FACEPLATE

The Official Newsletter for the Divers and Salvors of the United States Navy

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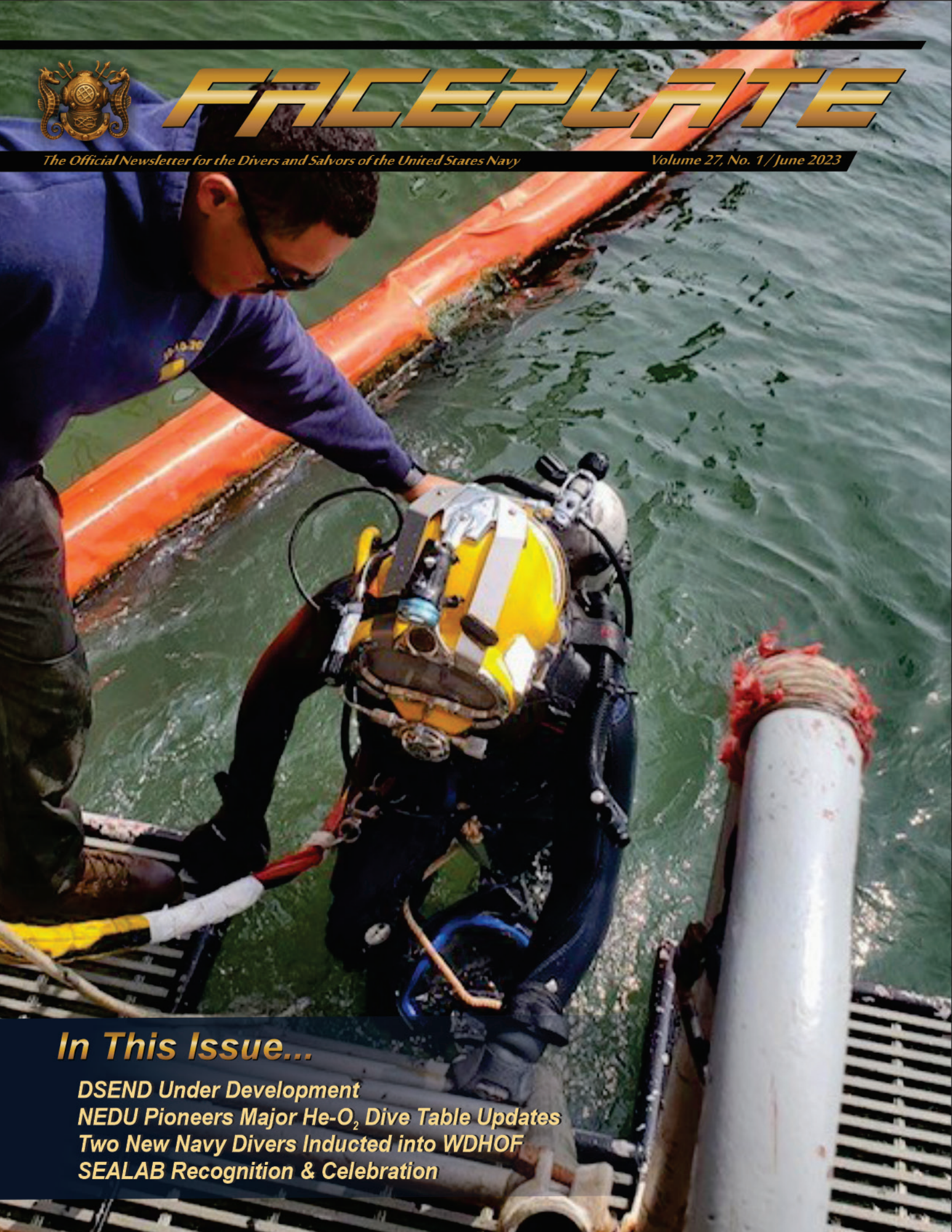

In This Issue...

FACEPLATE

FACEPLATE is published by the Supervisor of Salvage and Diving to make the latest and most informative news available to the Navy diving and salvage community. Discussions or illustrations of commercial products do not imply endorsement by the Supervisor of Salvage and Diving or the U.S. Navy.

Articles, letters, queries and comments should be directed to the Commander, Naval Sea Systems Command, NAVSEA 00C, 1333 Isaac Hull Ave. SE Stop 1070, Washington Navy Yard, DC 20376-1070. (Attn: FACEPLATE). Visit our website at **http://www.navsea.navy.mil/Home/SUPSALV/00C3-Diving/Faceplate-Magazine/** to view/print Faceplate.

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In This Issue

Cover

MARMC diver ND2 Anthony Miltner exits the water after removing cofferdams off the USS Mesa Verde (LPD-19).

SUPSALV SENDS...CAPT Sal Suarez

It is hard to believe I'm rapidly approaching a year since I relieved CAPT Young – time seems to have flown by. While I've been able to see quite a lot of the community, I'm still looking forward to making more connections and forging new relationships. I draft this having just returned from the first international mobilization of the Saturation Fly Away Dive System (SAT FADS) on deployment out of Singapore. The mission is in support of the Defense POW/MIA Accounting Agency (DPAA) and involves recoveries at two different sites in the Pacific with a team made up of personnel from NEDU, DPAA, CTF73, MDSU1, SRC, and multiple codes within my own office at SUPSALV. I am looking forward to hearing how this mission unfolds!

Another example of outstanding teamwork was the recent recovery of a patrol boat that sunk near Bangor, WA. This event included personnel from the Puget Sound Naval Shipyard dive locker and MDSU1, where they utilized a barge assigned to NSWC Carderock detachment Puget Sound to recover the patrol boat and all items on board. A truly outstanding job across multiple organizations to quickly accomplish the task at hand – congratulations on a job well done, and BZ to all involved!

I'd like to congratulate all of our new Diving Chief Warrant Officers and Master Divers! You have all worked tirelessly to get where you are today, and your success is well-deserved. Your continued achievement serves as an inspiration to others who are striving to reach similar goals, and the community looks forward to seeing everything you accomplish.

Another note of congratulations… amongst stiff competition for one position available, the first Engineering Duty Officer (EDO) In-service Procurement Process (IPP) selection for FY23 was ND1 Mark Hartman! This brand-new commissioning process hit the fleet this year after many machinations, iterations, and heavy lifting by personnel in my office and PERS over the last few years to garner valuable fleet diving perspective into the EDO Community. Ultimately, ND1 Hartman will work through OCS towards a commission as an EDO and serving within the subset of the community as an EDO Diver. Congratulations, ND1!

As I write this, there is a key Underwater Ship's Husbandry (UWSH) mission preparing to get underway – the in-water replacement of both rudders onboard the USS IWO JIMA. This job stands out among recent and past UWSH operations due to the complexity and amount of forward leaning required to get in the right head space to enable success. Never been done before – check. New specialty cofferdams required – check. New procedures required – check. Nuanced details of shipboard equipment requiring focused attention – check. This job incorporates MARMC, contracted divers, UWSH program and engineering support personnel, all to be completed at a private shipyard facility in tight quarters. This clearly demonstrates the ability of the RMC to think outside the box, and engage the requisite entities to assess what is possible, develop and refine a process to make it actionable, and then promote the concept from an idea to execution on the waterfront. This mindset embodies and continues to demonstrate the mission-focused mentality of the Navy diving community. And, this is precisely the mindset that will be needed as the Navy continues to assess its ability to perform missions such as Battle Damage Assessment and Repair (BDAR) – shifting from asking "Can it be done?" to embracing the idea "It has to be done." That mission set (BDAR) continues to develop, but I have faith in, and continue to be amazed by the ability of the collective diving and salvage community to pivot quickly from ideas to actions.

Similar to the IWO JIMA rudder operation, the earlier mentioned ongoing DPAA mission highlights the inherent teamwork that something of that magnitude entails. For example, identifying and sourcing a vessel of opportunity (VOO) is often overlooked or assumed to be a simple routine function of today's extended salvage operations. However, distilling the discussion down a little further, this is but one variable of the function. The secret sauce in any matrixed operation is being able to identify and communicate all mission requirements (mission, theater, operational, etc.) early enough to ensure the timeline isn't unnecessarily extended by waiting on any part of the collective group to produce. This can only be accomplished via clear communication of planning requirements upfront, and communicating as soon as possible should any requirements change. My point here is not to focus on VOO contracting, but to serve as a reminder that, regardless what organization we stem from, we all have to remain mission focused as we work across a matrixed organization since most of us cannot achieve mission success alone. We must recognize that accomplishing our part of the mission alone does not ensure success and embrace the idea that we are all an enabling function of overall mission success. Defining mission requirements, developing a procedure, coordinating transportation, conducting safe diving operations, etc. – these are all important functions of a typical mission. I realize this is not news, but want to take time here to foot-stomp the imperative nature of working together efficiently. I was overjoyed to see the ultimate success of the Bangor patrol boat recovery by a group of like-minded, mission-focused people from multiple organizations, just as I am excited to watch operations like NEDU's mission in support of DPAA and the IWO JIMA rudder replacement continue to develop! Hooyah, Deep Sea!

DSEND

Deep Sea Expeditionary No-Decompression Suit Under Development

The Deep Sea Expeditionary No-Decompression Suit, DSEND represents a joint project between ONR and NAVSEA 00C to develop a next generation ADS with lightweight and form fitting rigid sections combined with new flexible, non-rotary joint designs. The program is being supported by the NUWC Keyport dive locker for in-water testing, fleet input, and to build a dive team of system operational and technical expertise throughout the developmental process.

The last Navy ADS was retired in 2017 after years of limited and declining use. The ADS that was retired had a depth rating of 2,000 feet, weighed 1,700 pounds, had split entry (top lowers onto diver/pilot with crane), and had very limited range of motion. It was, therefore, mobilized using diver/pilot controlled propulsion, classifying the ADS as a submersible vehicle.

The target for the initial DSEND suit is a minimum of 300 feet (to enable greater flexibility in design), target weight of ~500 pounds, modular for easy transport and swappable components, and capable of diver movement enabling walking and successfully completing tasks typical of a salvage dive. The DSEND suit will have a rear entry hatch, be equipped with the DAVD HUD system, and come in 3 sizes to accommodate for various sized U.S. Navy divers.

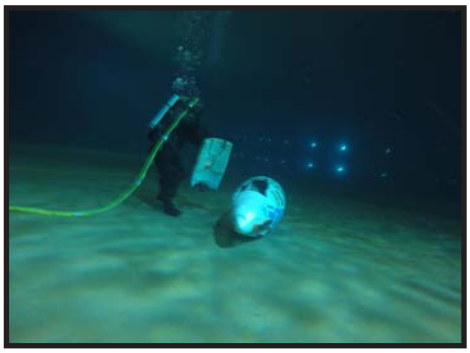
During the week of 16 November, the DSEND team demonstrated the suit to Navy diving leadership and resource sponsors, OPNAV 95 and OPNAV 97, SEA 00C and ONR at the Naval Undersea Test facility in Carderock, VA. The prototype suit used in this demonstration was a flooded suit to demonstrate the flexibility and maneuverability of these new design concepts. The suit was equipped with the CODA Octopus; Divers Augmented Vision Display, DAVD. The in-water demonstration displayed the suits flexibility by the diver walking and maneuvering on the bottom, dropping to one knee, object recovery, confined space entry and exit with large target, wreckage penetration and recovery of body and black box, along with rigging objects to be recovered to the surface. A follow on demonstration was held in February at the NEDU test pool.

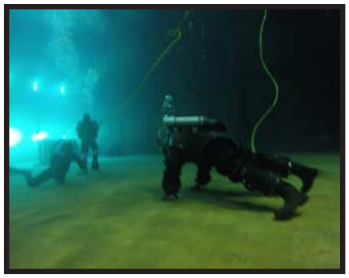
The next phase for this program is to develop a 50fsw 1ATA DSEND Prototype. The objective of the 50fsw prototype system will be to conduct 1 ATA suit dives to validate joint designs as well as support the development of the deeper 300fsw+ suits. Additionally, the 50 fsw prototype will be laying out the roadmap for the certification and commercial classification process, support the development of using additive manufacturing for critical applications, and the optimization of joint angles and locations to provide more maximum suit flexibility and maneuverability.

Once final approval for funding is established through an ONR Future Naval Capabilities (FNC) project, the full depth, 300+ DSEND suit developmental program will officially start. This program will run for 3 years starting in FY25. The ultimate goal is to build a lightweight, flexible, and maneuverable 1ATA dive suit that can operate in deep water with an initial minimum goal of 300fsw for the first generation, with suits of deeper capabilities advanced in follow-on generations.

