



FACEPLATE

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

Volume 24, No. 2 / November 2020

We Dive The World Over

In This Issue...

DAVD Update
Rise of the Original Mud-Monster
Work Quickly and Fix the "Big Stick"

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/SUP_SALV/00C3-Diving/Faceplate-Magazine/ to view/print Faceplate.

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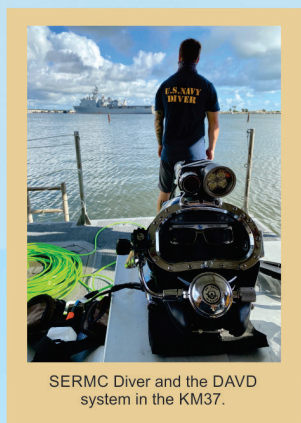
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SUPSALV SENDS...CAPT Jay Young

It has been over six months since COVID-19 struck the world, and I will be the first to say that when I last wrote to you in March 2020, I never would have thought that we would still be dealing with this crisis. That said, our Navy Diving community has met these challenges head on, and you all have found creative ways to continue diving operations in support of our mission requirements. I am confident that we will come through this crisis (hopefully sooner than later) and we will be stronger for it.

Salvage – Our salvage forces have continued to operate at the highest level through the spring and summer. On 29 April 2020, the Canadian Armed Forces lost a CH-148 in the Ionian Sea. In coordination with the Canadian Armed Forces, our SUPSALV team conducted a successful ROV search and recovery operation and recovered all critical equipment and remains from over 10,000 feet of sea water. In June 2020, the USAF lost an F-15C in the English Channel. MDSU 2 and SUPSALV deployed to Sunderland, UK and completed a successful search and recovery operation at 175 feet of sea water. MDSU 2 divers conducted surface supplied diving operations by day, and SUPSALV personnel conducted ROV operations by night. In July 2020, the USMC lost an AAV while conducting training evolutions off the coast of San Clemente Island, CA. SUPSALV teamed with the Undersea Rescue Command (URC) and successfully searched for and recovered the AAV from 385 feet of sea water in less than a week's time. These three salvage operations are evidence that our salvage capability does not see lines of demarcation between the U.S. Military Services or our allied partners. Our stellar salvage forces are ready to respond to any operation regardless of the environmental challenges, the organization structures, and even geographical borders. In addition to helping the respective services to investigate why these incidents occurred, your efforts helped to bring closure to the families, friends, and colleagues of the 15 fallen service members lost in these tragic accidents.

Diving – In September, our SEA 00C3 provided on an onsite demonstration of the Diver Augmented Vision Display (DAVD) system and the prototype Multi-Occupant Flexible Recompression Chamber (MOFRC) system at the Joint



Expeditionary Base in Little Creek, VA. Many divers from the Navy Expeditionary Combat Command and area Naval Special Warfare units were able to see these systems in action. The DAVD and MOFRC systems have applications from UWSH to Salvage to Special Warfare operations, and these systems will improve the efficiency and effectiveness during manned diving operations. Please be on the lookout for these systems in your geographical area.

Underwater Ship Husbandry – COVID-19 has only been a minor speedbump to our UWSH forces around the world. In ports around the world, you have continued to safely and effectively execute underwater repairs on ships and submarines to keep our Fleet forces operating at full speed. Over the last nine months, you have successfully avoided 73 dry docking evolutions by creatively and effectively accomplishing the most complex waterborne tasks. One particular operation highlighted the teamwork and expertise required to execute to most critical waterborne repairs. In August 2020, our SUPSALV / SWRMC / PSNSY team successfully replaced four Main Shaft Bearings and 1 Intermediate Shaft Bearing aboard USS THEODORE ROOSEVELT (CVN 71) in San Diego, CA. Over the course of a short 21 days, our dive teams executed a very aggressive bearing replacement plan and knocked it out of the park. One waterborne bearing replacement is a great achievement, but replacing five CVN bearings in three weeks

is historic. Please continue doing what you do best to improve Fleet readiness.

We have discussed Battle Damage Response (BDR) in many different forums, and on 12 July 2020, BDR became more than just a concept aboard USS BONHOMME RICHARD (BHR) in San Diego, CA. BDR operations can take on many forms, but many cases involve fire and flooding as did the BHR. In the early days of the BHR fire, our BDR response came in the form of firefighting and the coordinated firefighting team used creative means to aggressively extinguish the fire. Once the fire was out and after five days of firefighting and continuous flow of water onto BHR, our salvage mission shifted to pumping water from the ship to restore ship stability. Over the next two days, our salvage team dewatered all compartments using portable hydraulic submersible pumps. The dewatering operation was manpower intensive, and BHR's internal conditions/environment made placing and relocating pumping equipment extremely challenging. In total, our team removed 350,000 gallons of firefighting water from the ship's compartments. BDR operations continue to this day as the Navy works through the decision process for the future of BHR. We learned valuable lessons from BHR that we are incorporating into plans for future BDR operations.

Before I close, I want to reinforce the importance of Diving Operational Readiness Inspections (DORI). DORIs are conducted to verify operational proficiency and compliance with technical requirements, approved procedures, and diving policy to help ensure the safety of our Divers during extremely demanding and often dangerous operations. Over the last couple of months, we have observed some concerning situations involving maintenance and material condition of diving equipment. SUPDIVE will provide additional details in his SUPDIVE Sends, and we will be sharing the detailed findings with you on our SUPSALV site. I encourage all of you to pull the DORI inspection checklists and take a proactive look at your diving programs, even if you are not due for an upcoming inspection. Keep leading, stay motivated, and please continue to take care of yourselves, your families, and your teammates. Stay safe, and I look forward to seeing all of you on the waterfront. Hooyah, Deep Sea!

TRF-KB Divers Conduct Local Salvage Operations

By: Chief Warrant Officer Three Joe Sweeting

The TRIDENT Refit Facility, Kings Bay Dive Locker performed salvage operations in June to remove hazards to waterway navigation in the Mayport Basin of Naval Station Mayport, Fla. This was the second time in 18 months that TRF-KB divers had conducted local joint salvage operations.

During a pre-dredge survey in late May, the U.S. Army Corps of Engineers discovered a sunken vessel in approximately 50 feet of seawater on the north side of the centerline entrance channel into the Basin. The Jacksonville Sheriff's Office Dive Team conducted an investigation of the vessel. It was determined to be a workboat of some type with no oil or fuel onboard. The sunken vessel, however, posed a potential navigation hazard for U.S. Navy maritime assets entering and/or departing Naval Station Mayport, Fla. The vessel was deemed to pose a navigation hazard, specifically for an upcoming port visit of USS DELAWARE (SSN 791).

Upon their arrival to Naval Station Mayport, the TRF-KB Dive Team performed critical inspections and surveys.

nel. It was decided that the best course of action was to remove any excess weight and increase buoyancy by using lift bags.

The TRF-KB Dive Team, assisted by the Naval Station Port Operations team, conducted two days of diving operations to remove sand and to rig the vessel for the lift. Once positive buoyancy was restored, the wreckage was moved out of the channel to the port operations boat ramp where it was cut up and disposed of.

The TRF-KB divers were familiar with this type of diving operation having previously conducted a similar joint operation in 2018. Following an EF3 tornado that struck the Naval Submarine Base, Kings Bay Waterfront in December 2018, TRF-KB divers conducted a joint salvage operation to remove several vehicles and a large shipping container from the water at Site Six. The debris posed a navigational hazard to U.S. Coast Guard and escort vessel operations as well as the mooring of



Navy Divers and support personnel pose in front of the sunken vessel they removed from the entrance channel of the Mayport Basin. (Front row left to right) BM3 Edgar Johnson, BM2 Kyle Lammie, BM2 Julio Colon, ND2 John Tyson, ND2 David Purkey, ND3 William Trainer, ND2 Randle Cain, ND3 Damien Curry, BM3 Ashanti Southhall, ENFN Marques Jones-Lewis, (back row from left to right) BM2 Anthony Nicholson, MDV Ashley Gossett, ND1 Stephen Schilz, ND3 Simon Dibble, ND3 Nicholas Gardner, ND3 Gabriel Cuesta, NDC Daniel Smith, ND3 Devon Gilman, BMC Vince Lokebill, HT2 Warren Ruth, ND3 Tristan Still.

In order to efficiently optimize the divers underwater time in near zero visibility conditions, TRF-KB divers coordinated the use of a remotely operated vehicle (ROV) with EOD Mobile Unit Six, Detachment, Kings Bay to re-locate the vessel. After locating and marking the sunken vessel using the ROV, the divers proceeded to conduct a salvage survey to explore and determine the best options for recovering the vessel.

The vessel, partially buried by the sandy bottom, was sitting upright along the sloping side of the chan-

nel. It was decided that the best course of action was to remove any excess weight and increase buoyancy by using lift bags.

SSGN, SSBN and visiting submarines. Despite being jobs that are not normally conducted by TRF-KB divers, both operations were safely and successfully executed by relying on the salvage experience within the Dive Locker. In addition to the cost savings to the U.S. Navy, these types of salvage operations also provide tremendous training opportunities and highlight the benefits gained through hard work and initiative.

CWO3 Sweeting is currently serving as the Division Officer for TRF KB Dive Locker (72B/380).



A vehicle is removed from the water at Site Six during a joint salvage operation following an EF3 tornado in December 2018.

Work Quickly and Fix the “Big Stick”

SWRMC, PSNS, and SUPSALV Divers Empower TR to Bully Again

By: LCDR Michael Beautyman, LCDR Nick Artabazon, and CW03 Chad Miller

Just weeks after being crippled by COVID-19 and reeling from the highly publicized and politicized reactions that followed, USS Theodore Roosevelt (CVN 71) was again threatened with a deployment derailed. The biggest sticks of all – the four shafts responsible for powering this behemoth of American brawn – were sitting on damaged bearings. TR, with little more than a month to the next underway, was glued to the pier.

