Training:
Preparing for Tomorrow’s High-End Conflict

INSIDE
Tackling Your JO Tour
2018 JOOYs Hit D.C.
Cool Tech Making Training Easier
Turning Innovation Into Reality
Undersea Warriors,

In the last edition of UNDERSEA WARFARE Magazine, we talked about our progress toward instilling a warfighting culture in everything we do. I highlighted our use of competition to drive innovation, our standup of the Aggressor Squadron, and a new way to solicit ideas and feedback directly from you via HeySUBFOR@navy.mil.

A frequently repeated quote, and for good reason, is an admonition that can be traced back to Archilochus, an early Greek lyrical poet and soldier circa 650 B.C. Archilochus said that in conflict, “we do not rise to the level of our expectations, we fall to the level of our training.”

The theme for this edition of UNDERSEA WARFARE Magazine is training—one of the most important things we do as Submariners to accomplish today’s mission and to prepare for tomorrow’s high-end conflict.

I am extremely proud of the Force’s recent full-rudder shift toward readiness for great power competition. Nowhere is this more evident than in many of the innovative ways we are assessing and applying lessons learned and the latest technologies to how we train. For example:

• Submarine Learning Facility, Norfolk recently implemented a “high-end war-fighting IPDT” for USS Washington (SSN 787). The lessons learned from this effort will inform Fleet Readiness Training Plan planning and execution moving forward.

• The Submarine Learning Center in Groton has produced authoritative reference materials on adversary orders of battle for use by students and submarine crews. These “baseball cards” contain the best information available from the Office of Naval Intelligence and actual data collected during real-world missions. You can access these products via the SLC SIPR site or your SOBT hard drive.

• All school houses are in receipt of an updated “red” playbook and are working with the Aggressor Squadron to ensure that crews receive the best blue vs. red (vice blue vs. blue) training scenarios.

• We are reducing redundancy by giving your Commanding Officer the option to validate knowledge or skill requirements for basic-level qualifications based on the successful completion of required off-hull schools and/or SOBT products, and vice-versa.

• We have developed and are using metrics to ensure that the changes we make to how we train produce Sailors who are better prepared in less time to accomplish higher-end missions/tasks with greater margins of safety.

Throughout this issue, you will read about other great ways the Submarine Learning Center and the Submarine Force writ large are working together to transform how we train. It’s truly an awesome time to be an undersea warrior!

Remember…we will not get a WARNORD. Prepare for battle now! Our nation needs you. AAIII!

C.A. Richard
“We must ensure that our undersea forces are equipped with new capabilities to improve our reach and lethality in the near term, are programmed to receive new technologies in the mid-term, and are on a path to execute our Commanders Vision in the future.”

Thomas E. Ishee
Managing Editor
For a good part of the Submarine Force’s history, we were the innovators, the disruptors. We broke free of the surface, sustained our depth and reach with nuclear power, and increased our stealth and mission capability through quieting, sensors, and computers.

Today, however, we are struggling to keep up with the pace of innovation in private industry. We are surrounded by examples of innovative commercial technologies changing the world before our very eyes, yet many we may not find on a submarine for several years.

One such example is the explosion of artificial intelligence and machine learning (AI/ML). Each day brings advances in image recognition, automobile autonomy, machine mastery of strategy games, new recommendation engines, and ground-breaking optimization analytics. The Navy as well as the other services have tried to follow, ingest, and replicate these innovations, but bureaucratic and cultural barriers continue to hinder the adoption of new and innovative AI solutions. Many in the Department of Defense (DoD) see AI/ML as a technology still in its infancy, while industry leaders consider a large set of AI deep learning applications “state of the practice.”

Exacerbating this problem is the explosion of “consultants” who seek to capitalize on AI hype, touting its abilities to solve any problem. Without an AI-literate class of decision makers in DoD, breaking out the signal from the noise can prove challenging. But even in this noisy environment, strong signals can emerge. It starts with a single Sailor with the right knowledge, skills, mindset, and passion to point it out to the rest of us.
This is one of those stories, a story in which one junior officer (JO) and a small group of Sailors made a big difference. It’s a story of innovation from the bottom up and finding a way to own and solve the problems at hand. We hope that the lessons from this story encourage other Sailors with innovative ideas to come forward and contribute—not just in AI, but in all the many areas where the Submarine Force can and must improve.

Project Harbinger

The origins of what became known as Project Harbinger start with Lt. Austin Anderson, a JO from USS Springfield (SSN 767). In 2017, he was on his post-JO shore duty as a Secretary of the Navy Innovation Advisory Council (NIAC) fellow. Lt. Anderson was evaluating the use of AI/ML algorithms and their applicability to sonar and fire control problems like contact identification and solution development. He taught himself how to build and train AI/ML algorithms and set to work on upgrading our primary fire control algorithms.

The early results were excellent, and he clearly saw the technology’s potential to substantially improve our capabilities. Despite the success, Lt. Anderson wasn’t sure how to get these algorithms deployed on submarines. While they showed great promise, his ideas needed refinement and endorsement. Like many JOS, he knew nothing about how the Navy sets requirements and acquires new capabilities. He was not going to be able to transition this technology on his own.

He did, however, start showing his results to other Submariners. He found passionate advocates in a small community of officers in the Pentagon and elsewhere. They included Capt. Scott McGinnis (Secretary of Defense Corporate Fellow at Stanford Research Institute), Cmdr. Brett Christman (Chief of Naval Operations N902), Cmdr. Cameron Aljilani (Office of the CNO (OPNAV) N97), Cmdr. Dan Stock (OPNAV N97), Lt. Cmdr. Ryan Hilger (OPNAV N97), Lt. Cmdr. Joe Hack (USMC Strategic Initiatives Group), and Lt. Christian Mineur (Navy Digital Warfare Office 330). Together they formed an informal team and started picking the idea of AI algorithms to improve solution development.

Early on, they briefed several decision makers in the Pentagon. Most were initially skeptical about applying AI/ML to undersea warfare; they did not see its purpose or how it was different from the capabilities of the Submarine Force. While NIAC no longer exists, COs can apply for the NIAC fellowship right after the boat received the first step is to tell someone about your idea, typically your department head or CO. Lt. Anderson didn’t know how to share his idea, but he knew that his former Engineer, Lt. Cmdr. Hilger at OPNAV N97, might. That got the ball rolling and ultimately led to the formation of a diverse team of mid-grade officers who rallied around Lt. Anderson’s idea and generated the access to senior leadership that the project needed to succeed.

