



# FACEPLATE

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

*Volume 26, No. 1/June 2022*



*"Anytime, anywhere.  
WE dive the world over."*

## ***In This Issue...***

***MDSU-1 Salvage of 36-Foot Tug  
Submarine Rescue Chamber - Old Reliable  
Emergent Repairs on USS STOCKDALE (DDG-106)  
Man in the Sea Museum Celebrates 40th Anniversary***

**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.

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ND2 Craffey righting the tug using a chain fall during salvage.



Navy Diver from MDSU ONE screening the ocean floor in Palau for lost remains in support of Defense POW/MIA Account Agency (DPAA).



ND2 Nathan Laughery re-enlists on project during emergent repairs on USS STOCKDALE.



Navy Divers from MDSU ONE, aboard USNS Salvor (T-ARS-52), remove fuel oil from the capsized World War II German cruiser Prinz Eugen in Kwajalein. (U.S. Navy Photo)



LCDR Christopher Wilkins, right, and Navy Diver 2nd Class Kenneth Hall, assigned to the MDSU ONE, dive under approximately six feet of Arctic ice during Ice Exercise (ICEX) 2022. (Lt. Cmdr. Wilkins/ U.S. Navy)



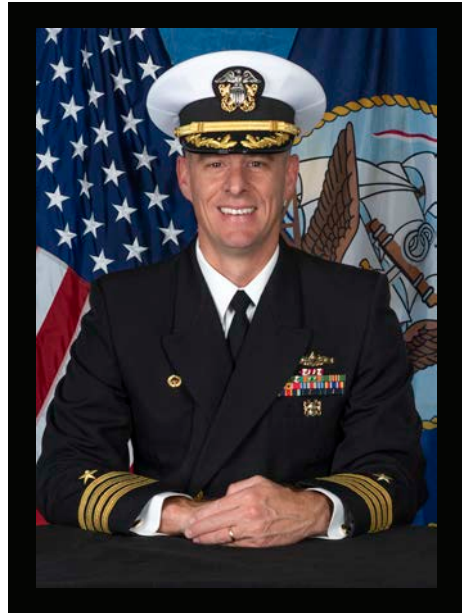




# SUPSALV SENDS...CAPT Jay Young

Where does time go? Three years have passed since I assumed command as SUPSALV, and those years passed by in an instant. It is hard to believe that I will be detaching from SUPSALV in June 2022, but I will be leaving with awesome experiences and great memories having had the honor and privilege of working with the Navy's best and brightest team. CAPT Sal Suarez will assume command as the 29th SUPSALV on 29 June 2022, and I wish Sal all the best as he continues to drive future success in what is already a high functioning team. Please continue to provide CAPT Suarez the awesome support that you have provided me over the last three years, and I look forward to seeing more outstanding accomplishments in Navy Diving.

As we welcome CAPT Suarez to SUPSALV, we bid a fond farewell to Mr. Mike Dean. Mike has dedicated the last 40 years to the Naval Sea Systems Command, 39 of those years at SUPSALV, and he has made the greatest impact on the Navy's diving program compared to any other U.S. Navy employee, civilian or military. As the Navy's lead diving technical expert, Mike led the engineering, acquisition, and diving programs to ensure Navy Diver safety is the absolute top priority. Mike developed and executed unique contract strategies that allow Navy salvage experts to conduct diving, search, salvage, and battle damage repair events anywhere in the world and in unmatched response time. Mike was also the visionary and execution agent for the Navy's Underwater Ship Husbandry Program, a program that our Fleet relies heavily upon to keep our ships and submarines at sea. Mike has dedicated his career to the Naval Sea Systems Command and to the Navy Diving and Salvage community, and his positive influence, operational efficiency, and mission accomplishment is unmatched. Mike has been an awesome friend and coworker to me and many, many others in our field, and



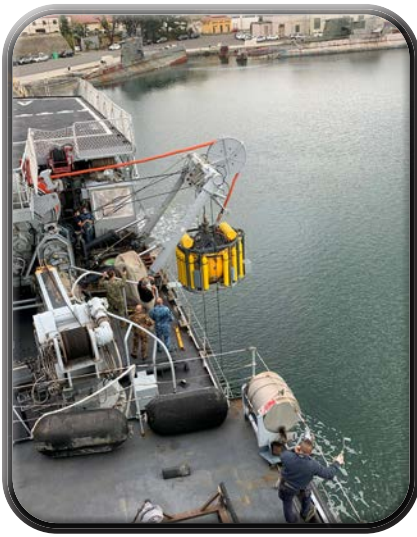
we are going to miss him. Hooyah, Deep Sea to Mike Dean as he sails over the horizon into retirement. Congratulations!

As I reflect on the last six months, I am energized by the missions you all have accomplished and more importantly the manner in which you have executed critical tasking. Our Salvage Forces have executed multiple operations that have engaged across the Navy Salvage Triad, a structure we had gotten away from in the last several years. Vessel salvage operations in Panama, F-35 search and recovery in the South China Sea, EX-BOONE battle damage repair exercise in the Atlantic...and the list goes on. I applaud your engagement and dedication to searching out opportunities to train as a Navy Salvage Triad in order to leverage peacetime casualties to enhance wartime readiness. Our Underwater Ship Husbandry (UWSH) forces continue to be the workhorse on the waterfront. Fleet readiness is not possible without our UWSH experts both on the waterfront and here in SUPSALV working 24/7 to develop new technologies, procedures, and equipment in order to execute underwater repairs to maximize operational availability. Our UWSH operators routinely field calls asking them to execute work underwa-

ter that many would think is impossible. Day in and day out, our UWSH forces accept these unique challenges and find a way to get the job done. Through your efforts to date in 2022, the Navy has avoided 20 ship and submarine dry dockings, and that number will continue to grow throughout the year equating to significant cost savings to the Fleet.

On the Battle Damage Repair (BDR) front, SUPSALV was tasked in December 2021 to step outside of our normal swim lane and execute the emergent line shaft bearing replacement on USS CHANCELLORSVILLE (CG-62) while in dry dock at SRF Yokosuka. CNRMC tasked SUPSALV to execute the repair as a simulated BDR event, and CNSP funded the operation. SUPSALV utilized our West Coast Salvage contractor, SMIT Americas, as the prime contractor to subcontract MARISCO, a proven shaft repair expert, to execute the shaft repairs. Our team completed the repair in just 70 days, and we collected a tremendous number of lessons learned in the process. Our after action report is in process, and we look forward to sharing the end product with all of you very soon.

I could not be more proud of the work that you all do for our Navy, and I am thankful to have been a part of your team. For me, I am headed down the road to the Mid Atlantic Regional Maintenance Center (MARMC) where I will have the privilege of leading the MARMC team as their next Commanding Officer. Although it is difficult to leave SUPSALV and our awesome team here at the Navy Yard, I am looking forward to getting back to the waterfront and helping to keep our Fleet ready for any operation that comes their way. As I said in my first SUPSALV Sends back in 2019, "I am not a fan of the desk. I get my energy from engaging with you during operations, so watch for me in your dive lockers and on your dive sides." So, for the MARMC Dive Locker, I will see you in July. I wish you all the best. Hooyah, Deep Sea!



# ITS ANTEO Saturation System Risk Assessment

By: **MDV Josh Dumke and LCDR Irwin**

Ciao! from beautiful northwest Italy. In November 2021, a NAVSEA 00C team composed of LCDR Matt Irwin (Asst. SupDive), Justin Pollack (00C4) and NDCM Josh Dumke (00C3) traveled to La Spezia to perform a Risk Assessment (RA) on the Italian Navy's saturation system onboard the submarine rescue ship ITS ANTEO (A 5309). NAVSEA was joined by NEDU subject matter experts NDCM Bill Dodd, NDC Kevin Smith, and Mike Wisner to assist with the assessment and lay the groundwork with their Italian saturation diving counterparts for future bi-lateral engagement.

In line with a COMSIX-THFLT request for support, the team completed a system walk-through, physical condition assessment, operator qualification verification, maintenance records review and periodic survey review. On the third and final day, the Italian crew demonstrated their proficiency through unmanned and manned operation of the saturation system. In addition to saturation diving capabilities, the ITS ANTEO is also capable of supporting mixed gas surface supply diving – both to depths comparable to U.S. capabilities.

The ITS ANTEO Commanding Officer and crew were fully supportive of the U.S. team and provided unrestricted access to the saturation system and related equipment. The crew was fully engaged with the assessment team in reviewing the system, documentation and records - going above and beyond to ensure all required information was available. Needless to say, there were no complaints over lunch.

Following the trip, 00C composed a report for Commander, U.S. Sixth Fleet, detailing the assessed risk that would be posed to U.S. personnel utilizing the Italian system. The report also provided recommended risk mitigation measures, that when implemented, reduce the risk to the diver. The risk assessment's main function is to assist the commander when making risk decisions

various types of diving operations, and strengthen ties between our two nations.

When asked about the importance of completing this risk assessment and bilateral engagements with our foreign partners, Master Chief Bill Dodd said, "U.S. Navy Saturation diving engagements with our international partners will allow for increased operational proficiency through cross training. These training operations will directly strengthen strategic partnerships and greatly contribute to maintaining maritime underwater dominance, which directly aligns with SECNAV priorities. The cross training will also greatly enhance interoperability mission readiness in regards to any national tasking in PACOM and EUCOM to support deep ocean recovery efforts utilizing partner nation assets... and because it's cool."

**HOOYAH ITS ANTEO**

and crew! NAVSEA 00C thanks you for the warm welcome, hospitality, and shared commitment to diving excellence!



*Justin Pollack, MDV Dumke, MDV Dodd, LCDR Irwin and Mike Wisner meet with RADM Rossi and Italian officers.*

in regards to future bilateral saturation diving operations with the Italian Navy.