Fortunately, the divers of Southwest Regional Maintenance Center (SWRMC), Puget Sound Naval Shipyard (PSNS), the U.S. Navy Supervisor of Salvage and Diving (SUPSALV), and Navy Experimental Diving Unit (NEDU) share a quality with that former Assistant Secretary of the Navy and President: a vigorous appreciation for “the strenuous life.” After inspection, the final count: all four main bearings and the number four (port outboard) shaft intermediate bearing needed replacement. It would mark the fourth time main bearings were replaced in water on a carrier, and the first time in almost eight years. The intermediate bearing had never been replaced in water. Just 79 days after returning to homeport, Roosevelt was due underway for carrier qualifications.

The team had 21 days.

With the requirement to execute this unprecedented repair set, the team set to work. SWRMC, the lead maintenance activity, organized the Alpha dive team on Naval Base Coronado and began generating a work package. They prepared to shift into 24 hour operations with crews assigned to the day and night shifts. PSNS, with ample experience repairing carriers, mobilized seasoned ci-

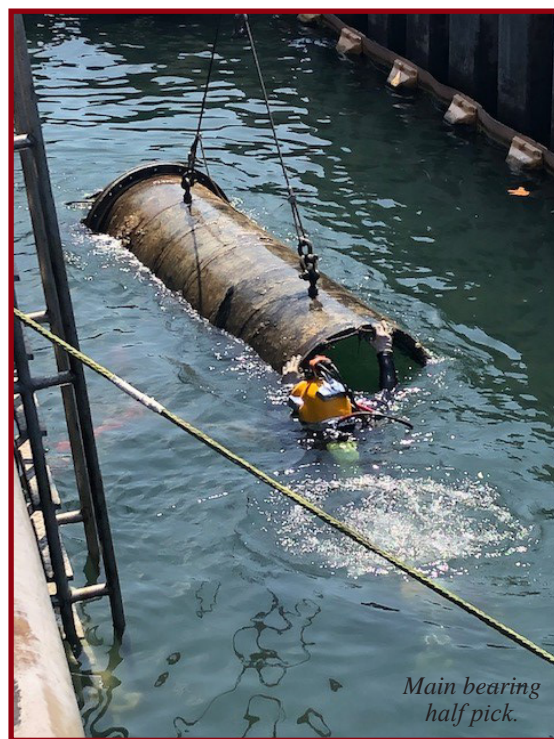
vilian divers and trained the combined team with insight on the main bearing procedure. SUPSALV, the technical authority for underwater ships husbandry, mobilized commercial welder divers from Phoenix International and bearing replacement equipment from its Emergency Ship Salvage Material (ESSM) program, and provided technical representatives onsite to oversee the welding operations and assist SWRMC and PSNS where requested. Engineers at SUPSALV also rapidly developed the procedure for the intermediate bearing replacement.

The rapid and coordinated response of this effort was further complicated by the pandemic, with different organizational standards potentially limiting participation and slowing work. The leadership in the SWRMC dive locker quickly developed and received approval for a mitigation plan, and the healthy team commenced work.

Broken down to its prime elements, a carrier shaft bearing is replaced by removing the rope guard and fairwaters, welding lifting and handling padeyes to the hull of the ship, using jacking bolts and pullers to remove the top half of the bearing, lifting the shaft, pulling and rotating the bottom bearing to remove it, and then reversing with the refurbished bearings. It is an exercise in underwater rigging, where slow is smooth and smooth is fast. The loads – which ranged from thousands of pounds (bearing halves, 50-ton chain falls) to over 100,000

pounds (lifting the shaft approximately one inch) – could severely damage equipment and the ship, initiate injury, or kill a diver. Leaders in the SWRMC dive locker thoughtfully generated the shift teams, blending experienced Navy divers with fresh two chucks and distributing the PSNS expertise to ensure that each 12 hour stint had folks who understood each element of the procedure, from rigging to inspection to barge crane operations.

Phoenix divers prepared the work-sites, removing the fairwaters and rope guards and welding the rigging points into place before shifting their barge to starboard to commence work on the number one shaft. The commercial and Navy sides would work simultaneously, the former on the main bearings of shafts



Main bearing half pick.

one, two, and three, and the latter on the main bearing and first-time intermediate bearing on shaft four. The Navy side began by considering the most efficient and safe way to rig the initial equipment – including two 50-ton chain falls weighing more than two tons each – into position. After some discussion and some white-board drawings of questionable clarity, the team settled on a creative rig. They rigged each chain falls to its load cell, flounder plate, and one end of the chain that would support it from the propeller lifting tunnel, or “rat hole.” Divers then swam a line from one of the two barge hydraulic winches through the lifting tunnel, connected it via sacrificial line to the 8th link, and used a small piece of line to control the bitter end of the chain. This allowed the winches to do the work of pulling into place the entire lifting system, with the diver merely controlling the loose bitter end of the chain to ensure it ran untwisted through the tunnel. Once through, the bitter end was long enough to complete

By the Numbers:
5 shaft bearings
100,000+ pounds lifted
3 diving commands
21 days
8 days early finish

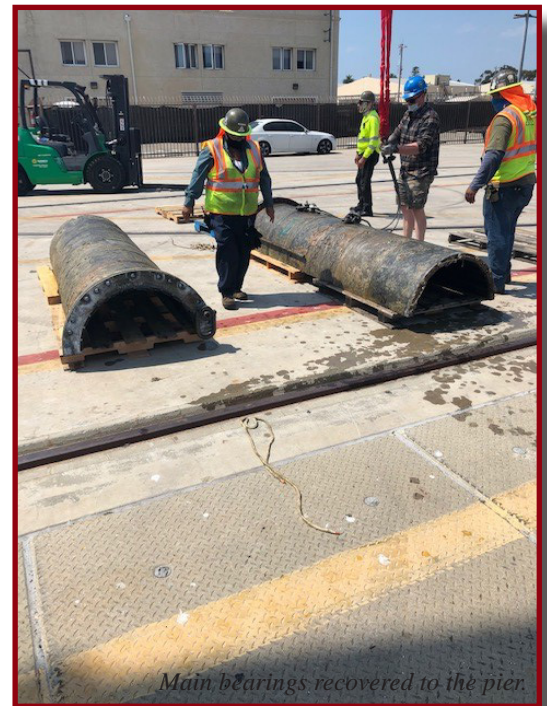
book. It was on the very first day of lifting operations that the barge crane failed. Diver technicians began troubleshooting immediately and sought help from the crane experts ashore. Thwarted, at least for the moment, the divers sought a more creative solution.

Recognizing that the bearing halves were only going to be craned ashore for a 72 hour overhaul – and that bringing them to the deck on the barge offered no advantage, but expended time rigging – the team developed a plan to rig them from the side of the barge. One sling suspended them in the water by their rigging bridle from a cleat on the barge, and another lazy sling provided a pick point for the shore based crane once the barge was transferred to the pier to turnover bearings. This proved so effective that, even after the barge crane was finally restored, the dive team finished the job with this method, laterally moving many thousands of pounds without the use of a crane.

The parallel dive sides presented their own challenges. Irrefutably faster together, they each advanced to the point of needing the same limited tools and parts required for this job. Even as SUP-SALV mobilized more equipment from ESSM, the Navy side had to pause so that the contracted divers could continue unimpeded. Eventually

every swivel hoist ring in the SUP-SALV inventory was employed at once.

After thousands of turns on jacking and draw bolts to pull and push bearing halves, dozens of feeler gauge clearance measurements, coating hands and wetsuits and hats in peanut butter consistently



Main bearings recovered to the pier.

cy preservative, and rigging more yard and stay picks than Joshua Humphreys, the combined dive sides completed the job eight days early. A national asset was returned to the fleet ready for tasking. The rough were ready to ride again.

LCDR Michael Beautyman is Assistant for Salvage at the U.S. Navy Supervisor of Salvage & Diving, where he has conducted dozens of salvage operations and technical assists. He is a diving, salvage, and surface warfare qualified Engineering Duty Officer who previously served as Salvage Officer for 5th Fleet.

LCDR Nick Artabazon is Test & Evaluation Department Head at the Navy Experimental Diving Unit, where he evaluates new undersea and diving technology for the warfighter and serves as the lead diving accident investigator for the US NAVY. He is a diving, salvage, and surface warfare qualified Engineering Duty Officer slated to serve as Salvage Officer for Pacific Fleet.

CWO3 Chad Miller is Diving Production Officer at Southwest Regional Maintenance Center, where he has overseen hundreds of underwater ship husbandry jobs comprising thousands of hours of diving. He is a Diving Salvage Warfare and Enlisted Surface Warfare qualified Diving Chief Warrant Officer who has served at numerous afloat and ashore diving and salvage commands.



the connection to the flounder plate, and when the winches were paid out evenly, the divers could regain the yard and stay lines for use on the next step.

Any diver with a little binsutke on her wetsuit will tell you there is no such thing as a job that goes perfectly by the

Command in the **SPOTLIGHT** **NAVSEA SUPSALV**

By: SUPSALV Staff

The Naval Sea Systems Command's Office of the Director of Ocean Engineering, Supervisor of Salvage (SUPSALV) and Diving, or NAVSEA 00C, provides technical, operational and emergency support to the Navy, Department of Defense and adjacent federal agencies in the ocean engineering disciplines of marine salvage, pollution abatement, diving, diving system certification, and underwater ship husbandry (UWSH). A tenant of the Washington Navy Yard, the 00C home office, which is comprised of five program divisions manned by 13 active duty Sailors and 35 civil service employees/contractor support, overlooks the historic Anacostia River, where Navy Divers once trained from 1927 to 1980. On top of the personnel employed in Washington, D.C., and three geographically dispersed field representatives, the subordinate Emergency Ship Salvage Material (ESSM) enterprise employs over 200 contract personnel at eight worldwide locations, each of them postured to support and augment fleet capabilities. This first in a renewed series of articles generated to spotlight the diverse units and talented professional that constitute the dive-enable force focuses on the functions of this one of a kind program office.