If you’re at a loss for whom to contact, consider UWDC. Its role is to serve as an entry point for any good idea to improve capabilities and concepts of operations that provides clarity on what you are trying to achieve, but you will be able to explain and defend your ideas in any brief or discussion.

Lesson 3: It takes a small and diverse village to make a change.

If you’ve got an idea, find a group of supporters who can help you out. You don’t have to be the one to know and ready to tell everyone who those who can contribute what you need to move forward. There is plenty of evidence that small, diverse teams produce the best results, so be selective. While all of your friends may be great people, they too many be too much like you to bring about success. Instead, find people who know things you don’t, who challenge your thinking, and who bring different perspectives. If you can, find people who have connections to resources and access to those with influence. The connections may not only afford you the resources and leadership endorsement you need, but they can provide an outside perspective to evaluate your team’s ideas.

Be careful, however, not to let the team’s size continue to grow unbounded. There is also evidence that groups become less effective as they expand beyond what is absolutely necessary. This is the idea encapsulated by Jeff Bezos’ famous “Two Pizza Rule,” which says that a team’s size should be no greater than the number of people that you can feed with two pizzas.

The Harbinger team met this test. It was small and spanned multiple domains and perspectives. Lt. Anderson had just joined the Navy’s DWO after a Secretary of the Navy Tour with Industry at General Electric Digital. He had numerous contacts in the commercial industry practices to inform the team’s thinking. Similarly, Cmdr. Stock worked closely with the acquisition community on what capabilities to bring to Submarine Warfare Federated Tactical Systems. His knowledge was critical to understanding how Lt. Anderson’s algorithm could get fielded. Capt. McGinnis and Cmdr. Christman had a wealth of contacts across the Pentagon and beyond. These were key to getting an audience with the right decision makers.

Lesson 4: Write it down.

Adm. Richardson famously said, “Nothing so sharpens the thought process as writing down one’s argument.” The team initially met skepticism from Submarine Force decision makers because their argument wasn’t yet fully formed. Merely presenting a different approach to solving a particular problem failed to clearly answer the frequent question of “What problem are you trying to solve?” Recognizing the need to strengthen their argument, the team turned to writing ideas in the format of an operational design. They laid out an argument for why the Submarine Force needs
Modern learning technology assumes various names such as augmented reality (AR), adaptive training (AT), simulation learning, and computer-based learning. Aside from the different acronyms, the basic concept is enhancement of teaching, learning, and assessment through the application of technology.

The educational needs of today’s Navy have shifted, with increased emphasis on the Navy’s Ready Relevant Learning (RRL) initiative. RRL is the Navy’s transformation to more effectively recruit, develop, manage, reward, and retain Sailors by modernizing schoolhouse content based on validated fleet training requirements.

Submarines across the fleet are now engaged in modern, hands-on, learning technologies that use a variety of applications, all of which provide Sailors opportunities to create training environments that continually refine their learning experiences.

Augmented Reality Learning Technology
One of the biggest areas of learning technology is in hands-on augmented reality (AR). Long before mobile AR applications were popular, the Navy had implemented AR real-time overlaying technology for its submarine diesel governor’s engine maintenance training.

In years past, governor maintenance replacement training was performed on an operating submarine diesel engine. Due to high costs, environmental concerns, and limited ability to conduct casualty training on operating engines, the operational engines were retired and removed from the training curriculum. As a result, the detailed understanding of how the governor works and how adjustments affect an operating diesel engine has decayed over time.

Naval Sea Systems Command (NAVSEA) Submarine Training Directorate teamed up with the Submarine Learning Center (SLC) and Huntington Ingalls Industries to develop a solution—the 3D-printed Woodward Governor and AR tablet. The innovative AR governor tablet improves crew readiness, as crews learn how to replace and properly adjust a governor while at sea.

Branded the “Woodward Governor 3D Augmented Reality,” it provides the Navy with a solution to reverse the knowledge decay. NAVSEA funded the tool’s research and initial development in 2016, with prototypes deployed to Naval Submarine School (NSS) in Groton, Conn. and Trident Training Facility in Kings Bay, Ga. in 2017. The Woodward Governor 3D AR tablet was deployed to the remaining submarine training facilities in 2018.

The Woodward Governor 3D AR tablet provides a computer graphic overlay that enables Sailors to visualize maintenance procedures on the governor. AR lets Sailors see the effects of adjustments to the 3D Woodward governor that are often required following governor replacement on submarines. The AR overlay software includes a cut-away view that gives Sailors the ability to look at internal mechanisms and components from any angle and even observe how internal components react to operator adjustments to the governor’s controls.

Instructors now use these new tablets to teach diesel generator Woodward governor maintenance inspection tasks exactly as they are performed aboard submarines.

Sailors have been training with 3D printed Woodward governors and Woodward Governor 3D AR tablets for over a year. They have performed various maintenance and operational inspections on the Woodward governors in their advanced maintenance training in ways that traditional methods simply could not reproduce.

Machinist’s Mate Auxiliary petty officer 1st Class Mitch Williams from Waverly, Iowa, who instructs submarine crews in an advanced AR diesel maintenance course at NSS, Submarine Base New London, said, “These program tablets are great; they walk students through a sequence all the way from removal of the governor to installation, as well as testing and inspection.”

Throughout the submarine training domain, innovative modern learning technologies such as 3D-printed components and AR technologies are replacing stand-alone and static instructional methods that had limited ability to demonstrate complex concepts. The 3D-printed Woodward governor and Woodward Governor 3D AR learning technologies provided at submarine learning sites are two components that ensure that the Submarine Force remains ready to meet today’s challenges while building highly skilled and technically proficient warfighters.

Adaptive Training Learning Technology
Along with AR learning technology, the Submarine Force is using other new learning technologies to enhance proficiency in new ways. Sailors across the Submarine Force are training on new learning technologies available to the fleet.

Developed by the Naval Air Warfare Center Training Systems Division (NAWC-TSD) with funds from the Office of Naval Research’s science and technology departments, SEW-AT is an innovative EW adaptive training technology system designed to improve crew performance when operating EW systems. It provides Sailors the opportunity to practice EW skills while reducing reliance on tactical training equipment and its associated costs and labor requirements.