Due to the excellent support, the RA team was able to finish the assessment early and were granted a tour of the Italian Navy's dive school and had lunch with RADM Massimiliano Rossi, the Italian Navy's Special Operations Commander (COMSUBIN). The team was briefed on the Italian Navy diving force's role in conflicts spanning from WWI through present day. The U.S. Navy has a Personnel Exchange Program (PEP) billet at the Italian dive school. This billet, as with the other PEP billets, is an excellent opportunity to learn from a key partner, share U.S. expertise in

*Photo above: Saturation Dive Bell onboard ITS ANTEO being deployed over the side.*

*Master Chief Dumke is currently serving as the Fleet Liaison, Assistant Program Manager, and Chair of the Diving Senior Enlisted Advisory Team for NAVSEA 00C while providing support to U.S. and partner nations diving communities. He can be reached at [joshua.w.dumke.mil@us.navy.mil](mailto:joshua.w.dumke.mil@us.navy.mil), (desk) 202-781-3457, or (cell) 202-904-7534.*

*LCDR Irwin is currently serving as Assistant Supervisor of Diving at NAVSEA 00C. He can be reached at [matthew.j.irwin2.mil@us.navy.mil](mailto:matthew.j.irwin2.mil@us.navy.mil), (desk) 202-781-1685.*



# Command in the *SPOTLIGHT*

## MDSU ONE

### Mobile Diving and Salvage Unit ONE

By: LCDR Christopher Wilkins and NDCM John Hopkins

In February 1966, in Subic Bay, Republic of the Philippines, the current Mobile Diving and Salvage Unit (MDSU) ONE was commissioned as Harbor Clearance Unit ONE. In Vietnam, the command was immediately tested, with salvage teams conducting numerous harbor clearance operations in Vietnamese rivers, harbors, and coastal areas during the con-

The MDSU ONE headquarters has deployed as the command and control element for diving and salvage forces in C5F. MDSU ONE personnel have deployed in support of C3F, C4F, C5F, and C7F operating in Kuwait, Iraq, Bahrain, Dubai, Jordan, Egypt, South Korea, Vietnam, Papua New Guinea, Kure Atoll, Chuuk, Kwajalein, Palau, Guam, Saipan, American Samoa, Japan, Malaysia, Indonesia, Brunei, the Philippines, Singapore, Micronesia, Thailand, Australia, Canada, Colombia, Chile, Honduras and many other countries, as well as operations/training and exercises in the United States. The command also regularly participates in exercises throughout the Pacific, including FOAL EAGLE, DUGONG, SEAHAWK, COBRA GOLD, RIMPAC, ICEX, NORTHERN EDGE, and CARAT.

Over the years, MDSU ONE has conducted and participated in a number significant operations with national level attention. In 2001, the sailors of MDSU ONE assisted in the recovery of remains and effects of the students and sailors who perished in the tragic accident that sank the Japanese fishing vessel EHIME MARU. In 2003 they supported OPERATION IRAQI FREEDOM in the early days of the invasion by crossing into southern Iraq to conduct Combat Harbor Clearance in the port of Umm Qasr, Iraq. Also in 2003, they removed the fuel from the sunken WWII era wreck of the USS MISSIS-



*Navy Divers from Mobile Diving and Salvage Unit ONE, aboard USNS SALVOR (T-ARS-52), remove fuel oil from the capsized World War II German cruiser Prinz Eugen in Kwajalein. (U.S. Navy Photo)*

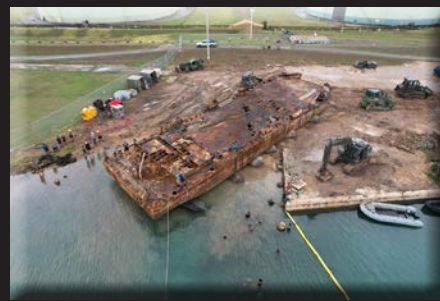
flict. The command was recognized for its professionalism when it received the Meritorious Unit Commendation and Presidential Unit Citation.

Upon conclusion of the Vietnam War, Harbor Clearance Unit ONE was relocated to Pearl Harbor, Hawaii in 1971. The unit's name was changed from Harbor Clearance Unit ONE to Mobile Diving and Salvage Unit ONE in January 1982 to reflect the unit's capabilities more accurately.



*Navy Diver from Mobile Diving and Salvage Unit ONE conducting supervisor checks prior to entering the water.*

SINEWA in Ulithi Atoll. In 2007, they responded to a commercial vessel M/V TONG CHENG in distress off of the island of Oahu and performed emergency underwater repairs at sea, and defueled the ship to allow emergency entry into port for repairs. In 2009 they were instru-



*Navy Divers from Mobile Diving and Salvage Unit ONE conduct Expeditionary Port Damage Repair and Opening training utilizing roller bags to move obstructions from the Guam Harbor of Refuge. (MDV Marshal Goble/U.S. Navy)*



*Navy Diver from Mobile Diving and Salvage Unit ONE conduct exothermic cutting and rope suspension for Battle Damage Repair/Assessment training.*

mental in the successful debeaching of the USS PORT ROYAL, stranded on the reef outside the entrance to Pearl Harbor. In 2013 they participated in the wreck-in-place and removal of the USS GUARDIAN, stranded on the Tubbataha Reef,



*Navy Diver from Mobile Diving and Salvage Unit ONE screening the ocean floor in Palau for lost remains in support of Defense POW/MIA Account Agency (DPAA).*

80 NM off the coast of Palawan, Philippines. In 2017 they were involved in the recovery and stabilization efforts after the collisions of the USS FITZGERALD and the USS MCCAIN. In 2019 they defueled the leaking wreck of the Ex-Nazi Heavy Cruiser PRINZ EUGEN, that capsized and sank in Kwajalien Atoll after having survived two nuclear blasts during the Bikini Atoll tests ABLE and BAKER. In 2020 they mobilized to Kauai, HI to patch, dewater and tow the SUBPAC Torpedo Retriever MPC-4 back to Pearl

Harbor. Additionally, they flew to San Diego to assist in the emergency response onboard the USS BONHOMME RICHARD by assisting in the removal of firefighting water onboard the ship to preserve stability while the firefighting was ongoing. In 2021 they dove inside the bowels of the Navy's Red Hill Fresh Water Well facility surveying the tunnel complex to locate potential sources of the jet fuel contamination, and skimming the

surface of the well to pump out contaminated water from the aquifer with Emergency Ship Salvage Material equipment.

Recent efforts at MDSU ONE have focused on the development of afloat salvage tactics for modern Expeditionary Battle Damage Assessment and Repair (ExBDA/R) in support of major combat operation (MCO). MDSU ONE, in conjunction with SUPSALV, conducted a complex ExBDA/R exercise on the hulk of the Ex-USS BONHOMME RICHARD as she was towed through the Gulf of Mexico to a scrapping yard in Texas. A similar exercise will be conducted at sea onboard the Ex-USS DENVER prior to RIMPAC SINKEX this summer. The use of decommissioned ships on their way to final disposition allows the salvage teams to cut, weld, flood and dewater the ship without concern of the damage caused to ship systems. These types of drills are expected to become a mainstay of future Salvage training and SINKEX events.

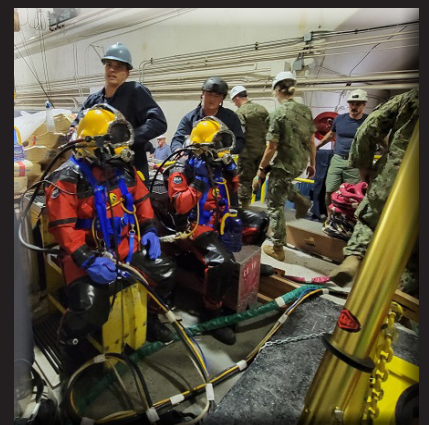
Another tenant of readiness for MCO includes experience in harbor clearance operations. Deployed MDSU ONE divers have been working in the Guam Harbor of Refuge throughout the last year to practice and develop harbor clearance tactics by utilizing modern equipment to remove 13 wrecks blocking the emergency anchorage. Most recently the divers have successfully utilized inflatable roll-



*LCDR Christopher Wilkins, right, and Navy Diver 2nd Class Kenneth Hall, assigned to the Navy's Mobile Diving and Salvage Unit ONE, dive under approximately six feet of Arctic ice during Ice Exercise (ICEX) 2022. (LCDR Christopher Wilkins/ U.S. Navy)*

er-bags to haul a refloated 220 ton Harbor Utility Craft onto the beach for disposal.

Whether MDSU ONE is diving, towing, communicating, debeaching grounded vessels, or conducting underwater salvage operations, they have a proud history of overcoming harrowing conditions and overwhelming odds to get the job done. They operate around the world and in conditions ranging from the heat of the tropics to the freezing environment of the arctic. These accomplishments directly reflect the exceptional professionalism of the men and women who have served as "MDSU ONE Sailors" over the unit's collective 56-year history of service to our great Nation. Why would you want to be stationed anywhere else?



*Navy Divers from Mobile Diving and Salvage Unit ONE prepare to dive in support of Red Hill operations.*

LCDR Christopher Wilkins serves as the MDSU ONE Salvage Officer/Command Diving Officer. NDCM John Hopkins serves as the MDSU ONE Command Master Diver.



# Underwater Aluminum Friction Stud Welding For LCS and Beyond

By: T.J. Guthrie

With the growing numbers of LCS Independence variant vessels being introduced to the Fleet, it has become apparent that the Navy's underwater welding capabilities need to be expanded beyond the traditional steel hulled vessels to now include aluminum. Of the multiple underwater aluminum welding processes that SEA 00C5 is currently working on to support husbandry there is one in particular that is promising and has potential to expand to support all of the Deep Sea Navy, aluminum friction stud welding.

Friction Stud Welding (FSW) is a solid-state process that allows for the joining of two materials without melting the materials or adding any filler material. The technology under development is performed by rotating a threaded aluminum stud at a high rate of speed and advancing the stud into aluminum hull plating. The result is the generation of large amounts of frictional heat allowing the stud and plate to deform plastically with the continued application of pressure. The stud is consumed as it plastically flows outward removing impurities at the interface of the stud and hull plating at which point the rotation is ceased. The stud and hull plating are allowed to cool and the pressure removed resulting in a threaded stud that is secured to the hull.

The current lightweight, hand held, aluminum FSW system under development is intended to be a fully automated process minimizing human error for more efficient, repeatable, and reliable welds. This would allow for the necessary welding procedure qualifications to be shifted from the welder/divers to the aluminum friction stud welding system, eliminating numerous welder/diver qualifications

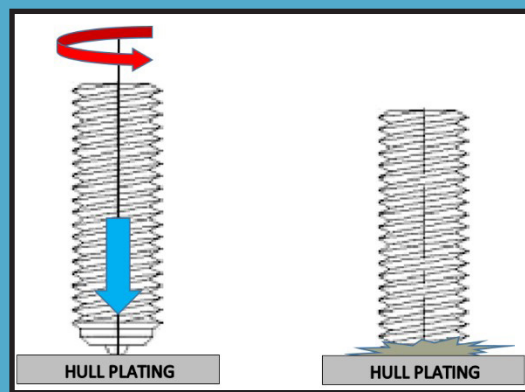
and expanding the end users to now include Navy divers. Currently any welding completed on an active Navy vessel is limited to the welder/divers covered under the Diving and Diving Related Services (DDRS) contract, all of which must be qualified to the applicable welding procedures that will be utilized. Navy

welding cofferdams below the waterline. There are currently no successful wet welding process for aluminum that can be used to complete hull repairs therefore all repairs below the waterline must be completed in a dry environment provided by a cofferdam. Without this technology there are limited ways to secure the welding habitats (cofferdams) to the hull, greatly reducing the capacity to perform hull repairs.