The DSND team is led by ONR Warfighter Performance Department Dr. Sandra Chapman, and SEA 00C Program Manager Mr. Paul McMurtrie, and is supported by a diverse team of engineers, divers and technical experts including:

- **NUWC Newport - Mr. Tom Hansen, Deputy Program Manager, Testing Engineer**
- **NUWC Keyport - Dive locker Dive team: CWO2 Ryan Foster, NDCM Jericho Diego, NDCS Alejandro Delapena, NDC Thomas Gerace, HM1 David Bauer, ND1 Ben Eisenbarth, ND1 Matt Villafuerte, ND1 Jacob Eastland, ND1 Jaeoh Lim, ND1 Ashley Smith, ND1 Greg Murphy, ND1 Ben Smeltzer, ND1 Jacob Walthall, ND1 Nick Gardner**
- **NEDU - T&E Department, Manned testing**
- **NSWC Panama City- Testing Support**
- **NUYTCO - DSEND suit development, Rotary Joints**
- **MIDE Technologies - Flexible joint Development**
- **CODA Octopus - DAVD HUD**
- **JHU/APL - Project Management, Capability Development**





Command in the SPOTLIGHT

MARMC

Mid-Atlantic Regional Maintenance Center

"We Fix Ships!"

By: CWO2 Brandon Holt

Mid-Atlantic Regional Maintenance Center (MARMC) resides at Naval Station Norfolk (NSN), the world's largest naval base and home of the U.S. Navy's Atlantic Fleet. NSN was established on July 4, 1917, and was originally referred to as the Naval Operating Base (NOB). On Jan. 1, 1953, NOB changed its name to Naval Station Norfolk, 36 years after it was established, but 70 years later it is still often referred to as NOB.

MARMC has taken many forms over the last 20 years. Originally formed in 2004 from the convergence of four commands: Shore Intermediate Maintenance Activity (SIMA), Supervisor of Shipbuilding, Conversion and Repair – Portsmouth, Fleet Technical Support Center, Atlantic (FTSLANT), and the Regional Support Group. In 2009, MARMC realigned under Norfolk Naval Ship Yard (NNSY) and became known as Naval Ships Support Activity (NSSA). Finally, at the end of 2014, NSSA re-established back to MARMC under the purview of Commander, Navy Regional Maintenance Center (CNRMC).

A fourth of the entire U.S. Naval fleet, with over 75 surface and subsurface Naval Warships and Military Sealift Command (MSC) vessels, are ported on military installations and civilian shipyards throughout Hampton Roads area and at NSN. The mission to provide world-class Underwater Ships Husbandry (UWSH) falls on the broad shoulders of the MARMC regional repair dive locker, who falls under the direction of a fellow deep sea diver, MARMC Commanding Officer Capt. Jay Young.

"We Fix Ships" is MARMC's mission statement. In order to execute underwater repairs to the largest concentration of Naval Warships, insert the Navy's largest production dive locker consisting of 130 active duty personnel and DoD civilians. The team is comprised of not only Navy Divers, but includes retired divers, as well as a highly talented division of Machinist's Mates, Electrician's Mates, Enginemen, Information Systems

2022 MARMC Dive Locker Divisional Photo.

Chief of Naval Operations (CNO) Admiral Michael M. Gilday visits MARMC's RFC-6500 Recompression Chamber during his recent tour at MARMC.

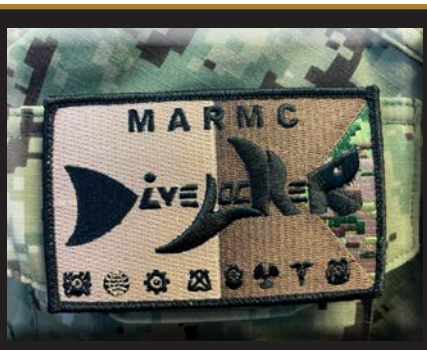
Technicians and Boatswain's Mates known as Boat and Motor whose expertise maintain our fleet of 60-foot and 15-meter dive crafts, directly enabling the five dedicated home ported dive teams and one assigned deployment team in the execution of UWSH.

Since 2019, 33% of the active-duty Navy Divers stationed at MARMC fell under a Sea Unit Identification Code (UIC). The main mission of the Sea UIC is to provide fleet technical assistance and underwater repairs to the Forward Deployed Regional Maintenance Center (FDRMC) through a continuous presence of rotational deployments. During these six-month deployments, a highly trained mobile team consisting of personnel from MARMC, South West Regional Maintenance Center (SWRMC), South East Regional Maintenance Center (SERMC) and now Puget Sound Naval Shipyard (PSNS), and Intermediate Maintenance Facility (IMF), deploy to their home operating base situated in Manama, Bahrain, home of the U.S. Fifth Fleet and Central Command. The coalition of Navy Divers provide underwater support in the form of surge capabilities to the Navy's Fifth and Sixth Fleet home ported warships in addition to critical repairs, supporting mid-voyage forward deployed naval assets in multiple geographic locations within the areas of responsibility.

In addition to the fleet repairs provided at NSN, the MARMC dive locker is charged with providing underwater repairs and periodic planned maintenance services to the three nuclear training platforms located at the Nuclear Power Training Unit (NPTU) in Charleston, South Carolina. The Nuclear Power Training Unit is a technical school operated by the U.S. Navy to train enlisted Sailors, Officers, Knolls Atomic Power Laboratory (KAPL) civilians, and Bettis Atomic Power Laboratory civilians for shipboard nuclear power plant operation and maintenance of surface ships and submarines in the U.S. Nuclear Navy.

The MARMC dive locker is leading the innovation for the advancement in repair safety and efficiency. Have you ever worked in a ballast tank of a submarine? It comes as no surprise that it wasn't designed with waterborne repairs performed by divers in mind. Recently our subject matter experts met with Naval architects and engineers through a series of surveys and dry-dock ballast tank walkthroughs. The results brought awareness and the requirement to implement design changes to ensure the safest working conditions. In addition, these proposed changes will ultimately increase efficiency while conducting waterborne ballast tank repairs.

MARMC proudly supports the Naval Sea Systems Command's (NAVSEA) campaign 3.0 of on-time and on-cost delivery of combat ready vessels through the Chief of Naval Operations and Continuous Maintenance (CMAV/CM) availabilities or emergent repair



MARMC Dive Locker (Code 970) Divisional Shoulder patch.

MARMC Dive Locker Khaki photo.

requests. In order to maintain that initiative and stay future focused, MARMC is currently participating in the first of its kind UWSH Regional Maintenance Center wide NAVSEA supported Navy Manpower Analysis Center (NAVMAC) review: an in-depth look and assessment of the workforce structure based on fleet demand signal in order to sustain a combat ready force. With the ever adapting warfighting strategy, this comprehensive assessment will be able to accurately provide the correct workforce structure to CNRMC Commanding Officer Rear Adm. Eric Ver Hage in order to sustain the U.S. Navy's maritime superiority and undersea dominance posture.

The MARMC Dive Locker supports the fleet at a record breaking pace. Boasting a total of 59,027 minutes of bottom time (BT) in the first quarter of Fiscal Year 2023, a 23% increase from the first quarter of 2022 and a 35% increase of the first quarter of 2021. With a total BT of 232,889 minutes in 2022, MARMC is on target to surpass last year's production efforts. Remember that old saying, "Sailors belong on ships, and ships belong at sea." It's time to get back in the water and get to work, we have ships to fix! Until next time – Hooyah Deep Sea!

KM-37 Dive Helmet with the USS Helena (SSN 725)

MARMC Dive Team Alpha responded to a report of a Norfolk based sailor's car that went off the pier and into the water. Within 24 hours, Dive Team Alpha found, and recovered the vehicle. The Sailor who owned the car was not injured in the incident.

CW02 Brandon Holt is currently serving as the Command Diving Officer and Diving Division Head at Mid-Atlantic Regional Maintenance Center, Norfolk Virginia.

Equipment Corner
Fleet Feedback

By: NDCM Mike McInroy

Navy Diver productivity and efficiency are based heavily upon the proper operation and maintenance of dive equipment and systems. It is therefore critical that the fleet provides feedback for equipment and system discrepancies via Failure Analysis Report (FAR) submission, Operational Procedures (OPs) and Emergency Procedures (EPs) feedback, and PMS feedback reports. Maintenance is designed to preserve the as-certified condition of systems and minimize the risk of failures, but not all potential failures can be eliminated. Operators and maintenance personnel are usually the first to identify failures and are encouraged to capture as much data as possible to properly complete a report.

A FAR is a feedback path via which commands can share data to facilitate the collection and analysis of common failures in diver's life support and ancillary systems. To submit a FAR, go to: https://supsalv.navy.mil/Far/farAdd.asp (00C3 > Diving Technical>add new far). Our goal is to have the proper procedures for the fleet to dive safely. OPs and EPs for NAVSEA 00C3 Diving Life Support Systems (DLSS) are being transitioned from the associated Technical Manuals to standalone documents posted on secure supsalv. If your command has feedback for current OP/EPs, go to: https://supsalv.navy.mil/00C3/OpEp.asp (00C3 > Diving Technical > OPEP Data Entry). If you have any questions, first ask within your chain of command - they will have a lot of your answers. If not, NAVSEA 00C is available to answer your questions at our main phone line, (202) 781-1731.

Securus cartridge after thermal event.

Failure Analysis Reports for EOD managed and Naval Special Warfare systems can be submitted via "PMS-EOD" (408) and "PMS-340 (SPECWAR)" quick links at https://www.navsea.navy.mil/Home/SUPSALV.

NAVSEA 00C can work with the original equipment manufacturer (OEM) to correct deficiencies and get divers back in the water as soon, and as safely as possible. Recently, a compressor purification system had a thermal event and NAVSEA 00C3 was able to work with the OEM to have technician conduct a site visit and evaluate the failure. The technician identified the root cause of the failure and provided a service report to get the compressor back into operation. Additionally, the OEM provided training, which was distributed to the fleet and there will be an update to the manufacturer's tech manual. The FAR ensured the fleet understands, when changing one cartridge, all cartridges in the system must be changed.

Too often we (myself included) have put off submitting the FAR, which inevitably leads to the failure never being reported and the underlying problem going unaddressed. The issue might be not a one off, so please submit and do your part to ensure we correct issues before they become a bigger problems. Also, based on the level of failure or malfunction, a FAR does not have be your first report to 00C; report to your chain of command and contact us anytime.

NDCM Mike McInroy is a Fleet Liaison Master Diver currently stationed at NAVSEA 00C.
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SEALAB Recognition & Celebration

Panama City, FL
November 2022

By: Martin Harrell

They came from afar by ones, twos, and threes – right through the wind and rain. Well, some of the aquanauts and their guests. Most of those coming from eastern and south Florida had to delay their arrival until Friday afternoon, but some either braved the hurricane or came a day earlier. Others, coming from farther away, no doubt faced cancelled flights. One drove all the way across the country from California! That's how important this celebration was to each one of them, and they found it worth the trip!

In the end, age, travel from afar, and the hurricane took their toll. The aquanaut teams were represented by just a handful of them: John Kleckner, Fernando Lugo, Omar Moore, Jay Myers, Jack Schmitt, and Martin Harrell.

No one during the planning stage of the celebration could have predicted the late-season Hurricane Nicole, which went inland near Fort Myers crossed Florida near the middle of the peninsula, then drove up the east coast into the Carolinas. Weather forecasts predicted that Panama City would be hammered by wind, rain, and tidal surge. They were wrong! Panama City received only light wind and rain and nearly normal tides the day before the celebration and into that night, as Nicole passed along the east coast. Veterans Day was overcast, but that was all.

This was not just a recognition and celebration, but one done with great concern for the frailty of octogenarians (see below)! Examples of caring hosts were evident everywhere.

Man in the Sea Museum did a wonderful job planning the SEALAB Recognition & Celebration Events to coincide with Veterans Day and the day after. They had the able assistance of my brother, John Harrell, who, while not in the program, is a long-time resident of Panama City. Staff and volunteers at the Man-in-the-Sea Museum (MITS) also were actively visible throughout the planned events. Together, they sought and received discounted rates at the seaside, Hotels in Panama City Beach, set up tours of the Navy Diving & Salvage Training Center (NDSTC) and Navy Experimental Diving Unit (NEDU). They also arranged and conducted the recognition program at the Center for the Arts in downtown Panama City and at the Man-in-the-Sea Museum in Panama City Beach. They publicized the three main events in local newspapers and TV broadcasts, attracting lots of local residents to join the festivities. Although changes in the schedule had to be made, the final three events were:

- 11:00 AM – 1:00 PM, Friday, November 11: A private tour of the NEDU, followed by one of the NDSTC for the aquanauts and their families.
- 4:00 – 8:00 PM, Friday, November 11: A public recognition & celebration ceremony in the circular parking lot outside of Panama City's Center for the Arts. This was followed by dinner at selected restaurants and watering holes nearby. The History Class Brewing Company, which was immediately across the street from this ceremony, even offered a SEALAB beer!
- 11:00 AM – 2:00 PM: Reunion and family lunch at the Man-in-the-Sea Museum in Panama City Beach.