NAWC-TSD designed and developed SEW-AT by drawing from multiple learning theories and principles. Using an AN/ BQX-10 simulator, it allows Sailors to practice standing watch during periscope
depth operations using a single PC-based, stand-alone training system. Applying sce-
narios derived from the Submarine Force’s Continuing Training and Qualification Manual, the adaptive algorithms within SEW-AT observe operator actions and assess performance on criteria including safety-of-
ship, report timeliness, contact classification, and emitter parameter changes.

ETSC Commander LTJG Chris Parks, from Baltimore, Md., uses the SEW-AT computer as both an “A” school and pre-deployment training tool. Parks said, “This provides new Sailors their first experience in standing their prospective watch station and also allows submarine fleet Sailors the opportunity to improve their skills. SEW-AT provides adaptive learning to first accession stu-
dents, junior ship personnel, and any Sailor new to electronic warfare.”

SEW-AT responds by adapting scenario difficulty and provides immediate opera-
tor feedback using verbal cues by using a dynamic operator ease-of-use. Feedback either challenges the operator with tougher scenarios or relays the difficulty based on operator performance. These adaptive instructional interventions avoid a “one size fits all” approach to training and, instead, provide tailored hands-on train-
ing based on an operator’s strengths and weaknesses. When the scenario is com-
plete, SEW-AT generates a detailed narra-
tive along with scores in several skill sets.

SEW-AT contains more than 100 sce-
narios and covers every theater of opera-
tions. It and other similar training systems can inform instructors of specific student weaknesses, help students gain familiarity of a new operating environment, or simply get “reps and sets” in search and reporting pro-
cedures without occupying an entire trainer.

Across submarine training, modern hands-on learning technologies are replac-
ing outdated and expensive instructional methods. The SEW-AT training provided at submarine learning sites ensures that the Submarine Force remains ready to meet current challenges while building relevant and capable warfighting readiness.

Simulation Learning Technology

Developing modern learning technology training programs that use robust, interactive, game-based simulation learning technology is essential to training the new generation of Sailors. In fact, the Submarine Force recently implemented competition in training to encourage sub-
marine crews to test their mettle in submarine simulation scenarios. These simulated war games determined which crew was the fastest, sank the most tonnage, or even win in a fight against another crew in a con-
ected SM TTs simulation attack center.

LT Gregory Morgan from Detroit Mich., tactical instructor at NSS Naval Submarine Base, New London, who over-
sees submarine crew training stated, “In most sce-
narios, said, “As the competition-in-train-
ing coordinator, I create the scenarios on the SM TTs to challenge the Submarine Force and to instill the warfighter mind state. Warfighting competition in train-
ing makes training fun, but still provides a large amount of practice for life-and-
death situational training. Each computer-
based scenario, our teams are debriefed on what went wrong and what went well, to improve team training in the future.”

Submarine Force competition is organ-
ized in a manner similar to professional athletic leagues. The Submarine Force com-
petition league is divided into two confer-
ences, the Atlantic and Pacific. The two con-
ferences are further divided into divisions, which consist of submarine crews in each fleet, connected by the SM TTs simula-
tion attack centers. The commanding officer of the local submarine training facility serves as the umpire. Crews compete in seasons that are about six months long.

The matches consist primarily of com-
bat scenarios in Anti-Submarine Warfare (ASW) and Anti-Surface Warfare (SUW) in a variety of formats: head-to-head, simultaneous, and stand-alone.

The head-to-head competition is between two submarine crews who fight in a linked SM TTs simulation technology. The crews can fight against each other or compete in the same battlespace.

In the Simultaneous format, two sub-
marine crews conduct the same scenario at the same time in separate SM TTs. The match is over when the first crew sinks its target while successfully evading the remaining enemy forces.

The Stand-Alone format is similar to simultaneous, but crews conduct the sce-
narios back-to-back in the SM TTs. This method is ideal for smaller training facili-
ties or training facilities that only have one SM TT. The crews flip a coin to see who participates first. The second crew cannot observe the first crew in battle. Whichever crew achieves its goal faster while living to tell the tale wins.

Scoring the competition is relatively simple, and results matter. In combat, killing the enemy while being killed in the process of doing so is clearly not sustain-
able. Therefore, to win in the competition, a crew must kill the enemy and survive in the process. It is possible that two crews can fight against each other and both end up losing. However, it is not possible for both crews to fight and for both to win. The crew that achieves the first kill and survives is the winner.

Each umpire coordinates with the squadron commanders to develop a sched-
ule, score the matches, and track the results of each submarine crew. Umpires publish warning orders to identify the competi-
 tors, lay out the scenario, and schedule the com-
petition. The umpires report compe-
tition results and lessons learned to the commissioner, who then coordinates with the type commanders (TYCOMs) to post results and update divisional standings on TYCOM websites. Throughout the competition season, submarine crews are divided into one of three categories:

Rookie: A submarine crew that has yet to participate in team competition.

One-Deck: A submarine crew that com-
peted but was either killed or out-gunned by another submarine crew. Submarine crews whose matches result in a draw also receive on-deck status.

Veteran: A submarine crew that has achieved victory. A veteran team is typi-
cally created from the normal pool of eligible teams for competition. However, they may opt to remain eligible to provide a larger number of teams for competition. However, if a veteran submarine crew subsequently loses, they forfeit their veteran status for on-deck status.

Submarine crews are now doing battle in the SM TTs simulation attack centers, to test their skills, and the competition is fierce! In a recent tournament, a crew that had just changed homeport humbled an entire waterfront, while another crew that drove down from a remote shipyard crushed a recent deployer. Crews who win are plan ahead, show mastery of basics, and act boldly with calculated risk. Crews that lose underestimate their opponents, spend excessive energy on basic skills, do not fol-
low fundamental doctrinal and procedural Target Motion Analysis tenets, or act reck-
lessly. New crews gain important lessons while enhancing proficiency.

Virtual simulation learning technology is an extremely useful training aid, provid-
ing high levels of training in a short period of time. Simulation allows for multiple rep-
etions, which aid in building competence. As Sailors gain proficiency, the training level can be elevated in complexity.

Submarine Firefighting Learning Technology

In the same way that Sailors gain profi-
ciency on the SM TTs simulation learning technology, so can they gain training profi-
ciency when fighting fires. Indeed, the next generation submarine firefighting learning technology-training facility is up and run-
ning at the Submarine Learning Facility in Norfolk, Va. This new simulation facil-
ity adds complexity and realism that is long overdue in submarine firefighting training.