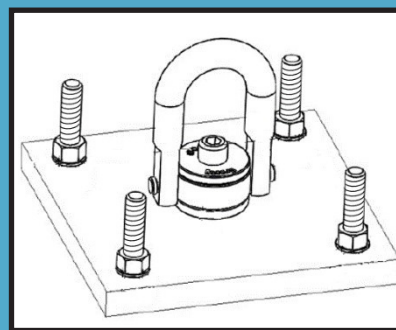
The technology of aluminum friction stud welding is not limited to husbandry, applications can be expanded in support of battle damage repair and salvage operations. Depending on the requirements of the operation, support could be provided in a hand held or ROV mounted versions where studs would be affixed for installation of patches and rigging attachment points to aluminum hulls or aluminum items that are to be salvaged, i.e. aircraft.

Having a rapidly deployable and reliable avenue to address the issues encountered with welding to aluminum is a necessity. The aluminum friction stud welding lays the foundation that is necessary to advance the Fleet into performing permanent type aluminum hull repairs below the waterline, as well as expanding the capabilities and providing alternate solutions for battle damage and salvage operations. This once conceptual solution to this capabilities gap is a step closer to becoming a reality.

*T.J. Guthrie joined the 00C5 team as the UWSH Welding Engineer in October of 2020 after almost 12 years as a Project Engineer for ESSM in Williamsburg, VA. Prior to achieving his mechanical engineering degree in 2008 he was a fabricator and welder in the automotive racing industry. Most recently he completed the Joint Diving Officer course at NDSTC and is a graduate of class 22-10 JDO.*



*Friction stud welding process*



*Bolt on rigging point using installed studs*

Divers are required to have the DDRS welder/divers wet weld rigging points to the hull for many husbandry repairs prior to commencing any work; a qualified FSW system would eliminate this nuisance affording the ability to have an endless style and configuration of engineered bolt on rigging points to fast track the repair. This method of constructing rigging points will also benefit the DDRS welder/divers during the installation of

# Submarine Rescue Chamber - OLD RELIABLE -

By: CWO3 Lonn Espinosa Trinidad

Commander John Killila's Undersea Rescue Command (URC) homeported in Coronado, California - Navy's premier command for worldwide submarine assessment, intervention, and rescue missions. The enterprise consists of approximately 50 active-duty officers and enlisted sailors, 30 Oceaneering International contractors, and 60 reserve component personnel.

Active participant of the international rescue community conducting joint exercises, improving tactics and proce-

dures, and sharing techniques that allow trapped sailors to be rescued from a disabled submarine anywhere in the world.

When a submerged disabled submarine (DISSUB) situation occurs, rescue and escape are the two available options for the crew. The escape method is where trapped personnel evacuate the disabled submarine and ascends to the surface with no outside support. The rescue method is carried-out by external assistance who extracts the trapped submariners, which is when they activate Undersea Rescue Command.

Balancing future investments with emerging programs within submarine rescue, we prepare to execute today's missions and unforeseen taskings in the future, all while maintaining the discipline of budgetary responsibility. Undersea Rescue Command aligns strategic and fiscal choices to reach optimal warfighting capability without compromising the mission. Undersea Rescue Command ensures the enterprise will continue to meet our Nation's needs with people, platforms, and rescue readiness capabilities.

The most utilized rescue asset by URC is the Submarine Rescue Chambers (SRC), entering its final operational stages, preparations for lay-up status has commenced. Shifting focus to its successor –

the Pressurized Rescue Module (PRM), this system has the capability to navigate, descend in the water column, maneuver in currents up to 2.5 kts, and perform an angled mate to a depth of 2,000'. Furthermore, it allows personnel transfer to the surface maintaining up to 6 ATA of cabin pressure. With all the impressive capabilities the PRM offers, several are saddened with the SRC's era coming to an end. "The SRC loss is a detriment to Undersea Rescue Command, they are less labor intensive than the Pressurized Rescue Module and have proven themselves as a reliable asset over the years," said Navy Diver First Class Justin Tilden, Recue Division leading petty officer.

The McCann rescue chamber was developed in the early 1930s, well-known for its operational use in May 1939 to save 33 Sailors in the sunken USS SQUALUS (SS 192) in the vicinity Portsmouth, New Hampshire. Many foreign militaries, to include the U.S., continue to own and operate rescue chambers today because of their simple design and reliability. The International Submarine Escape and Rescue Liaison Office (ISMERLO) is an organization that aims to facilitate international response to a distressed submarine and improve the ability to respond to calls for assistance through its coordination role. Although established by NATO, ISMERLO supports all nations and pursues the involvement of global submarine-operating nations.

Undersea Rescue Command maintains two submarine rescue chambers as part of the Navy's submarine rescue program. They are enhanced versions of the original McCann rescue chamber, SRC-8 and SRC-21 has been the rescue system of choice. Originally designed



ND2 Stotler, ND2 Tino, ND2 Patenaude and ND1 Car-ey places tie downs on SRC-8 while NDCM (Retired) Brian Pratschner completed a final walk-through at the long term storage area where SRC's are safe from exposure to elements.





*ND2 Stotler, ND1 Brooks, ND2 Tino and ND1 Carey conducts a walk-around to ensure safe placement of SRC onto sled.*

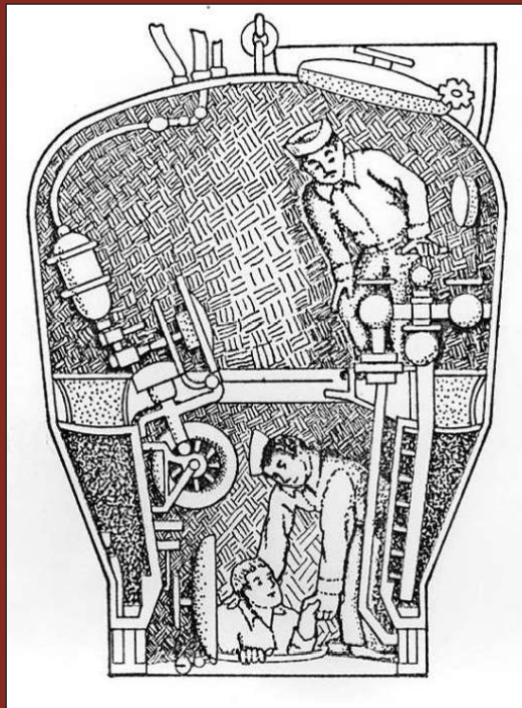
to a depth of 850 feet, SRC-21 supports two operators and six passengers, weighs about the same as a Standard Navy Double Lock at 21,600 pounds on the surface and 1,000 pounds buoyant while submerged, and is lowered using a tethered cable system to the disabled submarine.

The rescue chamber works by mating with a submarine's escape hatch. The

lower compartment of the chamber is cleared of water by blowing it into the chamber's ballast tanks. Once the pressurized air in the lower chamber is released into the upper compartment and vented to the surface, the chamber and submarine are at equal pressure.

The hatch can be opened and equalized, allowing the trapped submariners to enter the rescue chamber for transport to the surface.

As Undersea Rescue Command evolves and slowly transitions to pave the way of the future, the team worked relentlessly over the past year preparing. Many can agree that the collaborative efforts between URC Active/ Reserve component and Oceaneering International to develop and validate process that improve efficiency will benefit the submarine force tenfold, paying many dividends down the road for U.S. and allied forces who may need saving in the depths of Davy Jones locker.



*McCann rescue chamber original concept.*



*ND2 Patenaude, ND1 Carey, and Mr. Edoria (Oceaneering) coordinates crane rigging and movement to facilitate transport for long term storage.*

#### **Undersea Rescue Command Divers Roll Call:**

*CDR James Colgary, CWO3 Lonn Trinidad, NDCM Peter McDermott, MDV Todd Slayden, NDC Frederick Wells, ND1 Kevin Brooks, ND1 Curt Callaway, ND1 Joshua Correa, ND1 Alexander Kowalski, ND1 Joseph Olin, ND1 Sean Soblin, ND1 Matthew Stephan, ND1 Justin Tilden, ND1 Jonathan Wardlaw, ND2 Colton Benner, ND2 Nick Coleman, ND2 Dominic Cranston, ND2 Dan Delaney, ND2 Ben Gomez, ND2 Andrew Kaschalk, ND2 Rob Kersey, ND2 Brynden McAndrews, ND2 Matthew McNurlin, ND2 Trevor Palm, ND2 Lucas Patenaude, ND2 Jacob Stotler, ND2 James Tino, ND3 Nicholas Oh, CAPT Edward Waters, HM1 Nicholas Robertson, HM3 Calvin Blankenship.*

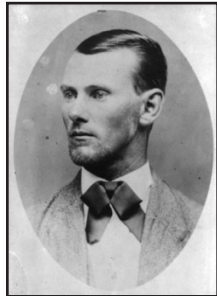
*CWO3 Lonn Espinosa Trinidad is currently serving at Undersea Rescue Command as the Command Diving Officer.*

# This Day in Diving History

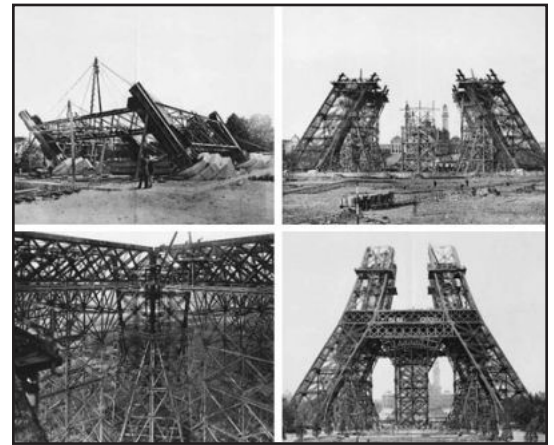
By: MDV David Gove

## Old School Facts – 1882 vs. Present

New York City is far and away the most populous city in the United States. Anyone that has visited finds themselves in awe at its sheer size and volume of people. Currently its population sits at over 18 million; in 1882 this number was less than a million. If you could go back in time and check out NYC in 1882, when John Turpin was around, here are some of the things you might notice:



If you wanted to read a paper you could but would be stuck with the NY Times as the Wall Street Journal would not be published for another seven years. In the paper you would likely read about things like Gustave Eiffel building a large tower in Paris, results from the last bare knuckle heavyweight championship, a bill introducing "time zones" across the U.S., and the assassination of the outlaw Jesse James. This last headline would probably be all the buzz as it occurred less than a year after the infamous gunfight at the OK corral (Wyatt Earp/Doc Holiday....."I'm your Huck-leberry") and the assassination of William H. Bonney a.k.a. Billy the Kid. For a few pennies you take a coach or walk to the Hudson River to see the Brooklyn Bridge under construction, likely seeing a few people doing the Grecian Bend when they left in the evening only to return the next day. On the way you would want to avoid the crime ridden five points neighborhood made famous by the movie "Gangs of New York" as it was pretty close by. From there if you walked to the southern tip of Manhattan, you would see that Ellis Island was extremely busy brining in "huddled masses yearning to breathe free". Pretty close by (on a clear day) you may be able to see Bedloe's Island where the Fort Wood star-shaped defensive post was located. Here you would likely hear a rumor about the same guy building the large tower in Paris assisting in the design of a future gift from France called the Statue of Liberty. She was still being constructed piece by piece in Paris but would soon be shipped over and placed atop Fort Wood's star shaped post. While there you would probably want to shift over to Thomas Edison's Pearl Street Power Station to see his brand-new invention called the electric light. While it only gave power to 85 customers in lower Manhattan, at least it was in the very rich part of town (a bit safer than the five points) and what a sight it must have been.