NAVSEA 00C1 - Business/Financial Services is one of the most critical divisions at 00C, responsible for funding management and financial support. Serving as the central financial agent for all SUPSALV projects, 00C1 enables adjacent codes and operational units, alike, through their provision of business management, contracting, acquisition, purchasing, and budgeting services.

NAVSEA 00C2 - The Salvage Operations Division maintains standing worldwide commercial contracts for salvage, emergency towing, deep ocean search and recovery operations, and oil pollution abatement.. The specific functions of this division are the swift and technically sound execution or technical oversight of open-ocean towing, heavy lift operations, deep ocean search and recovery to 20,000 FSW, and all manner of marine salvage, clearance, removal, and recovery; the rapid execution or technical oversight of pollution mitigation and representing the DoD on the National Response Team; and the maintenance and provision of specialized salvage, diving, and pollution equipment to fleet diving operations. Tasks include, but are not limited to, towing inactive ships, heavy lifting damaged warships, locating and recovering aircraft and other objects of interest from the ocean floor, providing uniformed salvage officer expertise and specialized equipment to lead, advise, complement, or increase fleet diving capability, using pollution equipment to contain and clean up large spills, and providing naval and ocean engineering instruction and counsel.

NAVSEA 00C3 - The Diving Programs Division is the lead technical authority for Department of Defense and Navy diving. Technical elements of 00C3's central agency include the provision of cradle-to-grave engineering support for diving equipment, from basic research and design through prototype development, testing and evaluation, acquisition maintaining the Authorized for Navy Use (ANU) list, developing technical manuals, and managing planned maintenance requirements. In addition to its engineering functions, this division also directly supports fleet operations through broad spectrum policy administration, to include the adjudication of technical matters, revision and issuance of the Navy Diving Manual, Diving Advisory messages and comprehensive hazard assessments in support of waiver requests. 00C3 manages and administers the System Command's Diving Operational Readiness Inspection (DORI) program and recently introduced the DORI Quality Assurance Surveillance Program (QASP) to ensure cognizant headquarters covering multiple diving warfare communities are conducting effective inspections of their subordinate diving commands in accordance with the OPNAV 3150 and to gain/share best program practices between these communities. Members within the 00C3 team include the U.S. Navy Supervisor of Diving, who serves as the Technical Project Officer (TPO) supporting diving information exchange between our allies and partners around the globe, and the Fleet Diving Officer and Master Diver who chair the respective diving Chief Warrant Officer and Senior Enlisted Advisory Teams (CWO-AT/SEAT)).

NAVSEA 00C4 - Diving Systems Safety Certification Division provides maximum reasonable assurance that all Diving Life Support Systems (DLSS) are safe for manned use. NAVSEA via SUPSALV is the lead Diving Systems Safety Certification Authority (SCA) for the U.S. Navy. The purpose of the Certification Program is to provide an objective, third-party review of all

U.S. Navy-owned or operated manned diving and hyperbaric systems. This division performs a multitude of functions in assessing the safety of system designs and hardware. 00C4 provides consistent support during system design, fabrication and testing, initial certification for manned use and periodic surveys verify safe operating conditions. In addition to USN systems, 00C4 is also the SCA for all dive-capable U.S. Special Operations Command (SOCOM) units, including elements of the U.S. Army, Air Force, and Marine Corps. Currently, 00C4 has certification oversight of over 270 systems assigned to 81 commands worldwide.

While system certification is the service the fleet is most familiar with, 00C4 personnel also support diving system hazard assessments of foreign Navy's DLSS, conduct manufacturer quality assurance audits, survey and approve commercial oxygen cleaning facilities, and work closely with NAVSEA 00C3 on all issues affecting DLSS safety. Division personnel assume their responsibilities as the U.S. Navy's 911 for diving, available to provide the fleet with the support required to complete all missions as safely as possible.

NAVSEA 00C5 - UWSH Division is the Navy's technical authority for the underwater maintenance and repair of waterborne hulls. Responsibilities include maintenance and repair capabilities, development of work systems, processes and technical documentation, waterborne repairs on vessels that would otherwise require dry-docking, maintaining pre-positioned tooling and equipment kits to support worldwide operations, and providing technical expertise in engineering and repair operations. 00C5 maintains worldwide contracts, for hull cleaning; diving services, and engineering support

Current Fleet Projects

A-Frame Diver Launch and Recovery System (LARS)- Gone are the days where Navy Divers have dedicated vessels with certified launch and recovery systems. The new T-ATS vessel will be a Multi Mission Common Hull Platform based on the commercial offshore anchor handling tug supply vessel. These vessels will be able to support towing, diving, salvage, rescue, oil spill response, and humanitarian assistance missions by being able to support modular payloads that are embarked by the Command supporting the assigned mission. As we prepare for the transition from the T-ARS and T-ATF to the T-ATS our diving teams have increased their use of contracted civilian vessels of opportunity (VOO) that are dynamic position capable to train and conduct real-world diving missions.



Contracted A-Frame Diver Launch and Recovery System (LARS) installed onboard vessel Olympic Artemis VOO in support of North Sea salvage operations.

This has allowed our divers to build dynamic positioning diving experience and expertise in preparation for the ATS class vessel introduction to the Fleet. Operational units continuously demonstrate the need for a lightweight, portable, A-frame launch and recovery system capable of deploying and safely recovering three divers. These end-users require a worldwide deployable system containing a support base, pivoting A-frame, winches, clumps, a dedicated hydraulic system, and associated equipment necessary to execute the mission safely.



MDSU TWO divers utilizing commercial LARS system during salvage operations in the North Sea.

In response to these demand signals 00C3 and 00C4 have worked diligently over the course of the last two years to evaluate engineering and design specifications to ensure commercially built systems could move to the testing phase with an operational unit. Concurrently, Mobile Diving and Salvage Unit TWO (MDSU TWO) welcomed the opportunity to test multiple LARS during training evolutions and a real world salvage mission. This partnership provided invaluable feedback for final design specifications enabling the LARS to become a program of record. Moving forward, NAVSEA intends to continue market research and progress into system procurement in FY21.

Diver Augmented Vision Display (DAVD) – DAVD is a transparent heads-up display (HUD) technology readily adapted to current U.S. Navy diving helmets. This system uses a waveguide optical display technology to provide high-resolution data and imagery to the diver. Building upon Naval Surface Warfare Center Panama City Division's initial strides, Coda Octopus Group, Inc., a diving equipment manufacturer developed and designed a produc-



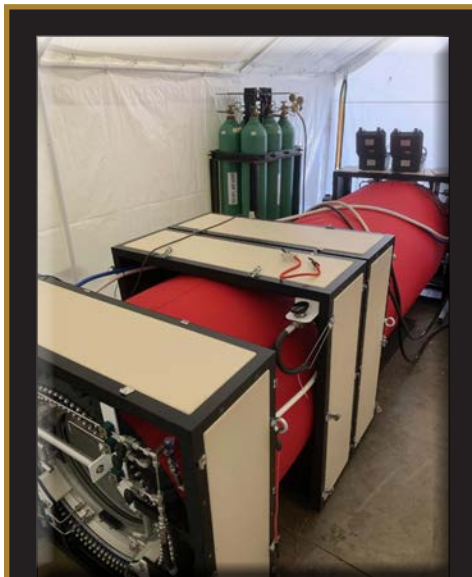
DAVD HUD installed in SERMC UBA.

tion capable DAVD system via a Cooperative Research and Development Agreement (CRADA). Additionally, the Office of Naval Research (ONR) has been a key partner in the development of the DAVD Gen-1.0 thru Gen-4.0. In conjunction with this ongoing development, 00C3 has teamed with National Aeronautics and Space Administration (NASA) and industry partners to develop a future generation DAVD system capable of integrating with future space systems and next-generation one-atmosphere diving suits. DAVD 1.0 systems includes one Kirby Morgan faceplate-adapted HUD, a diver-worn Diver Processing Pack (DPP), 300 ft. umbilical cable, Topside Control Panel (TCP) and a PC laptop with monitor control panel, and sonar system.

Over the last few months, 00C3 has made some very giant strides with DAVD. The system has undergone extensive operational testing during issuance to Southeast Regional Maintenance Center (SERMC), Underwater Construction Team ONE (UCT ONE), and MDSU TWO. With technical assistance from Coda Octopus, divers quickly gained the knowledge to become subject matter expert (SME), training others at their commands. Real-time feedback from these end-users has enabled the manufacturer and 00C3 to make this an innovative part of the diver's dress in the future.

Plans for the DAVD 2.0 includes the ability to connect three HUD displays, 3D SONAR, third-person viewing to enable topside personnel to direct diver location, azimuthal tracking provided by Fiber Optic Gyroscope (FOG), 600 ft. umbilical sets, and reduction in equipment size for ease in deployment and HUD integration with the MK 20 underwater breathing apparatus (UBA) will be introduced.. Later next year, DAVD 3.0, which will include enhanced mixed reality picture quality utilizing integrated sonar and helmet-mounted camera assisted technology, improved display tracking/positioning aligned with divers helmet movements. DAVD 4.0 will further develop the system for UBA use in a low magnetic environment to support mine countermeasure (MCM) operations.

The Multi-Occupant Flexible Recompression Chamber (MOFRC), or flex chamber, whose design stems from the need for a lighter recompression chamber system capable of completing a Treatment Table 6A with maximum extensions to 165 FSW in expeditionary environments. The chamber construction consists of a pressure barrier with an aluminum support structure housed within a Vectran braid strength member and an exterior protective covering with acrylic viewports in the inner lock and outer lock doors. The system boasts a 42-inch inside diameter and capacity to treat two patients with a single inside tender. The total man carried system, which is transportable via one 463L air cargo pallet, has an interior volume that is 21.5 cubic feet larger than the Transportable Recompression Chamber System (TRCS) and a 1,000 pound weight advantage over the same.



