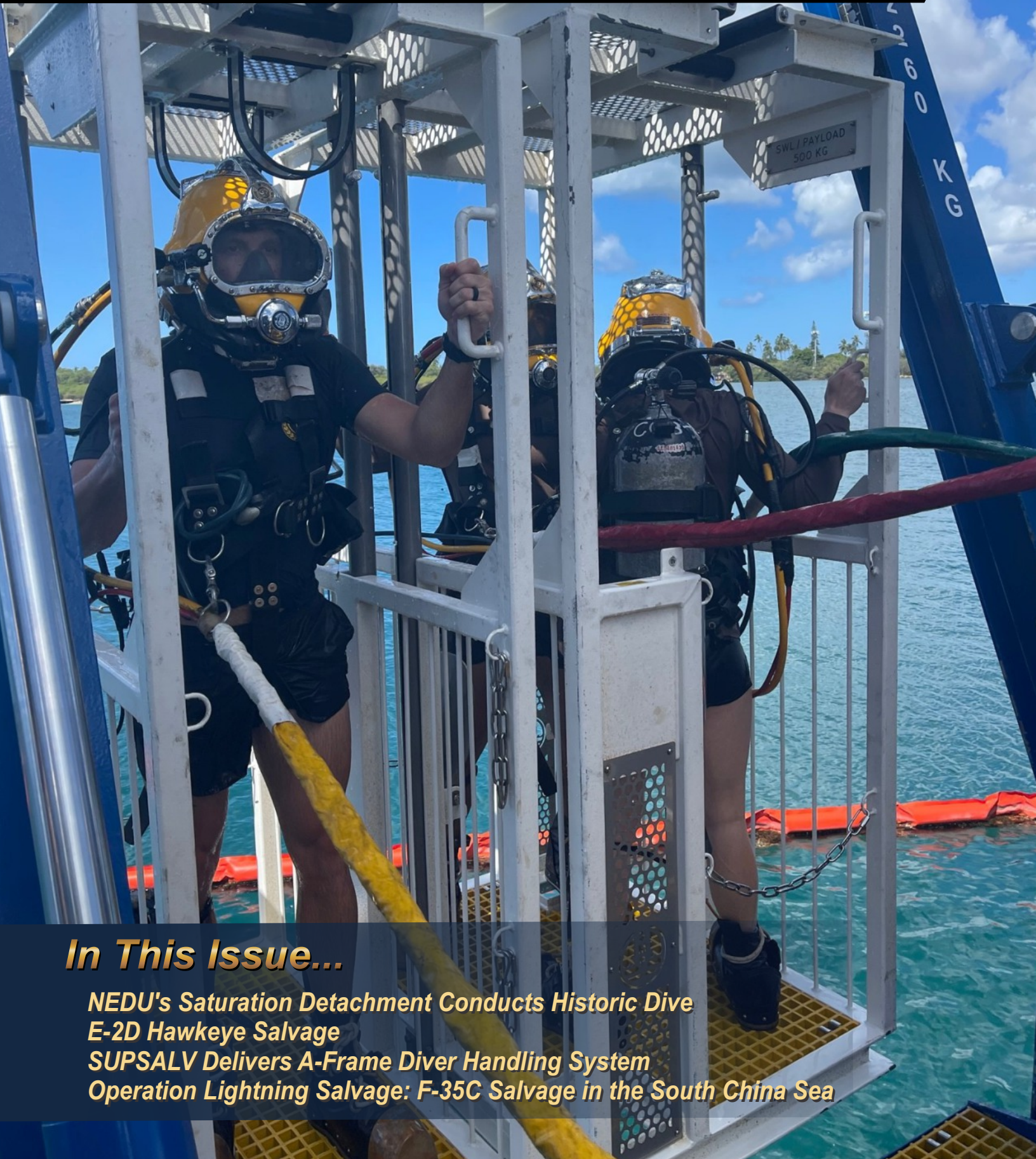




FACEPLATE

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

Volume 26, No. 2 / November 2022



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*NEDU's Saturation Detachment Conducts Historic Dive
E-2D Hawkeye Salvage*

SUPSALV Delivers A-Frame Diver Handling System

Operation Lightning Salvage: F-35C Salvage in the South China Sea

FACEPLATE

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Cover



MDSU ONE Divers (left to right) ND2 Holbrook, ND2 Donlon, and Nd2 Hernandez conduct training evolutions pierside and verification of Operational and Emergency Procedures (OPEPs).





SUPSALV SENDS...CAPT Sal Suarez

What an exciting time to be a Navy Diver! Having relieved CAPT Jay Young just over four months ago, I can't believe how many things have already happened in this short a time. It makes me truly excited for what the coming years will bring as I get the honor and privilege to serve as the 29th SUPSALV. I want to thank CAPT Young for his superior leadership to the office and the Navy Diving community over the last three years. Thanks, Jay, for everything you've done during your time here and I wish you the best of luck while serving as the Commanding Officer of the Mid-Atlantic Regional Maintenance Center (MARMC).

Of course, I would be remiss if I failed to mention another major personnel change within the office – the farewell of Mr. Mike Dean and the hail of his relief, Mr. Dan Neverosky. Mike has been a cornerstone of this office and served in multiple positions during his 39 years here. While serving as the Deputy Supervisor, he was always calm under pressure and provided a healthy continuity within this office and the community at large, which helped to ensure we could lean forward on his foundation of sound engineering principles and wealth of experience. Having recently retired from active duty, and no stranger to the office himself, I'm excited to have Dan onboard as Mike's relief. I look forward to leveraging Dan's experience and calm demeanor as we move forward together!

The strong state of Navy diving is due to the professionalism and dedication of our people. While we can always use more divers in the ranks, the ones in the force today are some of the most skilled and loyal people in the Navy, implementing highly technical skills to accomplish demanding



and substantial workloads. People are the most valuable asset the Navy has and all of us need to continue to stay motivated, communicate clearly, remain engaged every day, and stay committed to each other. The future of the Navy is tied to its ability to continue to project power, and we help do that by making sure we can perform whenever and wherever the need arises. All divers can take pride in that, and in that fact that senior Navy leadership doesn't question your capabilities or commitment to meet any needs that may arise. Your professionalism and amazing work every day confirms what is known to be true – you expand the capabilities of the Navy! Our ability to expand that advantage through diving related research, studies, and exercises is a testament to our ability to hold ourselves accountable to doing so safely and effectively.

Our Navy's underwater ship's husbandry (UWSH) capability further expands that advantage on the waterfront, providing a huge return on investment. In the short time I've been onboard, there have been multiple instances of short-turn

requests to support the UWSH need. There is no better advertising than work well done, and I can't thank SUPSALV's UWSH personnel, the dive lockers, and our contractor teams enough for continued outstanding performance! As always, if you have ideas on ways to improve and expand the UWSH skillset, please send it up.