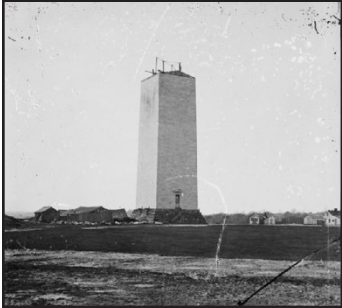


Another city you may want to check out would be Washington D.C. which is only 230 miles to the south. Your options for travel would be horseback (cars would not be mass produced for another 20-30 years), or steam locomotive. If you wanted to fly you would have to wait even longer as Orville Wright was only 11 years old at the time. Once you arrived, you would surely recognize the Capitol and the White House (although both of them would be smaller). You would also get a glimpse of this new road surface called asphalt that was being laid on Pennsylvania Ave. It was billed as being smoother and longer lasting than the dirt, rock or cobble stone



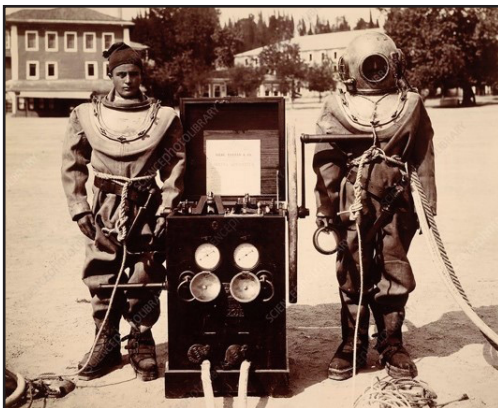


surfaces common all over the U.S. It may take you a minute to figure out why the American Flag looked a bit different until you counted the stars - there were only 38 of them. Colorado would have been the newest state admitted into the union (1876) and in a few years four more stars would be added (MT, ND, SD and WA). Looking south from the White House, you would see the Washington Memorial in its final stages of construction. You would have to do all this during the day as those 85 customers in Manhattan were the only ones with electricity. This did not include White House which still had gas lights. The city itself would seem much smaller; the population was only 20% of where it stands today - roughly equivalent to the current population in Chattanooga, TN. If you wanted to visit some of today's familiar tourist attractions you would have to wait 40 years for the Lincoln Memorial to be built and 61 years for the Jefferson Memorial and Pentagon to be constructed.



In 1882, the Navy was in process of modernization. This was in large part due to the Garfield administration ordering a re-

view of the Navy a year prior. This review found that of 140 vessels on the Navy's active list, only 52 were in operational state and only 17 were iron-hulled ships. Among these changes were an increased emphasis on shipbuilding, a revised concept of sea power, and a revolutionary idea in training programs. Some of the first steps in this modernization were to construct protected cruisers and battleships. There were also increases in weapons technology including the introduction of the torpedo. This weapon would be the driving force behind the Navy establishing its first school dedicated to diving under Jacob (Jake) Anderson. This course would only be 2 weeks in length, be based in Newport, RI and would train divers to recover exercise torpedoes. The course of instruction was based solely on dress of the diver and underwater procedures to a max depth of



60 feet. No dive manual existed and things like decompression, DCS or AGE were years from being fully understood. Four years later in 1886 the first diving pay would be authorized for the amount of \$1 per hour.....eleven years later (1893) a new rank called Chief Petty Officer would be established. The Navy's transformation starting under the Garfield administration would be nothing short of incredible - in only 32 short years the Navy would grow from its small post-civil war fleet to rivaling that of Great Britain by the outbreak of World War I.

Navy Diving has some of the richest history and heritage of any community in the military; these emails have always been an attempt to outline just that....I hope you have enjoyed them half as much as I enjoy writing them. To those that have accomplished so much before to the current members of the world of Mud, Muscle and Miracles - Hoo-Yah Deep Sea, the first round is on me.

**For Those About To Rock (We Salute You)...**

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

# ***Diving Officer's Perspective***

***By: CW04 Jason Potts, USN***

## **Revisiting Operational Readiness**

Over the course of a 15-month travel schedule jam packed courtesy of COVID-19, the Naval Sea Systems Command (NAVSEA) Diving Operational Readiness Inspection (DORI) Team enjoyed the unique opportunity to witness firsthand the operational readiness of twelve diving units aligned with five distinct enterprises across the globe. During these interactions, the DORI team recorded a total of 673 findings while observing the practices and cultural norms that separate the highest functioning teams from those less prepared to meet operational demands.

Recognizing the fact that the preparatory phase of DORI is a perpetual endeavor for the Navy's best dive teams, this edition of Diving Officer's Perspective aims to highlight some of the NAVSEA DORI Team's most noteworthy observations while providing a few pointers for leaders eager to maximize readiness and safety on their waterfronts. As you review these highlights and tips, we encourage each reader to take a mental inventory of your program attributes in search of opportunities to eliminate gaps and bolster readiness by implementing innovative, repeatable, and durable processes to ensure we remain the world's pre-eminent military diving force.

First and foremost, the best lockers take pride in READY PEOPLE by leveraging medical programs as key enablers of individual and unit readiness. Reaching beyond the minimum administrative requirements, leadership energetically supports and partners with embedded and external Undersea Medical Officers (UMOs) and Diving Medical Technicians (DMTs) to maintain their unit's primary weapons system, its people, while consciously safeguarding protected health information.

### **Medical Readiness Tips:**

1. Solicit recurring, independent health record reviews by senior UMOs to ensure currency and accurate completion of Diving Medical Exams with a particular focus on the adjudication of potentially disqualifying conditions and follow ups on documented findings. Radiation Medical Exam continuity and compliance with Hearing Conservation Program and Periodic Health Exam requirements, including annual skin exams, should also be carefully scrutinized to ensure your personnel are "fully medically ready" to conduct missions assigned.
2. Monitor compliance with Independent Duty Corpsman (IDC) supervision, training, and patient contact requirements.
3. Conduct routine, hands-on deep dives into your first aid kits to ensure supplies and equipment are: (1) aligned with your mission and operating environment(s); (2) within the capabilities of your team; and (3) functional and within shelf life periodicity. Wherever applicable, also ensure recompression chamber primary and secondary medical kits are maintained in strict compliance with approved requirements.
4. In the absence of a billeted UMO, lockers subject to NAVSEA DORI must establish agreements with adjacent units to ensure proper physician oversight of diving medical programs and personnel, to include DMT and Deep Sea Diving IDC supervision per OPNAVINST 6400.10, as applicable.

Operationally ready divers also demonstrate unprecedented pride in ownership of their diving life support equipment, tools, and ancillary equipment. The most effective leaders we've observed capitalize on every opportunity to question practices, engage their people, and personally assess their unit's equipment. Divers in high functioning lockers are eager to showcase their MATERIEL READINESS.

### **Materiel Readiness Tips:**

Get your hands on your equipment on a routine basis, inculcating cleanliness, readiness, and functionality as everyday norms from which the organization will not deviate.

1. Verify all diving and mission support equipment aligns with Authorized for Navy Use requirements and configurations dictated in military operation and maintenance manuals and manufacturers' technical manuals, as applicable. When in doubt, contact NAVSEA's Fleet Master Divers to verify authorization.
2. Legitimize planned maintenance system spot checks and monitored evolutions to ensure all technicians are properly trained and proficient in maintenance execution.
3. Redefine Force Revisions as opportunities to conduct stem to stern reviews of each work Center, during which all periodicities and implementation of approved maintenance requirements for assigned equipment are verified.
4. Routinely access SKED (or your unit's equivalent) and all work center manuals to ensure the latest maintenance requirements are in use.



5. Aggressively seek out blind spots in ancillary system (i.e. boats and tooling) maintenance to spotlight and rectify deficiencies.
6. Units subject to NAVSEA DORI must utilize COMUSFLTFORCOMINST 4790.3 Scheduling and Execution Effectiveness Review, Command Level Effectiveness Review, and Spot Check Accomplishment Rating instruments to complete maintenance and material management (3M) program self-assessments on an annual basis, and no later than 90-days prior to DORI commencement. Annual assessment results must be submitted to the NAVSEA Diving Programs Office (SEA 00C3) via cognizant headquarters with the most recent submissions available for inspection.

Additionally, our profession's top teams take pride in PRACTICAL READINESS by sewing training into their cultural fabric and constantly pursuing process improvement. These teams understand their mission, protocol, equipment, and how they'll behave when the opportunity to fail presents itself.

#### **Practical Readiness Tips:**

1. Disrupt normalized deviance by renewing strict procedural compliance during routine and atypical operations through leadership presence on dive station and direct oversight of diving support operations.
2. Make Operational Risk Management (ORM) count by replacing cookie cutter deliberate, time-critical, program, and evolution assessments with adaptive and collaborative processes that take into account real-time consideration of known risks and relevant variables inherent to that mission and operating environment.
3. Adopt a questioning attitude when conducting ORM assessments of boat and other support operations that directly and indirectly influence diving operations. Include supported (i.e. ship's force) and supporting (i.e. port ops) entities in the process.
4. Incorporate realistic, unannounced drills into routine operations.
5. Reinvigorate training programs to maintain the level of knowledge commensurate with every level of qualification.
6. Use your enterprise's DORI lessons learned as process improvement checklists.
7. Units subject to NAVSEA DORI must:
  - a. Ensure all Diving Supervisors supervise no less than one dive in each mode and apparatus for which they are qualified to supervise on a semi-annual basis. Diving Officers and Master Divers qualified as Diving Supervisors may maintain proficiency through direct engagement in dive station casualty drills, curriculum development, classroom instruction, practical events, Master Diver candidate prescreening and evaluation, advisory team meetings, and the Military Diver Training Continuum.
  - b. Establish comprehensive training plans, tailored to the unit's mission, outlined in short and long ranges, and approved by the Diving Officer, in writing, to ensure all dive qualified personnel maintain the requisite level of knowledge. Training plans must include Diving Advisories, Diving Safety Lines, DORI and Quality Assurance Surveillance Program findings, mishap reports, emergency drills, and methods of assessing knowledge and skill retention on a recurring basis. Proficiency in core skills related to the application of organic diving capabilities and the unit's assigned mission are critical elements that must be incorporated and refined on a continual basis.
  - c. Issue letters of designation to all qualified Diving Supervisors, including Diving Officers and Master Divers, that specify: 1) applicable constraints and restraints derived from the command dive bill or instruction; 2) the mode, or modes, of diving the individual is authorized to supervise; and 3) proficiency requirements.
  - d. Utilize NAVSEA DORI checklists to complete a comprehensive diving self-assessment no later than 90 days prior to DORI commencement.