Multi-Occupant Flexible Recompression Chamber assembled and on display at Joint Expeditionary Base Little Creek-Ft. Story.

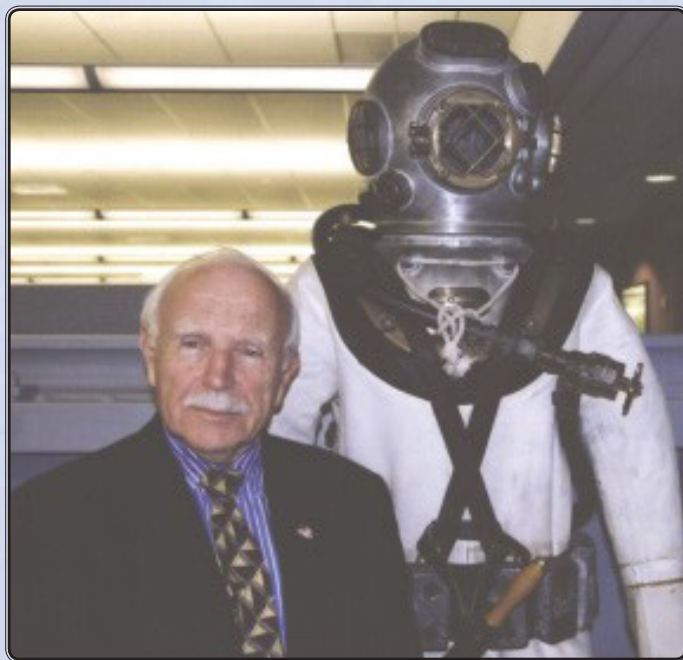


DAVD system integrated with SERMC DLSS.



Multi-Occupant Flexible Recompression Chamber assembled and on display at Joint Expeditionary Base Little Creek-Ft. Story.

Navy Dive Computers (NDC) – 00C3 is currently developing diver-worn technology that provides real-time decompression guidance to the diver based on real-time monitoring and calculation. Cochran initially designed three different models of NDCs, allowing decompression ranging from open-circuit air to closed-circuit (N2O2 and HeO2), based on applicable algorithms. These items are no longer in production but still in use throughout the dive-enable force. In March 2020, 00C3 released requests for proposals in concern of next-generation dive computers to see which companies could provide a reliable, all-encompassing product that utilizes U.S. Navy algorithms and dive tables. Navy Experimental Diving Unit is projected to commence testing of associated prototypes this fall, with testing expected to take six to eight months, pending the results, NAVSEA will use this information to select the Fleet's newest NDC!



Jim Bladh

United States Navy

Patriot, Salvor, Mentor, Friend

On Friday, December 13, 2019, James Carl Bladh (Jim), 94, passed away on the 78th anniversary of the Office of the Supervisor of Salvage & Diving (SUPSALV), United States Navy. Jim spent 28 years in SUPSALV, using his persuasive skills and extensive knowledge to successfully complete recovery and salvage projects from Hong Kong to Pago Pago. Colleagues might say that he managed every aspect of the military and civilian projects, including his supervisors.

Jim was born in the San Francisco Bay Area, to an enterprising Swedish father and an adventurous French mother, who had been a Harvey Girl (worth the google). Jim left home in his teens and spent his life roaming the world. Before joining the navy, he worked for a year or two in the oil fields of California; driving semi-trucks from Montana to California; and playing cowboy in Montana.

Jim joined the Navy in 1942, as a fearless seventeen-year-old sailor. He was assigned as a Gunner's Mate to the USS San Francisco, a heavy cruiser, which was headed to the South Pacific to fight the Japanese. Jim participated in eight major engagements including the Battle of Guadalcanal, Gilbert and Marshall Islands; actions in the Marianas, Palau, and Leyte Gulf; and off Luzon, Iwo Jima, and Okinawa. Those initial acts of patriotism led to a 30-year career in the Navy and a final commission as Lieutenant Commander, not bad for starting out as a seaman recruit, without a bit of education past high school.

After retirement from active duty, Jim continued an active role in many major sal-

vage operations, as a civilian member of the staff of the SUPSALV. He was frequently asked to do the impossible, because he had an ingenious way of getting things done. No one questioned how he did it; they just knew he would succeed, where others with a more conventional approach would fail. When the forces of bureaucracy were arrayed against him, he was at his best. When facing overwhelming bureaucratic resistance, often having been told "NO" in clear and concise terms, Jim seemed to sense they just didn't understand. "NO," from Jim's perspective meant either he had not asked the right person or needed to rephrase the question. It certainly did not mean that the idea would not be implemented. Jim was a visionary, always thinking of new and better ways of achieving goals and improving performance. He dragged many of his supervisors into thinking the unthinkable and asking, "Why not?"

During his long career, the many adventures were exciting, colorful and became the basis for the sea tales that seemed almost unbelievable and endless. In the late 40s, he accompanied Admiral Richard E. Byrd on an ice breaker to the South Pole, which was the largest polar expedition at that time. He then graduated from EOD (Explosive Ordnance Disposal) School in Indian Head, Maryland and Navy Dive School at the Washington Navy Yard. He supervised diving operations with Turkish divers in the Mediterranean, testing new diving equipment. At Port Lyautey, Morocco, he personally hauled munitions in unmarked trucks to the demolition range, to prevent munitions from falling into the wrong hands.

While on a seven month around the world cruise on the USS Canberra, Jim served as Ordnance Gunner and Diving Officer. The ship stopped at many ports including: Panama, Greece, Japan, Lebanon, Pakistan, Italy, and Spain. One night in Athens, returning to shore after dinner onboard, Jim met Rita Hayworth, who had dined at the officers' mess. This encounter became a favorite sea tale he always included in his repertoire.

In July 1964, at the request of the FBI, Jim led a Navy dive team to Jackson, Mississippi, to search the river for the remains of two young African American men who had disappeared. The divers found a skull, human ribs and train track rails that were used to weigh down the bodies when they were tossed into the river alive. After the recovery, the FBI directed the team, for their own safety, to leave immediately without collecting their belongings from the hotel. Forty-three years later, Jim went back to Jackson to testify in the trial that found a KKK member guilty of murder.

In the mid-sixties, Jim was the diving officer for Sea Lab 1, an experimental underwater habitat developed by the Navy to prove the viability of saturation diving and humans living in isolation at the bottom of the sea for extended periods of time. Scott Carpenter, the well-known astronaut participated as an aquanaut in the experiment, which took place off the coast of Bermuda. Jim made several dives to support the habitat, including a 200 ft dive on air to identify for salvage consideration, a downed aircraft in the area near the habitat.

In the late 1960s, Jim was transferred to HMS Vernon at Portsmouth, England, to become the first exchange officer for diving to the Royal Navy. Jim quipped, "I'll never forget my first morning at Vernon, when at 0600 there was a knock at my door and a very attractive WREN entered saying 'Good morning Sir, your tea.' I immediately thought to myself, damn if I haven't been in the wrong navy for twenty five years." Jim is the only non-British Naval Officer to have a permanent mess number in HMS Vernon at Portsmouth, UK.

During his tour of duty at Portsmouth, he qualified to be the diving officer for the HMS Reclaim. He operated the ship's submersible chamber to 225 ft on air to recover Air Lingus plane wreckage.

He worked with his British colleagues to define new diving recompression tables. He made an 800 ft chamber dive on a helium-oxygen breathing gas mixture. Something his own Navy probably would not have allowed a forty-two-year-old to do.

In 1972, Jim was in charge of salvaging the USS *Regulus*, a navy ship wrecked by a typhoon in Hong Kong harbor. While surviving the hardship of being a single sailor staying at the Hong Kong Hilton, Jim developed a risky, but feasible plan for removing the wreck that was obstructing the busy harbor. Although the harbor master told him he was not in favor of the plan, Jim proceeded with the plan anyway. Under cover of darkness the ship was moved; halfway through the tow across the middle of the harbor, he advised his boss of the progress. Jim said "if we don't make it, I'm defecting to Red China". The Captain solemnly replied, "That's right Jim, don't ever come back!" Needless to say, he made it across. It's hard to argue with success.

Jim wasn't about medals but he earned a few along the way. These awards of distinction included: Asiatic Pacific Campaign Medal with eight stars, China Service Medal, Victory Medal (WWII), Philippine Liberation Medal, Combat Action Ribbon, Navy Commendation Medal, Meritorious Service Medal, and Vietnam Service Medal.

Jim deployed twice to Vietnam. The first time, was to research the success of anti-swimmer nets in the waters near Danang and Saigon. After weeks of experimenting, unfortunately, it was concluded that although the nets would block the Viet Cong swimmers, they would require too many boats to maintain them, thus putting the boats at risk. One of Jim's many successes, during his time in Viet Nam, was his discovering a way to use the crank-type field-phone, which

an army communications team installed in his temporary Danang headquarters. This allowed Jim to call anywhere in the world via the White House switch. He always said, "It's all about communication." He sincerely felt the state department wouldn't mind sharing their phone line had they known, but some things are better left unspoken. This would come in handy in his next assignment in Vietnam, the search for missing in action.

In 1973, Jim's next assignment was setting up and managing the Joint Casualty Resolution Commission. He was responsible for locating the remains of Americans lost off the coast of South Vietnam, during our long conflict there. The effort involved coordinating the security of land-based mobile microwave stations that supplied navigation services to the offshore search and recovery vessel, as well as the security of the vessel itself. Jim's relationship with the Vietnamese military, needed to support the effort, was critical. He often complained he had supplied new batteries, tires and fuel to more jeeps than the Vietnamese had, but it was key to keeping the support in place. The Viet Cong and offshore pirates were also there to add a little excitement to the effort.