A very important purpose of this planning was to give our families a look

SEALAB Divers during reunion

into the past to help them understand what we achieved, why we did it, and why that was important at the time.

Tours of NEDU & NDSTC

The MITS staff were well prepared for these tours. Earlier, they had created a list of expected aquanauts and their family members. Unless one had a military identification card, everyone had to be on this list to enter the Navy Lab where the NEDU and NDSTC are located. The MITS staff even had their private cars available in the parking lot outside of the Thomas Street gate to drive those who did not have a military ID to NEDU.

The event began in the NEDU parking lot, where we were met by its Commanding Officer and where the SEALAB reunion began. I'm certain that you find it hard to believe that some of us don't look like we did way back then! Oh, you'd recognize Jay Myers, Fernando Lugo, and Omar Moore anywhere, even though they might be carrying a few extra pounds and gray hair today. And that bright reflection of sunlight you see off the top of my head? That's the brains growing and pushing my hair out by the roots! That's my story, and I'm sticking to it! However, I did not recognize John Kleckner until Omar pointed him out to me – and John was my roommate on San Clemente Island! If you want to visit him, you have to be mobile, for John told me that "his home where his RV is"; he lives in it. Gosh, it was great to see those guys and their families again!

The tour of NEDU was conducted by its executive officer, LCDR Ethan G. Copping. He was well aware that, while our families included teenagers, many of those making the tour were in their eighth decade. So while keeping families together, he organized us into groups according to our physical abilities. For instance, could we safely climb and descend stairs, or did we need an elevator, and did we walk so slowly that we held up others? It is hard to admit that aging is among us. Still, I've never had more considerate guides, and their explanations of NEDU's tasks were clear and stated at a level all could understand. The tour was fascinating, and we found that NEDU has changed considerably from what it was in our day. Its control, monitoring, and recording equipment has gone digital; your grandchild would have no difficulty showing you how it works!

After touring NEDU, we drove over to the NDSTC, where we were met by its Commanding Officer, CDR Troy R. Lawson and several on his staff. Here, a Master Diver briefed us on the breadth of training offered to all military services and even to some "sand-crabs" (i.e., civilians) by this school. "Jake" was on display, wearing at least a half dozen generations of diving rigs, beginning with the Mark V, and our host briefed us on the more important of these. Then, again in groups according to physical ability, we toured the physical facilities of the entire school. Everything about this school is new to our SEALAB generation. The only things missing are the knee-deep mud, turbid waters of the Anacostia River, and that bar across that river where our off-duty actions were rude, crude, and socially unacceptable!

Folks, diving equipment and methods of training have changed since our time! I'm sorry that so few of us could be there to see this first-hand! We must be getting old, although I still claim to be the oldest 18-year-old on the block!

Following these two tours, the school opened its "ship's store" to us, and many bought shirts, caps, and other mementos to remind us long afterward of a little known, but very important arm of our Navy! Then, we went separate ways for lunch. While I personally regretted not being able to join my Navy colleagues the entire time, my family had arranged a family reunion to coincide with this SEALAB recognition program.

Bernie Campoli next to his picture through the viewport of SEALAB

Downtown Panama City Celebrates SeaLab

SeaLab Aquanauts Tour at NEDU

Recognition & Celebration Program

Man in the Sea Museum staff were really prepared for this event, and, from the sizable crowd which showed up, it

was well publicized in Panama City. Everything was outdoors in the parking lot for the Center for the Arts. The MITS staff had set up a podium with a sound system and even a large movie screen with a video projector. Several hundred folding chair were set up there to form an outdoor auditorium.

Now, one has to take into account the timing of this event. Sunset in Panama City was 4:44 PM; evening twilight was 5:10 PM, and the event began at 4:00 PM. I'm certain that this timing on Veterans Day was intentional, for the agenda was to describe the SEALAB program, introduce the aquanauts and let each speak briefly, then show a 45-minute video of the three SEALAB projects. It should have been (and was) dark enough by the time the video began to see it on the screen.

When individually introduced and invited to speak, a few of us were a bit long-winded – with yours truly being the worst. [Indeed, I violated my own opening comment: When Steve invited me to speak several weeks ago, I asked him how long he wanted me to speak. I said, "Steve, if you give me five minutes to prepare, I can make an hour-long talk. If you give me an hour to prepare, I can make a five-minute presentation." He replied, "Martin, you have three weeks!"]

The host introduced me, to the mirthful delight of my sister and other family members, as the best dressed aquanaut present – all because Virginia had selected my clothes! [To a Navy diver, being well dressed means wearing enough to satisfy decency (which isn't always obeyed) and enough more to accommodate climatic needs (e.g., rain, cold, etc.). If, without the assistance of our ladies, anything matches or is appropriate for the occasion, it is sheer luck.]

When introduced, each aquanaut who was present spoke briefly of his experiences. We heard Fernando Lugo speak graciously of CAPT Walt Mazzone, and Jay Meyer tell us how Jack Tomsky found him in Deep Sea Diving School and made him the youngest diver on the aquanaut team. Omar Moore read a meaningful, multipage letter. Everyone enjoyed John Kleckner's depiction of the first time he drew a blood sample from Sweet Old Bob [Barth] during Project Genesis: "Listen you skinny little son of a bitch, you have one shot at this!"

I spoke of one of my very favorite memories of CDR Jack Tomsky, who headed the SEALAB III program: We had contracted General Instruments to develop and build a diver-worn, hot water heater to keep divers warm when diving in cold water. The engineer assigned to do this work died halfway through this project. A manager from that company called me to report this engineer's death and state that, because they couldn't find his work, they would have to start the project all over. Now, you have to understand Jack's no-nonsense personality: He was the best boss I ever had, but he could be loud and demanding. When he whispered, you could hear him at the other end of the building, and often he was shouting. When I reported this problem to Jack, he slammed a big fist down on his desk and shouted, "Not on my watch, he doesn't die! You tell them to get him up out of his coffin and finish the job! Then, he can die!"

For us aquanauts, this recognition was really, really heartfelt! Yes, we are honored often by friends and strangers who, thanks to Budweiser's Super Bowl ad, thank us for our service, just as has happened to every member of our military services. However, Navy diving is not a profession in which one usually reaps honors -- even when accomplishing something for mankind, such as saturation diving, which never before had been done! Thank you for this recognition!

Following this ceremony, we participants, our family members, and others in attendance were free to go eat dinner – while the MITS staff stayed behind to remove the chairs and other equipment needed for the event. There were numerous bars and restaurants in the immediate area of the Center for the Arts. Many chose a watering hole, the History Class Brewing Company, which was right across the street. It honored us by serving a SEALAB beer!

Reunion & Barbeque Family Lunch

The previous events gave us a glimpse of Navy diving today and provided public recognition of what we had done. However, this Saturday event at the Man-in-the-Sea Museum was really where we had our SEALAB reunion. There, we had no set schedule and were free to tour this rather amazing museum, watch a SEALAB video, buy souvenir shirts and hats, greet our teammates, mix with visitors, eat lunch, and have our pictures taken. They also arranged a video interview of each aquanaut, and he made sure that we each had a chance to chat with Barry Cannon's brother and sister, David and Jeanne. SOB's son, Dave, was also present, along with others, such as Jim McCarthy and Bernie Campoli, who, while not divers, were instrumental in one or more of the SEALAB projects.

Perhaps there is no better impression of this SEALAB Recognition and Celebration program than that penned afterwards by my daughter Susan, "I had a lot of amazing experiences this weekend; long walks on the beach, time spent with family, behind the scenes tours at the NEDU and NDSTC, but my favorite has to be watching the looks on the faces of the pioneers of saturation diving when they heard the current Navy testing procedures explained. There are *how many* safety protocols? What do you mean you use computer simulations and dummies before you test on human subjects?

"Seriously, though, what my dad and the other divers did was groundbreaking stuff, and most people don't know it ever happened. The aquanauts were all handpicked for these projects because of their skills and knowledge, but I still can't imagine the courage it took to do what they did. This is the second Sealab reunion I've been lucky enough to attend, and there are only a handful of these guys left now. Special thanks to the Museum, NDSTC, and NEDU for keeping the story alive."

Martin Harrell, one of the United States Navy's Deep Sea Diving Officers and architects for SeaLab III's Diving systems. "The difficult, we do immediately. To do the impossible, took us a little bit longer."

2022 ABCANZ Diving Working Group

By: CAPT Bob Marsh

This past November, members from OPNAV N97, CTF 73, NAVSEA 00C, BUMED, NEDU, PMA-205, and UCT attended the 2022 ABCANZ (American, British, Canadian, Australian, New Zealand) Diving Working Group hosted by the New Zealand Royal Navy onboard the Devonport Naval Base in Devonport, New Zealand. After a two year pause due to the COVID-19 pandemic, the working group was reinvigorated to re-establish critical relationships within the ABCANZ diving community. The location of the ABCANZ Diving Working Group, held in conjunction with the ABCANZ EOD Working Group, rotates on an annual basis, and is hosted by Australia, New Zealand, United Kingdom, Canada, and the United States, usually in that order. The schedule for the next working group is currently in the works, expected to take place in early November 2023, and an announcement to key stakeholders and participants will be released once finalized. OPNAV N97 is designated as the *U.S. Head of U.S. Delegation*, and will be soliciting participants in the upcoming months.

What is the ABCANZ Diving Working Group?

This annual working group provides a venue for ABCANZ Technical Project Officers (TPOs), and other diving research and development (R&D) stakeholders, to meet in person, share relevant diving and salvage technical updates, and collaborate on areas of shared interest to close *interoperability gaps* between the nations. This venue also provides ABCANZ partners insight into current diving-related R&D programs underway by the respective nations to highlight areas suitable for collaboration and participation, such as joint developmental projects. Additionally, the working group discusses new underwater mission capabilities, shares lessons learned from significant diving missions and/or events (i.e. MISHAPs), and highlights future opportunities for combined diving exercises and engagement.

This year's working group enabled newly-appointed TPOs to meet in person. U.S. TPOs are assigned by the Navy International Program Office (NIPO) to act as the official U.S. conduit for international engagement, information sharing, and coordination of R&D efforts. For the U.S. Diving and Salvage Community, NAVSEA 00C3B, the Supervisor of Diving (SUPDIVE) is designated as the TPO. The United States, along with other nations, have standing formal information sharing agreements that enable multi-national projects for the purpose of decreasing resources and time required to bring developmental projects to a fielded capability. If you are fortunate to participate in diving and salvage interoperability exercises during your tours or deployments, and see something of interest that may benefit current U.S.

2022 ABCANZ Diving Delegation, Devonport Naval Base, New Zealand

Navy diving capabilities (i.e. equipment), please contact NAVSEA 00C3B (SUPDIVE) directly to discuss further. My contact information is on the SUPSALV Secure site on the *00C3 Diving tab*.

2022 ABCANZ Diving Working Group

For 2022, NAVSEA 00C3 personnel presented three topics: 1) *NAVSEA 00C3 Diving Program Update*, discussing NAVSEA's role as the technical authority for U.S. Navy diving equipment, policy, procedure, procurement, and equipment sustainment; 2) *NAVSEA 00C3 Diving Research and Development Update*, providing summaries of recently fielded diving equipment and equipment undergoing research and development efforts; and 3) *2022 ABCANZ International Interoperability Brief*, discussing current U.S. requirements and technical risk assessment requirements to support joint interoperability diving operations with ABCANZ nations utilizing non-ANU, non-U.S. Navy certified diving life support systems. A separate break-out session was conducted for the ABCANZ Undersea Medical Officers, and their colleagues, to discuss ongoing diving-specific medical research. NAVSEA 00CM, our NAVSEA 00C Undersea Medical Officer, discussed currently funded biomedical R&D being conducted by a host of academic institutions and DoD research facilities. These briefs fostered follow-on discussions that focused us to look hard at mechanisms to further "standardize" common diving equipment and procedures used by ABCANZ nations to increase interoperability.