This year's battle damage assessment and repair (BDA/R) scenarios performed in conjunction with the RIMPAC and ATLANTIC THUNDER fleet exercises have provided some great experience to the Mobile Diving and Salvage Units (MDSU) and Regional Maintenance Center (RMC) teams that participated. This capability – immediate response to and repair of platforms downrange – will be another skillset where both the salvage and repair response teams can continue to shine. I'm excited to see the level of enthusiasm that the SEA21 organization demonstrates by working with the MDSU units, waterfront RMCs, and this office to try and establish a model that will allow for more regularly scheduled BDA/R exercises. We have to be ready to answer this call when received and continued practice will be vital to growing this emergency response!

Returning to this office 16 years later has felt like a bit of a homecoming. This is partly due to quite a few of the same faces walking the hall, but mostly due to the fact that the professionalism and level of skill within the team here hasn't changed. I am excited that I get to work with the outstanding men and women in this office again. I will try my best to get out on the waterfront to engage with the lockers and I look forward to working with you all. Hooyah, Deep Sea!



History in the Making: NEDU's Saturation Detachment Conducts Historic Dive

By: Navy Experimental Diving Unit Saturation Detachment

On June 1, 2022, the Navy Experimental Diving Unit's Saturation Detachment (NSD) flawlessly conducted the Navy's first operational saturation dive from the deck of a dynamic positioning vessel of opportunity (VOO) off the coast of Catalina Island, CA. Working in conjunction with Submarine Squadron 11's Undersea Rescue Command (URC), NSD deployed five highly trained saturation divers to stowage depth of 420 foot sea water (fsw) using the Navy's Saturation Fly-Away Diving System (SAT FADS). Divers conducted two dive-bell excursions to 490 fsw completing critical maintenance and detailed inspections of URC's submarine rescue chamber false mating seat. The maintenance and inspection was crucial for the training and recertification of URC submarine rescue assets and had an immediate impact on U.S. Navy submarine readiness.

Saturation diving was pioneered by Captain George F. Bond in the late 1950's, and is the most efficient method for extended deep-water missions. Briefly, in deep diving operations, decompression requires increasingly long durations as divers descend deeper and longer, however, once a diver fully saturates with their

breathing gases, additional decompression is unnecessary. As an example taken from the U.S. Navy Dive Manual, "For a 40-hour task at 200 fsw, a saturated diver would spend 5 days at the bottom pressure and 2 days in decompression, as opposed to spending 40 days making 1-hour dives with long decompression periods using conventional diving methods."

To conduct missions of this type, the Navy has developed a mobile Deep Diving System coined SAT FADS. This system is equipped with a multi-lock deck decompression living chamber, dive bell, launch and recovery handling system, and requisite life-support systems, and is deployable around the world. In practice, the expert dive team from NSD can remain saturated during day-trip excursions using the pressurized dive bell, and during rest using the pressurized living chamber on deck, while only needing to decompress once the mission is complete.

While NSD completed the historic dive on June 1, the original mission was actually a joint training operation to validate URC's remotely operated vehicle (ROV) as a primary means of attaching an external lifting cable to the SAT FADS dive bell in the event of a

critical system failure. This type of unlikely system failure results from the bell umbilical and lifting wire being completely severed or can be caused from critical topside malfunctions onboard the VOO. Working together, NSD and URC identified the HOS Dominator, a commercial vessel contracted through NAVSEA, as an appropriate VOO to support the complex saturation diving operations necessary for the planned mission. NSD mobilized the SAT FADS aboard 17 flatbed semi-trucks transiting cross-country from Panama City Beach, FL to North Island Naval Base, San Diego, CA. Once the system arrived on-site, NSD personnel conducted installation, full system start up, and operating procedures over the course of five days.

With validation of the system status confirmed, NSD and URC were trained and equipped for the HOS Dominator to get underway. After a short transit to URC's training site off the coast of Catalina Island, NSD executed a 180 fsw training dive conducting specialized equipment testing. Simultaneously, URC personnel also conducted ROV operations to include the initial inspection of their rescue chamber false mating seat, a training tool for critical for submarine rescue.



SATFADS dive bell being deployed off the aft deck of the HOS Dominator off the coast of Catalina Island, CA during NSD and URC dual tether saturation and ROV diving operations. Photo by: NDCM Bryan McCurley.

Throughout their inspection, URC noted excessive growth and fouling on the mating surface. Excessive fouling directly hinders proper sealing during mating operations, negating the ability to conduct training evolutions or the recertification of their submarine rescue equipment. Following several unsuccessful attempts to thoroughly clean the mating surface, URC turned to NSD for a historic 490 fsw saturation dive to clean and inspect

the false seat. The new tasking required a deeper stowage depth, lower bottom mix O₂ percentage, and additional emergency gas requirements.

Commanders from NEDU and URC, along with CSS-11, SUBPAC and key NAVSEA personnel quickly worked together to deliver formal tasking and mission approval while the HOS Dominator returned to port for preparations. While in port, NSD Divers completed three days of de-

compression before surfacing from a five-day saturation dive officially completing the planned 180 fsw training dive. Subsequently, crew personnel secured replenishment items, mixed gas to meet the new depth requirements, and the NSD divers were trained on the mission-specific bottom work tools to clean the mating seal.

On May 31, 2022, NSD and URC were again underway on the HOS Dominator navigating back to the coast of Catalina Island. While in transit, NSD compressed five divers to a stowage depth of 420 fsw and on the morning of June 1, 2022, three Divers transferred under pressure from SAT FADS living chamber to the dive bell. The dive bell was isolated, separated from the system, and launched over the side descending to 460 fsw. Once at depth, the bell operator equalized with the sea pressure and opened the bell hatch to the submarine training site below. Two divers, dressed in their SLS System Mk-IV Helmet and SLS backpack, descended to the dive project on the bottom to begin maintenance and inspection of the false mating seat.

NSD completed two historic bell excursions during this operation putting five divers on the bottom at 490 fsw. As if this dive were not exciting enough, during the first excursion, NDCS Pete Kozminsky proudly displayed his commitment to his Nation, the Navy, and the diving community by re-enlisting on top of the false seat. His depth was marked at 475 fsw while NEDU's Commanding Officer, CDR Dustin Cunningham, recited the oath. This is the deepest known open-ocean re-enlistment in U.S. Navy history. Following the successful cleaning and inspecting of the submarine training seal, the NSD divers completed just shy of six days of decompression in the SAT FADS living chambers before "surfacing" on Tuesday morning, June 7, 2022. This marked a total of eight days under pressure and capped off the Navy's historic first operational saturation dive from the deck of a dynamic positioning VOO.