During the middle of the operation, Jim came to the end of his 30 years of active duty service. Jim celebrated his retirement from active naval service, at the bar of the Majestic Hotel in Saigon. Not elaborate, just a few sailors and the usual bar girls.

He returned to Danang as a contractor, to finish the search operations for remains and downed-aircraft. In this environment, civilian garb was ineffective in getting the work done with Jim's Vietnamese counterparts, so despite retirement, the uniform went back on. When General Kingston did an inspection tour, his comment to Jim was, "Jim, you're a funny looking civilian in that rig." Jim's response was, "General, watch out; I might just put on more stars and outrank you." A short time later, South Vietnam was overrun and Jim and his crew got out just in time.

Some of the salvage projects for which Jim planned and managed work while at SUPSALV were: The *Oriental Warrior*, USS *Tortuga*, and the USCG Cutter *Blackthorne*. Additional projects included the search and recovery of NASA Space Shuttle *Challenger*, South African Airliner, and TWA Flight 800.

Jim was responsible for starting the hull-cleaning and underwater welding program for the navy, which evolved into a much larger program of underwater ship husbandry and became a major initiative for SUPSALV.

In the mid to late 70s, Jim worked with the Suez Canal Authority, to establish communi-

cation and transportation plans, in advance of the salvage operation. The canal had been blocked from the wreckage debris of several wars and needed to be cleared to reestablish trade routes. In the process of managing the project from start to finish, Jim walked the entire length of the canal, from Port Said to Suez City, one hundred miles long.

Jim was the project manager for the book *Mud, Muscle, and Miracles*, published by the Naval Historical Center and Naval Sea Systems Command, documenting the history of marine salvage in the U.S. Navy. The book describes marine salvage as, 'A science of vague assumptions based on debatable figures taken from inconclusive experiments and performed with instruments of problematic accuracy by persons of doubtful reliability and questionable mentality.' That's why marine salvage takes someone with endurance, humor and ingenuity to get the job done; that was Jim Bladh!

Another example of Jim's amazing experience and expertise in Salvage was demonstrated when SUPSALV was advised of oil, spilling from The USS *Mississinewa* (a Navy Tanker in Ulithi Atoll) in the Western Pacific Ocean. This ship had been sunk in 1944, by the first successful Japanese secret weapon, the *Kaiten*, which was a Kamikaze human-torpedo water craft, used and built solely as a suicide weapon, during WWII.

The tanker sat dormant, submerged on the seafloor in the Atoll for 50 years, before starting to leak oil. This was a potential environmental disaster to the local inhabitants, who survived on fishing in the lagoon. Amazingly, Jim had actually witnessed the attack and saw the ship sink in 1944, while he served on a Navy Destroyer anchored nearby. Fifty years later, he helped in the planning and execution of the oil removal operation where almost four million gallons of oil were removed, with less than five gallons spilled. Jim was there when the ship sank and 50 years later, helped to prevent an environmental disaster.

Jim mentored a new generation of salvors and diving experts, inspiring them to appreciate the thrill of the job and the importance of successfully accomplishing the goals, no matter what it takes. He had a style that is reminiscent of the privateers who served our country so well in a different time. Like them, he became a legend.

At the time of his death, Jim was married to Rosemary E. Grubb. He has one surviving daughter, Patricia (Patty) A. Bladh and was preceded in death (2009) by his son James C.(Jimmy) Bladh Jr. "Obituary," *Cunningham Turch Funeral Home*

UCT 1 HOST DIVING CAPABILITIES DEMONSTRATION

BY: EXPLOSIVE ORDNANCE DISPOSAL GROUP TWO

Naval Sea Systems Command (NAVSEA) and Underwater Construction Team (UCT) ONE hosted a diving capabilities demonstration at Joint Expeditionary Base Little Creek – Fort Story September 24.

The demonstration showcased a prototype of the multi-occupant flexible recompression chamber (MORFC) and the first generation diver augmented vision display (DAVD). The DAVD was delivered to UCT and Mobile Diving and Salvage Units (MDSU) for immediate operational use. The DAVD is a transparent heads-up display (HUD) that uses wave guide optical display technology to provide high-resolution data and imagery inside the diver's helmets.

"This is really game changing, we're turning the lights on underwater," said Paul McMurtrie, NAVSEA DAVD program manager. "Primarily it's an underwater navigation system in a zero visibility environment. We put a guy down there and send sonar imagery and other critical information that shows everything around you so the diver can navigate straight to the project."

The current DAVD system capabilities include real time display of critical

data; in helmet-viewing of photographs, technical schematics and text messages; high-resolution sound navigation and ranging (SONAR) imagery; future generations will be able to display imagery-as-



Equipment Operator 1st Class Joseph Rodriguez and Navy Diver 2nd Class Juan Ramirezvelez, both assigned to Underwater Construction Team (UCT) 1, sit in the multi occupant flexible recompression chamber (MORFC) also known as the FLEX chamber, during an equipment demonstration with UCT 1 and Mobile Diving and Salvage Unit (MDSU) Two.

sisted underwater navigation and obstacle avoidance; 3D-augmented and mixed reality displays in low visibility condition; first and third person viewing capability utilizing CODA Octopus 3D SONAR.

The DAVD project in an Office of Naval Research, ONR sponsored Future Naval Capabilities Program. This capability was initially developed by Naval Surface Warfare Center Panama City Division (NSWCPD)063058. CODA Octopus, Inc. a 3D sonar manufacturer working in collaboration with NSWPCD, then further developed and designed a production capable system via a cooperative research and development agreement (CRADA).

"We are looking to improve diver efficiency," said Capt. Thomas Murphy, NAVSEA Supervisor of Diving. "When a diver is doing a project at any depth they have limited amount of bottom time. The DAVD system allows them to find where they need to work quickly and

give them the tools to work more efficiently to maximize their bottom time."

The DAVD system is being introduced into the fleet through generational development. This allows early fleet introduction of basic capabilities with the ability to integrate future improvements as technology advances. There are four generations currently scheduled to be introduced to the fleet by 2026. The fourth generation specifically focuses on explosive ordnance disposal (EOD) low magnetic signature free-swimming display and DPP for use in the multi-mission underwater breathing apparatus (MMUBA).

The MORFC, also known as the FLEX compression chamber prototype was also on display during the demonstration. The FLEX chamber is a highly portable, lightweight and is much easier to transport and store than the Transportable Recompression Chamber (TRC) currently in use. The FLEX chamber is a thousand pounds lighter as it uses a Vectran braided material as its strength material and can fit 3 occupants, the same amount as the TRC. The FLEX chamber display was a proof of concept to acquire feedback from the fleet and is scheduled to be issued for use in the Fleet next year.

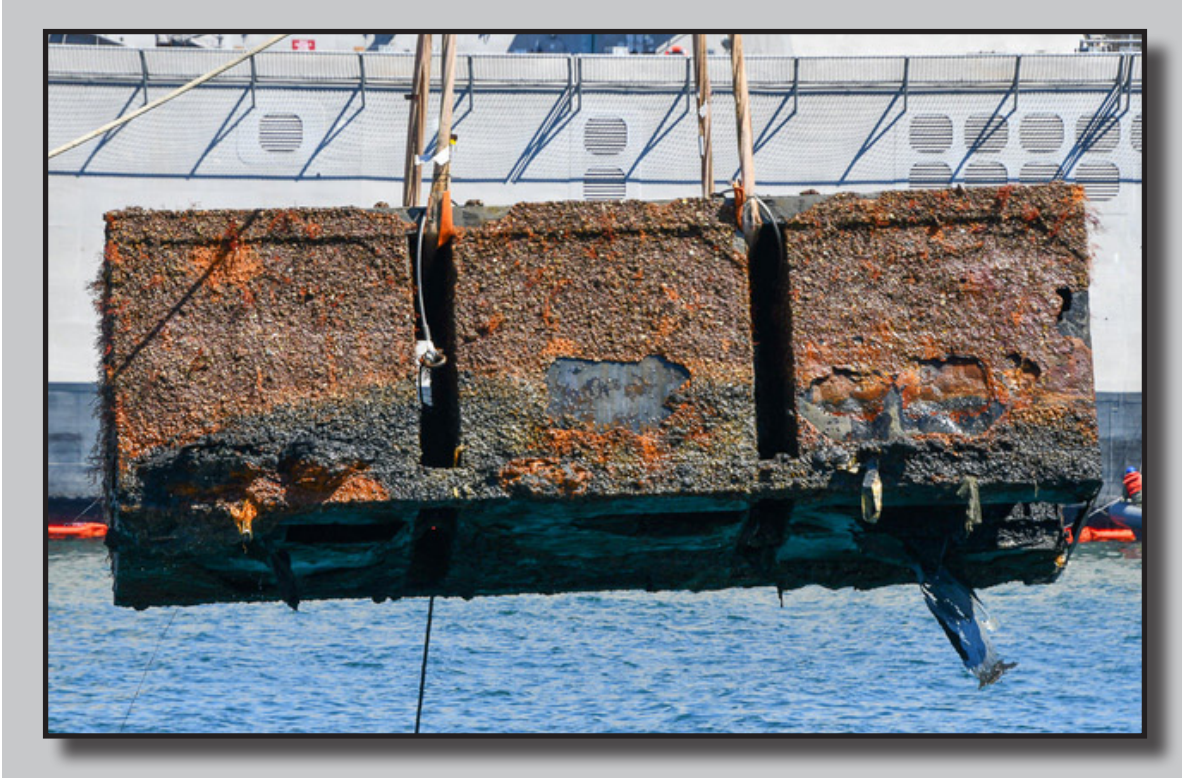
NECC forces are globally deployed, providing capability across the full range of military operations in the maritime strategy to include forward presence, maritime security, humanitarian assistance and disaster response, sea control and power projection and deterrence. The forces that comprise NECC include: Naval Construction; Coastal Riverine; Expeditionary Logistics Support; Explosive Ordnance Disposal; Maritime Civil Affairs and Security Training; Expeditionary Intelligence; Expeditionary Combat Camera; and Expeditionary Combat Readin

Photos by: Explosive Ordnance Disposal Technician 1st Class John Barry/Released



An Underwater Construction Team (UCT) diver assigned to UCT One exits the water after completing a dive using the first-generation Diver Augmented Visual Display (DAVD) system.