Finally, the highest performing diving units we've assessed build operational readiness on well-engineered ADMINISTRATIVE FOUNDATIONS. These units' instructions translate higher headquarters requirements, many of them hard learned, into actionable constraints and restraints applicable to their supported mission requirements.

#### **Administrative Readiness Tips:**

1. Address the minimum requirements for commander's critical information requirements, constraints, restraints, and no-go criteria; breath hold, exceptional exposure, cold/warm water, radiation, contamination, and emergent dives; single closure to sea operations; and other unique or special mission dives and dives conducted in conditions considered to be exceptionally arduous, where applicable, in the dive bill.
2. Comprehensively assess your unit's diving life support system re-entry control processes to assure careful administrative scrutiny, stringent work controls and materiel verification, and effective audits. Ensure mechanisms are in place to revise pre-survey outline booklets in collaboration with the cognizant certification managerial whenever the scope of work dictates.
3. Review diving qualifications for newly-reported personnel to ensure compliance with MILPERSMAN article 7220-099, Hazardous Duty Incentive Pay for Diving Duty, properly addressing lapsed qualifications, as required.

As always, we greatly appreciate your tireless efforts in maximizing the readiness of the people, equipment, and programs our nation entrusts to your leadership. Until next time, dive safe and effectively, and don't hesitate to contact us with any questions, concerns, or recommendations you might have. Looking forward to seeing you on the waterfront!

# Emergent Repairs on USS STOCKDALE (DDG-106) SONAR Dome Rubber Window

By: ND1 Eli S. Stoller



Navy Divers from U.S. Naval Ship Repair Facility Japan Regional Maintenance Center (SRF-JRMC) Detachment Sasebo jumped into action when the forward deployed USS STOCKDALE (DDG-106) released a Category 4 CASREP reporting loss of pressure in the SONAR Dome Rubber Window (SDRW). Navy Divers conducted an emergent Level 2 inspection discovering a 15-foot horizontal rupture along the port side of the SDRW. With the nearest available dry-dock located in Yokosuka, Japan, a solution enabling the ship's transit without causing further damage to the internal transducer required a coordinated effort by the entire SRF-JRMC team.

SRF-JRMC immediately coordinated with NAVSEA 00C5 on the quantity of traditional repair kits required and the shipment of equipment. In the interim, ND1 Ross Buzek with Mr. David Berlin, Detachment Sasebo's Leading Technical Authority, developed a locally produced mechanical patch option to install while awaiting the NAVSEA shipment. With the SDRW technical community's insight, Detachment Sasebo started mechanical patch fabrication with a strict design parameter to avoid further damage of the SDRW and to ensure the traditional NAVSEA repair kit could eventually be executed. An underwater SDRW repair of this scale had never been attempted in the

U.S. Navy and is comparable to patching a 6 inch gash in the sidewall of your vehicle's tire.

Within 4 days of initiating the mechanical patch option, materials were fabricated and ready to install on the SDRW. Dimensions of the patch were 16 feet in length, 12 inches wide, and made of 0.25 inch stainless steel with 26 welded lag bolts acting as compression studs. The backing plate with lag bolts was positioned inside the SDRW with

lag bolts externally protruding to allow clamping bracket installation on the exterior. Special crowbars were fabricated to open the rupture and position the patch inside to resist pressure. Following nine days of diving in sub-freezing temperatures, the patch was installed and ready to be tested. For USS STOCKDALE to maintain normal cruising speeds, the mechanical patch needed to withstand 24.5 psig for 15 minutes. Unfortunately, 18 psig was the maximum attained pressure.

Immediately following initial testing, rigging of the Skeg Bridle and the installation of the SDRW patching cofferdam started. The Engineering community decided a hybrid method would be completed by leaving the mechanical patch installed to assist as a backing plate for upper and lower SDRW alignment. All but seven mechanical patch studs were removed and holes were cut into the six WC-777 patches and seven 1-A patches to receive 3" washers and external nuts. An underwater epoxy, Artic Bond, was applied behind each nut to ensure the patch remained watertight. After eight days of diving and observing the HP-2 Elastolock cure time, the SDRW was ready to be pressurized and tested. On this attempt, 13 psig was the maximum attained pressure. With this unfortunate result, USS STOCKDALE departed for Yokosuka with an unfavorable speed restriction of 5 knots. Although the desired test pres-

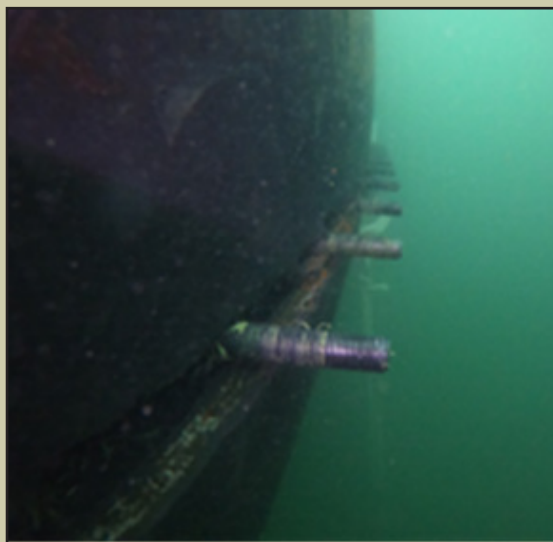


*Upper and Lower SDRW alignment in progress with ruptured edge grooming.*



sure was not reached, the installation of the patches accomplished the overall objective: No further damage was done to the SDRW or internal transducers during transit.

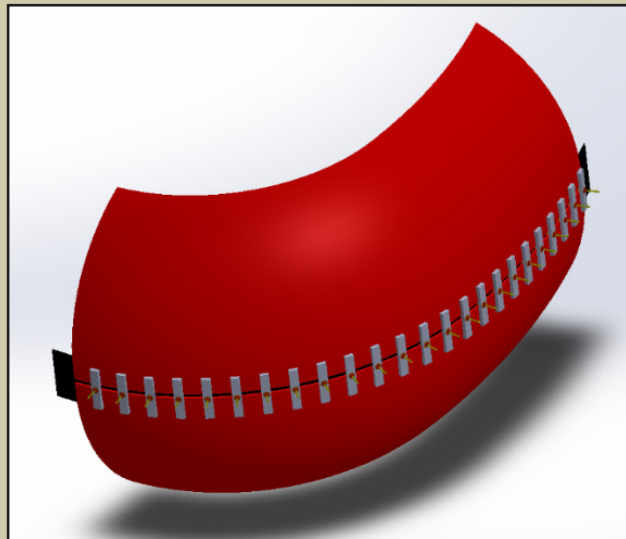
As is the case with nearly all underwater repairs, this job presented its own set of unique challenges; it tested the limits of our Navy's Underwater Ships Husbandry capabilities and NAVSEA traditional repairs. The ingenuity of the SRF-JRMC Navy Divers exceeded all expectations as they took initiative to fabricate, install, and test a mechanical patch option that ultimately withstood a higher pressure than the traditional repair kit. SRF-JRMC Navy Divers utilized every resource available, to include Additive Manufacturing and Remote Operated Vehicles, to develop a mechanical patch solution. They explored and executed any and all available options in attempting to return USS STOCKDALE to mission readiness. Additionally, the SRF-JRMC Detachment Sasebo Dive Locker received a "Bravo Zulu" from the CDR Booher, Commanding Officer of USS STOCKDALE for their hard work and dedication during the repair. Data collected and lessons learned will only enhance the Navy's capability to conduct SDRW repairs far into the future.



*Mechanical patch backing plate positioned with compression studs protruding through rupture.*



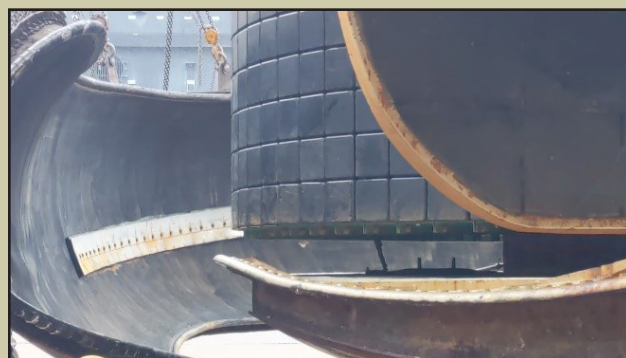
*Custom developed crowbars to open rupture and position mechanical patch backing plate.*



*Solid WORKS Model concept of locally developed mechanical patch.*



*DDG-106 in dock in Yokosuka with hybrid patch exposed.*



*SDRW removal in progress with mechanical patch backing plate visible.*

*ND1 Eli Stoller is the Diving Waterfront Coordinator at SRF-JRMC Detachment Sasebo where he schedules and oversees all diving operations involving production for 21 Forward Deployed Naval Force ships and craft.*

*article cover photo: ND2 Nathan Laughery re-enlists on project.*



## CWO5 B.M. FLEMING SERMC C970 DIVING OFFICER

After 33 years (and the 1st day of the third month) of service to our country and our Navy, it is time for me to say my goodbyes.

As I have been working on my retirement speech it has come as no surprise that every person, with a few exceptions (Ray Schubert) that I grew up with in the Navy has already retired. MDV (Ret) Vern Malone and I went to 2nd Class School together in Coronado, 1989. He was the second to last guy from our class to retire. As of May 1, 2022 we will all be gone. I keep my eye on the new Master Diver and CWO names, but for the most part now I do not recognize the names any longer. It is time to pass the stop watches to the next generation of diving supervisors and the to-do-list to our community leadership.

When I joined the Navy in 1989 it goes without saying that the diving community was a different place. For one, we had source ratings. I was a Hull Technician until October 1, 2005 when I commissioned as a CWO2. I went to 1st Class Dive School right after my first command and qualified as a diving supervisor at every command after that. As divers, we were ALWAYS competitive with each other in everything that we did to include who reached what qualification first. I believe that this was what always made diver's stock worth so much – we were motivated to achieve the next goal or complete the nearly im-

possible task. Let's not pretend that the diving Navy is without problems though. We have certainly had our disputes and failures, before my time, during my time, and to be sure, after my time. But with the right mixture of leadership from both enlisted and officer all of those problems have been, or can be overcome.