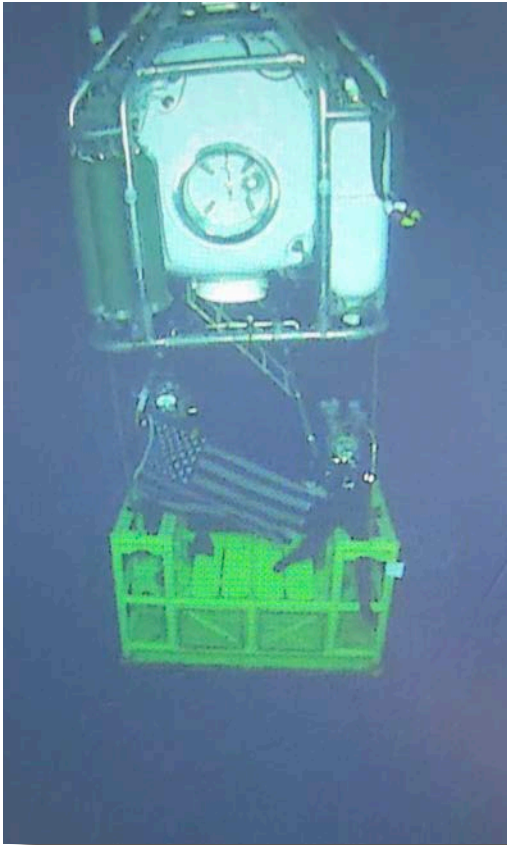
NSD is currently conducting mission specific training in preparation for an upcoming joint operation in the South Pacific sponsored by the Defense POW/MIA Accounting Agency. The operations completed this past year and scheduled over the next nine months have paved the way for future missions, furthering the need for U.S. Navy deep open ocean saturation diving requirements.

Article cover photo: SATFADS dive bell being recovered off the aft deck of the HOS Dominator off the coast of Catalina Island, CA during NSD and URC dual tether saturation and ROV diving operations. Photo by: NDCM Bryan McCurley.

CWO4 Chris Stearns is the current Officer in Charge and NDCM (MDV) Bryan McCurley is the Detachment Master Diver of the Navy Experimental Diving Unit Saturation Detachment.



The NSD Dive team and topside support personnel immediately following the divers reaching surface for an eight day, 490fsw saturation dive off the coast of Catalina Island, CA. Names left to right and back to front: ND1 Desmarais, NDC Swartwood, NDC Smith, HMC Hobbs, NDCM Dodd, NDCM McCurley, ND1 Stiglbauer, LT Richardson, ND1 Fenimore, ND1 ODell, NDCS Kozminsky, ND1 Capen, ND1 Mcelyea. Photo by: Mr. Wade Bingham.



NSD divers on the clump weight at 460 fsw prior to locking back into the dive bell following the completion of bottom work. Divers from left to right: NDCS Kozminsky and ND1 Fenimore. Photo by: URC ROV



SATFADS assembled and loaded on the aft deck of the HOS Dominator in preparation for at saturation diving operations. Photo by: EMC Shuler.

Diving and Manned Hyperbaric Systems Safety Certification

By: Mike Frey

Within the U.S. Navy the responsibility for diving and manned hyperbaric systems certification is delegated by the Chief of Naval Operations through OPNAVINST 3150.27D, Navy Diving Program to Commander, Naval Sea Systems Command (COMNAVSEA). COMNAVSEA assigned all Navy Diving Program responsibility to the Office of Supervisor of Salvage and Diving, SEA 00C. Within SEA 00C, the responsibility for Diving Systems Safety Certification lies with SEA 00C4, Diving Systems Certification Authority (SCA). The SCA is provided Technical Warrant Authority for the certification of diving and manned hyperbaric systems and diver handling systems through the NAVSEA Chief Engineer, SEA 05.

What is System Certification?

By definition, certification is the action or process of providing someone or something with an official document attesting to a status or level of achievement. For our purposes, this is accomplished by performing a detailed assessment of the material and procedural adequacy of the system. System Certification is not unique to the U.S. Navy Diving Program. There are many systems in both the military and commercial sector that are either certified or classified, depending on the term used by the independent organization granting the certification/classification. We do this by following the basic foundation and structure of the original Submarine Safety Program (SUBSAFE), design requirements, initial system certifi-

cation requirements and process, and continuation of system certification requirements. Initial system certification is accomplished through review of the design, and verification of the fabrication process and material used in the system, followed by unmanned and manned operational testing. Continuance of system certification is accomplished by on-site verification of the system material condition, completion of required maintenance, and operational verification. The detailed process and requirements of initial, and continuation of system certification can be found in the U.S. Navy Diving and Manned Hyperbarics Systems Safety Certification Manual (MAN-010). Additionally, the on-site survey checklist completed for both initial and continuation of system certification provides in detail all the areas the 00C4 surveyor will verify during the survey. All cited certification documents are provide on the 00C secure web site at: <https://supsalv.navy.mil/> under 00C4 Certification/Certification Publications.

Although system certification cannot positively ensure that an accident will not happen, it does however provide "maximum reasonable assurance" that a catastrophic or critical accident will not occur. This is accomplished through verification, by an independent technical review, that a diving system provides acceptable levels of personnel safety throughout its specified operating range when approved operating and maintenance procedures are followed.

History of U.S. Navy Diving and Manned Hyperbaric System Certification

How did Diving and Manned Hyperbaric Systems Certification under Naval Sea Systems Command come to be established? To answer this question, we must go back to the loss of the USS THRESHER (SSN 593) in 1963. Commissioned in 1961, the USS THRESHER was the first of her class built to dive deeper and cruise faster than any other ship of the undersea navy. After completing shakedown trials, a post-shakedown overhaul was completed at Portsmouth Naval Shipyard in Kittery, Maine. On 10 April 1963, while engaged in a deep test dive, approximately 200 miles off the northeastern coast of the United States, USS THRESHER (SSN 593) was lost at sea with all persons aboard, 112 naval personnel and 17 civilians. The Court of Inquiry concluded that a flooding casualty in the engine room is the most probable cause of the sinking of the THRESHER, and that in all probability water affected electrical circuits and caused a loss of power. Facts gathered during the investigations showed that there were deficiencies in: specifications, shipbuilding practices, maintenance practices, and operational procedures. As a result, the SUBSAFE Program was created in June 1963. The first Submarine Safety criterion was issued in December of 1963. It provided the basic foundation and structure of the program that is still in place today, in-

cluding: design requirements, initial SUBSAFE Certification Requirements and Process; and Certification Continuity Requirements and Process.