The catastrophic results of the 2012 USS Miami (SSN 755) fire tragedy necessi-
tated an assessment of submarine firefight-
ing training, which identified that existing life-and-death fire and capabilities train-
ing did not fuel the realistic fire in submarine training. These typically single-level trainers that ran a few different scenarios and did not account for the close-quarters environment on the submarine. Most of these trainers did not get hot enough to provide a second level of training. The SM TTs sim-
ulating scenarios and they did not simulate fires that spread from a source to outboards and to the overhead. The next generation firefighting trainer (NGEN FFT) solves those issues.

The NGEN FF T simulation learning technology is a computer-controlled, gas-fired, five-deck training system. The multi-level trainer simulates Class A, B and C fires in a realistic submarine environ-
ment. Instructors now can link and expand fires both vertically and horizontally to challenge submarine crews’ responses to an expansive dynamic casualty.

The gas-fired fires do not create smoke when burning; instead, they generate it by using non-toxic smoke fluid, which cre-
ates smoke to obscure vision, simulating what teams will experience in actual fires on a submarine. The increased smoke-
generation, and the training system’s ability to sustain higher temperatures for longer periods, provides greater authenticity to firefighting training than before. The cur-
rent legacy trainer operators at 145 degrees, with an upper limit of 175 degrees. The NGEN FF T operates at 300 degrees, with an upper limit of 400 degrees. The NGEN FF T is reconfigurable with removable

Delivered prototype SEW-AT systems to SLC (ASW) (SSN) in Bangor, Norfolk, Kings Bay and San Diego

Stand-alone “lunch box” systems on board six deployed submarines

Collected usage data from 94 ESM operators on SEW-AT version 1.0 from SLC Schools (SEW-
AT 1.2 usage data analysis in progress)
bulkheads in order to simulate racks and berthing spaces and includes a galley area with correct-size doorways.

These tight spaces allow firefighters to practice ingress into tight spaces and around corners while fully dressed in protective gear and fighting a fire with a fully charged hose. Teams that do not demonstrate proper firefighting techniques get to feel the heat when the fire flashes into the overhead, a truly impressive feature that gets the team’s attention quickly.

The NGEN FFT was developed by NAVC-TSD, NAYSEA Submarine Training Systems (07TR) with consultation by Atlantic and Pacific TYCOMs, and the SLC.

NGEN FFT firefighting training capability that safely delivers the simulation necessary for submarine crews to build their skills in fighting complex submarine fires. Training on the NGEN FFT enhances warfighting readiness through the realism inherent in the trainer and by providing a first-hand appreciation of the skills necessary to extinguish a potentially devastating submarine fire.

Computer-Based Learning Technology

Another example of how the Submarine Force is applying technology to enhance teaching and support learning and assessment to prepare Submariners for battle is by using Submarine On-Board Training (SOBT) computer-based learning technology.

Experienced Submariners may remember when SOBT consisted of laser discs as large as vinyl records and cassette tapes.

Since then, SOBT has evolved to respond to today’s Sailors’ training needs and now provides modern learning technology to supplement traditional instructor-led training classes and, in some cases, has replaced brick-and-mortar schoolhouse courses with an interactive, hands-on, simulation learning experience designed to train combat-ready warfighters.

Today most of us have a home computer and a smartphone with information available at our fingertips. We log into the computer and have ready access to email, websites, reference materials or projects because the computer recognizes our profile and leaves bookmarks to return us back to where we stopped the video or left the webpage. We also watch short videos to help us fix our cars or appliances. The team at SOBT recognized the power of easy access to information and has incorporated these simple yet powerful capabilities into the program to place training and reference materials at Sailors’ fingertips.

SLC and the Naval Undersea Warfighting Center (NUWC) deliver updates to SOBT each spring and fall, reliably delivering content and other materials to the entire Submarine Force and ensuring that the Force is using the latest training and reference materials available.

Sailors can access SOBT material through the Seaware learning management system, which is accessible on computer desktops connected to the submarine network. Seaware organizes the material and connects to each Sailor’s account, allowing each Sailor to customize the Seaware system to fit his or her needs.

In addition to traditional SOBT interactive multimedia instruction modules, Seaware allows Submariners to access the Submarine Learning Channel, which contains more than 500 short videos that provide explanation or demonstration of a wide variety of tasks. This enables a subject matter expert to demonstrate through a short video a critical part of a procedure or techniques that are difficult to describe in a technical document. The videos provide simple yet powerful effective training on tasks or concepts without having to sign up for a course and sit in a classroom.

The quality of videos continues to improve as the SOBT team recently updated video development standards with the assistance of experts in the video production field. Rather than showing instructors giving lectures in a classroom, these three-to-five-minute-long videos consider the perspective of the viewer and are generated on topics based on requests from the fleet. The instructors in the videos are not actors, but actual Submariners who are experts in their fields and are properly trained to film these videos.

The Submarine Learning Channel environment is a simple and familiar construct that allows Submariners to identify favorites, generate a playlist, or assign videos to others to support a training plan. They are deliberately bite-sized but hard-hitting and targeted to specific pieces of equipment or concepts. With videos hosted in SOBT’s Seaware system and accessible from any laptop aboard, the Sailor is ready to watch when it fits his or her schedule.

The content in SOBT’s Interactive Multimedia Instruction (IMI) modules is detailed and reference based. In most cases, the student must pass a test to earn a completion certificate. Recently, the TYCOMs identified specific SOBT products that, when successfully completed, can allow commanding officers to grant credit for knowledge factors on some qualification cards. The team at SOBT is continuing to evaluate their IMI content to determine where Sailors can meet other qualification standards.

In addition to the material developed by the SOBT team, Seaware also delivers over 200 IT professional topics. These topics provide the necessary knowledge certifications for Electronics Technician Communication – Submarine (ETR) Sailors to convert to Information System Technician – Submarine (ITS) Sailors without requiring connectivity to an off-base network. These products also provide continuing educational units (CEUs) to all ratings of our cybersecurity workforce.

Seaware also contains links to reference materials essential to the Submariner. Current tactical doctrine published by Undersea Warfighting Development Center, (UWDC), intelligence products published by the Office of Naval Intelligence (ONI), and lessons learned published by TYCOMs are included with each SOBT update. Submarine crews no longer have to download publications, search the network, or be concerned with having the right version of doctrine because the information is at each Sailor’s fingertips through Seaware.