Rise of the Original Mud-Monster



By: CWO2 Lonn Trinidad

U.S. Navy Divers, the iron men of Explosive Ordnance Disposal Mobile Unit THREE, are back at it again, with much eagerness, diving in fearlessly. Chomping at the bits to exercise their pre-existing capabilities and solidify the company's reputation as the third fleets ready salvage team, an opportunity presented itself during a recent hydrographic survey. It was discovered that a potential hazard for deep-drafted vessels homeported in Naval Base San Diego existed.

The team worked relentlessly over the past year preparing for this type of project. In order to sharpen their skills, the west coast deep sea divers took part in the clearance of a 16-foot rectangular steel object resembling a "mud-monster", a training aid from the late 1970s.

The mud-monster weighs approximately 30,000 pounds at a depth of 35

feet below seawater, which sank several decades ago. "This was not a simple pier side salvage. The years of mud accumulation, low visibility, and cold water, all made it challenging for the diver to complete his job," said Senior Chief Adonis Patrick, Master Diver and Senior Enlisted Advisor of the MDS Company. Port Operations requested assistance in removing the obstruction and EODMU THREE readily volunteered to pursue in assisting with the recovery efforts, putting to good use all the skill sets learned while in unit-level training.

The survey began in early February by deploying a side-scan sonar/remotely operated vehicle team to pin-point the location of the project. Following it with splashing divers to conduct the survey for data collection used for planning. After the initial evaluation, it was determined that

the most feasible plan would include jetting, dredging the internal compartment, and perimeter of the object. Subsequently, dragging, floating, or heavy lifting the object to a location where they would no longer be a hazard for navigation.

Resuming training after several weeks of confinement due to the coronavirus pandemic complicated this operation, and protester riots around the Navy installations certainly did not aid the situation either. The team showed their abilities in accomplishing the mission with less than optimal conditions. Deep Sea has always been known to adapt to any situation, any time, to get the job done. Fortunately, their diligent efforts paid off as two promising leaders took ownership of the mission and took it for action. Navy Diver first class Rory Fagan (salvage planner) and Navy Diver first class Tuck-



ND2 Kubichan and ND2 Guzman rinsing off the residual mud from the project.



Left to right: ND2 Guzman, ND2 Laplant, MDV Patrick, ND1 Ludy, ND2 Macminn, ND1 Fagan, HM1 Truelove, ND2 Kubichan, NDC Wiggins, HM1 O'Brien, ND1 Smith, CM1 Dube, ND2 Alexander, CWO2 Trinidad.



NAVFAC Crane and rigging providing all hands safety-brief prior to commencing lift operations.



Top side tenders lowering the dredge air-lift device.

an approved disposal site.

er Ludy (diving supervisor) collectively gathered concepts for a full-proof salvage plan. Successfully, both led the team and tackled each phase of the recovery.

After raising the project out of Davy Jones locker, it was manually hauled nearly the length of a football field, where it was pre-staged pier side for removal by a 200-ton floating crane. "Underwater rigging is complex and is significantly more than it seems. Several factors need to be considered, ranging from proper hardware selection to precisely orienting and spacing the connection points. Not knowing what to inspect can result in either initial success or complete and utter failure," said Navy Diver second class Troy Alexander, lead diver for hoisting the object up and over for transport to

prime example of a win/win approach, and success did not happen by chance. It took the determined efforts of Navy diving professionals to plan and set in place the processes. All have a stake to achieve positive results, improving bonds between the local commands, while setting a positive trend within the Navy. Altogether the divers displaced over 40,608 pounds of mud and debris to recover the project. EODMU Three emerged victoriously from completing this type of operation. It enabled them to combine resources to overcome the challenges of a realistic environment in which to train together. The Mobile Diving Salvage team adds another critical milestone signifying mission readiness to their operational track record.

Roll Call

MDS Co 3-1: CWO2 Lonn Trinidad, NDCS Adonis Patrick, NDC Brandon Wiggins, ND1 Rory Fagan, ND1 Tucker Ludy, ND1 Justin Smith, ND1 Kurtis Robinson, HM1 Shane O'Brien, CM1 Ledisi Dube, ND2 Brandon Franklin, ND2 Jake Aston, ND2 Jason Hohl, ND2 Troy Alexander, ND2 Matt Guzman, ND2 Anthony Kubichan, ND2 Kevin Macminn.

ESU-1: HM1 Daniel Truelove. LOGSU-1: HM2 Spencer Warren, HN Chris Larios.

CWO2 Lonn Espinosa Trinidad is currently serving at Explosive Ordnance Disposal Mobile Unit THREE as the Commander for Mobile Diving & Salvage Company 3-1.

Photos by: ND1 Rory Fagan

Article Cover Photo: Project lifted 'rise of the original mud-monster'.

Diving Officer's Perspective

By: CW04 Jason Potts, USN

“KDSA”

In the latter months of 2017, senior Uniformed leadership conducted a series of briefs throughout our Navy in an effort to communicate findings identified during the comprehensive assessment chartered in response to a string of mishaps in the U. S. Seventh Fleet area of responsibility earlier that year. Three years later, and in the spirit of capitalizing on lessons learned subsequent to the tragic loss of life onboard USS JOHN S. MCCAIN and USS FITZGERALD, this column seeks to succinctly present major elements of those findings in contexts compatible to our profession.

I.) OPPORTUNITY TO FAIL. Highlighting the fact that nobody was trying to cut corners as repeated successes in the midst of eroding standards fostered normalized deviance up and down concerned chains of command, the review highlighted three interrelated mishap contributors: rising pressure to operate, flawed decision making processes and poor execution. Contemplating these contributors as three phases of a perpetual cycle many readers have likely noted in their own lockers and teams, it's most important to realize the fact that the presence of an opportunity to fail often proves itself the single deciding factor between short-term success and catastrophic failure in myriad operating environments. KEY TAKEAWAYS: How often have you and your teammates enjoyed a huge sigh of relief following circumstances in which you achieved a desired end state while narrowly avoiding absolute failure? In these cases, how did a rising pressure

to operate lead to flawed decision making processes and poor execution? If it had presented itself, how would an opportunity to fail have impacted this chain of events? Finally, how can we leverage these circumstances as opportunities to crush normalized deviance, learn and reestablish adherence to standards?

II.) CAN-DO VS MUST-DO. As each of us learns during entry-level dive training, a positive, motivated, CAN-DO attitude markedly elevates individual and team performance in the face of daunting challenges often inherent to mission essential military operations. The review, however, aptly illuminated the opposing peril awaiting organizational cultures that inculcate a MUST-DO attitude in which everything is mission essential and red line tempo is no longer the rare exception but the norm. In these cultures, some of which are alive and well in our force today, psychological and mental fatigue overwhelm organizational climate and serve as an onramp to the aforementioned cycle. In any organization, the manner in which each of us communicates risk to our chains of command is absolutely essential as it often informs the development of necessary constraints and restraints. It takes tact and patience to provide useful feedback in a manner that leadership can understand and translate into well informed, durable orders. The criticality of concisely communicating hazards, acceptable criteria and assistance required to mitigate risk and execute tasking cannot be overstated. Once feedback is provided and decisions are made, our role transitions to execution

in alignment with the decision maker's intent. KEY TAKEAWAYS: Where have you seen CAN-DO attitude devolve into an ever-present MUST-DO culture? Based on this recognition, where can followers and leaders, alike, apply micro toughness in everyday environments to disrupt these scenarios and refocus decision making on the basis of established priorities? For leaders: what are your leadership priorities? How do you communicate these priorities throughout your organization and reference them in your decision making processes?

III.) ESSENTIAL TENANTS: The review identified five essential tenants that led to the 2017 mishaps and similar accidents in recent memory: breakdown of fundamentals, inability to plan, breakdown in preparation, teamwork & teambuilding, and risk assessment & management. KEY TAKEAWAYS: Peeling away the surface layers reveals leadership at the core of each of these tenants. How is our enterprise capitalizing on self-awareness, emotional intelligence and receptiveness to feedback in order to elevate and sustain leadership at every level?

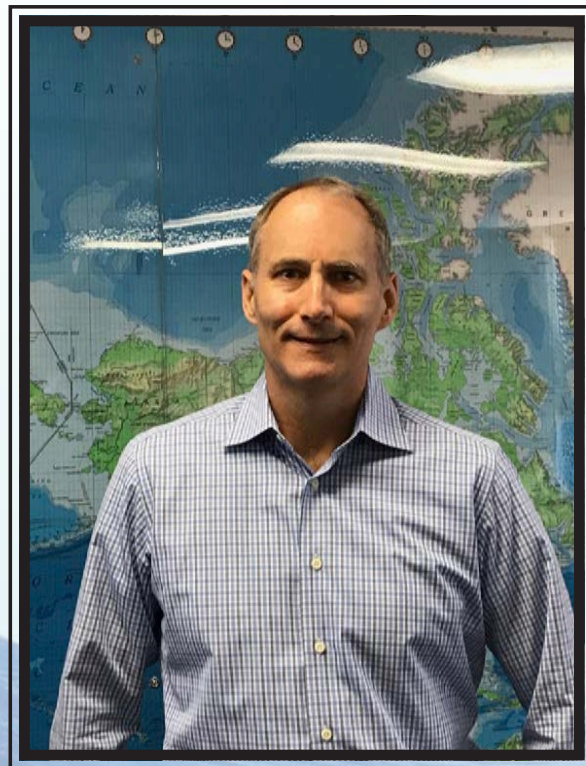
As we set this article aside and step back into our daily personal and professional lives, please consider how these findings and takeaways apply to our self-imposed charge to KEEP DEEP SEA ALIVE and how we can make them count.