After the loss of USS THRESHER, the Secretary of the Navy formed the Deep Submergence System Review Group (DSSRG) to develop systems to locate, identify, rescue from, and recover large, deeply submerged bodies from the ocean floor. Navy Diving and Manned Hyperbaric Systems fell under Deep Submergence Systems. By 1966, the need for Deep Submergence Systems (DSS) to become a separate project became apparent. The certification of submersibles using a technical Letter of Requirements began in the 1964-65 time frame. In 1968, certification requirements and criteria for DSS were promulgated in NAVSHIPS "Material Certification Procedures and Criteria Manual for Manned Non-Combatant Submersibles." In 1970, due to a fire in a recompression chamber at the Navy Experimental Diving Unit, Washington Navy Yard, DC requirements for manned hyperbaric chambers were published in "Hyperbaric Facilities, General Requirements for Material Certification". Following that publication, requirements for diving equipment were issued in 1971 in NAVSHIPS "Diver Equipment, General Requirements for Material Certification." The increased complexity and interaction of the different components of Navy diving systems resulted in the consolidation of the three documents in 1973 into NAVMAT P-9290, "System Certification Procedures and Criteria Manual for Deep Submergence Systems." The requirement for diving systems certification were originally defined in OPNAVINST 9940.1 F, Navy Diving Program. This document assigned the Chief of Naval Material (CNM) the responsibility for the certification of material and procedures for Deep Submergence Systems and for establishing material certification criteria for all such systems. CNM in turn assigned the responsibility

(through NAVMATINST 9940.1B) to the COMNAVSEA to perform the function of System Certification Authority for non-combatant submersibles and afloat diving systems equipment. The certification process and the assignment of responsibilities were defined in NAVMATINST 9290.1. However, the establishment of two certification authorities did not relieve NAVSEA 00C involvement with DSS. In fact, due to five divers losing their lives on 16 January 1982 on the USS GRAYBACK, it was recognized that greater involvement by SEA 00C in the certification process, and safety analyses during system design was required.

In August of 1985, as result of a series of diving accidents, two of which were fatal, that occurred within a relatively short period of time in late 1984 (USS FLORIKAN) and early 1985 (EODMU TWO) the Chief of Naval Operations ordered a review of the Navy Diving Program. The board convened in 1986, which consisted of a panel of 16 members representing all the various TYCOMS, SYSCOMS, Training Commands and OPNAV. Among the numerous recommendations that came out of the review there were two that directly pointed at System Certification. First, update and reissue NAVMAT P-9290 as two NAVSEA publications; one covering the certification of both shipboard and [portable] and shore-based diving systems, and the second covering DSS and non-combatant submersibles. Second, consolidate all diving and manned hyperbaric systems certification under the cognizance of NAVSEA 00C. As we know, the second did not occur at that time. Although not directly affecting diving system certification NAVMAT P-9290 was directed to be revised and reissued as a NAVSEA publication (NAVSEA P-9290). Additionally, the Navy Diving Program was now directed by the Chief of Naval Operations through OPNAVINST 3150.27- Navy Diving Program. The first standalone diving life support systems certification manual, SS521-AA-MAN-010

U.S. Navy Diving and Manned Hyperbaric Systems Safety Certification Program (MAN-010/"The Orange Book") was issued in October 1987. Although, recommended for consolidation under NAVSEA 00C two System Certification Authorities still existed; COMNAVSEA for shipboard and portable systems, and Commander, Naval Facilities Engineering System Command for shore-based systems. The first revision of MAN-010 was issued in May 2004, followed by revision 2 in Nov 2006, revision 3 in April 2016, and revision 3 Change A in March 2018. The main focus of these manual revisions were to remove technical requirements. This was accomplished by moving technical requirements into the U.S. Navy General Specification for the Design, Construction and Repair of Diving and Hyperbaric Equipment, Naval Sea Systems Command TS500-AU-SPN-010 (GENSPECS). The focus of the Certification Manual is the system certification process and re-entry control requirements.

Revision 4 of MAN-010 is set to be released this calendar year. This revision completely removed the remainder of the technical requirements, and although it took over 35 years from the 1986 CNO Diving Program Review recommendation, all System Certification Authority responsibilities are aligned under COMNAVSEA in accordance with OPNAVINST 3150.27D. When released please read in its entirety. To cite a Dr. Benjamin Franklin quote from the 1986 Foreword: "If you would be right...read." Meaning, if you wish to succeed in playing a role in the certification process of a diving or manned hyperbaric system, the first step is to read the Certification Manual and understand it.

Mike Frey is the NAVSEA Diving Systems Certification Authority. He came aboard 00C in 2000 as a Diving Systems Certification Engineer and fleeted up to the SCA in 2009. Mike served on active duty as Navy Diver and retired from the USN Reserve in 2019.



SUPSALV Delivers A-Frame Diver Handling System to NECC in Exercise with Mobile Diving Salvage Unit One

By: Robyn McGinn

A-Frame Launch and Recovery System (LARS) Acquisition:

Per OPNAV Instruction 3150.27D, the Department of the Navy (DoN) has designated the Naval Sea Systems Command (NAVSEA 00C) as the technical authority for the design, acquisition, certification, and Authorized for Navy Use (ANU) designation for Navy diving life support systems (DLSS) and manned hyperbaric systems. To fulfill this role, NAVSEA 00C provides “cradle-to-grave” life-cycle management of USN diving equipment, policies, and procedures with responsibilities that include providing for research and development, design, acquisition management and repair assistance for diver life support equipment, manned hyperbaric systems, surface supported diving systems, saturation diving systems and diving tools.

In FY 2020, NAVSEA 00C3 was tasked by OPNAV N95 to provide two (2) Twin-Basket A-Frame Launch and Recovery System (LARS) that could be rapidly transitioned to support safer and more efficient operations from Dynamic Positioned (DP) Vessels of Opportunity (VOOs). An A-Frame LARS typically consists of an A-frame structure pinned to a foundation structure and controlled by hydraulic rams for booming a stage inboard and outboard. The rams and winches are supplied power from hydraulic power units fed through a control console. The Lift Wire Winch is typically mounted to the foundation with the main lifting wire reeved through a sheave on center of the A-frame cross-beam connected to the diver stage. The Guide Wire Winch is also typically mounted to the foundation with the guide wire double reeved through a clump weight below the stage/bell and dead ended to the A-frame cross-beam. The A-frame design may not suit every diving mission, but is preferred to a stage from a single davit because of the added stability and control provided by the guide wire running on both sides of the stage/bell.

NAVSEA 00C3 performed an Analysis of Alternatives (AoA) of commercially available systems and developed a System Requirements Document (SRD) with the endorsement of the Navy Expeditionary Combat Command (NECC); the intent was to provide a compact, portable LARS that was air-transportable and capable of deploying and recovering three (3) divers on stages to at least 400 fsw through the air/sea interface from a DP VOO. Based on the SRD and AoA, the NECC down-selected to the Submarine Products Manufacturing (SMP) Ltd Twin Basket Launch and Recovery System (LARS) which was procured by NAVSEA 00C and delivered to Mobile Diving and Salvage Unit (MDSU)-1 and MDSU-2 in 4th Quarter FY 2022.

