN 750)

MMC Brent G. Roets
USS *Greenville* (SSN 772)

ETC Robert M. Rupert Jr.
USS *Providence* (SSN 719)

EMC Eric R. Schulte
USS *Springfield* (SSN 761)

EMC Michael E. Sims
USS *Oklahoma City* (SSN 723)

ETC Randy M. Sparks
USS *Hampton* (SSN 767)

ETC Dustin L. Spicer
USS *Alabama* (SSBN 731) (B)

ETC Jonathan M. Stephens
USS *New Mexico* (SSN 779)

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

ETC Luis R. Torres
USS *Scranton* (SSN 756)

ETC Terrance S. Tyson
USS *Wyoming* (SSBN 742) (B)

MMC Jason T. VanGorden
USS *Michigan* (SSGN 727) (B)

Limited Duty Officer Qualified in Submarines

Lt. j.g. Nathan Fink
USS *Oklahoma City* (SSN 723)

Lt. Darby George
USS *Mississippi* (SSN 782)

Lt. Clarence Smith III
USS *Louisiana* (SSBN 743) (B)

Supply Officer Qualified in Submarines

Lt. j.g. Patrick Coughlin
USS *New Hampshire* (SSN 778)

Lt. Tucker M. Livingston
USS *Toledo* (SSN 769)

Ens. David Machinporrata
USS *Louisiana* (SSBN 743) (B)

Lt. j.g. Anthony Ostgulen
USS *Miami* (SSN 755)

Lt. Krysten Pelstring
USS *Georgia* (SSBN 743) (G)

Lt. j.g. Michael Zamudio
USS *Topeka* (SSN 754)

Qualified IUSS Officer

Lt. John Appelbaum
NOPFWI

CWO4 William Morgan
NOPFWI

Lt. Cmdr. Shawn Perry
NOPFWI

Lt. Valon Walker
NOPFWI

Qualified Surface Warfare Officer

Ens. Michael L. Coble
USS *Frank Cable* (AS 40)

Ens. Jesse W. Cross
USS *Frank Cable* (AS 40)

Ens. Jarrod Hancock
USS *Frank Cable* (AS 40)

Ens. Michael Peoples
USS *Frank Cable* (AS 40)

2012 COMSUBLANT Battle "E" winners

COMSUBRON 4 (Groton, Conn.)
USS *New Hampshire* (SSN 778), commanded during the competition by
Cmdr. John McGunnigle

COMSUBRON 6 (Norfolk, Va.)
USS *Boise* (SSN 764), commanded by
Cmdr. Brian Sittlow

COMSUBDEV Squadron 12 (Groton, Conn.)
USS *Toledo* (SSN 769), commanded by
Cmdr. Sam Geiger



Dr. Alexis Catsambis, left, cultural resource manager, and Blair Atcheson, historical preservation coordinator, both from the Naval History and Heritage Command at the Washington Navy Yard, move a late 19th century Howell torpedo. The torpedo was discovered by a team of Navy dolphins off the coast of San Diego and is scheduled to undergo months of restoration by a Navy archaeological team.

Rare Torpedo Found

Naval History and Heritage Command's (NHHC) Underwater Archeology Branch (UAB) at Washington Navy Yard received the crated remains of a historic and rare Howell Torpedo, May 30.

The Marine Mammal Program's trained Navy dolphins, of the Space and Navy Warfare Systems Center Pacific (SPAWAR), found the century-old torpedo off the coast of San Diego in March.

"There were only 50 in existence, and we now have the third one that is still around today," said Blair Atcheson, NHHC UAB Historic Preservation and Outreach Coordinator. "There is one at the Naval Undersea Museum and one at the Naval War College."

The Howell torpedo, named for Lt. Cmdr. John A. Howell, the primary contributor, was developed between 1870 and 1889. The Howell, the first propelled torpedo, was 11-feet long, made of brass and it had a range of 400 yards, a speed of 25 knots, and a warhead filled with 100 pounds of explosive.

"We have been coordinating with them and they have been keeping it wet in fresh water for us" said Atcheson.

"They managed to go through the channels and find us. They contacted Dr. Robert Neyland, head of UAB. We were able to talk to them and tell them what to do to preserve the artifact until we could manage to get it to D.C."

"Our objective is not to rush this; it is to be done right," said Dr. Alex Catsambis, cultural resource manager. "Eventually we will be putting it on display at a Navy museum, potentially the National Museum of the United States Navy. It's that important of a piece."

Photo by Mass Communication Specialist 2nd Class David Cothran

Held every two years by Commander, U.S. Pacific Fleet (PACFLT), RIMPAC is a multinational maritime exercise that takes place in and around the Hawaiian Islands.

Last year's RIMPAC exercise, the 23rd in the series that began in 1971, was held from June 27 to August 7.

RIMPAC is a unique training opportunity that helps participants foster and sustain the cooperative relationships that are critical to ensuring the safety of sea lanes and security on the world's oceans.

Six submarines, 40 surface ships, and more than 200 aircraft from Australia, Canada, Chile, France, Japan, Mexico, New Zealand, Republic of Korea, Russia, Singapore and the United States participated. Representatives from Columbia, India, Indonesia, Malaysia, Netherlands, Norway, Peru, Republic of Philippines, Thailand, Tonga and the United Kingdom were also among the over 25,000 personnel involved in the exercise.

RIMPAC 2012





Submarine Museums and Memorials in the Western Pacific



Australian National Maritime Museum (Darling Harbour, Sydney, Australia) shows Australia's rich maritime history through exhibits and historical vessels—one of which is HMAS *Onslow* (SS 60), one of six *Oberon*-class submarines that made up the Australian Submarine Squadron. Launched in 1968, *Onslow* patrolled the Indian and Pacific Oceans tracking Soviet submarines. <http://www.anmm.gov.au/site/page.cfm?u=1370>

Japanese Maritime Self-Defense Force Submarine Museum (Kure, Japan) introduces Japan's submarine legacy through various hands-on exhibits and activities, including a tour of the teardrop-shaped diesel submarine *Akishio* (SS 579). Decommissioned in 2004 and on display since 2007, the *Akishio*'s main mission was surveillance and interception of Soviet combatants. <http://www.jmsdf-kure-museum.go.jp/en/akishio.htm>



Surabaya Submarine Monument (Surabaya, East Java, Indonesia) gives the public an inside look at what life was like on the decommissioned *Whiskey*-class submarine KRI *Pasopati* (410). Built by the Soviets in 1952, and serving Indonesia since 1962, *Pasopati*'s major role was to maintain maritime law. <http://www.eastjava.com/books/monkasel/index.html>

Gangneung Unification Park (Gangneung, Republic of Korea) allows patrons to tour a captured North Korean mini-submarine that crashed into rocks off the South Korean coast during a spy mission in 1996, and a former U.S. destroyer from WW II that was given to the ROK in 1972. <http://www.gntour.go.kr/eng/sub.jsp?Mcode=10702>



Singapore Navy Museum (Changi, Republic of Singapore) showcases the history, tradition, customs, and development of the Singapore Navy. Some of the highlights include tracing the increased sophistication of shipbuilding and combat systems used by the Navy since its inception. Visitors will find hands-on target, navigation, and underwater simulators. http://www.mindef.gov.sg/imindef/mindef_websites/atozlistings/navymuseum/home.htm