Personnel from the Navy Experimental Diving Unit (NEDU) presented a synopsis of ongoing and completed studies and technical reports, some of which were used to support authorization of commercially available diving equipment that now resides on the U.S. Navy *Authorized for Navy Use* (ANU) List. Some specific items discussed included the OTS Spectrum Full Face Mask, U.S. Navy Shearwater Dive Computer, Kirby Morgan (KM)-97 EGS regulators, Interspiro RS4 regulators, and a study conducted on past suspect lots of CO2 absorbent used in U.S. Navy-certified rebreathers. NEDU also provided an update on their *21st Century HeO2 Study*, discussing newly designed models, algorithms, and updated decompression tables and schedules for mixed-gas HeO2 diving to be considered for release in future diving directives.

"The Farewell" statue, Devonport Naval Base, New Zealand

Excellent presentations provided by CTF 73 and Underwater Construction Team (UCT) TWO diving SMEs highlighted opportunities for future ABCANZ engagements via AOR-specific exercises and reduced the communication gaps between our C7F/CTF 73 forces and partner nations. Networking is the name of the game, and the ABCANZ Working Group serves as a catalyst for future discussions, interop engagements, and tighter partnerships.

If you believe your organization can provide added value to the U.S. Delegation at future ABCANZ Diving Working Groups, please contact NAVSEA 00C3. The Supervisor of Diving (NAVSEA 00C3B) will work with OPNAV N97 to define and refine the U.S. participant list and work with you to determine where your ideas nest within the U.S. ABCANZ Working Group objectives and goals.

CAPT Marsh is serving as Supervisor of Diving at NAVSEA 00C.

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This Day in Diving History

By: MDV David Gove

USS S-4

On December of 1927, the submarine USS S-4 was accidentally rammed by Coast Guard destroyer USS PAULDING (CG-17) after she had completed a submerged test run off the coast of Provincetown, Massachusetts (in the hook of Cape Cod), causing her to sink. PAULDING was doing nearly 18 knots when she hit the S-4 and ripped a hole nearly 4 feet long and two feet high in the S-4's hull. The S-4 settled on the bottom in 110 feet of seawater. USS FALCON (ASR-2) immediately got underway from New London after receiving word and had Divers leaving the surface by 11 a.m. the following morning. Once the S-4 was located, Divers used a series of taps to determine there were six men still alive in the torpedo room -- Murphy's Law then reared its ugly head.

Photo # NH 41823 Towing USS S-4 to the Boston Navy Yard after salvage, 1928

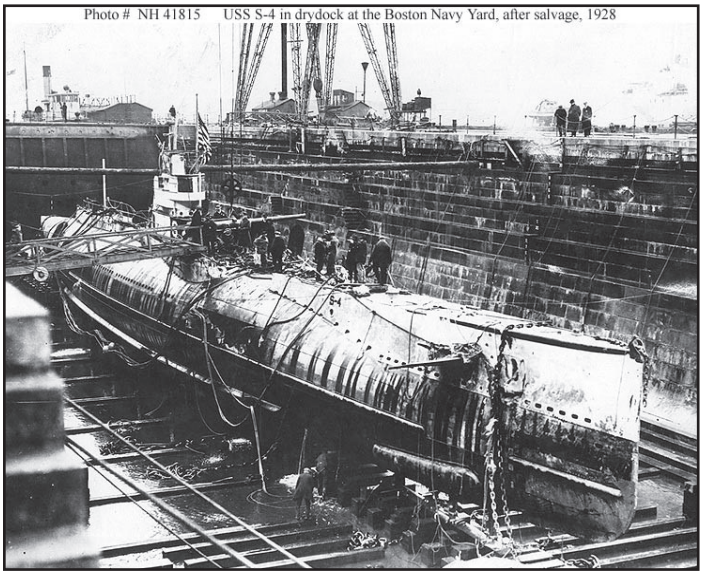


Photo # NH 41815 USS S-4 in drydock at the Boston Navy Yard, after salvage, 1928

A Nor'easter (really bad) storm abruptly moved in and prevented rescue dives for a couple of days. Despite extremely rough seas and adverse conditions, the USS FALCON insisted it recommence rescue operations. During the first set of dives, another series of taps was received, asking the Divers to "please hurry". The decision was made to send Chief Torpedoman (Diver) Michels down to fasten an air fitting to the torpedo room in order to supply fresh air to the trapped crew members. While attempting to attach the airline, Chief Michels would become injured and severely entangled in the S-4. Another Diver, Chief Gunner's Mate Thomas Eadie, having already maxed out his bottom time from the previous dive, stopped un-suiting and made preparations to return to the bottom to free Michels. Despite great risk under extreme environmental conditions, Eadie made his descent and worked for two hours on the bottom, finally freeing Michels and bringing him to the surface (the air hose was also attached). For this unselfish act to rescue a shipmate at great risk to himself, Eadie was awarded the Medal of Honor by President Calvin Coolidge in January 1928.

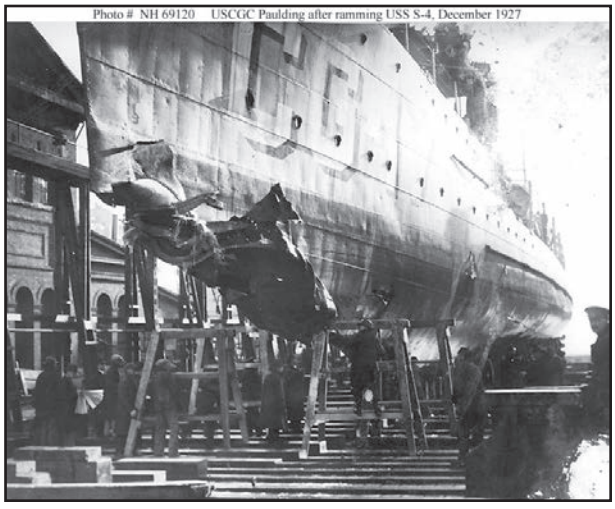


Photo # NH 69120 USCGC Paulding after ramming USS S-4, December 1927

Tragically, this fresh supply of air would come too late -- the six men had already succumbed to CO2. The drama and heartbreaking efforts of the attempted rescue hit the media all over the country. This raised the question, "Just how could the Navy

rescue submariners who are stuck on the bottom?" The answer coming from the Navy was unsatisfactory; we could not rescue our own. The decision was made to salvage the S-4 not only to discover the cause and extent of damage was; but also to use it as a platform to develop submarine rescue and salvage techniques. Divers struggled in ice-cold water and high seas to get to the boat, install lifting lines, and sealing the holes torn in the hull by the collision. Navy Divers would use six salvage pontoons, internal buoyancy, and the USS FALCON herself to raise S-4 on 18 March 1928 and tow her to dry-dock for inspection and investigation.


Photo # NH 41836 Divers who worked on salvaging USS S-4, 1928


Photo # NH 89419 Chief Gunner's Mate Tom Eadie with Medal of Honor, 1928

Once the investigation was complete, the stripped boat was towed south to Key West and used as a platform to examine possibilities for submarine rescue and to practice salvage techniques. This platform was key in the development of the McCann Rescue Chamber and Momsen Lung and would come none to-soon as the sinking of the USS SQUALUS would occur a mere 10 years later. The USS S-4 was scuttled in deep water off the coast of Pearl Harbor on 15 May 1936.

Note 1: In one of the photos, you can see a group shot with some of the Divers responsible for the S-4 Salvage. Standing second to the left is Thomas Eadie; just below him, kneeling on the far left, is Frank W. Crilley, who was also awarded the Medal of Honor for his actions on the salvage of the F-4 thirteen years earlier.

Note 2: Two of the photos show Chief Gunner's Mate Thomas Eadie, USN, wearing the Medal of Honor, which had just been presented by President Calvin Coolidge in ceremonies at the White House. Thomas Eadie served in the Navy from 1909-1939 and was awarded the MOH, two Navy Crosses, and countless other awards. He passed away on November 14, 1978 (age 87) and was laid to rest in the Island Cemetery in New Port, RI.

Further Reading: Check out "MEN UNDER THE SEA" by Commander Edward Ellsberg.


Photo # NH 103777 Chief Gunner's Mate Thomas Eadie receiving Medal of Honor, January 1928

MDV David Gove, your friendly neighborhood Master Diver. Copyright David Gove, 2021.

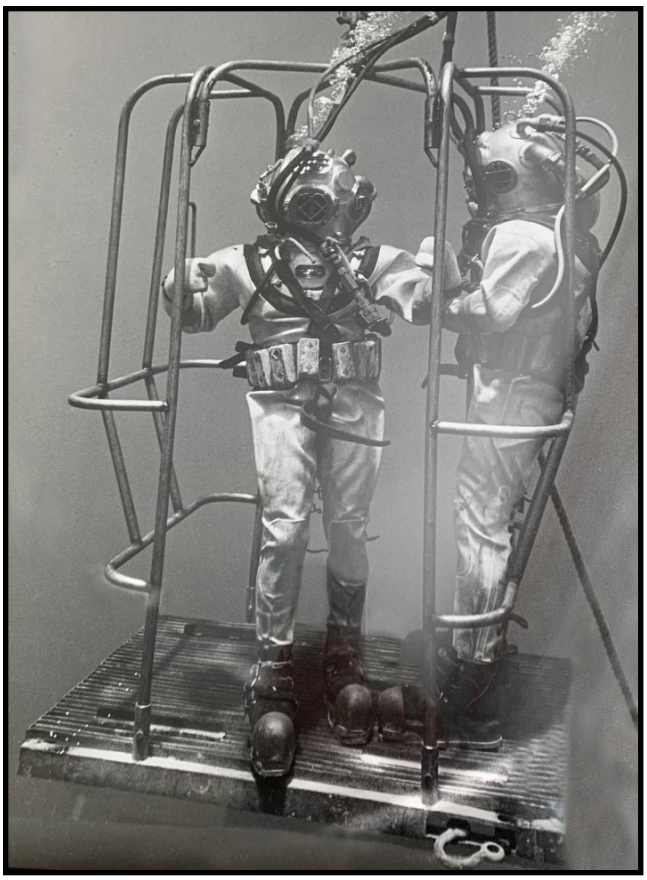
Retired Master Diver

Pete Ruden

By: Bob Bauer, Rob Warren, and Gary Crawford

Pete Ruden is a name that virtually every U.S. Navy saturation diver does, or should know. It is with a heavy heart, and a deep sense of loss that I must report Master Diver Pete Ruden passed away on 08 December 2022, after a short unexpected illness. Master Diver Ruden served our country on active duty, with honor and distinction, for 22-years. During that time, he served 11 years in the Man-in-the-Sea Program and with Submarine Rescue Unit COMSUBDEVGRU ONE (CSDG-1). Master Diver Ruden's expertise in deep saturation diving, Special Forces submarine lock-in/lock-out programs, and various special projects, paved the way for numerous Navy divers who followed in his footsteps.

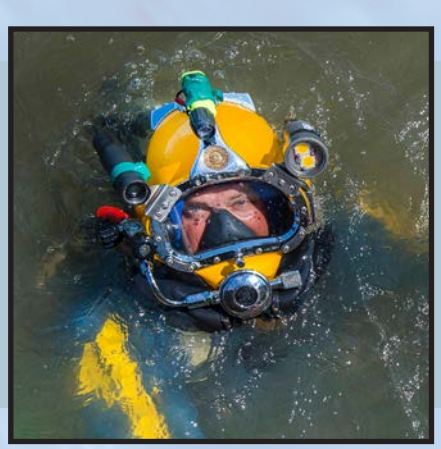
After retiring from an exemplary military career, Pete went to work for Mare Island Naval Shipyard as a contractor at Westinghouse Electric. In this capacity, he was tasked by Capt. Carl Griggs, CNO-OP 23, to develop a badly needed overhaul package for the ASR-21 Class MK-2 Deep Diving and Deep Submergence Systems. In the very late 1980's, Pete was asked to serve as Program Manager of Navy Diving for PMS 395 (Deep Submergence Systems). It was during this time that the Navy Diving Systems Certification Authority (SCA) asked Pete to provide his expert assistance with the first lease of a portable commercial saturation diving system, for use by Navy divers. His mentorship in this endeavor proved invaluable to the SCA, as the propeller and turret of the USS MONITOR were successfully salvaged and recovered off the coast of North Carolina. After he retired from civil service, Pete Ruden continued to serve the Navy as a diving systems consultant. His knowledge of saturation diving operations and systems is unparalleled in this day and age.