SMP LARS Validation with MDSU-1 and Initial Certification:

Part of NAVSEA 00C’s acquisition plan was to institute a validation and verification process with the end-user to ensure that the SMP LARS compiled with performance requirements in its intended operational environment, that any deficiencies were identified and corrected, as well as any product improvements desired by the end-user were captured for future implementation. MDSU-1 successfully lined up the use of the MV Ocean Valor at the tail end of RIMPAC in August 2022 to support, which allowed NAVSEA 00C the valuable opportunity to demonstrate and test the performance of the system in support of initial certification for manned use. A collaborative team was put together to include representatives from MDSU-1, MDSU-2, and NAVSEA 00C with the goal to deploy, test, and operate the system under realistic conditions, while also conducting initial training to evaluate the effectiveness and suitability of the system in direct relation to end-user requirements.

The team met at MDSU-1 in Pearl Harbor, Hawaii during the week of 1 AUG and conducted the following events successively:

- Verification of basic installation plans for onboard a DP VOO (MV Ocean Valor) to include operational set-up and load testing procedures (picture 1)
- Verification of system functions pierside (Unmanned) (picture 2)
- Verification of Operational and Emergency Procedures (OPEPs) pierside (Unmanned) (picture 3)
- Verification of OPEPs and Training Evolutions pierside (Manned) (Faceplate cover photo)
- Verification of system functions at-sea (Unmanned) (picture 5)
- Verification of OPEPs and Training Evolutions (Manned) (picture 6)
- Initial Certification and transition the SMP LARS system to MDSU-1 (picture 7)



Collaborative planning with the end-user allowed for NAVSEA to verify and validate system performance in a working environment, supporting a smooth delivery and acceptance by MDSU-1. This event allowed the SYSCOM and NECC to work and train together, which revealed areas of improvement that directly resulted in improved procedures for system operations as well as policy in relation to diving from DP Vessels. NAVSEA OOC will continue to lead efforts throughout life cycle sustainment activities for diving equipment, monitoring the use of the system via working relationships and certifications with the operational commands.

USN divers continue to need more capable equipment with reduced footprints to meet expeditionary objectives, and due to the variability of operational needs, a variety of equipment must be made available as modular assets to mitigate the inherent risk associated with diving. NAVSEA OOC has the responsibility of supporting the DoN with diving systems and technical guidance that are mission-effective, efficient and safe through the implementation of innovative technology.

Robyn McGinn has worked at NAVSEA for 15+ years and is the Program Manager for Diving Life Support Systems (DLSS) at NAVSEA OOC.

Article cover photo: SMP LARS installed starboard after on OCEAN VALOR.

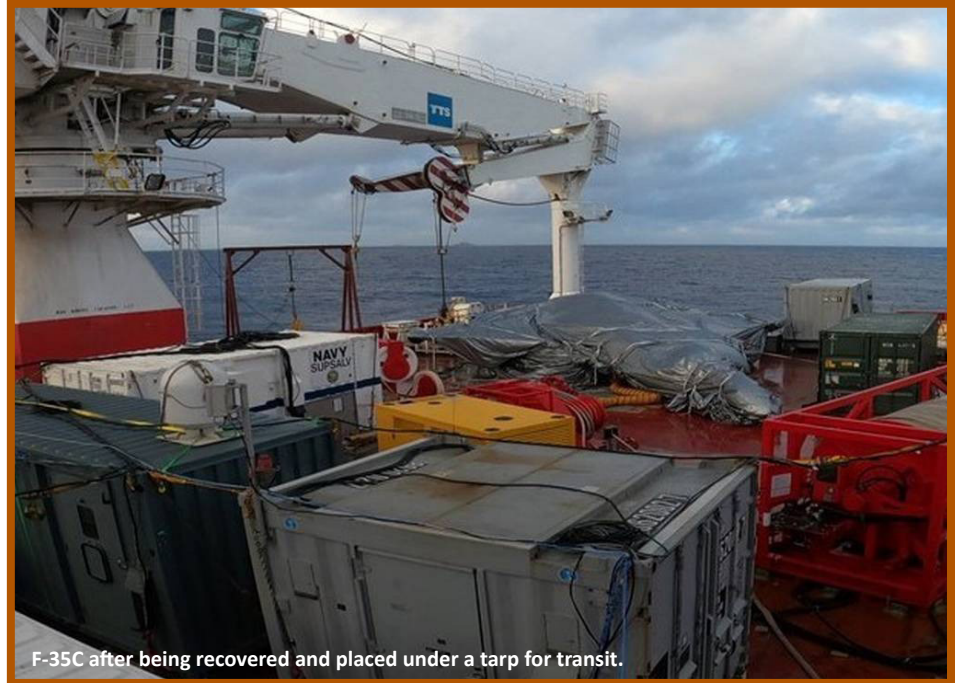
Operation Lightning Salvage: F-35C Salvage in the South China Sea

By: LCDR Neil "Spanky" Tublin

On January 24th, 2022 a Navy F-35C crashed in the South China Sea and the Supervisor of Salvage and Diving (SUPSALV) was tasked with the recovery of the aircraft and associated components. International attention on the mishap and the classification level of the aircraft made speed of salvage a primary concern. Given the estimated depth and weight of the aircraft, we chose to mobilize our Autonomous Underwater Vehicle (AUV) Hugin for search, our Remotely Operated Vehicle (ROV) CURV-21 for site survey and undersurface rigging, and our 60-kp Flyaway Deep Ocean Salvage System (FADOSS) for lifting the aircraft from the ocean floor. Once we determined our port of embarkation we were able to swiftly move our equipment and personnel on site to begin mobilization. This required coordination with the Office of the Chief of Naval Operations (OPNAV), Naval Air Systems Command (NAVAIR), Pacific Fleet (PACFLT), 7th Fleet's Combined Task Force 75 (CTF-75), Trans-



CURV-21 Remotely Operated Vehicle awaiting to be sent overboard for operations.



F-35C after being recovered and placed under a tarp for transit.

portation Command (TRANSCOM), and various other organizations.

We contracted the Diving Support Construction Vessel (DSCV) Picasso to conduct the operation. While the Picasso does have its own ROV, we did not utilize it to conduct the operation. Once the Picasso arrived in port we expeditiously mobilized our equipment and personnel, along with personnel from the Aviation Mishap Board, the F-35C Joint Program Office, and the Naval Safety Center. In addition, CTF-75

embarked a security detail and an Explosive Ordnance (EOD) detachment.

After arriving at the location provided as the mishap location, we were able to launch the AUV, process the data, launch the ROV, rig, and recover the aircraft within three days, with an additional day to ensure we recovered all items associated with the mishap. We were on our transit back to port with all of the salvaged equipment only thirty-five days from the day of the mishap and after only five days on site.

The SUPSALV team was able to demonstrate why we are a National Asset by utilizing teamwork, sound judgement, and dedication to the task at hand.