I will never forget my first command (USS CANOPUS AS-34). Back then you could actually make Master Chief without being a Master Diver. Our Chief and Master Diver, who was also a Chief, did not respect each other, and it showed! I have also seen the fallout from commands where the CWO and MDV did not work together and diver morale suffered greatly. Our community now has a Senior Enlisted Advisory Team (SEAT) AND a Chief Warrant Officer Advisory Team (CWO-AT) and together these two teams lead our community with a common purpose – to DRIVE Navy Diving policy and procedures! It has only been about one decade since the first CWO-AT charter was signed and together with the SEAT we have made great strides in our community. From updating the dive manual and OPNAV instructions to securing billets at some of the most influential commands to promote Navy Diving. Coy Everage is now filling the first ever FLEET FORCES COMMAND (FFC) billet for a 7201 CWO. The difficulties of obtaining this billet will soon be lost to memory but, if our community attacks every goal with the same level of effort and persistence as we did with the FFC billet we are in a better place now than we were a decade ago – OUR CHARTERS ARE WORKING!

Goals are definitely what put me in

the place that I am today. Of course, goals are just dreams if not achieved! And none of the goals that I have achieved were accomplished alone. In that regard, I owe thanks to so many people. But, as previously stated, they are mostly already retired. I would have loved to have had the opportunity to be present and say thank you to every person who ever mentored me throughout my career, just as I would have loved to have been able to invite everyone to my retirement ceremony. With the current COVID requirements and limitations in place that was just not a reality.

I beseech (a word I fondly remember from Chief's initiation) you all to continue driving this amazing diving community in the right direction. When it is finally your turn to retire you will have the same opportunity as I do now to look back at the positive changes that have taken place during your time of service. And whether directly or indirectly, you will have contributed to those positive and lasting efforts and will remember them with rightful pride.

For those of you who do not already know, I will be retiring (sort of) to East Tennessee. My wife and I bought 46 acres in Afton, TN and I have also already accepted a Program Manager position in Oak Ridge, TN. As much as I love our community I have decided that after 33 years of diving and working for the Navy it is just time to move in a new direction. Plus, there is no better decompression for the mind than getting on your tractor and working on ANY project around your own slice of heaven! If you are ever in my neck of the woods please look us up. There will always be a pot of coffee on in the barn.





# MAN IN THE SEA MUSEUM CELEBRATES ITS 40TH ANNIVERSARY!

BY: STEVE MULHOLLAND, PRESIDENT, INSTITUTE OF DIVING

Founded in 1982 by the Institute of Diving, the 5,000-square-foot museum is a treasure chest of diving history and education with an impressive collection of diving suits, masks, and assorted memorabilia. Outside the museum on the 1-acre lot is a large collection of bathyspheres, diving bells, submarines, and other deep-sea exploration vehicles and habitats.

The museum's premier exhibit is the original SEALAB-1, the world's first undersea living facility, launched in 1964 by the U.S. Navy to test extended isolation of humans and the effects of saturation diving on divers working for extended periods in the briny deep.

The SEALAB program began in 1963 at what was then the Navy Mine Defense Laboratory in Panama City Beach and is now a division of Naval Sea Systems Command. SEALAB-1 was a prototype sea base, pieced together along Alligator Bayou in the Bay. The research team included doctors George Bond, Robert Thompson and Walter Mazzone, along with aquanauts Robert (Bob) Barth, Lester Anderson, Sanders Manning, and Mercury 7 astronaut Scott Carpenter.

SEALAB I was lowered off the coast of Bermuda on July 20, 1964 to a depth of 192 feet (59 m) below the ocean surface. The initial 11-day undersea mission at depth proved that

humans can explore, live, and work at extreme depths for extended periods. It set the stage for further SEALAB developments and experiments around the world, such as the Aquarius Reef Base, a fixture in the Florida Keys National Marine Sanctuary for two decades, and the world's only undersea laboratory.

Bob Barth was the only aquanaut to participate in all of the Navy's experimental diving programs, Genesis and SEALABs 1, 2 and 3. Bob resided in Panama City for years and spent most of his retirement as a civilian working at the Navy Experimental Diving Unit (NEDU). Barth along with his fellow teammates from the SEALAB program had the ini-



*Museum's grand reopening ceremony February 2021.*



*Local news support of the museum.*



*Bernie Campoli, Jack Schmitt and Jim McCarthy from the Sealab programs were honorary cake cutters and our plank owners of the museum.*



*SEALAB 1 being raised from the bottom 1964.*

Kids Appreciation  
Day - March 2022



CREW OF SEALAB 1 1964  
Bob Barth, Dr. Bond, Lester  
"Andy" Anderson,  
Dr. Robert Thompson, and  
Sanders "Tiger" Manning.



tial idea for establishing the Institute of Diving and its museum. The Institute of Diving was formed as a non-profit, educational organization in 1977 and has been maintaining Bay County's only Military Diving Museum for over 40 years.

The Man in the Sea Museum is a work of love run by volunteers. Simply talk to the volunteers, they can be a wealth of diving information and you'll quickly feel the love they have for the museum and the stories the exhibits have to tell. Bay County is the home of the Military Diver, and every military service sends their members to this area to conduct diver training. Maintaining this unique history is the primary goal of the museum and its volunteers.

Beyond climbing your way through SEALAB I, guests appreciate the interactive experience of the museum. Take a walk in a pair of 80-year-old diving boots, try on an old MKV (mark-five) Diving Helmet, and even take your picture in of the five Seal Delivery Vehicles at the museum. Expect children to love the place since the Man in the Sea Museum features many hands-on, try-on, and climb-in exhibits that let kids of all ages get involved in learning.

The museum celebrated its 40th anniversary in March. Like any wise old diver, the museum has had its good days and bad days throughout the years. But like that old diver, it has shaken off the dust and is back at its antics again. A new board of directors and staff members were implemented in the fall of 2020. With a revised passion to secure a place for all military divers to call home, this team has worked relentlessly to make the museum a place of pride and honor. 2021 was the best year in the museum's history with over four thousand visitors, four new exhibits, and local news articles galore. With the first quarter of this year under our belts, the museum is on track to support over 9,000 visitors in 2022!

If you haven't seen the museum in the past year, we implore you to stop by or take a look at our website and Facebook page and see the direction the museum has been

heading in the past 18 months. Our staff has been working hard to make "Man in the Sea Museum" a household name and we want our military diving family to be part of it. If you are a military diver, married to a military diver, work with military divers, or just want a t-shirt, please take a closer look at volunteering and becoming a member of the museum.

**The museum is open  
Wednesday thru Saturdays  
from 10 a.m. to 4 p.m.**

**17314 Panama City Beach Parkway  
Panama City Beach, FL 32413**

**850-235-4101**

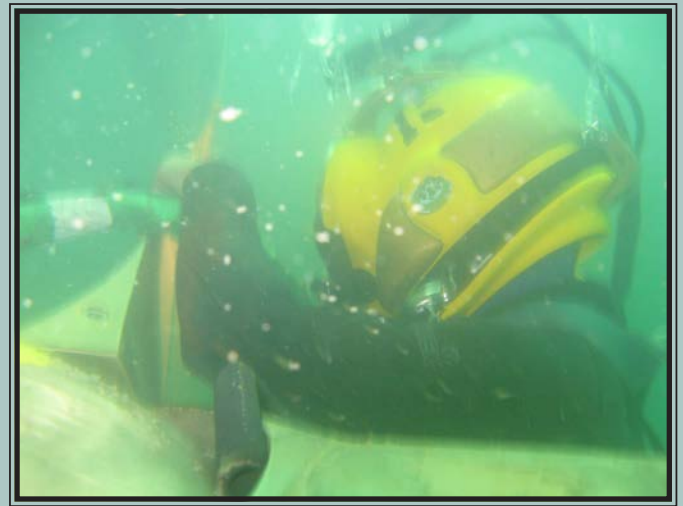
**[www.maninthesea.org](http://www.maninthesea.org)**

**[https://www.facebook.com/  
ManintheSeaMuseum](https://www.facebook.com/ManintheSeaMuseum)**



# UWSH the Other SUPSALV Discipline

By: Bill Reid



Hello from under the ship. Well, at least that is where I used to hang out when I was routinely diving on UWSH operations. Nowadays, I am generally chained to a desk here in DC trying to influence ship design, driving innovation, ferreting out improvements, and supporting the folks wearing the Mk 20's and Km 37/97's. My tether does not extend much further than the beltway these days, and it is, unfortunately, an unusual circumstance if I am out running an operation.

Speaking of innovation, I'm sure the Submarine maintenance providers out there are familiar with Tom Payne, 00C5's resident Submarine system engineer. Tom is often out working with divers and component engineers to translate a diver initiative (good idea) into an engineered tool or procedure. In addition, he works on improving procedures and fixing the things that did not work quite the way that was expected. Each new block of VA Class boats brings new and interesting challenges to Fleet divers and keeps Tom busy.

On the topic of interesting challenges, LCS class vessels top the list. TJ Guthrie, 00C5's underwater welding (UWW) engineer and our newest NDSTC Graduate, is working an Aluminum Friction Welding small business innovation and research initiative to develop a system to weld studs on the aluminum hull of the LCS 2 variant. The vision is for

the system to be certified for use by both military and commercial divers to enable temporary attachment points on a hull for cofferdams, patches, and UWW dry chamber habitats. LT Dustin Shelley is working to reinvigorate a composite patch initiative for the LCS2 variant that had previously stalled. Meanwhile, Scott Posey (our cofferdam and LCS SME) is busy improving and cleaning up our portfolio of LCS procedure and equipment sets. This keeps him in regular contact with SERMC and SWRMC divers servicing their homeported LCS vessels. These divers include Hugh Scully and Chad Miller at SWRMC who have their hands full with LCS, as well as many other ship classes out there in San Diego. Fortunately, I know they are up for the challenge.

Thinking of SERMC brings to mind the recent opportunity I had to slip the leash and go to Mayport for a 24/7 rudder repair job and C4F Maintenance Summit. While there, I heard rumors that Jim Peck was going to retire, but that's his story to tell. If true, his retirement will be sorely felt. Jim does a phenomenal job working the waterfront and coordinating the many diving operations there. He also has his hands full with LCS logistics and diver support for the LCS v1. Jim has that waterfront so wired that he coordinates hull cleaning operations as a side hustle for fun.

On the topic of hull cleaning, Tom McCue is still doing an outstanding job of managing that program. More impor-

tantly, he is fighting the good fight with the environmental regulators and policy setters to ensure that Underwater Ship Husbandry Divers and providers are allowed to continue doing what they do while still protecting the environment. The big issue Tom is dealing with currently is the move towards more stringent requirements on hull cleaning--like capture and filter requirements. The hull cleaning program saves a tremendous amount of taxpayer money in fuel cost avoidance and greatly reduces greenhouse gases produced by the Navy's ships so finding a way to continue is crucial.