Not only was Pete a pioneer in the world of Navy deep diving, he was a truly caring and good person - a mentor with a special heart, who trained and made people around him, better. Pete taught an entire generation of Navy diving systems engineers that safety of the diver must always be first and foremost in their minds, and in their system designs. He often challenged them to ensure their designs had sufficient redundancy, to ensure that Navy divers were never placed in harm's way. He felt strongly about this because he knew first-hand the many dangerous missions that Navy divers would successfully complete under his watch.

Master Diver Peter M. Ruden is survived by his wife, Marie, other family members, and a whole host of us that called him our mentor, and most of all, our friend.

Bob Bauer 00C41, Rob Warren Retired 00C4, Gary Crawford Retired 00C3/4; all former Mare Island Naval Shipyard Ocean Engineers and friends of MDV Pete Ruden.



Diving Officer's Perspective

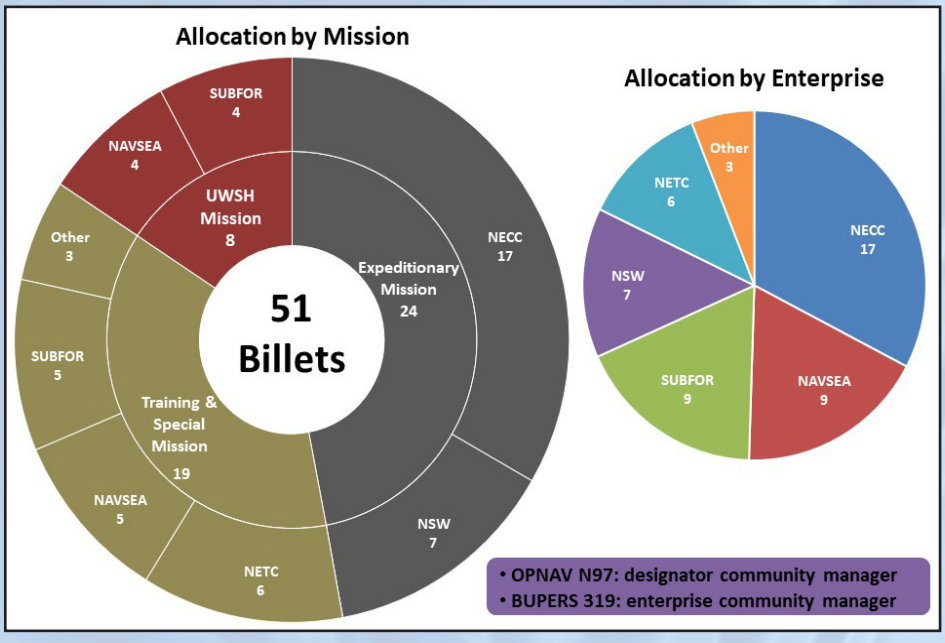
By: CWO4 Jason Potts, USN

Diving Chief Warrant Officer Program

With the annual Chief Warrant Officer (CWO) application season right around the corner, I decided a few months ago to canvass the current Diving Officer (CWO Designator 7201) cadre with the hopes of gathering their thoughts on how our profession—every one of us in the fleet diving community from the recent 2C graduate to the 33-year CWO5—might (1) better inform our current and future applicant pool on what the Diving CWO career path and application process are all about and (2) get folks talking about the opportunities that await motivated Navy Divers in the commissioned walk of life.

As one might expect, my inbox was immediately flooded with interesting ideas, thought-provoking recommendations, and, of course, extremely candid opinions, all of which are sewn into this relatively quick read I hope you'll take just a few minutes to review, consider, and socialize. This article is broken down into bite size chunks that get at the primary themes of the feedback I received. It's never too soon to start thinking about the road to a commission, so please check out the topics below, give what I've written some thought, and drop ANY Diving Warrant a line to discuss the officer gig and the program's potential compatibility with your own personal and professional goals.

What is a Diving CWO, and what do they do? The Diving Officer designator (officer version of a rating) is comprised of prior enlisted Chief Warrant Officers in the ranks of CWO2, 3, 4, and 5 who are recognized as the U.S. Navy's commissioned technical leadership authority in diving and hyperbaric operations. By definition, CWOs are Naval Officers that possess extensive experience and knowledge to direct the most difficult and exacting operations within a given occupational specialty. A snapshot of 7201 billet allocation is provided in the following charts.



As divers, we are led by a mix of Unrestricted Line (Submarine, Explosive Ordnance Disposal and Special Warfare) and restricted line (Engineering Duty) officers. Always the bridesmaid and never the bride, our Warrants are appointed exclusively to support these less specific walks of officer life as the common denominator of commissioned leadership in our Navy's various dive-enabled enterprises. CWOs are career Division Officers, Department Heads, and staff officers that will never command or serve as XOs but instead thrive on

highly repetitive assignments that allow them to truly hone their technical and operational knowhow as they progress through the ranks in repetitive assignments of increasing complexity.

Serving as technical experts who lead complex peacetime and combat-related diving missions at sea and ashore, they oversee underwater ship husbandry, salvage, special warfare, and undersea research and development diving missions in support of broader military objectives while utilizing significant operational and technical experience to safely execute high-risk dive-enabled operations.

- As Command Diving Officers, they manage all administrative facets of the command's diving program, including life-support system maintenance, repair, and certification.
- In operational settings, these officers provide critical onsite operational risk management, ensure verbatim procedural compliance, and maintain clear command, control, and communication throughout the course of a specified diving operation.
- Strategically, Diving Officers manage and advise key dimensions of force generation, manpower allocation, operational requirements, equipment resourcing, and policy alignment.

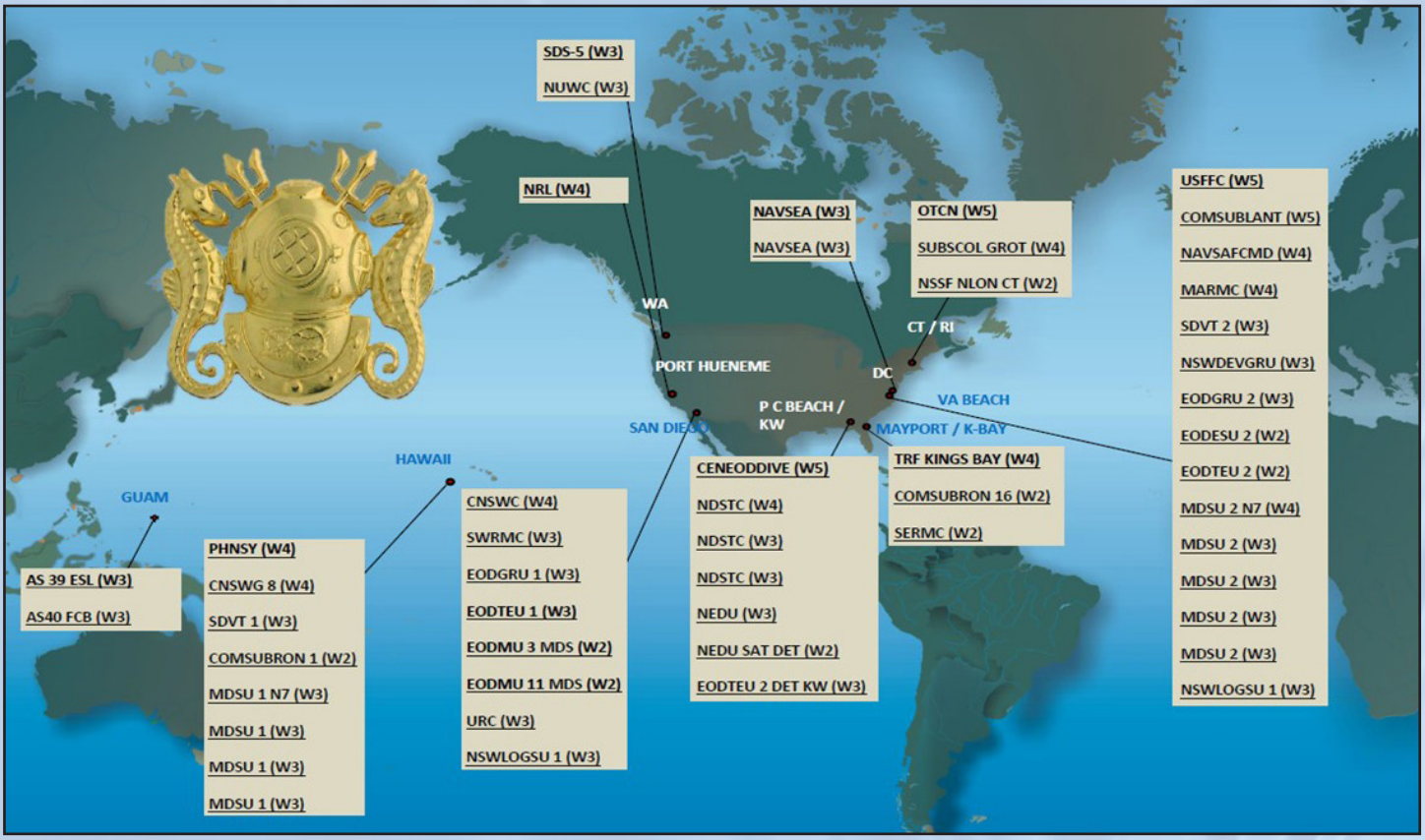
Technical expertise and proficiency in a given mission area are of the utmost importance in Diving Officer detailing and placement. Unlike the ND rating, the Diving CWO career path does not consists of specific pillars an officer is expected to gain experience in to remain competitive for promotion. Wherever practicable, we instead strive to enable Diving Officer specialization in Mobile Diving and Salvage, Special Warfare, or Underwater Ship Husbandry mission areas, and, although highly repetitive, technically specialized assignment is desired, non-specialized detours are available to qualified officers in the areas of training, special programs, submarine escape and rescue, saturation, program management, research, and experimentation. Specific details of the designator can be found in the following Military Personnel Manual (MILPERSMAN) article, and a global laydown of Diving CWO billets is depicted in the following graphic.

1210-145
CH-72, 27 Aug 2020
Page 1 of 4

MILPERSMAN 1210-145

DIVING CHIEF WARRANT OFFICER (7201)

Responsible Office	BUPERS-319 LDO/CWO Community Manager	Phone: DSN COM	882-3042 (901) 874-3042
Point of Contact	NAVSEASYSCOM (SEA 00C3B2)	Phone: DSN COM	326-1159 (202) 781-1159



Prior to commissioning as a Diving CWO, selectees are discharged from the military, issued a DD214 and brought right back in under a new oath for a completely new job. Once commissioned, new CWOs attend four weeks of training at Officer Training Command Newport's LDO/CWO Academy, which is designed to complete the transition of prior senior enlisted Sailors into their new roles in the wardroom per the Navy's Officer Professional Core Competencies. Upon completion of their time in Newport, Diving Officers embark on a career path that increases in complexity as they climb the ladder depicted below until they reach a maximum combined time in service of 30 years as a CWO4 or 33 years as a CWO5. During their initial assignment, Diving CWOs can expect to remain close to the waterfront and dive station while looking forward to occupying key positions in progressively larger staffs toward the tail end of their careers. As they progress, fully qualified CWOs are subject to 100% promotion to CWO3 after three years of commissioned service, a 70-90% promotion opportunity to CWO4 after seven years of commissioned service, and a 33-50% promotion opportunity to CWO5 after about eleven to thirteen years of commissioned service.