The SOBT team knows it must engage the fleet; bottom-up feedback is best when it comes directly from the afloat Sailor. SOBT’s chiefs and officers who are developing training priorities want to hear the fleet’s voice to help steer their efforts. Seaware facilitates SOBT feedback using email, comment sections, and usage metrics to evaluate the fleet’s needs. The feedback goes to the active-duty Sailors managing SOBT product development.

The SOBT team also visits each submarine homeport annually to provide assistance to crews, answer questions and get feedback on SOBT products.

The ability to deliver high-quality training and reference materials uniformly across the Submarine Force through SOBT and integrate them into the Seaware learning management system is a critical enabler for combat readiness. The training and materials available ensure consistency in delivering training products, reducing crew time necessary to find reference materials and providing opportunities for training, anywhere, anytime.

By engaging our Submarine Force, both new and experienced, in the modern, hands-on, learning technologies discussed here, Sailors are being afforded the exciting opportunity to explore the newest depths of computer-based learning technology currently being taught throughout the Submarine Force. Submarine crews will now be able to more readily develop relevant warfighting readiness skills and become better prepared for the fight.

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**SOBT Resources**

- 300+ Education Learning Videos
- 600+ Interactive Learning Courses
- UWDC and ONI Publications
- Lessons Learned Messages
- Cyber Security Workforce Training
- Training Feedback/Requests
- Email for Feedback: E-mail to: WN loves SOBT Feedback@Navy.mil

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**Seaware**

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ETSC Petty Officer 1st Class Patrick Parks, standing, demonstrates the SEW-AT computer workstation with ETSC Petty Officer 1st Class Benjamin Gobper.
The Junior Officers of the Year (JOOYs) for 2018, selected by their squadrons, were accompanied by their significant others for various events, including a meeting with the Chief of Naval Operations (CNO) and the Washington, D.C. area Submarine Birthday Ball. The camaraderie in the group was instant; despite our various backgrounds—688, SSGN and SSBN, in drydock and operational, engineering and weapons and navigation—we shared similar experiences. It was a refreshing time to appreciate the work we had put into a job that can be all-consuming and to step back and see how our individual roles fit with the mission of the Submarine Force and the Navy at large.

Monday morning began with a trip to the Pentagon and a lunchtime briefing by Vice Adm. Merz, Deputy CNO for Warfare Systems (OPNAV N9). He emphasized the need for interoperability and collaboration between the branches of the military as well as coordination with allies as we prepare for potential great power conflict. Cdr. Gene Severtson, Unmanned Systems & Future Capabilities Branch Head at OPNAV N97, then briefed us on exciting developments in Undersea Unmanned Vehicles (UUVs), upcoming modules for the Virginia-class submarine, and Columbia and SSN(X) development and construction.

On Monday evening CNO Adm. Richardson and his wife, Dana, hosted the JOOYs and significant others for “midrats” and drinks at the historic Tinge House on the Washington Naval Yard. The Richardsons shared their experience of raising five children through a Navy career and prioritizing staying together as a family through 21 moves. They also shared the treasures they have accumulated during their travels, from the submarine warfare insignia of numerous countries to paintings from their tours in Italy. In a final toast in the greenhouse, Adm. Richardson emphasized the need for great leaders within the Navy and recognized the contributions of both Submariners and spouses.

On Tuesday the symbolic architecture and interior design of the Library of Congress reminded the JOOYs of the importance of scholarship and history during a docent-led tour. Thomas Jefferson, recognizing the necessity of continued and wide-ranging learning, donated his library to create this now-indispensable institution. We were reminded of our need to continue learning, starting with the basics of the engineering plant, then how to drive and fight a submarine, and now continuing with strategic plans and preparations for various potential futures in this great power competition.

They explained the role of the university in professional military education and the importance of that education. Though political administrations change and alliances shift over time, military educational institutions maintain a mutual respect for the craft of warfare and for one another. He welcomed questions from the group, which concerned career progression, the role of education in determining assignments, and personal experiences while in the Navy.

Captain Michael Majewski, Nuclear Propulsion Program Manager from N133, hosted a brief discussion to understand the concerns and recommendations of the JOOYs in a format similar to the biannual Junior Officer Symposium. He was receptive to concerns about in-port maintenance requirements and gaining underway experience during extensive drydock periods.

That afternoon Adm. James Caldwell and his wife, Kim, hosted the JOOYs for a delicious lunch at Naval Reactors on the Washington Navy Yard. They candidly explained their long journeys with the Navy, starting from childhood—Kim was the daughter of a SeaBee captain and the Admiral was the son of a submarine captain. They married the same month that he graduated from the Naval Academy, which was followed by his numerous tours at sea and on shore. Kim offered advice on leading the wardroom in coordination with the Ombudsman and how important attitude is in the success of making a home and

How do you remind outstanding lieutenant Submariners, who are used to standing Officer of the Deck and leading a division, of how big the Navy is and the role of submarines in national defense? Bring them to Washington, D.C.

After the tour, the group walked through the extensive Capitol tunnels to visit with Rep. Joe Courtney of Connecticut, whose district includes Naval Submarine Base New London and Electric Boat. He congratulated the JOOYs and their significant others on their accomplishments before going to witness a vote on the House floor.

On a crisp Wednesday morning, president of the National Defense University (NDU), Vice Adm. Fritz Roeger and his wife, Julie, welcomed the group to NDU, where the theme of education continued.

Vice Admiral Fritz Roeger welcomes the 2018 Junior Officers of the Year to NDU.
friend group in various places. They spoke of the disconnect in sources of energy that introverts and extroverts can have in marriage, which resonated with many of the couples present. Both the JOOYS and their significant others appreciate the candor with which they shared their experiences and answered numerous questions that focused more on the life of submarine couples and less on the technical aspects of the job.

That evening many local 1120s gathered in Crystal City for a prime opportunity for submarine officers across all levels of experience—from division officer to retired admiral—to share experiences, seek advice, connect over tours on the same boats, and celebrate this vocation in a low-key venue.