How will we respond to the next opportunity? It's up to us.

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

Retired Captain
***Daniel
Eldredge***

United States Navy



Retired Captain Daniel Everett Eldredge, United State Navy, of Alexandria, Virginia, passed away on Friday, July 10, 2020. He is survived by his loving parents; Robert and Kathleen Eldredge, beloved wife; Ginette Alomar Eldredge, cherished sister; Maureen Elizabeth Eldredge (Miles Brooks), and adoring brother; Michael James Eldredge (Wendy Blizzard Eldredge). He also leaves many nieces, nephews and dear friends.

Dan was born in Chelsea, MA at a Naval Hospital on July 28, 1962. Growing up as the son of a US Army Lt. Colonel, Dan lived in Alabama, Puerto Rico, and Germany until the family was stationed back in the US in his hometown of Ayer, MA. He graduated from Ayer High School in 1980. He was awarded an appointment to the United States Naval Academy, Class of '84, in Annapolis, MD. After USNA commissioning week in 1984 he completed nuclear propulsion training and submarine training before reporting to the USS Casimir Pulaski, SSBN 633 (Blue). In May 1989 he left active duty to attend Tulane Law School in New Orleans, Louisiana. He graduated cum laude in 1992. In 1994 Dan graduated with honors from Naval Justice School and reported to Naval Legal Service Office, Northwest, Whidbey Island Detachment where he served as defense counsel and legal assistance officer. During his Naval career as a JAG (Judge Advocate General's Corp) he completed tours in New Orleans, Norfolk, Puerto Rico, Washington State, Oregon (where he graduated cum laude from Lewis & Clark Law School in 2005 with an LL.M. in Environmental and Natural Resources Law), California, Hawai'i and DC at the Washington Navy Yard. After 27 years in the Navy he retired and became the Admiralty Counsel for the Navy's Supervisor of Salvage and Diving since 2016. In that same year, he earned an M.A. in Defense and Strategic Studies from the Naval War College.

In May, he and Ginette celebrated 18 wonderful years of marriage. Dan lived life to its fullest. He was an avid runner, cyclist, rower, chess player, voracious reader and overall sportsman. At the time of his passing, he lived in Alexandria with his wife and their golden retriever Niebla. He will be forever missed.

"Obituary," Jefferson Funeral Chapel



The Carl Brashear Foundation Presents 6th Annual Navy Diver of the Year

By: NDCM(DSW/SW/EXW) John D. Hopkins

Congratulations, and a well-deserved “Hoo-yah” goes out to the 2019 recipient of the Navy Diver of the Year award, ND1(DSW/SW/EXW) Bryan L. Myers of Mid-Atlantic Regional Maintenance Center (MARMC) in Norfolk, Virginia.

With all of the events that were canceled internationally and DoD wide due to the COVID-19 virus, this year has been one for the record books. Some things though have continued on without stopping. One that did transpire was the Carl Brashear Foundation's, Navy Diver of the Year selection. The award was established in 2014 to honor Navy Divers who have overcome personal or professional challenges and continue to push forward with the same honor, courage and commitment shown by BMCM(MDV) Carl M. Brashear. Master Diver Brashear was a pioneer in the Navy and the diving community, whose life inspired the 2000 bio-picture, Men of Honor.

Usually this award is presented to the recipient at the Military Diver Training Continuum (MDTC) by CWO5 (Ret) Philip Brashear, Carl's son and President of the foundation. It goes without saying that things were challenging this year with

the quarantines and the cancelation of the MDTC, but the board of directors rolled up their sleeves and got to work. Due to the social distancing restrictions the award presentation has yet to take place.

ND1 Myers is an “Army Brat” born in El Paso, Texas who moved around a lot with his family. He graduated from Round Rock H.S. in Round Rock, Texas, just north of the capital, Austin. He then studied at Centenary College of Louisiana receiving a degree in communica-



Mid-Atlantic Regional Maintenance Center Commanding Officer, CAPT. Tim Barney congratulates ND1 Bryan Myers on his selection as the 2019 “Navy Diver of the Year” by the Carl Brashear Foundation.

tions in 2009. Bryan enlisted in the Navy in 2010 to be a Rescue Swimmer, when his path was changed at boot camp and he secured a contract for the ND program graduating Second Class Dive School in 2011. He hit the Fleet running and has yet to stop. Now as a First Class Diver and Diving Supervisor, he is the Leading Petty Officer for the MARMC Dive Locker, responsible for the training and administrative functions for over 35 Navy divers, while responsible for the maintenance of three diving platforms with certified diving systems and all associated equipment.

The MARMC Commanding Officer, CAPT Tim Barney congratulated ND1 Myers on his award commenting that, “The competition was very tough this year and the board of directors commented that Myers has raised the bar for all

future competitions”. ND1 Myers is a Diving Supervisor for MARMC's Alpha Dive Team and is looking forward to his career in the Navy having set his sights on Master Diver and beyond.

Master Chief Master Diver John Hopkins is currently stationed at Naval Sea Systems Command in support of the office of the Supervisor of Salvage and Diving.

DAVD

Divers Augmented Visual Display

By: NDCM (DWS/EXW/SW) Joshua Dumke

Over the last few months, we have made some very giant strides for the Divers Augmented Visual Display. We have been able to issue systems to South East Regional Maintenance Command (SERMC), Underwater Construction Team One (UCT 1), and Mobile Diving Salvage Unit Two (MDSU 2). With each issue of the DAVD system and the assistance with personnel with Coda Octopus, we have trained the divers to a point that they are able to become the System Matter Expert (SME) and train the others at their commands.

We have been able to deliver DAVD 1.0 that includes the Kirby Morgan faceplate adapted Heads up Display (HUD), the diver worn Diver Processing Pack (DPP), 300 ft. umbilical cable, Topside Control Panel (TCP), and the PC laptop with monitor control panel.

SW2 Ken Lancaster with UCT1 was asked what he was impressed with the most with the DAVD system, he stated "The heads up display was able to show us tons of different data like maps, compass bearing, and pictures. What I thought was one of the most exciting features was the ability to tell the diver position in zero visibility water utilizing the Coda Octopus sonar, that's something I could see being used a lot. With minor adjustments to the current system, I see the DAVD's becoming as common on the dive site as a comms box."

Petty Officer ND1 Klingaman Robert and ND2 Turnwall Ryan from SERMC added their views saying "The DAVD system is a welcome advancement in diving in my opinion as it is a way to further reduce the margin of error when it comes to working in the water, especially in reduced visibility. Having the ability to be able to put information like schematics or drawings for example in front of your diver while still on the bottom is a huge positive. While using the system

in a training dive to dismantle a console on the bottom, we can say that to be able to reference multiple pictures showing you where a piece is located, and what its shape is, when you only have a foot of visibility, really takes the guess work out. With the advancements this system is coming out with, be it able to navigate using maps collected from sonar data, or just having a project laid out in simple pictures, the diving Navy can further improve upon safety and efficiency."

As of now, the Gen 1 system is limited to 165 FSW due to the HUD design, however, the DPP, DMU, and umbilical is rated to 328 FSW.

We are excited about the ability to deliver 2.0 in 2021, this will include the capabilities of Gen 1.0 with the following upgrades:

- 3D SONAR, which will be a 3rd person viewing that helps direct diver location
- Head tracking provided by Fiber Optic Gyroscope (FOG),
- Diver Motion Unit (DMU) the upgrades including
- 600 ft umbilical set
- Further DPP reduction
- HUD depth capability to 300 FSW

In Fiscal Year 2022 Gen 3.0 will be released and issued that will include:

- Enhanced mixed reality picture quality utilizing integrated sonar and helmet-mounted camera assist technology
- Enhanced display tracking and positioning aligned with divers helmet movements
- Heads-up Display (HUD) integration with the MK 20 UBA

The future just gets better, some very impressive initiatives we are looking to push for are Explosive Ordnance Disposable (EOD) Low Magnetic signature Multi-Mission Underwater Breathing Apparatus

Update



UCT Diver EO1 Rodriguez, Joseph
donning KM 97 with DAVD.

(MMUBA). Removal of the HUD glasses and have faceplate projection system.

00C is working closely with NASA Extreme Environment Mission Operations (NEEMO) program office to provide the DAVD system for NASA Astronaut training. Additionally, 00C is working with NASA and a commercial 1 ATA dive suit manufacturer to develop a future generation DAVD system capable of projecting type heads up display to be used in Navy diving helmets, future NASA EVA suits, and future versions of the 1 ATA dive suit.

We are making Navy Diving in less than desirable conditions more efficient. We are enabling the divers to find projects on the bottom and navigate around hazards as well as moving directly to the worksites on the bottom of vessels. I want to personally want to thank the CWOs and MDVs from SERMC, MDSU, and UCT in making the first issuance and training a complete success.

Master Diver Dumke is currently stationed aboard NAVSEA SUPSALV where he's the Military Liaison for the DAVD system. Any and all questions and inputs are welcome at joshua.w.dumke@navy.mil.



The Old Master

We Own the Solution

You're nearly two years into a tour at MDSU-1 that has been nothing short of phenomenal. You and your company had a great deployment and during the sustainment phase you were involved in another great salvage job. While you still have another year left at the command, you know that you need to make that phone call to the detailer to see where you can go next. You want him to know your 'wish list' and give him every reason why you are the perfect fit for that next job that you want. We've all been there at various ranks and with different dive pins on our chest. From the second tour 2C to the third tour MDV, there is almost always some level of unknown that causes angst associated with the next set of orders. Those of us who have been lucky enough to sit in the Detailer or Enlisted Community Manager (ECM) seats have had the pleasure of a lot of conversations related to those next set of orders. Sometimes we get to deliver good news for the anxious diver, sometimes we don't. I have great news for all of you though – while some may perceive our tour lengths, career path, detailing procedures, or moving as a problem, the good news is that all of you own the solution! Yes, each and every Navy Diver owns the solution!