YRS COMM SVC	SEA CAREER PATTERN	SHORE
CWO5		COMNAVSEASYSCOM (00C3) COMUSFLTFORCOM COMSUBLANT OTC NEWPORT CENEODDIVE
11		
Master's Degree **CWO4** AQD: CB3	COMNAVSPECWARDEVGRU MOBDIVSALU ONE / TWO (RTO) NRLSITE DET PORT HUENEME CA	COMNAVSPECWARCOM COMNAVSPECWARGRU THREE MARMC SOUTHWEST RMC NAVEXDIVINGU NAVSHIPYD & IMF PEARL HARBOR NAVDIVESALVTRACEN (CMD DV OFF) NAVSUBSCOL COMNAVSAFECEN
7		
Bachelor's Degree **CWO3** AQD: 2MT, KN2, KM2, QK1	SDV TEAM ONE / TWO NAVEXDIVINGU SAT DET NAVUNDSEAWARCENDIV KEYPORT COMEODGRU ONE / TWO MOBDIVSALU ONE / TWO EODMU ELEVEN EODESU TWO COMSUBDEVRON FIVE DET SRDD UNSEARESCOM USS FRANK CABLE	EODTEU TWO COMNAVSEASYSCOM (00C5) COMSUBRON ONE / SIXTEEN NAVDIVESALVTRACEN
3		
CWO2 AQD: KL0, KN1, KM1, CA3	MOBDIVSALU ONE / TWO EODMU THREE/ELEVEN DET MDS USS EMORY S LAND	NAVSUBSUPFAC TRIDENT REFIT FACILITY SOUTHEAST RMC

30 yr MCPO	30 yr CWO4	33 yr CWO5
• $6,395 / month • $76,743 / year 75% (60%)	• $7,002 / month • $84,024 / year 75% (60%)	• $8,726 / month • $104,722 / year 82.5% (66%)

DISCLAIMER: HIGH THREE PAY BEFORE TAXES / BRS CALCULATED +2% PER YEAR OVER 20 (DOES NOT CONSIDER MEMBERS/GOVT CONTRIBUTIONS TO BRS/TSP)

When done correctly, the officer role is completely different from a CWO's previous LPO and LCPO/MDV roles. Warrants can expect to have a different view of authority, accountability and responsibility as well as increased levels of involvement and influence in foundational policies and decision making while being held to a set of standards unique to members of our Navy's officer corps. Aside from the challenge, and although Senior and Master Chiefs possessing the Master Diver classification can expect to take a pay cut for their first three or four years of commissioned service due to the loss of some specialty pays, officers retiring as CWO4s and CWO5s enjoy a significant return on investment, as depicted in the following retirement pay graphic, for the rest of their lives.

Contrary to what some folks might have heard, you will not just be permanently chained to a computer as an officer, but you will be expected to forget everything you know and remember everything you learned as you step out of your enlisted leadership role and into a completely new job description in the wardroom while you continue to serve alongside, and work in close collaboration with, the world's premier group of senior enlisted leaders, U.S. Navy Chief, Senior Chief, and Master Chief Petty Officers. Your effectiveness will in large part depend on your ability to seamlessly integrate into the wardroom as 'just another officer' even though you might have a few more miles steamed than your fellow Division Officers and Department Heads who, although currently less experienced as far as time in service goes, will in the future serve as our XOs, COs, and major commanders. The CWO career path offers enlisted leaders who are interested in additional challenges an awesome opportunity to lead at another level while continuing to stay operationally and technically relevant throughout the whole of their career.

Who can apply? The program is open to Chiefs and Senior Chiefs with 14 to 20 years time in service and Master Chiefs with 14 to 22 years time in service. Chiefs and Senior Chiefs commission as CWO2s, and Master Chiefs commission directly to CWO3. The previous year's board selected CWOs with an average age of 35 years, average total service of 17 years, and an average of five previous duty stations.

Diving CWO applicants should be well rounded with demonstrated superior leadership as well as operational and technical expertise in the field of Navy diving. Only ND rating applicants will be considered, and all candidates must possess the Master or First Class Diver classification. First Class Divers must meet the following eligibility requirements:

- Served or serving as a Leading Chief Petty Officer.
- Served at least three complete tours as an ND and a minimum of one year of their fourth tour, including underwater ship husbandry and expeditionary platforms.
- Qualified at the highest level of Diving Supervisor at the present command and at least once as a Surface Supplied Diving Supervisor. If onboard the current command less than 12 months, the member must have been qualified to the highest level at their previous command and actively pursuing qualification at the new command, meeting all applicable command qualification timelines. Favorable consideration can be given for Submarine Rescue Chamber Supervisor, Lock Out Trunk Diving Supervisor, Lock Out Chamber Diving Supervisor, Dry Deck Shelter Diving Supervisor, Navy Experimental Diving Unit Dive Watch Supervisor, Saturation Diving Supervisor, and Mixed Gas Diving Supervisor.
- Be qualified as a Diving Warfare Specialist as a First Class Diver.
- Successfully pass the written Master Diver Course Pretest administered by Naval Diving and Salvage Training Center within two years of the commissioning application's submission date.

The vehicle for CWO application is a standard template that includes a few basic details of your career; an endorsement from your Commanding Officer, acknowledging your leadership potential and technical performance; your own comments; enclosed appraisal forms completed by a panel of officers who interview you; and an eligibility checklist. Each year, waiver requests must be submitted to the CWO Officer Community Manager by July 15th, and applications must be submitted to Navy Personnel Command by October 1st in preparation for the January selection board. The deadline for application addendums is 15 December, and board results are released by message in the February/March timeframe.

What do I do if I'm interested in applying or simply learning more? First and foremost, contact ANY Diving Warrant directly to discuss the program and application process. Also:

- Communicate your goals to your chain of command.
- Develop a strong record of sustained superior performance in demanding assignments.
- Excel in your rating!
- Crush your LPO and LCPO/MDV tours!
- Linkup with a CWO mentor who you can work with along the way.
- Checkout:
    1. LDO/CWO In-Service Procurement Board info at *https://www.mynavyhr.navy.mil/Career-Management/Boards/Administrative/LDO-CWO/*
    2. The mountain of helpful info listed on the LDO/CWO Community Manager page at *https://www.mynavyhr.navy.mil/Career-Management/Community-Management/Officer/Active-OCM/LDO-CWO/*
    3. LDO/CWO Academy info at *https://www.netc.navy.mil/Commands/Naval-Service-Training-Command/OTCN/LDO/*
    4. The Diving CWO MILPERSMAN article at *https://www.mynavyhr.navy.mil/Portals/55/Reference/MILPERSMAN/1000/1200Classification/1210-145.pdf?ver=H4WWpWc1MJ2y8r1f1OQyZQ%3d%3d*

Thanks in advance for your engagement in, and support of, this exciting program! Looking forward to seeing you on the waterfront!

CWO4 Potts is the Fleet Diving Officer at NAVSEA 00C.

NEDU Pioneers Major He-O_2 Dive Table Updates, Continuously Improving Diver Safety

By: LT Mitchell Reed, Navy Experimental Diving Unit Public Affairs

The Navy Experimental Diving Unit (NEDU), the Navy's premier diving research laboratory, is nearing completion of a three-year project over 20 years in the making. Through the steadfast work of the NEDU dive team, and the world class scientists behind this project, NEDU will submit new guidance to the Diving Manual providing a critical update to the current Surface Supplied Helium-Oxygen (SS He-O_2) dive tables, drastically improving diver safety by significantly reducing the chances of developing decompression sickness (DCS).

"This is what NEDU is all about, the hard work and always-improving attitude is what continues the excellence of this Command," explains Commanding Officer Cmdr. Dustin Cunningham, USN. "Problem solving and putting forward solutions to maximize our diving capability while simultaneously improving our sailors' safety is our unceasing focus."

History: Vice Admiral Momsen, The Squalus, and an untested experimental diving table

While many bounce dives are well-suited for using a closed-circuit gas reclaiming underwater breathing apparatus, bounce dives requiring heavy work efforts, such as salvage dives, are best accomplished using SS He-O2. The original SS He-O2 dive tables were developed by then Lieutenant Commander Charles "Swede" Momsen (retired as 3-star Vice Admiral), and first put into practice during the salvage recovery effort of the USS SQUALUS off the coast of Portsmouth, New Hampshire. Following the rapid rescue response leading to the successful rescue of 33 submariners that were trapped overnight, salvaging efforts to raise the SQUALUS commenced. Hidden under 243 feet of sea water (fsw), the SS He-O2 dive tables pioneered during that salvage effort enabled the expert divers to pass cables under the submarine's hull and attach pontoons on each side. From the meticulous work enabled from the experimental dive tables validated during the recovery, amazingly, the USS SQUALUS was brought to the surface, recommissioned as the USS SAILFISH, and continued to serve throughout WWII. Incredibly, while untested and experimental, only 2 cases of decompression sickness were documented from a total of 648 dives.

While revolutionary at the time, the He-O2 dive table remained relatively unchanged until present, receiving minor updates in 1950 and 1990s in an effort to reduce DCS and oxygen toxicity that frequented during longer duration dives. The last modification to the SS He-O2 table occurred in the summer months of 2000 that greatly help enable the recovery effort of the USS MONITOR off the coast of North Carolina's Hatteras Island.

While these tables pioneered mixed gas diving, a need for an update became clear as the current

A diver being hoisted over the side by a stage on his way to assist in the salvage of the USS Squalus. Summer, 1939 (NEDU historical photo).

Navy Experimental Diving Unit's Ocean Simulation Facility.

schedules presented in the tables had unacceptably high estimated risks of DCS, limiting the Navy's capability for surface supplied diving during dives deeper than 240 feet sea water, or when bottom times exceeded 30 minutes. As such, NEDU was tasked with developing a replacement SS He-O2 table of schedules created to assume a uniform acceptable risk of DCS.

Decompression theory has come a long way over 80 years

Modern dive table development relies heavily on computationally intensive methodologies. Decompression algorithms generally aim to model the effects of gas movement across the lungs, blood vessels, and tissues in the body, while under varying levels of atmospheric pressure. While these models have become particularly advanced, further development was required to fit an appropriate model to modernizing the SS He-O2 dive tables. Though there are many types of decompression models, a probabilistic decompression model, designed to calculate the probability of developing DCS within a specific dive profile, was chosen. Briefly, the updated model provides a far safer dive profile, reducing the risk of developing DCS, especially when diving deeper depths. However, before these exquisite models developed by the expert team of decompression scientists at NEDU (including two previous Albert R. Behnke Award recipients) could be considered for adoption into the Navy Dive Manual for fleet use, they needed to undergo rigorous manned testing to confirm the probability of developing DCS was indeed as predicted.

NEDU's "all-hands on deck" attitude outperforms expectations

Over the course of the last 3 years, NEDU has systematically tested the newly proposed SS He-O2 dive tables. Fifty-six untiring Navy divers from NEDU and the Navy Dive School selflessly jumped into action trading their operational dive prowess for participation as experimental subjects to enable the Navy to continue their DEEP SEA dominance. Using the state-of-the-art Ocean Simulation Facility (OSF) at NEDU, the tireless team completed 232 dives using 20 different depth/time schedules ranging from as shallow and short as 80 fsw for 30 minutes and no decompression stops to as deep and long as 320 fsw for 30 minutes with subsequent in water and surface decompression stops for 6 hours, marking the deepest bounce dive at NEDU since the 1960's. The intrepid research team responsible for the development, analysis, and evaluation of the newly tested dive tables, were prepared to give a recommendation to the Navy to adopt the new dive tables if it was found that DCS occurred in less than 5% of dives. Amazingly, DCS occurred in only 2 out of 232 dives, or less than 2%, greatly improving the safety and capability of the U.S. Navy when performing surface supplied bounce dives at deeper depths.

What's next?

As the U.S. Navy continuously looks for ways to improve the safety of its divers while enhancing its capabilities, the newly updated SS He-O2 dive tables will make an immediate impact for fleet operations the world over. Time and time again, U.S. Navy Divers live up to their ethos: "The accomplishments of United States Navy Deep Sea Divers are the benchmarks by which the world measures man's achievements in the sea. My specialized skills, undaunted spirit and unbreakable will enable me to succeed in an environment where there are no second chances. Excellence is my standard."

LT Mitchell Reed is Research Physiologist and Public Affairs Officer serving at the Navy Experimental Diving Unit.

Article cover photo: NEDU divers complete a 320 FSW SS He-O2 Dive in the Navy Experimental Diving Unit's Ocean Simulation Facility.

US Navy Divers complete work to recover the turret of the USS Monitor from roughly 240 fsw. (Photo: Monitor NMS)

Two New Navy Divers Inducted into The Women Divers Hall of Fame

By: Capt(retired) Bobbie Scholley

I'm pretty sure I can hear some of you right now asking, "Hey, is there a Men Divers Hall of Fame?". Well not exactly, but there are numerous civilian diving Hall of Fame and other diving award programs that have been in existence for decades. Trust me when I point out that they have been very heavily weighted toward male awardees including some Navy Divers. I wasn't aware of any of this while I was an active-duty Navy Diver until I retired and became more active as a member of the Women Divers Hall of Fame (WDHOF). I also wasn't aware of how many women divers of incredible expertise in a whole variety of underwater fields that there were around the world.