LCDR Neil "Spanky" Tublin is an Assistant for Salvage assigned to the NAVSEA Supervisor of Salvage and Diving. He is a dive qualified Engineering Duty Officer and former F/A-18E pilot.



HUGIN Autonomous Underwater Vehicle.

DEEPSEA SEND-OFF: A TRIBUTE TO THE BRASHEAR LEGACY

BY: CW02 SPENCER PUETT AND NDCM JASON COOK

On 29 July, Mobile Diving and Salvage Unit TWO had the distinct honor of participating in Army Chief Warrant Officer 5 (CW5) Philip M. Brashear's retirement ceremony, after 41 years of service. As a nod to Warrant Officer Brashear's late father, legendary Master Diver Carl Brashear, three Sailors from the Virginia Beach-based diving and salvage command facilitated a surprise "12-step" reenactment from the hit movie "Men of Honor". ND2 Michael Drake and ND3 Zachary King tended ND2 Cain Randle as he completed the walk down the red carpet, where the three rendered a salute to CW5 Brashear. The awe-inspiring spectacle served as the final salute to Brashear, while honoring his legendary father. Earlier in the ceremony, CW5 Brashear was appointed as an honorary Navy Chief Petty Officer by Master Chief Petty Officer of the Navy, Russel Smith, in recognition of his tireless dedication to the United States Navy.

Photo captions top to bottom: CW5 Brashear and CMDCM Cook watch as ND2 Randle completes the 12-step reenactment tended by ND2 Drake and ND3 King; Members render the final salute to CW5 Brashear; Post ceremony; ND2 Drake, ND2 Randle, CW5 Brashear, and ND3 King.

CW02 Puett enlisted in the Navy in 2005 and has completed tours of duty at EODTEU's ONE and TWO, EODMU THREE, SWMRC, MARMC, and MDSU TWO. He commissioned in 2020 and is currently the Company Commander for MDS Company TWO FOUR.

NDCM Jason Cook has been a Navy Diver for 21 years, and is currently serving as Command Master Chief, Mobile Diving and Salvage Unit TWO.



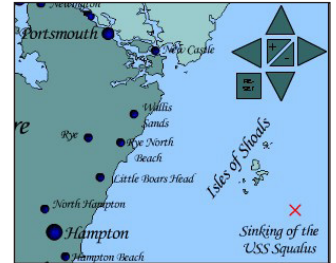
This Day in Diving History

By: MDV David Gove

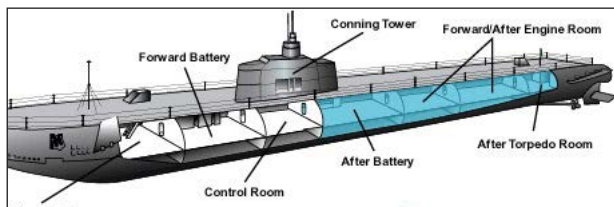
USS SQUALUS (SS-192) Rescue & Salvage

The rescue and salvage of the USS SQUALUS (SS-192) was and remains the greatest submarine rescue/salvage in naval history worldwide bar none. Not only were 33 people pulled from the clutches of the deep, but several diving platforms/techniques were proven operationally at the great risk of the Navy Divers involved that are still in use today, both in the military and civilian communities. This was one of Navy Diving's finest hours and each and every Deep-Sea Renegade should know this story cold.

On March 1, 1939, the Navy commissioned its then-newest submarine, the USS SQUALUS (pronounced "sk-way-lus" not "sk-wall-us"). Named for a small shark with a reputation of "a big bite," she was the

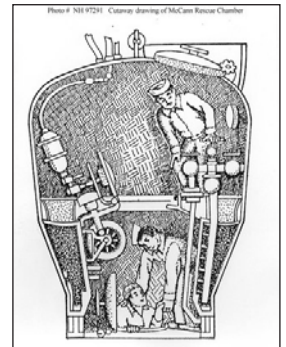


pride of the Navy. She was of newer, larger design with state-of-the-art amenities such as air conditioning. The SQUALUS had been installed with every safety feature the Navy could think of. Despite these technological advantages, she suffered a catastrophic valve failure during a test dive off the Isle of Shoals at 0740 on Tuesday 23 May 1939. Partially flooded, the submarine



sank to the bottom and came to rest keel down in 240 feet of water. SQUALUS was initially located by her sister ship, USS SCULPIN. The two submarines were able to communicate using a telephone marker buoy until the cable parted due to the high seas. Navy Divers and salvage ships responded quickly,

getting on station and attaching a downhaul cable (240 fsw on air) to ready the rescue effort. The following day, operations commenced to rescue the surviving 32 crew members and one civilian from the forward sections of the boat. At 1130 on 24 May, USS FALCON (ASR-2) lowered the newly developed McCann rescue chamber - a revised version of a diving bell invented by Commander Charles B. Momsen - and, over the next 13 hours, all 33 survivors were rescued from the stricken submarine.



There were five total runs in the McCann rescue chamber with Chief Badders and/or PO1 Mihalowski being involved in each run. Each run took between 2-3 hours to complete. The rescues official Navy report stated that, "These men were fully aware of the great danger involved. If they became incapacitated, there was no way in which they could be rescued, as the chamber could not be entered from the outside. Considering all facts, it is felt that these men accepted the greatest personal risk of any during the entire rescue operations, and performed their duties in accordance with the highest traditions of the service." For their actions, the following divers would receive the Medal of Honor: MMC(DV) William Badders, TM1(DV) John Mihalowski, MEC(DV) James Macdonald, and BMC(DV) Orson Crandall. These would be the only CPOs to receive this honor during the interim years between WWI and WWII.

On 13 September, after long and difficult salvage operations, USS SQUALUS (SS-192) was raised and towed into the Portsmouth Navy Yard. The boat was formally decommissioned on 15 November, renamed USS



SAILFISH, and recommissioned on 15 May 1940. This operation took close to four months to complete, had many firsts, and started only two days after the rescue which occurred in May of 1939. The decision to salvage SQUALUS was made almost immediately. The Navy felt it important to raise SQUALUS as she incorporated a succession of new design features. With a thorough investigation of why she sank, more confidence could be placed in the new construction, or alteration of existing designs could be undertaken. Furthermore, given similar previous accidents, it was necessary to determine a cause.

HELIUM OXYGEN DIVING AND SURFACE DECOMPRESSION

The salvage operation of the SQUALUS began with the first operational helium-oxygen dive by Chief William Badders and the first use of Sur-D procedures off of USS FALCON (ASR-2). This new breathing medium and decompression procedures were critical to the salvage operation due to the depth (240 feet) which was done on air previously.