Thursday morning was a unique opportunity for a brief by the Deputy Director, Operational Support for the CNO (N2/ N6F21), Cmdr. Greg Crosby, that featured recent deployments in various theaters. The brief came alive with sea stories since the most recent deployments in various theaters. Admiral James Caldwell and his wife Kim pose with the 2018 Junior Officers of the Year. The JOOYS then shared lunch with Vice Adm. Richard, Commander Submarine Forces, in the Marine Corps Dining Room in the Pentagon. With the backdrop of bullet-scarred helmets and historic swords, Vice Adm. Richard emphasized the need for warriors in the Submarine Force and his belief that there may be a shooting war during the time that the officers who sat with him returned to submarines as department heads. He listened to recent developments on the waterfronts, such as competition training that pit one crew against another in attack center simulators, and he discussed his philosophy concerning tactical nuclear weapons. His inspirational tone was refreshing, reminding us that we do indeed prepare for battle, though that often has the form of signing hundreds of maintenance forms and slogging through yet another day at the simulator.

After piling into two vans, we spent the hour drive to the Lockheed Martin facility in Manassas, Va., talking submarines. We saw them in action as testing progressed, and marveled at future photonics masts. We also toured the production bays where current systems are tested and sent to the fleet. It was an eye-opening experience, particularly for officers serving on boats with older systems, and an occasion to provide feedback from real users.

In a rare opportunity on Friday afternoon, the group toured the East Wing of the White House, to include the Diplomatic Room. Two Secret Service officers, as well as Submariners Cmdr. Matt Thatcher and Lt. Andrea Weis, offered historical and humorous facts about the various rooms, their décor, and their functions over the years as they guided the group through the building. The President’s butler, a retired Navy Master Chief who served abroad both surface ships and submarines, provided the group with presidential chocolates.

The week concluded at the Washington, D.C. area Submarine Birthday Ball. Adm. Richardson remarked on what a tight community the Submarine Force is, citing JOOY Lt. Brian Davenport who served aboard the same boat that Adm. Caldwell previously commanded. He remembered the many boats and Sailors who gave their lives in service, as honored in the Tolling of the Boats. He then looked forward to the continued success of the fleet, which now includes female Sailors and officers, such as JOOY Lt. Erica Leinmiller, and teased her husband, Lt. Micah Dose, for continuing in the submarine tradition of marrying up. He described with vigor the vital role that the Submarine Force plays in national security today and the continued need for high-quality officers and Sailors to continue performing the hard missions, “alone and unafraid.” The dancing commenced with notable contributions from Vice Adm. Richard’s wife, Lisa, Adm. and Mrs. Caldwell, Norwegian Naval officers, and the JOOYS.

The week provided an opportunity to celebrate excellence in our division officers, to meet and discuss both work and home life with several of the most senior officers in the force, and to recognize both the challenges and the opportunities that face the Submarine Force and the Navy as a whole. We departed at the end of the week with new friendships and a renewed appreciation for the important role the Submarine Force plays in national defense.
One (former) submarine CO’s thoughts on being a great submarine Junior Officer:

“Put more into life than you expect to get out of it. Drive yourself and lead others. Make others feel good about themselves. They will outperform your expectations, and you will never lack for friends.” — Rear Adm. Gene Fluckey, WWII Medal of Honor recipient

I’ve weathered some rough seas during my naval career, which has informed my opinions on how young officers can succeed. Simply stated, I want you to accept two fundamental challenges: learn to fight your ship and lead your Sailors.

Getting the most out of your JO tour is a contact sport. Put yourself out there. Try hard. Don’t be afraid to fail; it won’t be that bad, and you will be forgiven. Then, try again. This is what your JO tour is all about—learning about yourself and what specifically works for you.

The following are some “knows” and “dos” to help you fight and lead. Not everything below will resonate yet, but I suggest you put this article in your “leadership toolkit” (everyone should have one) and read it again later in your tour. Knowing your ship, Sailors, and boss will be key to your success as a Submariner. Truth in advertising: I didn’t always do these things, but I wish I had! I made some mistakes as a JO, and most of this I learned from the school of hard knocks.

“But Captain, I am not planning on making this a career.” Doesn’t matter. The skills needed to fight the ship and lead a division or watch section are life skills and highly valued outside the Navy.

When I was a JO, my CO once asked if I wished command. The question caught me off guard. I wasn’t sure I really wanted to go to command or even stay in after my JO tour. I responded halfheartedly that I didn’t think I knew enough to command. He laughed and said, “of course not, you’re only a JC!” He went on to explain that, in your Navy career, what you learn today prepares you for success at the next level. Over the years, I saw that he was right! Your training to become a Submarine CO begins with your commissioning and continues every day that you are in uniform, preparing for the moment you say, “I relieve you.”

My goal for each of my JOs; finish your tour ready to walk across the pier to another ship, equipped to perform at the next level—leading your own watch section and serving as a department head. By the time you leave, if you know your ship, Sailors, and boss and work to understand what to do as a leader, then you will excel as a JO!

What to know

As a new submarine officer, you will learn a new culture and language, leadership and management basics, new watch stations, running a division, and managing programs. You will feel overwhelmed at times. Keep after it! Eat the elephant one bite at a time.

Know your ship. Learn the basics first. When qualifying, stay a little later if needed. Come in on some weekends. Learn what you need to, and then go get your checkout or take your exam. I tended to “polish the cannonsball,” over-studying unimportant things. Ask for help if there is a roadblock, if you don’t understand a concept, or you are in the shipyard and can’t get your practical factors done. Once you are qualified, it is purely a license to learn—become a true expert, lead your teams, and see what works and what doesn’t.

When I reported aboard my first ship, my ship’s leadership put me straight into engineering qualifications, as expected, and told me not to worry about forward qual’s at all until I had qualified EOOW. This was horrible advice. When you get aboard, come up with a plan to focus on ready to safely execute the task, have the courage to say so and take the time needed to do it right—the first time. Tell your department head if you do.