I would love for you to visit our website at www.wdhof.org to learn more about our organization, for several reasons. One is because I'm the WDHOF volunteer who keeps the website up to date, so if you see anything wonky on there you can bug me. Two is that our website developer is the very talented Chuck Bloom, a retired Navy Diver and the husband of one of our members, Rebecca Jones, NDC (DSW/EXW/SW) (ret). But the big reason is that is shows that we have a two-part mission. *We recognize women divers who have made outstanding contributions to the exploration, understanding, safety and enjoyment of our underwater world.* WDHOF currently has 254 members, 25 of which are Navy Divers. The second and equally important mission is to *support the underwater world and its associated careers by promoting opportunities in diving through grants, scholarships, internships, and mentoring as well as a worldwide network of industry contacts.* Our scholarship and training grant program is one of the largest in the diving community.

Back to my original exciting news. After the delays due to Covid, like everyone else, we were shut down for two years from holding our biannual meetings held during diving conventions. We continued to conduct business virtually as much as we could. We're an international organization to begin with, so much of our work was already being done virtually by email, video chat and phone calls. We just had to ramp up our video chat game during Covid. We continued to hold our annual new member nomination and selection process in 2020, 2021, and 2022. We also continued to do fundraising for scholarships and training grants online and with the help of many generous sponsors, we awarded scholarships and training grants as usual. The only thing that we had to put on hold was our normal annual induction ceremony for the new class of members that were selected each year that would be held in March at the Beneath the Sea Convention in Secaucus, NJ. We didn't even get the chance to hold the 2020 ceremony before New York and New Jersey were shut down days before the convention was set to start.

Finally on November 1, 2022, in a sparkling hotel ballroom in Orlando, Florida, we were able to hold a perfect Induction Ceremony for the WDHOF Classes of 2020, 2021, and 2022. There were seventeen women in total between those three classes, selected from six different countries, although most from the U.S. Not all the new members would be able to make the ceremony. Susan Eaton, a Geoscientist and Polar Explorer was leading an expedition in Artic Norway; Angelique Songco, Marine Biologist and Park Superintendent of Tubbataha Reefs Natural Park, Philippines; and Karen Gowlett-Holmes, Marine Biologist at EagleHawk Neck Tasmania, Australia were tied up with responsibilities. Fortunately, Natalie Gibb, Conservationist and Cave Explorer and Deni Ramirez Macias, PhD, Conservation Biologist, both from different areas of Mexico were able to attend, as was Helene De Tayrac-Senik, Marine Conservationist and Dive Show Founder of the longstanding Paris International Dive Show in Paris, France. Nine other new members from various areas of the U.S. also attended including two Navy Divers. Caron Shake, PhD, CDR, MSC, USN (ret), class 2020 and Valerie Langstaff, TMCM, EOD, USN (ret), class 2022 were proudly there to be inducted. It was a huge pleasure to bring them into the organization and there were plenty of other navy members attending to help with the celebration, especially after the long wait.

Why have I asked to write all this on Faceplate? As those of you who have worked with me or for me know, I have always had more than one "good" idea floating around in my head. This is also my request for help from this audience with both WDHOF missions. For the first mission, I need help with nominating women navy (or other military) divers for selection to become members of WDHOF. Anyone can nominate a candidate! The nomination process is very clearly outlined on our website (again, thanks to Chuck Bloom) at https://www.wdhof.org/nominations and are due on July 30th each year. The straightforward nomination package is online but does require at least 3 letters of recommendation. The criteria of what the selection board is looking for is also listed and there is a selection panel comprised of other members which is conducted

Navy members of WDHOF during the Induction Ceremony Dinner on Nov 1, 2022: (front l-r) CAPT (ret) Karin Lynn, CDR (ret) Gail Chapman, CAPT (ret) Deb Bodenstedt, CAPT (ret) Gina Harden, RADM (Ret) Bette Bolivar, TMCM(EOD) (ret) Valerie Langstaff. (Back l-r) CDR (ret) Caron Shake, NDC(DSW/EXW/SW) (ret) Rebecca Jones, CDR (ret) Darlene Iskra, CDR Grace Landers, CAPT (ret) Bobbie Scholley.

Navy Members gather to support the induction of newest navy members, Diving Medical Officer CAPT Victoria Cassano, MC and Research Physiologist, CDR Rene Hernandez. MSC, PhD in March 2004. (l-r) CDR Lori Yost, CAPT Bobbie Scholley, CAPT Victoria Cassano, CAPT Karin Lynn, CDR Rene Hernandez, CDR Gina Harden and CDR Karen Kohanowich.

TMCM(EOD) (ret) Valerie Langstaff (r) receives WDHOF pin from CDR (ret) Darlene Iskra during Induction Ceremony on Nov 1, 2022.

CDR (ret) Caron Shake (r) receives WDHOF pin from CAPT (ret) Bobbie Scholley (l) during Induction Ceremony on Nov 1, 2022.

very much like a military promotion board. I wonder how that happened. The selection panel selects no more than six new members per year, so the nomination needs to be well done.

If you need any advice or help with working on a nomination package, you can ask myself, any other WDHOF member (I've listed all the navy members below), or CAPT (ret) Mark Helmkamp, who probably has the greatest number of successful nomination packages submitted over the past twenty years! I can think of at least three of our diving pioneers who should already be members, CDR (ret) Sue Fitzgerald, EOD, HMCS(DV) (ret) Susan Wagner (DMT), and CMC(SCW/FMF/DV) (ret) Elisia Correa. There are probably more that I'm not remembering, and I know that there are others that I don't know since I've been retired for so long. I have to count on all of you out there to do the heavy lifting on this, even though I'm always here to help.

The second part of the WDHOF mission is to mentor and provide opportunities to those following us into careers or pursuits beneath the ocean's surface. *Our Scholarship program began in 2002 with three scholarships. This year we had a record number of applications, and we will be awarding $68,400 to 46 individuals who are passionate about our water planet and looking to grow in their knowledge and skills.* There is one training grant in particular that is offered every year for $1000 to women or men enrolled in an ROTC or JROTC program, military academy, or be a Sea Cadet or Sea Scout. What a great opportunity for some young woman or man! There are also lots of other basic and advanced dive training grants available. Applications will open again in early September, watch our website if interested.

Additionally, we mentor in all sorts of areas. If you check out our members roster, you'll see subject matter experts in almost every area of underwater endeavor. Just an example of some of the ones that I'm really awed by are the cave divers (look at Jill Heinerth's bio or website, she's incredible) and the free divers (Tanya Streeter and Mandy-Rae Cruickshank's bio, I could never do that). We also have archeologists, researchers, photographers, and dive business giants. The navy members do their fair share also. WDHOF partners with the National Park Services (NPS) and the Wounded American Veterans Experience SCUBA (WAVES) Project (https://www.wavesproject.org/) to support veterans. This project teaches wounded/disabled veterans to SCUBA dive and then to use that skill as a form of therapy. It's become a very successful program. The NPS and WAVES wanted to break off smaller groups of all women veterans to help them in other areas and asked WDHOF to provide a seasoned veteran military diver as a mentor for their dive projects. WDHOF quickly jumped in. The first project mentor was highly experienced salvage officer CAPT (ret) Gina Harden (https://vimeo.com/394856986) and the second project was mentored by new WDHOF member CDR (ret) Caron Shake (https://vimeo.com/769710532). Some of you might remember Caron when she came out to MONITOR Expedition 2002 to help out. One of the veterans that Caron mentored went on to apply for a WDHOF advanced training grant and was awarded it in 2022. She subsequently earned her divemaster qualification and plans to continue in the WAVES program helping

Navy Members and friends gather to support the induction of newest navy member Seabee Diver EAC(SCW/FMF/DV) Rose Oliveros in March 2010. (l-r) ND1, NDC(DSW/EXW/SW) Rebecca Jones, CDR (ret) Darlene Iskra, CAPT (ret) Bobbie Scholley, CAPT (ret) Karin Lynn, CAPT (ret) Erika Sahler, EAC(DV) Rose Oliveros, CAPT Martha Herb, CDR Rene Hernandez, CAPT (ret) Mike Herb, CDR Gail Chapman.

CAPT Scholley proudly welcomes Chief Petty Officer Jones into WDHOF in March 2017.

Navy members of WDHOF gather to welcome newly inducted navy member Diving and Salvage Officer, CAPT Sara Olsen in March 2019. (Front l-r) CDR (ret) Rene Hernandez, LCDR (ret) Susan Hernandez, NDC(DSW/EXW/SW) (ret) Rebecca Jones, CDR (ret) Gail Chapman, CAPT (ret) Deb Bodenstedt, (back l-r) CAPT (ret) Bobbie Scholley, RADM (ret) Martha Herb, CAPT (ret) Karin Lynn, CDR (ret) Karen Kohanowich, CAPT Sara Olsen.

Chief Jones instructs the table of officers about the latest in diving safety while her navy diver husband stands by to support, during cocktail hour at the ceremonies in March 2019. (l-r) RADM (ret) Martha Herb, CAPT (ret) Deb Bodenstedt, CDR (ret) Gail Chapman, CAPT (ret) Peter Daspit, CAPT (ret) Karin Lynn, NDC(DSW/EXW/SW) (ret) Rebecca Jones, ND1(DV) (ret) Chuck Bloom.

to instruct other veterans to become SCUBA certified, completing the circle.

My hope is that some of you will see this as an opportunity to recognize one of your fellow divers by nominating her as a candidate for induction into the Women Divers Hall of Fame. Maybe a few of you might pass this information along to a friend or family member interested in applying for a diving training grant or scholarship. You might even know of a veteran out there that could use the benefits of learning to SCUBA diving to help with his or her wounds (either external or internal) by pointing them towards the NPS/WAVES program. Or maybe you'll just read through this and wonder, "What the heck?". That's okay too. At least I've gotten the information out there and it might reach one more person. Thanks, Dive Safe, and HooYah!

CAPT(ret) Scholley retired in 2005 after 24 years of active duty. She served as CO, USS BOLSTER (ARS 38), CO, MDSU 2 during Operation DETERMINED RESPONSE, MONITOR EXPEDITON 2001 and 2002 and CO, NWS Earle, NJ. She also served as SUPDIVE. She was inducted into WDHOF in 2000 and has served terms as President and Board Chairmen.

WDHOF was founded in 1999. There were seventy-two honorees on WDHOF's inaugural roster in 2000 of which 3 were U.S. Navy Divers. The class of 2001 had 30 members with 3 U.S. Navy Divers. The number of new members selected per year has decreased to on average 6 per year and Navy Divers have continued to be highly respected members of the organization. The current Navy Divers who are members of the Women Divers Hall of Fame are:

CAPT(RET) DEB BODENSTEDT
EMCM(SW/MDV)(RET) MARY BONNIN
RDML(RET) BETTE BOLIVAR
CAPT MC(RET) TORIE CASSANO
CAPT(RET) GINA HARDEN
RADM(RET) MARTHA HERB
LCDR(RET) LINDA HUBBELL
CDR(RET) DARLENE ISKRA
NDC(DSW/EXW/SW)(RET) REBECCA JONES
CAPT MC(RET) MARIE KNAFELC
CDR(RET) KAREN KOHANOWICH
LCDR MC GRACE LANDERS
TMCM(EOD)(RET) VALERIE LANGSTAFF
CAPT CEC(RET) KARIN LYNN
CWO3 CEC(RET) ROSE OLIVEROS
CAPT SARA OLSEN
CEC(SCW/DV)(RET) LYNN RODRIGUES
CAPT CEC(RET) ERICA SAHLER
CAPT(RET) BOBBIE SCHOLLEY
CDR MSC(RET) CARON SHAKE
CAPT(RET) HEIDI STEFANYSHYN-PIPER
CAPT(RET) KATHYRN SULLIVAN
HT3(DV) DONNA TOBIAS
CDR(RET) SUE TRUKKEN
CAPT(RET) LORI YOST

The Old Master

Hooyah to my Deep Sea family, far and wide. Recently, I was approached by a mentor about writing this article. Imagining the article's core intention is to provide snippets of advice for the both present and future Sea Dwellers, I thought "I am nowhere near that salty!" But then again, 00-70-2C convened 23 years ago, this August. So I guess that makes me somewhat salty.

While attending the Navy Diver Second Class Course of Instruction (ND2C COI), I forged lasting friendships with a great group of Deep Sea hopefuls: Tony Greico, Luke Johnson, Lee Fitzgerald, Heidi Van Brocklin, Chris Hoeg, Tim Staniszewksi, the Ross "brothers" Richie and Andy, Michael "Ramesh" Haytasingh, and the late Randall Irving and Dan Jackson. I owe this crowd a debt of gratitude for proving that anything is possible, if you embrace the suck. Two Naval Diving and Salvage Training Center Instructors made a huge impact on the diver I would become, BM1 Ray Schubert and BM1 Ray Baker. Thanks to Ray Schubert, I learned to give second chances (but make sure they pay the man). And from Ray Baker, I learned to keep running; push through the pain. These two were the perfect duo to usher a bunch of knuckle-dragging wannabes through what was, for most of us, the most difficult challenge of our lives (to that point, anway). At my first command, Explosive Ordnance Disposal Mobile Unit SIX (EODMU SIX), I was lucky enough to be exposed to sound deck-plate leadership under the watchful eye of DCC Anthony "Shep Diggity" Shepard. Though he will no doubt resist the accolade, as my first LCPO, he was the most influential leader that I had in my career. From him, I learned the value of holding individuals accountable. If you garnered his respect, you had an ally for life…trust me, he came through clutch for me on several occasions (and came down hard on me at the same time-well deserved).