In the words of Commander Momsen, "The greatest single development produced on this job was the decompression system. Divers were brought by stages, calculated to be safe, to 50 feet. From this depth they were brought quickly to the surface, undressed, and placed in a pressure tank within five minutes after surfacing. There he was fitted with a mask and given pure oxygen for a time sufficient to remove all of the excess gas from his body. Fifty feet

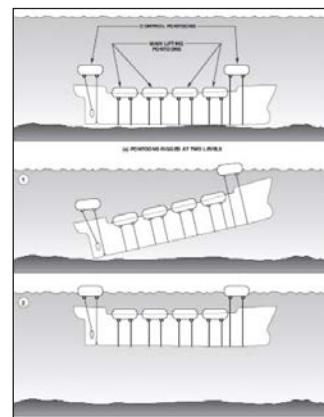
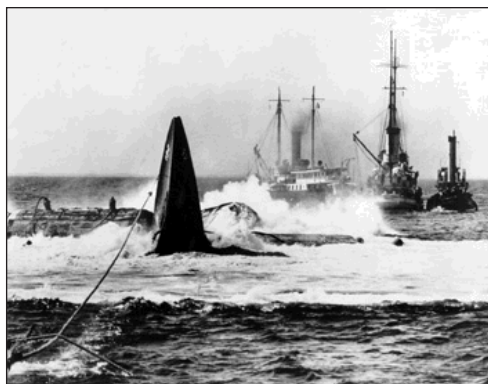
of saltwater is equivalent to 1-1/2 atmospheres of pressure which added to the atmospheric pressure gives us 2-1/2 absolute. At this pressure, the bloodstream can handle in physical solution just about the amount of oxygen that is required by the body. Thus, the bloodstream as transportation is free to carry the greatest amount of the helium away to the lungs. Since the solubility of a gas in a liquid varies as the pressure, at a pressure of less than 2-1/2 atmospheres, the carrying capacity of the blood would be reduced, hence it would take longer to remove the gas." There were only 2 cases of the bends during the entire course of this operation - a total of 628 dives.

We currently do HEO2 diving and Surface Decompression on a routine basis, so it seems easy to simply follow the procedure. In 1939 this was an experimental measure used to complete such an

important operation. Imagine for a moment being used to simple in-water staged diving on air only and suddenly shifting to a different medium with incomplete decompression in water only to finish it in the chamber within a limited period of time on the surface. Because this procedure was calculated and not totally proven at the time it fell to the divers to do work underwater while questioning the procedure in the back of their minds. After the success of this operation, the procedures became instrumental in a majority of salvage operations and training to this very day.

SALVAGE OPERATIONS

Many of the procedures used on previous submarine salvage operations (like the USS SKATE) would be used on the SQUALUS. Lifting pontoons were primarily used, but there are some significant differences that made the SQUALUS operation noteworthy. The salvage plan called for raising SQUALUS with pontoons and her remaining internal buoyancy. To accomplish this, the salvage was planned and conducted in three distinct stages. Unlike previous pontoon salvage operations, control pontoons limited the distance the ship was lifted in any single lift. The reason for this is when pontoons and the vessel's own buoyancy are used, the exact locations of the centers of gravity and buoyancy cannot be determined, thus one end always rises first. If the rise of the upper end is not constrained, a sharp angle will result and air will spill from open bottom ballast tanks. To prevent a sharp angle, SQUALUS would be lifted a short distance, towed submerged to shallow water, and lifted again. To limit the distance the submarine was raised on each lift, the pontoons were arranged at different levels between the surface and the submarine. When the uppermost pontoons reached the surface, their lift would be lost and SQUALUS would hang in midwater, supported by her internal buoyancy and that of the submerged pontoons. The upper pontoons were known as the control pontoons because they controlled the height of the lift.



After weeks of grueling work both by divers and topside personnel, all was ready for the first lift. Commander Momsen described what happened,

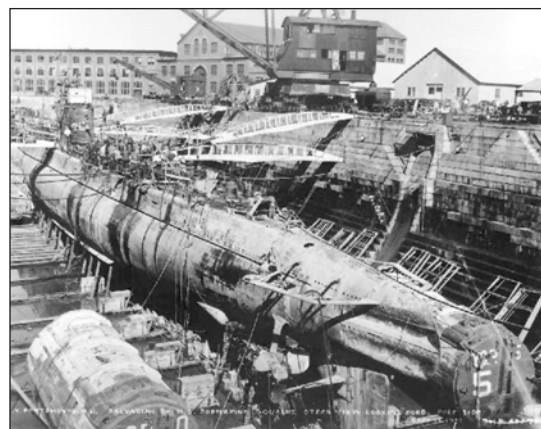
"At the end of fifty days of work, the first lift was attempted. We raised the stern successfully and then the bow. The bow came up like a mad tornado, out of control. Pontoons were smashed, hoses cut and I might add hearts were broken. It was the 13th of the month, July. Another 20 days of mopping up were required before we could again rig for another try. The second try was successful."

Pontoons were rerigged for the second lift so that more positive control over the bow was maintained. SQUALUS was raised 70 feet and towed toward Portsmouth until she grounded. The pontoons were rerigged for lifting in the shallower water and she was again lifted successfully and eventually towed to dry-dock (Sept 15, 1939); 113 days after it sank. The vessel was exactly one year old.



USS SAILFISH

After reconditioning, repair, and overhaul, the submarine was recommissioned and renamed USS SAILFISH (SS-192) on 9 February 1940. Once sea trials were complete, she departed Portsmouth on 16 January 1941 and headed for the Pacific. Transiting the Panama Canal, she refueled at San Diego and arrived at Pearl Harbor in early March. The submarine then sailed west to the Philippines, where she operated out of the Cavite Navy Yard with Submarines, Asiatic Fleet (which eventually became 7th fleet). She was in port when the Japanese attacked Pearl Harbor on 7 December 1941. SAILFISH conducted 12 patrols and would be awarded nine battle stars for her service in World War II Service. It is especially noteworthy that several of the SQUALUS survivors served aboard SAILFISH during some of these war patrols.



During the Pacific

War, the captain of the renamed ship issued standing orders if any man on the boat said the word "Squalus" he was to be marooned at the next port of call. This led to crew members referring to their vessel as "Squailfish". That went over almost as well; a court-martial was threatened for anyone heard using it.

President Roosevelt visited during the salvage operations and formally commended the "devotion to duty, courage, skill, initiative, and self-sacrifice" of the officers and men who salvaged

the sunken submarine. Every Navy Diver who worked on the rescue and salvage of the USS SQUALUS received an award ranging Congressional Medals of Honor (4), to Navy Crosses (49), to citations from the Secretary of the Navy (4).