Fiscal shenanigans notwithstanding, the future of UWSH looks busy. While UWSH has always come and gone in cycles, the trend seems to be upward and expanding service areas is contributing to that trend. For example, it appears that our submarine work will continue to increase. Luckily, we have LCDR Matt Wagner onboard. Although he is surface ED qualified, he spent time at Portsmouth Naval Shipyard so now has a bit of the mark of the submarine on him. Matt has been a great addition and has helped ease the submarine load on Tom Payne and our operations specialists Russ Mallet, Neil Wolfe, and Scott Heineman. In fact, we did so much SSN work in Guam on the backside of 2020 (the year of COVID) that when we traded CWO3 'Goody' Goodman for CWO3 Mike 'Paz' Pazman, we immediately put

him to work SSN's around the world and in Guam (a home coming or sorts).

When Stockdale ruptured her sonar dome (SDRW), Neil Wolfe, Warrant Paz, and I had the distinct pleasure of working with two very innovative gentlemen out in SRF Sasebo. Faced with the rather large dome rupture with no idea how to approach any kind of repair, LCDR Steve Lombardo immediately pulled out his BDR suit, jumped outside the box, and came up with a unique approach. Steve was savvy enough to recruit support and he pulled in David Berlin, the SRF-Sas Technical Division Head. These two mavericks designed, tested, redesigned, and improved a novel approach to restore integrity to the dome. 00C5's part in this operation was material support for the initial repair approach using the traditional SDRW patch method. So, Neil and Paz were launched (ask them about their bubble bus odyssey) to support, provide additional diver input, and eventually oversee the installation of the largest traditional patch method ever attempted. Ultimately, the final solution was a hybrid of the two approaches. In the end, the repair fell short of what we had hoped to achieve, but it exceeded expectations and was an awesome example of what

can be achieved when folks are given the leeway and support to try something new.

So, with casualties like Stockdale's SDRW, failing bearings, DDG rudder cracks, and the occasional CPP blade seal leak, the 00C5 operations team members including specialist Scott Heineman (who maintains our highest deployment rate), Russ Mallet, and Neil Wolfe will be gainfully employed and busy into the future- and coming to a water front near you. Luckily for me, team members also have personal lives which means they have to come home occasionally. This sometimes gives me an opportunity to flee DC to support an operation. In fact, I just had the opportunity to be the on-site representative for a DDG rudder repair in Rota, Spain. While in Rota, I had the honor and pleasure of working with CDR Ben Hall {formerly LT Hall of 00C5}. It was great catching up with Ben and even better seeing what a fantastic job he is doing shepherding diving maintenance in Rota. His initiatives include securing ample indoor storage for diver and 00C5 maintenance equipment which ensures equipment is ready-for-issue when needed.

Of course, I would be remiss if I didn't point out that my 3-week deployment was made possible by the outstand-

ing support of my staff--particularly Jacob Nessel, our CPP and propeller SME, who stood in for me to keep the office running smoothly. Scott Posey, in addition to working cofferdam issues and rigging plan reviews, also jumped in to help hold down the fort. Both of these gentlemen are naturally strong leaders who represent the strong future of this fine profession.

Cheers to you and a Great big Thank you to all you UWSH divers for doing what you do and making it look easy. I say again what I always said when out on the piers - we in DC do not have the market cornered on good ideas so feel free to reach out with your good idea and let's see what we can do with it. Red Diver, Left Bottom.

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*Article photo caption: Diver Bill Reid repairing USS GRIDLEY (DDG 101) CPP Blade.*

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*Bill served 20 years active service in the Navy, the last 12 of which were as a Diving Officer in the Engineering Duty Officer ranks. While on active service Bill did Tours in SRF Yokosuka, SUPSALV, and SUPSHIP Gulf coast. Upon retiring from active duty Bill joined the Civil Service ranks at SUPSALV as the UWSH Propulsion Systems Engineer eventually promoting to UWSH Division Director where he has served since 2007.*

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# Faceplate Feedback

**FACEPLATE appreciates feedback on our entire publication. So if you want to sound off about something we have published, please do!**

**faceplate\_editor@supsalv.org**

**<http://www.navsea.navy.mil/Home/SUPSALV/00C3-Diving/Faceplate-Magazine/>**







# MDSU-1 Salvage of 36-Foot Tug Bayview, Idaho

By: CW02 Stephen D. Vanzant, MDS CO 1-6 Company Commander

**M**obile Diving and Salvage (MDS) Unit ONE, Company 1-6 was tasked with an emergent job to salvage a 36-foot 1942 Gunderson Marine Tug in support of Naval Surface Warfare Center, Carderock Division's (NSWCCD) Acoustic Research Detachment (ARD) in Bayview, Idaho. Diving operations were based at an altitude of 2,051 feet above sea level, in 36°F of fresh water, with surface temperatures ranging from 22°F to 38°F, all of which required special planning considerations. The vessel sunk on Feb. 26, 2022, while moored to the boat slip, and came to rest in about 30 feet of water. The NSWCCD ARD is located on Lake Pend Oreille, which is Idaho's largest, deepest (1,150 feet), and quietest body of water providing an ideal environment for acoustic testing without the attendant problems and costs of open ocean operations. The ARD operates and supports unique Large Scale Submarine Models, Test Ranges, and acoustic test facilities utilized in conducting Research, Development, and Test & Evaluation.

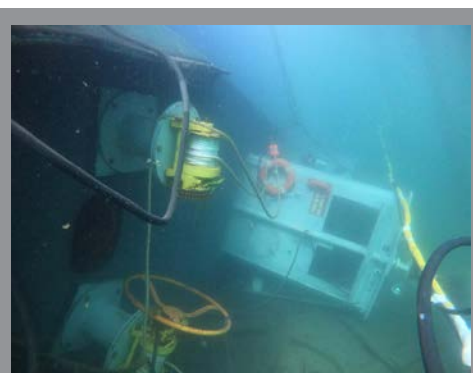
Within 24 hours of official orders, a four-man team, led by CW02 Stephen Vanzant and NDCS (MDV) Marshall Goble, conducted an initial site survey and mission planning at NSWCCD ARD, as well as to establish the Emergency Action Plan and logistical movements of Emergency Ship Salvage Material equipment from Port Hueneme, and Naval Undersea Warfare Center, (NUWC) Division Keyport Divers Life Support System and Equipment.

After a day of planning at NUWC Keyport, NDC Tommy Gerace, ND1 Kyle Knigga, and ND1 Matt Villafuerte drove the seven-hour journey to the job site, trailering all diving and salvage equipment and providing topside support throughout the salvage mission. MDS Company 1-6 arrived on-site the following day, led by NDC Timo Martinez. After a required 12-hour equilibration period at altitude, ND2 Owen Craffey, ND1 Jeff Baker, and ND1 Chris Prust left surface to conduct an initial salvage survey. The Salvors employed a PWH-100/3 Monkey Heater, donned 7-MM wetsuits and

floating a 10-ton vessel using lift bags as impractical. A 77,000-pound lift bag was suspended directly above the vessel, with two 10-ton chain falls attached to the lift bag's bottom by a strong back. ND2 Cayman Conley and ND2 Owen Craffey installed two 6,500-pound lift bags, one forward and one aft, to reduce overall weight and increase mechanical advantage for the Salvors to right the tug vertically for a much safer and more controlled lift. Additional lift bags were attached once the vessel was vertically oriented, and the Salvors safely controlled the lift with chain falls until the vessel was five to ten feet below the surface.

The vessel was secured to the starboard side of the barge and towed 200 yards to a floating dock equipped with overhead cranes, where it was raised to the surface for pumping. Two 3-inch trash pumps were installed, one forward and one aft, removing 1,445 gallons of fresh water until the vessel could float independently. The vessel was lifted from the water and loaded onto a flatbed semi-truck for transportation to the disposal site.

The overall mission was a huge success for the dive team – not only in terms of safely completing the salvage operation, but also in terms of cultivating relationships with Navy Pacific Northwest commands in order to facilitate future seamless interoperability. Flexing MDS Company's capabilities while operating in cold weather environments, at elevated altitudes, under time-critical pressures – is what we are designed to do.



36-foot tug resting on her port side.

KM-37 hard hats with hot water shrouds to combat the cold water environment.

Diver ingenuity was required due to the unique nature of the sunken vessel, which was resting on her port side inside a boat house slip with four pylons on each side within five feet. The risk of further damage to the dock infrastructure, rendered the typical method of re-





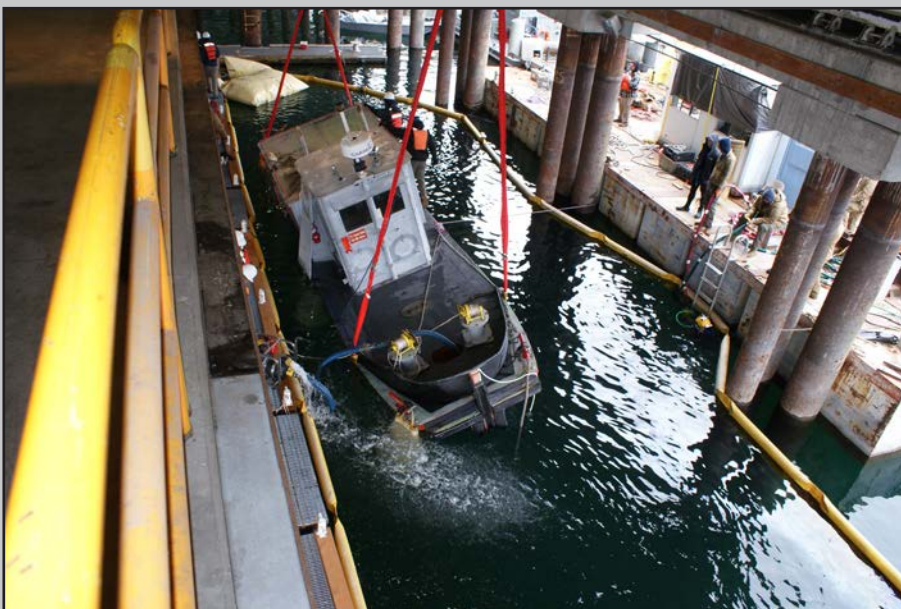
ND2 Craffey, ND1 Baker, and ND1 Prust conduct surface checks.



Equipment load out at Keyport Dive Locker



ND2 Craffey righting the tug using a chain fall.



MDS CO 1-6 divers pump 1,455 gallons of fresh water utilizing two 3-inch trash pumps.

#### **MDS Company 1-6**

CWO2 Stephen Vanzant  
 NDCS Marshall Goble  
 NDC "Timo" Martinez  
 NDC Zach Hanson  
 ND1 Jeff Baker  
 HM1 Robert Okane  
 ND1 Josh Amberson  
 ND1 Joe Sarge  
 ND1 James Lindley  
 ND1 Chris Prust  
 ND2 Casey Krug  
 ND2 Carlos Gallardo-Berry  
 ND2 Alex Christie  
 ND2 Elmer Figueroa  
 ND2 Blake Lamb  
 ND2 Owen Craffey  
 ND2 Austin Bradley  
 ND2 Cayman Conley  
 CM2 Matt Williams



MDS CO 1-6 and NUWC Keyport divers successfully salvaged a Navy 36-foot Marine Tug.