Early in my first tour, I went to the bridge as JOOD when getting underway from Pearl Harbor. One of the JOOD’s jobs was to operate the AN/PSN-11 handheld GPS, a military GPS unit that was about the size of a mailbox and completely unintuitive. Before I went to the bridge, someone showed me some basic button pushing, but I didn’t really understand how to use it effectively. Most important for the
Leaders told me, "Your job is to qualify. More bad advice on my first boat. My success of your Sailors. Learn their qualifications will take most of your time unambiguous about the responsibilities of Submarines. Qualified, qualifications will take most of your time at first, but you cannot neglect your divi- sion. I started out several steps behind because I did not get in my chief's hip pocket right away and learn how to really run my division. Don't let the active voice, with good grammar and spelling. Avoid repeating mistakes when writing for your chain of command (this is a good self-preservation tip). Find the final product that gets released and see how the mistakes were changed or how the writing flowed, especially if you weren't present for the final edits. Don't allow yourself to just be the typist; understand and discuss content, tone, and the mes- sage that the ship is sending off. A ship's reputation is in large measure built on its writing. So learn to well. Ensure that the reader will understand your mes- sage without you being there to explain it. What to do Lead yourself. Your energy can help the whole ship improve. Never give up. Be "all in" as a JG on the USS Ancony. How do you react when things go wrong or if you make a mistake with others? A leader should be able to recognize when they have not performed the way they were expected to. Rely on your experience to help others to perform to their potential. The most important subject matter expert. Integrate sonar,avig- nation, comm, and engineering department into your plan. You will find that you are able to "rub it in" and help others to perform to their potential. Others will know their piece of the pie, but you will be the one that helps tie it together. Know who you are. You may be called on to execute the plan...on short notice...with the trim pump tagged out...and with a team that has not performed the evolu- tion since POM workup. That's exactly what a Lt. j.g. can save the day. When our ship conducted our PPT, we bombed our evaluated ASUW train- ing. When working on the upgrade, we assigned one of our JOs as the ASUW planning officer and his hard work helped us do a 180! He developed a plan that included a valuable intelligence assessment tool to allow us to prioritize targets effectively. His plan also included training on ASUW-specific duties and responsibilities, which allowed every team member to contribute to decision-making data flow. Based on his ownership and our practice, leadership onboarding, including the divi- sion officer, must set an environment for integrity. How do you react to bad news? It is easier to tell the truth or to cover it up? Accomplishing the mission at all costs (or "just get it done") while breaking the law or violating protocol, policy, or procedure is simply not okay. If you find yourself saying or hearing others saying things like, "just make sure it gets done" or "I don't care how it gets done" you should hear alarms going off in your head. A division officer can, and ultimately must, help the chain of command identify where...
end of the world). You can avoid this situation by starting your planning early and using your lifelines to shipmates who have successfully completed similar tasks before.

Don’t be overly sensitive to your Sailors’ complaints, but be ready to be their advocate. Listen to them. It is a truism that, when you stand up for yourselves, Leaders who likely feel that no one is listening or cares enough to help with their problems. Never complain in front of your Sailors, especially about your chain of command! This will undermine your ability to get things done, and they will actually respect you less for your weakness. You don’t have to defend the command if you don’t want to, but piling on to a gripe session is not a big help.

Build your team up, don’t tear them down. Sometimes members of your division will make fun of a teammate, perhaps one who is struggling or who acts differently than other crew members. Don’t allow that to happen in your presence, and above all don’t join in. Stand up for those who can’t stand up for themselves. Avoid making the right thing into a group thing. Don’t do the right, unpopular, and uncomfortable things because they need to be done.

Lead your watch section. As a watch officer, you are a player-coach, responsible for your own performance and that of your team. Look ahead and plan the watch with your team. Figure out what you don’t know in your own performance, and that of your team. Look ahead and plan the watch section. Get out there, push yourself, and division and then live up to the example you set. It’s not a simple job, but I found it to be very rewarding all your days to be rosy. You may feel on top of the world one day, and the next you feel that you have made the worst (leadership, watch standing, discipline management) mistake in the history of the Submarine Force. This is normal. Get over it. You have some great coaches and teachers out there with your DHDs, your chief, the XO, the CO, and your fellow division officers. Ask for feedback. Ask for advice on issues that you are tackling. Learn from your bosses, good and bad. Most of all, own your division and your watch section. Get out there, push yourself, drive fast, and make your ship the best on the waterfront!

Welcome Home! A Sailor assigned to the Los Angeles-class fast-attack sub- marine USS Santa Fe (SSN 193) greets his family after he arrived at Joint Base Pearl Harbor-Hick- am, after completing his latest deployment.

Photo by Mass Communication Specialist 1st Class Daniel Hofer
More Ways to Complete Professional Military Knowledge Eligibility Exam

Sailors eligible for advancement to paygrades E-4/5/6/7 can now complete their Professional Military Knowledge Eligibility Exam (PMK-EE) requirements anytime, anywhere in the world, through a self-service app announced in NAVADMIN 340/19, June 26.

Sailors can access the PMK-EE through MyNavy Portal (MNP), Navy e-Learning (Nel), Submarine On-Board Training (SOBT) and now the PMK-EE app. Each of these PMK-EE options operate independently. So Sailors should select one of the systems to complete all modules. With PMK separated from the advancement exam, once Sailors complete their PMK-EE requirements for their paygrade, they will have more time to concentrate exclusively on job-specific occupational knowledge needed for the NAVLE, contributing to the Navy’s goal of promoting technical experts.

Here’s how Sailors can take advantage of the PMK-EE app:
1. Go to the Navy App Locker at https://www.applocker.navy.mil and download the PMK-EE app to a mobile device when ready to complete the eligibility requirement through an online exam. This does not require a Common Access Card (CAC).
2. Select each of the five topic areas: Career Information, Leadership and Character, Naval Heritage, Professional Conduct and Seamanship. Each topic may be taken independently of the others, in any order, and not necessarily during the same app session.
3. Once each topic is completed, the app will indicate the graded performance. Review the associated reference from the bibliography for incorrectly answered questions.
4. Score 80% or higher in each topic to pass the entire exam. If you did not pass a topic, you will have to retake it.
5. Once all topic areas are successfully completed, the app will display an overall exam score.
6. The app will ask for the Sailor’s DoD ID number (located on the back of your CAC) to transfer completion information to the Navy Training Management Planning System (NTMPS) or Electronic Training Jacket (ETJ).
7. Now, focus exclusively on job-specific occupational knowledge while preparing for the advancement exam.

Since all Sailors must successfully complete PMK-EE prior to being eligible for advancement in any paygrade, this app increases a Sailor’s flexibility by providing the capability to do so at the right time and the right place, at the convenience of the Sailor. The app helps support, for example, Sailors who advance through the Meritorious Advancement Program (MAP) or automatically advance to E-4 upon completion of an "A" school.