Master Diver Jon Klukas

I know, someone is out there throwing the bullshit flag on me right now. MDV, we don't have that control, you guys in Millington do! I promise you all, the solution to that which causes some of you a great deal of stress resides in the fleet. There is nowhere we see this more than within the MDV ranks. Once you have established yourself and your family in an area, it's tough to move. Some simply won't do it. They give the detailer and ECM that thinly veiled threat that we just love to hear; "If I can't stay in [VA, or CA], I'll just retire". Yes, hard to believe, but we've heard that plenty and mostly from E7 and above. Again, the good news is that these "leaders" that don't want to up-ten-and-shift geographic locations own the solution!

Let's get to that solution. We all have an obligation first and foremost to fill each billet that the Navy has bought and paid for. It's not up to us to decide whether we believe that a billet is worth while or important. They are important to the person with the checkbook or they wouldn't have been funded in the first place, so we have an obligation to fill the billets. This is where the fleet comes in with that solution. If every Navy Diver places value in each of the billets

and we don't discount any of them, they all become easier to fill. If every Navy Diver stays engaged with community manning, our career path, and lends a hand to fill empty 2C billets with qualified fleet conversions, that helps. If every Navy Diver asks their MDV and CWO to train more, drill more, run pre-screener more, and get every member of the team ready for that next dive pin, that helps. If every MDV stays engaged with the community as a whole instead of just their command, that helps. If every MDV makes the effort daily to train their replacement, that helps. The bottom line is that when our community is fully manned with competent and fully capable people across all paygrades and NECs, we have far more flexibility from a detailing and community management perspective. That flexibility allows those of us in Millington, TN to bend more without breaking a command, a mission, or our rating.

When we all take part in ensuring that every billet across every paygrade and NEC is filled, that equates not only to more flexibility in detailing and community management, that means that each dive locker operates more efficiently and in the safest way possible. Undermanned lockers mean that less people have more to do, resulting in increased work hours, stress, and possible decreases in safety and mission effectiveness. All bad news when you have a high-risk job! Take ownership of the solution. Talk to your MDV and see what you can do to help make sure that our rating stays fully manned. Chiefs, ask your MDV and the other MDVs in the area to run a pre-screener to help train their replacements. Better yet, take charge, set up all the logistics and ask all the area MDVs to participate by writing drills and evaluating. MDVs and CWOs, lead the way in these efforts and build fully manned dive lockers with highly trained and mission focused NDs! Be involved in community efforts and provide sound feedback to the SEAT and CWO-AT.

Keeping the ND community fully manned with quality people takes a team effort. Yes, that effort is led by the MDVs in Millington, but we need your help and we need that focus of effort to stay consistent. It's been an honor to serve with and for the Navy Diver community for the last 28 years. I thank each of you for what you do in service of our country, and ask that you maintain a healthy ND community by consistently and diligently recruiting solid 2C divers, training our supervisors, and developing the next generation of Master Divers and Chief Warrant Officers.

Hoo-Yah Deep Sea!





SUPDIVE SENDS ...CAPT Thomas P. Murphy

I would like to open this SUPDIVE Sends, by welcoming CDR Matthew Myers as the new OPNAV N973 Deputy Director for Diving (DEPDIVE). CDR Myers recently completed his Commanding Officer tour at Expeditionary Exploitation Unit ONE (EXU1) within Naval Surface Warfare Center (NSWC) Indian Head, MD. The EXU1 mission is to collect, process, exploit and analyze improvised and conventional weapons, ordnance and components, on land and at sea, to provide near real-time technical intelligence to tactical commanders, the EOD community, service components, DoD, national-level intelligence agencies, and allied and partner nations. As DEPDIVE, he is responsible for planning, programming and budgeting for acquisition, operational readiness and modernization of our diving and submarine rescue programs.

I would also like to congratulate and wish the recently departed DEPDIVE, CAPT John Porter, "Fair Wind and Following Seas" as he transitions into his new position with the Joint Staff. John has been a tremendous source of diving policy and budgetary program knowledge whose efforts were key to keeping our diving development and procurement funding stable over the last two years. Additionally, John has been working hard on various updates to Navy policy and interoperability agreements with our partners abroad, the first being the forthcoming revision to the Navy Diving Policy instruction, OPNAVINST 3150.27D, which will soon be signed out by the Director of Undersea Warfare, Rear Admiral Houston. The biggest change to the OPNAVINST 3150.27D, once issued, will be Naval Sea System Command's assumption of technical and system certification authority for all diver life support and hyperbaric systems, including shore-based systems, thus aligning each of these systems and associated processes with a single systems command. Subsequent to this realignment, Naval Facilities Engineering Command will



retain technical authority over buildings, including buildings which house diving and hyperbaric systems. Over the next year, our offices will be working closely with those commands responsible for the sponsorship, maintenance and operation of shore-based systems in order to ensure administrative continuity during the transition. In the international arena, the impact of the work Captain Porter did to formalize partner nation diving interoperability will soon be realized in the issuance of the agreement that will enable U.S and U.K. Divers to dive each other's equipment in support of worldwide operations without an OPNAV waiver. John - these endeavors, both of which took years to get off the ground, were not easy tasks but they will undoubtedly have a lasting effect within the diving community for years to come. I owe you a great deal of gratitude and would like to give you a big HOOYAH!!!! on behalf of the entire diving community!

As a follow-up to SUPSALV's opening article, I cannot over stress the importance of Diving Operational Readiness Inspections (DORI) and Diving Safety Assessments (DSA) in ensuring our divers' safety. These inspections are in place to verify operational proficiency and compliance with technical requirements, approved procedures, and diving

policy to help ensure the readiness and safety of our divers during extremely demanding and often dangerous operations. Due to COVID-19 travel restrictions, these inspections may have been shifted to the right in some cases to the maximum 42-month periodicity or granted a waiver by OPNAV N97 for additional extensions. Additionally, for those we have been able to inspect, we have observed some concerning situations involving the maintenance and materiel condition of diving equipment to include violations of re-entry control and operating procedures, and missed / undocumented maintenance checks, many of them critical. Just as SUPSALV has mentioned, our checklists and quarterly findings are available for use and review via the SUPSALV website link <https://www.navsea.navy.mil/Home/SUPSALV/00C3-Diving>. We encourage each diving unit to pull the DORI inspection checklists and take a proactive look at your diving programs, even if you are not due for an upcoming inspection.

This year, OPNAV directed NAVSEA 00C3 to initiate and supervise the DORI Quality Assurance Surveillance Program (QASP) for the purpose of standardizing and improving DORIs throughout the fleet. So far, we have completed three DORI QASPs during which we identified two major findings across the subject enterprises: (1) non-compliance with DORI and DSA requirements; and (2) inadequate or non-existent higher headquarters directives associated with training, proficiency and program administration. In addition to recommending focused action pursuant to enterprise compliance with established requirements, our QASP debriefs have also encouraged concerned headquarters to establish robust means of tracking DORI deficiencies and requiring Undersea Medical Officer or Deep Sea Diving Independent Duty Corpsman membership in all DORI teams as both of these program elements will be re-

quired in OPNAVINST 3150.27D. Our goal through the QASP is to standardize DORI execution between multiple warfare type commands, improve effective doctrine implementation and share best practices between organizations.

In case you missed it, MILPERSMAN 7220-090, Hazardous Duty Incentive Pay (HDIP) for Diving, became effective in June, shifting diving requalification from four dives every six months to eight dives annually. That same month, the Chief of Naval Personnel issued a memorandum authorizing Sailors who, but for COVID-19, would otherwise be eligible to receive performance-

based special or incentive pays, including demolition, diving and parachute duty hazardous duty incentive pays, to continue to receive their special or incentive pays, without the requirement to perform specific duties throughout 1 March 2021.

Finally, I have continued to look for opportunities to engage with Fleet divers on future diving systems and enhancements that will be introduced to the Fleet within the next two to three years. These engagements allow me time to brief emerging capabilities, answer questions and interact with divers to ensure I stay in touch with their concerns and needs. Since this Spring, I

have continued to update the community on our program advances with update briefs to SEAL Delivery Vehicles Team TWO and divers from Mid-Atlantic Regional Maintenance Center (MARMC), Mobile Diving and Salvage Unit TWO, and EOD Training and Evaluation Unit TWO while underway aboard the M/V Shelia Bordelon this past month.

As always, we value your feedback and ideas, so please keep them coming, especially if you have ideas for future Faceplate articles or if you would like to highlight the activities your unit has accomplished with a Command in the Spotlight article. HOOYAH, and DIVE SAFE!

Diving Advisories

- 20 - 09 EXTENSION OF DIVER LIFE SUPPORT SYSTEM/CERTIFICATION TENURE EXPIRATION DATE
- 20 - 10 DIVING LIFE SUPPORT SYSTEM OPERATING /PROCEDURES AND EMERGENCY PROCEDURES REVISIONS 2020
- 20 - 11 POSEIDON DIVING SYSTEMS XSTREAM US NAVY EDITION SCUBA REGULATOR ASSEMBLY OVERHAUL
- 20 - 12 HARDWIRE DIVING VOICE COMMUNICATION SYSTEMS
- 20 - 13 GERMICIDAL AGENTS
- 20 - 14 FLASK RACK ASSEMBLY O-RINGS
- 20 - 15 EXPANDED FLASK RACK ASSEMBLY O-RING INSPECTION AND REPLACEMENT
- 20 - 16 STANDARD NAVY DOUBLE LOCK RECOMPRESSION CHAMBER SYSTEM OXYGEN REDUCING STATION COMPONENTS
- 20 - 17 EXPANDED ANALOX ACG GAS ANALYZER PROVISIONS

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