NDCM Jason Cook

At my second duty station, Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility (IMF), I had the pleasure of working for two more mentors of mine, Master Diver Bill Crider and HTCS Totch Mabry. My tour under these two was one of the most rewarding and fulfilling of my career (yes, this is a shameless endorsement for a ship's husbandry tour). Together, these two taught me the valuable leadership principle of "Favor Carrots over Sticks" (look it up.) I carried this with me throughout the remainder of my career, and it served me, but more importantly-others, well. Next, I would take orders to Mobile Diving and Salvage Unit TWO (MDSU TWO), where for my entire tour I was fortunate enough to work for the one we affectionately refer to as "Sonny". Master Diver Michael Sonnenberg is very well known and respected throughout my generation of Deep Sea Divers, as both a YN, and MDV. The list of Sonny's influences on my professional and personal life would take up more space than SUPDIVE will allow for this article. An influence I do want to highlight is the level of calm he operated with during the most stressful of scenarios. To this attribute, I give the most credit in my making MDV.

In summary, I hope this article serves to motivate the younger Deep Sea generation to: embrace the suck, give second chances, keep running, hold individuals accountable (but favor carrots over sticks), and finally, keep calm.

Serving in the U.S. Navy, and in this community, has been the absolute highlight of my life. Like all of you, I have experienced both good and bad. However, at the end of the day, I wouldn't change a thing. Hey, if not for the Navy, I may have become a piano player in a...

HOOYAH DEEP SEA!!

SUPDIVE SENDS ...CAPT Bob Marsh

HOOYAH, DEEP SEA...NAVSEA 00C3 office is coming out of a very busy 2022 and into an equally busy 2023. I want to share some observations from 2022, along with thoughts for future discussions with your teams. Let's ensure we are focused on the right stuff to ensure safety of operations and progress the Navy Diver skillset.

Lessons Learned and Reflections:

Last November, I attended the ABCANZ Diving Working Group in Auckland, New Zealand with our Canadian, United Kingdom, Australian, and New Zealand partners. One recurring topic at the working group is sharing lessons learned from diving operations and incidents from previous years. New Zealand provided a synopsis of a tragic 2019 diving casualty that led to significant changes to the culture and management of their diving program. The assessed "root cause" of the incident was operator-level experimentation with specific dive rig protocols (i.e. operating procedures) that created a hypoxic situation. The investigation further revealed that this experimentation with rig procedures was not an isolated incident, and resulted from a competition-driven culture and desire to "perform amongst peers" within the organization. This led to a situation of compounding, normalized deviation that unfortunately ended tragically.

This "root cause" is not uncommon in my opinion. I believe each of us can think of past examples where minor shortcuts, or incomplete procedures have compounded over time to become the "new normal", and became important only when something broke, fell apart, was inoperable when needed, or became a Near-Miss or Mishap. Sometimes we think that "if nothing went wrong" when steps were missed or omitted, they must not be necessary, required, or important. When this happens, we unintentionally move from a zone of procedural compliance to unmitigated risk taking or gambling! This is a form of normalized deviation. New Zealand found through the course of their investigation that their organization "drifted" from a culture of "compliant task accomplishment" to a culture of "task achievement"...please take a second and think about this. The focus went from doing things the right way to doing things to get them done. Hindsight is always 20/20. Simple issues can be identified and corrected easily...it just requires people who are observant and champions of standards to ensure their daily performance is of the highest professional caliber and centered around compliance. The following are thoughts for consideration and sharing when you have (or make) the opportunity to talk amongst your team about how you do business. Each day is filled with opportunities to mentor peers, subordinates, or superiors...please take advantage of them when you can. Our job can be unforgiving at times, and that is a FACT. Normalized deviation is REAL! Complacency is REAL. Learn to identify and correct it so it does not become systemic or the new normal.

Training and Mentorship: Set your team up for success and learn/teach the "why" upfront.

Our formalized diving courses of instruction teach us deliberate procedural compliance (The What) and the theory behind it (The Why). This information is compiled from decades of Navy diving experience, trial and error, scientific study and experimentation, lessons learned, and ingenuity, and continues to be refined (i.e. we are working Revision 8 of the Diving Manual). Our formal education is the foundational bedrock in which we refine our diving craft. During our first tour, and successive tours to follow, we routinely get qualified, requalified, earn specialties, and assume significantly important positions within our respective dive teams (i.e. Inside Tender, various Diving Supervisor positions, Work Center Supervisors, LPOs, LCPOs, Master Divers, Diving Officers, etc.). We accomplish this by combinations of PQS, OJT, "Under Instruction" reps and sets, positions, assessments, real-world application, and trust building within the organization. Below are some thoughts to consider if you are either just starting your qualification and specialization process, or are the "signature authority" or assessor for your teammates:

1. If you are *Qualifying*: PQS is intended to teach the requirements and demonstrate competency, and sometimes proficiency, required to execute a task in which you are qualifying. It is NOT a signature collection exercise. When PQS is complete, and designation letters signed and issued, it "means" **YOU** have the knowledge and requisite skill set to execute **THAT** job in accordance with policy and procedure. You further hone that skill through successive execution of those duties and through teaching subordinates. Being "qualified" means you are competent at the task at hand, not just familiar. YOU are the first line of defense to identify deviation from compliance and prevent normalization of deviation on a daily basis. If you don't fully understand the "how" and "why" behind your duties and responsibilities associated with that qualification, demand assistance and mentorship until you get it. Focus on becoming an expert in that qualification, as it is most likely a foundational building block of something greater.

2. If you are a *Signature Authority*: **YOU** are the immediate "checks and balances" that sets the standards. You directly set the level of competence required of your subordinates to conduct a specific job on their own when you sign PQS. Make no mistake, this is an absolute critical responsibility to get right. Qualifying an individual to conduct a specific task (i.e. 3M Maintenance Person) sets the foundational level of procedural compliance that person needs to know and execute, without exception. "You get what you inspect" as the saying goes, and in this case, you literally set the bar for performance and knowledge required to do critical diving-related jobs. By monitoring your personnel's performance, YOU are providing "presence" and another "check" in the system to ensure duties are executed and carried out in accordance with established procedure and policy. Be that mentor and leader that always has time available for their teammates, and a resource for continuous reach-back and consultation.

We routinely hear in management and leadership venues to "delegate to the lowest levels". This is the target, but we need to delegate to the right personnel at the lowest levels who have the required and demonstrated skills, standards, and abilities to do the job and make decisions required by the job. This is a core building block of a professional, critical thinking force of Navy diving experts. We cannot afford to be caviler or lackadaisical when assigning responsibilities or qualifying personnel. If you feel you need more training, information, drills, procedures, etc., demand it from your team or resources that provide it.

Game Day: No two days are alike:

The "same" dive on a different day is NOT the "same" dive. We do many things in the diving community that are repetitious, whether it be PMS, setting up dive station, conducting pre or post-dive checks, or routine operations/jobs. Although the steps may be the same, or similar to the "last time we did it", something is ALWAYS different. It may not be overtly evident, but the probability something changed from yesterday is a guarantee! Change can be as simple, but extremely important, such as personnel readiness from one day to the next. Is your team fatigued? Did visibility or current change at the dive site? Was Standby Diver up all night tending to a sick child and still focused on the home front? Did we discover another piece of equipment requiring repair during yesterday's UWSH job requiring a different approach or tool? Is our equipment 100% ready today even though we just dove it last night? There are undoubtedly hundreds of scenarios you can insert here. It is imperative each day we assess "today's dive job and team" for what it is. Start by assessing your mission and environment to identify any changes from one day to the next. Look at your team with a critical eye to identify minor or hidden changes/issues that may introduce unnecessary or unmitigated risk. Look at your equipment to see if anything looks different…you might even notice something critical was missed yesterday that requires immediate attention. Your daily job is vitally important to the success and safety of diving operations. If you are off your game, speak up, make it known, and enlist the help of your team!

A good practice I learned from approving diving CONOPs and ORM briefs was whenever I saw "standardization", I began asking focused questions to challenge assumptions. My intent was not to get into a battle of the wits with the briefer, but rather to understand their thought process and act as an additional "check valve" to ensure complacency was not creeping in. Our follow-on discussion usually fostered transparent and candid conversations about the topic discussed and hazards we anticipated encountering, to include identifying new ones we both missed! I learned a tremendous amount from these discussions and we became more focused on solving problems as a "team", determined to define what right looks like. When something becomes standard, from daily deliberate risk assessments to pre and post-dive steps, the probability to miss extremely important steps or in-

formation increases. Building a culture of compliance and transparency is critical to our job. As such, ensure you treat each day as a new challenge.

Reporting and Transparency:

My last topic. Be real with reporting! Failure Analysis Reporting (FAR), Near-Miss Reporting, Hazard Reporting, Mishap reporting…a few things you may be familiar with from the Diving Manual and Navy safety training. These reports create a record of an event or series of events. They are written after the fact and record the details of the situation, the assessed root causes that led to the situation, the results of the situation, and a host of other pertinent information. Diving-related reports enable the widest dissemination of critical information relevant to the safety of personnel, equipment, and mission for community-wide awareness. Since our community routinely conducts high-risk operations, utilizing technically robust and sometimes complicated systems, in less than ideal environments, and with People, diving-related reporting is critical to our risk management and learning processes.

The gap between a Near-Miss and a Mishap in our career field can be razor thin. As such, we need to support a cultural mindset of information sharing that contributes to the unobstructed flow of lessons learned, observations, equipment failure reporting, and near misses. The more information the better, as this will make us safer and enable aggressive, targeted action to be taken to address gaps in equipment design and reliability, procedures, and policies when warranted. If you or your teams have any questions in regards to diving-related reporting, please contact our NAVSEA 00C3 office or the Naval Safety Command for direction and guidance. If you have or see something you believe has relevance to the diving community, but is not a specific reporting requirement, please contact us for follow-on discussions. You are the eyes and ears of the Navy diving community and we value your expertise and observations at the deckplate level. As always, Dive Safe, Dive Smart, and support your teammates!...v/r SUPDIVE

CAPT Marsh photo by: MC2 Daniel Cleary

Diving Advisories

22 - 12 UNDERWATER BREATHING APPARATUS MK 20 / CHECKLISTS

22 - 13 UNDERWATER BREATHING APPARATUS KM 37 NS / OPERATIONAL PROCEDURES AND CHECKLISTS

22 - 14 KM 97 COLD WATER USE AND OPERATIONAL / PROCEDURES AND CHECKLISTS

23 - 01 LIST OF EFFECTIVE DIVING ADVISORIES

23 - 02 KM 97 HELMET EMERGENCY GAS SUPPLY ADAPTER / REPLACEMENT AND SIDE BLOCK MODIFICATION

23 - 03 MILITARY DIVERS TRAINING CONTINUUM

For more information on effective diving advisories, go to
https://secure.supsalv.org/home.asp

"Iron Men"

It's said the IRON MEN are gone
And only in sentimental song live on.
Soft living has taken its toll, they say
The IRON MEN belong to another day.
But listen now and I'll tell you true.
That IRON MEN still wear the Navy blue;
For when the cry rises to succor and save,
The Navy Salvor's – the first of the brave.
Steel ships ripped on a coral reef
Need steel men to free from grief.
Ten fathoms below a Diver grows chill,
Works with his hands, his heart and his will.
"Bring back my son from his watery grave!
Raise that boat – a fortune to save!
Clear that wreck that blocks the port!"
"CAN DO!" is the Salvors ready retort.
From the bitter freeze of the Arctic cold,
To the heartless heat of the tropic fold,
Wherever tormenting wind and sea are met,
Fare forth the Salvors with no regret.
When at last the toilsome deed is done
And the fearful struggle with sea is won,
The Salvor sighs a great…… AMEN
And takes his place……with the IRON MEN!

By J. F. Madeo, Jr.
Commanding Officer
Harbor Clearance Unit-1