Active Component and Full-Time Support Sailors must complete the PMK-EE for the desired advancement paygrade by Sept. 1, 2019 to be eligible for advancement. Sailors in the Reserve Component must complete the PMK-EE for the desired advancement paygrade by Feb. 1, 2020 to be eligible for the E-4 through E-6 NAVLE (Advance Cycle 244) and by Jan. 1, 2020 for the E-7 NAVLE (Advance Cycle 244). Reserve Component Sailors must complete the PMK-EE for the desired advancement paygrade by Feb. 1, 2020 to be eligible for the E-4 through E-6 NAVLE (Advance Cycle 245). The PMK-EE, announced in NAVADMIN 085/18, was created to provide greater emphasis on PMK and to separate it from examinations on rating knowledge as part of Sailor 2025 and Rating Modernization efforts. This is an initial step toward electronic advancement exams and, eventually, individually-tailored rating exams, unique to specific jobs and platforms.

For further information on PMK-EE, visit the “Advancement and Promotion” pages under “Career & Life Events” located on the MNP website at www.mnp.navy.mil. Sailors can send questions to SEFPMK_EEQuestions@navy.mil or contact the PMK-EE Help Desk at (850) 473-6014/DSN 753.
Li. j.g. Bradley Hendrickson USS Louisiana (SSBN 731) (B)
Li. j.g. Steven Hygga USS South Dakota (SSN 790)
Li. Bradley Hauer USS Greenville (SSN 772)
Li. Christopher House USS San Jacinto (SSN 751)
Li. j.g. Stephen Johnson USS Alaska (SSBN 791)
Li. j.g. Andrew Jones USS Springfield (SSN 761)
Li. James Kacorpi USS Michigan (SSGN 727) (B)
Li. j.g. Zachary Kercher USS Maryland (SSBN 738) (G)
Li. j.g. William Kornien USS Jay Hawk (SSN 722)
Li. j.g. Aulf Khan USS Georgia (SSGN 729) (D)
Li. j.g. Daniel King USS Portsmouth (SSN 720)
Li. j.g. Spencer Klotz USS Providence (SSBN 752)
Li. j.g. Timothy Klawaski USS Pennsylvania (SSBN 733) (G)
Li. j.g. Buaa Langlan USS Pennsylvania (SSBN 733) (B)
Li. j.g. Scott Morris USS Pennsylvania (SSBN 733) (B)
Li. j.g. Nicholas Pradel USS Kennedy (SSN 781) (G)
Li. j.g. Nathaniel Stone USS California (SSN 781)
Li. j.g. Richard Summer USS Bonhomme (SSBN 698)
Li. j.g. Aaron Supi USS North Dakota (SSBN 784)
Li. j.g. Christopher Syzmanski USS Louisville (SSN 724)
Li. James Tammon USS Nevada (SSBN 793) (B)
Li. j.g. Zeb Toad USS Maryland (SSBN 738) (G)
Li. j.g. John Tinworth USS Charleston (SSN 766)
Li. Roehl Wagner USS Greenville (SSN 772)
Li. j.g. Brandon Watson USS New Mexico (SSBN 732) (B)
Li. Zachary Watt USS New Hampshire (SSN 778)
Li. j.g. Beau Wells USS Providence (SSBN 793)

Photo by Mass Communication Specialist 3rd Class Tristan Lotz

Guam Celebrates 75th Liberation Day

50 Sailors from USS-15 participated in the ceremony commemorating the 75th anniversary of the liberation of Guam from Japanese occupation by U.S. forces during World War II.

Fire Control Technician 2nd Class Patrick Troneiro high-fives children during the annual Guam Liberation Day Parade, July 21. More than 50 Sailors from USS-15 participated in the ceremony commemorating the 75th anniversary of the liberation of Guam from Japanese occupation by U.S. forces during World War II.
Stockdale Award Recipients


Stockdale Finalists included: Cmdr. Corey Poorman, CO, USS Providence (SSN 742).

TRIDENT II TEST LAUNCH

An unarmed Trident II D5 missile launches from the Ohio-class ballistic missile submarine USS Nebraska (SSBN 733) off the coast of San Diego, California, Sept. 4, 2019. The test launch was one of four conducted Sept. 4 and Sept. 6, as part of a U.S. Navy Commander Evaluation Test, validating performance expectations of the life-extended Trident II D5 strategic weapon system.

OAHU TROPHY

The U.S. Strategic Command (USSTRATCOM) Omaha Trophy was presented to the Blue and Gold crews of USS Nebraska (SSBN 733) during a ceremony held at Naval Base Kitsap-Bangor, Aug 21. Vice Adm. David Kriete, deputy commander, USSTRATCOM, presented the award to the commanders of Nebraska on behalf of the committee and the citizens of Omaha, Nebraska.

The Omaha Trophy is awarded annually to USSTRATCOM units who demonstrate the highest standards of performance in the command’s mission areas, their role in global operations and the command’s continued emphasis on strategic deterrence.

This is the second time Nebraska has been awarded the Omaha Trophy.

–Bravo Zulu–
On December 17, 1944, USS Spot (SS 413) began her first war patrol along the China coast under the command of Cmdr. William Post Jr. In her first combat action, she sunk two enemy trawlers in a gun attack on January 7, 1945. Between January 11 and 14, she sunk five enemy merchant vessels in three surface engagements. On January 19, Spot sunk a freighter with one torpedo hit and, later, a tanker with two torpedo hits.

The next day she attacked a trawler with her dwindling 20mm ammunition. Cmdr. Post nosed Spot against the trawler and sent over a boarding party. The trawler suddenly began to sink. All men made it back aboard along with the sole Japanese survivor.

Spot’s second war patrol was again off the China coast. On March 17, after torpedoing a cargo ship, radar detected a convoy, so she gave chase. One torpedo struck a merchant ship before Spot had to vacate the area. One escort later found Spot on the surface and pursued. Cmdr. Post fled on the surface and engaged the overtaking escort, a minesweeper, in a running gun battle while awaiting word from COMSUBPAC of having received an important radio transmission and hoping to find deeper water. With the escort close astern and having taken a severe beating from Spot’s 5” and 40mm guns, Spot finally received word from COMSUBPAC. She dived in 180 feet of water and evaded the minesweeper.

On April 25, Spot’s crew noticed a cluster of buildings and radio towers behind a lighthouse on Kokuzan Island. Spot opened fire with her 5” deck gun. The attack ignited an oil storage building, brought down one of the radio towers, and left several buildings ablaze.

Spot’s third war patrol was comparatively uneventful, sinking two junks and taking aboard two prisoners.

As reflected on her flag, Spot destroyed 16 merchant vessels, damaged a combatant, and shelled the radio station on Kokuzan. Not on her flag are the four battle stars the boat received for her WWII service.