Article cover photo: 36-foot tug secured to starboard side of barge during tow.





# The Old Master

I'm sure I think like many others that came in front of me who had the opportunity to write this article "Old Master" for Faceplate, their first thought was Damn I'm not old! Looking back in the mirror after 31 plus years of service "yeah you are buddy". It's time to go ashore and leave it up to the young bucks. As a native of Massachusetts, I enlisted in the Navy in January of 1991 during the first Gulf War, and I remember quite clearly listening to reports of the shock and awe campaign of our military defeating the Iraqi regime swiftly. I attended Engineman A School in Great Lakes, IL, where I screened for the Navy Diving Program, and consequently graduated Second Class Dive School in Coronado, CA. My first interaction and experiences in Second Class Dive School was incredible to say the least. Beyond the sole crushing PT and drinking from the firehose pace of learning, I found exactly what I was looking for. At the time I just thought being wet,



**NDCM Scott Brodeur**

sandy, and cold pretty much our entire time, the instructors were sadistic a\*\*holes whose main purpose in life was to make us quit or "DOR". I later come to the realization the training wasn't punishment, it was the measure in which we were being screened for those long diving days. These instructors would be working with us in the fleet, and they wanted to ensure we had what it takes when we were hatted up beside them. The standard of excellence was impressed upon every Navy Diver from the start, and through the ranks every diver is charged with maintaining it.

It was an incredible time in the early 1990's to be in the Navy and part of the diving community. I reflect now on the resources Navy Diving had and I can hardly believe the missions we accomplished with what little resources we had, once again on the steel backbone of our sailors. My first dive locker was the USS L.Y. SPEAR (AS 36) where the cast of characters I met and became lifelong friends, better yet brothers, were essential to success in this incredible journey. Having only two older sisters I found myself now having many brothers through thick and thin- still to this day. It didn't always seem to feel great at the time, but the lens of history is always a great measure of accomplishments. Looking back through the

years at the commands I happened to be part of at the right time on pure luck, was a blessing. The long diving days in Groton, to the pirate like days at MDSU-2 DET Puerto Rico and everything in between were incredible. Becoming a Master Diver in May 2004 was all based on those early mentors and the friends I made along the way (thank you!). My first command as MDV was MDSU-2 DET Alpha and there was no break in the action, we were constantly deployed my entire tour working on everything from Monitor, Katrina, OIF, and flyaway saturation diving. Two tours later, I found myself back at MDSU-2 as the CMC and that was the toughest job I ever had. Once again I thank God for my amazing family, and my brothers help along the way. In wrapping this up I purposely did not mention all the names because it would have been a faceplate book and not article. You all know who you are and I can't express enough how grateful I am to have your friendship. Diving is the only thing I wanted to do in the Navy. A good friend would always say "who's got it better than us?", my answer is still "NOBODY"! I always told myself I won't be one of those retired on active-duty guys hanging around like old dive gear waiting to get thrown out. One day I wouldn't be able to keep up and that would be the signal to retire ..... well here we are.

HooYah Deep Sea! Still undefeated in ultimate football, Scotty B







# SUPDIVE SENDS ...CAPT Bob Marsh

**G**reetings Fellow Divers! Throughout the past six months, I've had the opportunity to meet and engage with a few of our community's diverse lockers spread throughout the fleet, observing the critical work our community executes and their significant contribution to the Navy's warfighting readiness. These opportunities continue to provide the NAVSEA 00C3 team expanded awareness on community-wide technical needs and further identify areas in need of refinement as they pertain to equipment, technical guidance, and/or diving policy. As a result, our office has been working to identify, address, and close the technical gaps on various items over the past six months. Some of these efforts include developing criteria for COTS charging systems, re-assessing the ANU list for currency, applicability, redundancy, and gaps, and engaging BUMED and TYCOMs to highlight diving-specific medical support shortfalls. Additionally, our fleet engagements routinely spur valuable collaborative discussions on policy and technical guidance interpretation, usually highlighting areas requiring clarification and/or improvement.

As I wrote in our November issue FACEPLATE, fleet feedback ensures NAVSEA 00C3 efforts are on target and focused to provide what you need, when you need it. Being a member of a "high demand, low density" community of professionals always comes with challenges. We are continually asked to conduct high-risk evolutions within the constraints of time and resources to enable mission success. As such, it is imperative that we receive feedback from you, the working diver, on current equipment limitations, diving policy concerns, or technical challenges so our staff can aggressively work solutions that enable increased mission safety and success.

Weekly, our team receives numerous RFIs from the community in regards to policy interpretation, technical guidance relating to certified or ANU systems and equipment, or assistance with technical risk assessments to sup-



port unique dive operations (waivers/ETPs). These interactions, questions, and discussions help refine future initiatives and modifications to current diving policy as our community evolves to prepare for the next fight. Please continue to engage and use the 00C3 team as a resource to enable your day-to-day mission where needed. We exist for YOU! **New Equipment for Fleet Issuance:**

As I write this, NAVSEA 00C3 is finalizing programmatic requirements to release two major equipment upgrades to the fleet: a newly designed Divers Launch and Recovery System (LARS); and a technical refresh to the legacy Cochran Navy Dive Computer (NDC). Both of these technology refresh efforts have been underway for the past few years, as collaboration with TYCOMs, resource sponsors, test facilities, and manufacturers have recently concluded. Our office is finalizing certification, maintenance, and operating doctrine required to support the new systems with fleet issue / availability scheduled for quarter two and three of calendar year 2022! Please take a look at the new systems below.

**Shearwater Perdix NDC (U.S. Navy Version):** For commands that integrate NDCs into their diving operations, a refreshed capability will be available this year. The Shearwater Perdix NDC (U.S. Navy Version) was recently "Approved for Navy Use", and currently

resides on the NAVSEA 00C3 ANU list. Introduction of the Perdix brings updated technology to our legacy systems and eliminates the need for commands to carry multiple NDC versions (i.e. Air, NSW, EOD, etc.) to support various diving missions. Perdix combines the functionality of our legacy Cochran NDC models into one platform by integrating U.S. Navy Diving Manual decompression algorithms into one device that is user-programmed based on your diving mode, breathing gas (i.e. Air, N2O2, HeO2), and expected profile. Although these computers are physically identical to those one could purchase directly from Shearwater, the U.S.N. Version includes tailored software modifications, U.S.N diving algorithms, and dive calculations designed to meet U.S. Navy diving requirements. As such, these Navy-specific NDCs are NAVSEA-controlled to ensure commands receive the right systems. Some unique features of the Shearwater Per-

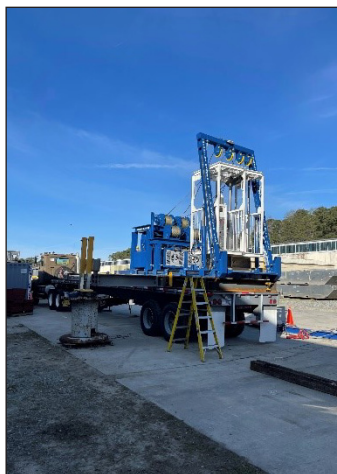


dix NDC (U.S. Navy Version) include: selectable dive modes; alarm and alert setting flexibility; customized display functionality; full dive profile logging; functionality in dry environments (i.e. recompression chambers) to 200 fsw, and other features applicable to U.S.N diving operations. Both a User Quick Guide and Operating Instruction Manual are available to support initial training and diving operations. As established for the legacy Cochran NDC, updates to the U.S. Navy Diving Manual, Appendix 2B, will be included in Revision 8 when finalized and released. Shearwater Perdix NDC (U.S. Navy Version) authorization will be



promulgated via a Diving Advisory upon fleet issuance.

Also new this year is the addition of a twin-basket design diver Launch and Recovery System (LARS) manufactured by Submarine Manufacturing and Products Ltd. (SMP). This system was designed to increase diver safety and meet the unique needs of diving from dynamic positioning (DP) vessels in addition to providing modernized diver launch and recovery options off existing U.S. Navy vessels and vessels of opportunity (VOOs) utilized by the fleet. Capable of deploying divers to current air and mixed gas diving depths, the SMP LARS provides hydraulic redundancy, additional in-water stability and control, and additional transportation and deployment advantages, as the system was designed to be stowed and transported inside a 20-foot CONEX box. To date, two systems have been procured and received. The new LARS are currently undergoing Navy testing, modification,



**LARS in stored / transport configuration**



**Fully assembled LARS on test platform**

and certification to satisfy diver life support system requirements. Initial issue of these first two systems are planned for Mobile Diving and Salvage Unit ONE and TWO to support their expeditionary mission sets. Additional systems are planned for procurement in the out years to support the future NAVAJO-class T-ATS, the U.S. Navy's replacement of the SAFEGUARD-class ARS.

As I wrap this up, I would like to

“foot stomp” my request from my November 2021 “SUPDIVE Sends”, asking for YOUR feedback. With competing priorities for valuable U.S. Navy resources in light of recent events, growing global competition, and increasing capabilities of peer competitors, targeted and efficient use of our resources is of critical importance. Resources aligned to equipment or doctrinal changes supporting our diving missions need to be on target and MUST

deliver required capabilities to fill gaps or improve effectiveness. As such, to ensure we (NAVSEA 00C3) are laser focused on your needs, we need your feedback and involvement to prevent future research and development or procurement efforts from missing the mark! As always, Dive Safe, Dive Smart, and support your teammates!

*CAPT Marsh photo by: MC2 Daniel Cleary*

## Diving Advisories

- 21 - 10 ADVISORY TEAM MEETING
- 22 - 01 LIST OF EFFECTIVE DIVING ADVISORIES
- 22 - 02 ISSUANCE OF REVISED FLY AWAY DIVE/SYSTEM III AIR SYSTEM TECHNICAL MANUAL, TRANSPORTABLE RECOMPRESSION/CHAMBER SYSTEM MK 6 MOD 0 AND MOD 1 TECHNICAL MANUAL, AND KM-37/UNDERWATER BREATHING APPARATUS OPERATIONAL PROCEDURES AND CHECKLISTS
- 22 - 03 ISSUANCE OF CRITERIA FOR U.S. NAVY USE OF COMMERCIAL SELF-CONTAINED UNDERWATER BREATHING APPARATUS CYLINDERS AND REVISED CRITERIA FOR U.S. NAVY USE OF COMMERCIAL DIVING BREATHING AIR CHECKLISTS
- 22 - 04 ISSUANCE OF REVISED INTERSPIRO DIVATOR SELF-CONTAINED UNDERWATER BREATHING APPARATUS DIVATOR PRODUCTS SURFACE SUPPLY APPARATUS CHECKLISTS
- 22 - 05 NAVY DIVE COMPUTERS
- 22 - 06 NEMO BATTERY POWERED UNDERWATER TOOLS

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