Note: This historic moment in Navy Diving history has been captured in quite a few books as well as a NBC made for TV movie called "Submerged". Her conning tower serves as a memorial at Portsmouth Naval Shipyard. A few notable books are:

1. Blow all Ballast by Nat Barrows
2. Back from the Deep by Carl Lavoe
3. The Terrible Hours by Peter Maas
4. The Rescuer also by Peter Maas
5. Lost Subs by Spencer Dunmore

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



Diving Officer's Perspective

By: CW04 Jason Potts, USN

TAKING A FIX

In the same vein as SUPDIVE's article, and with the aim of reintroducing some of the items that might not have made dive locker front page news during the pandemic, I'm using this chunk of Faceplate real estate to take a quick fix on a few of the major initiatives the Naval Sea Systems Command (NAVSEA) Diving Programs Office managed over the course of these last three years. Each of the following snapshots provides a brief summary of the specified initiative and a detail or two about why it matters to you, the fleet diver. As you peruse this and other articles in this issue, please consider dropping me a line at jason.w.potts4.mil@us.navy.mil with any feedback you might have on the content of our write-ups and Faceplate in general. We are HUNGRY for pointers on how we can produce a relevant, interesting, and beneficial periodical you not only want read but actually applies to your day to day life on the waterfront – we're writing this stuff for you, and we genuinely want to know how we can get it right.

POST-USE MAINTENANCE.

From revisions of underwater breathing apparatus (UBA) post-dive maintenance requirements to comprehensive reassessment and migration of germicidal agents to the Authorized for Navy Use (ANU) List, significant time and effort were dedicated to assuring effective sanitation of our diving equipment as a critical enabler of the safety, effectiveness, and opera-

tional readiness of the dive-enabled force throughout the initial phase of the pandemic and beyond. As we probed individual processes to ensure maximum protection against the known threat, an appreciable amount of the office's bandwidth was also dedicated to deliberate collaboration with our international partners to exchange ideas and capitalize on lessons learned as we jointly navigated these unique challenges. Although many beneficial changes were made, we also worked hard to steer the enterprise well clear of implementing wholesale, kneejerk requirements the likes of chamber hull sanitization that would have further strained unit-level manpower without solid substantiating evidence. If you haven't had the time lately, recommend giving your post-dive MRCs a fresh look next time you're breaking down a hat, and swinging by our website's ANU page, <https://supsalv.navy.mil/anu/Home.asp>, to check-out sanitizer items 7.3.1 and 7.3.2 for dilution instructions and specific UBA applications. While you're there, please flip through the rest of the ANU for info on recently-approved equipment and extensive technical information captured in the notes section of each item. You might be surprised how much useful stuff is in there!

DIVING IN THE VICINITY OF SUCTIONS AND DISCHARGES.

In response to recommendations from our Navy's stateside and Forward

Deployed Naval Force (FDFN) underwater ship husbandry (UWSH) lockers, we worked extensively with the Senior Enlisted Advisory Team (SEAT), Chief Warrant Officer Advisory Team (CWO-AT), and NAVSEA headquarters office responsible for Tag-Out Users Manual (TUM) administration to refine constraints associated with diving operations conducted in the vicinity of active sea suction and discharges. In addition to correcting TUM and Diving Manual misalignment, this collaborative effort also removed emergent criteria, thus disrupting normalized deviance that had crept in over the years; removed the 50 gallons per minute threshold, as few sea suction, regardless of size, are below this rating; permitted officer in charge authorizations to facilitate uninterrupted operations at places like our FDFN ship repair detachments; added provisions for dive boat and shore based (dams, etc.) suction; expanded applicability to all dive ops, not just UWSH, to ensure all operating environments are covered; added hull features as boundaries for diving within 50 feet of active suction; emphasized operational risk management; specifically addressed our Navy's smaller surface combatants; and markedly increased relevance and operational flexibility without decreasing safety. Now that these provisions, all of which are rolled into Diving Advisory 21-09, have taken root, I recommend carving just a little time out of your demanding schedules to verify

the compatibility of your unit's instructions, standard operating procedures, and level of knowledge with these changes, as they will no doubt make your team safer and more efficient.

NAVSEA DIVING PROGRAM POLICY.

Building on the hard work of our predecessors here in the office, we spent the better part of 18 months drafting and staffing the first revision to NAVSEAINST 3150.1, Diving Program, in 14 years. This policy, which aligns with the latest revision to the Navy-wide diving instruction, OPNAVINST 3150.27D, focuses primarily on dive-capable NAVSEA field activities and cognizant headquarters but also provides programmatic framework for other enterprises formally associated with the NAVSEA diving program via formal memoranda. In addition to satisfying basic doctrinal requirements the likes of identifying units authorized to conduct manned diving operations, this policy also gets into the details of Diving Operational Readiness Inspection (DORI) and general diving program administration. The particularly noteworthy provisions of this instruction I'd recommend current and emerging program managers checkout deal with medical program support (para 5.d.2), supervisory proficiency (para 5.d.6), training plans (para 5.d.7), letters of designation (para 5.d.8), lessons learned (para 5.d.10), maintenance and material management self-assessments (para

5.d.11), and DORI preps (para 7.d).

MANPOWER ASSESSMENT.

An especially critical requirement nested in the Navy diving program instruction I mentioned above is for the Pentagon office responsible for the Navy's undersea warfare programs (OPNAV N97) to periodically convene a Dive Executive Steering Committee, or DiveESC, to "improve the effectiveness and economy of diving activities and to ensure the Navy has the required capability to support peacetime, emergency and wartime diving technology and training requirements." The last time this group, which is comprised of senior leaders representing various segments of the dive-enabled force, came together, it issued action items for our office to take a hard look at UWSH capacity and the decades long practice of Navy recompression chambers supporting local area and regional bends watches, herein referred to as regional recompression chambers (RRCs). Although a detailed look into UWSH is relatively straightforward, the task of assessing RRC is a little trickier since a Navy-wide requirement for this capability doesn't currently exist. In response to this tasking, we set out on a two-year effort in collaboration with supported/supporting chains of command, the Navy's Military Personnel Plans and Policy directorate (OPNAV N13), OPNAV N97, and the Navy Manpower Analysis Center (NAVMAC) in Millington, Tennessee to initiate a

comprehensive assessment of UWSH and RRC unit manpower with the intent of rightsizing UWSH manpower based on factual metrics and developing a single, definitive report that'll inform DiveESC decisions on the future of RRCs in the Navy. Unlike traditional NAVMAC studies, we're only taking a look at the dive-capable section(s) of each assessed unit, so our lockers' very relevant needs won't get buried in a larger report. To date, the CWO-AT and SEAT devised potential courses of action, all concerned chains of command concurred up to and including the Flag-level, OPNAV N97 submitted a formal request, NAVMAC schedule the assessment for fiscal year 2023, and preliminary assessments were conducted onboard Southwest and Mid Atlantic Regional Maintenance Centers [HOO-YAH to these two lockers for taking time out of their busy schedules to host the NAVMAC team!!!]. The next step in the process is NAVMAC's development of the assessment methodology and detailed coordination with unit leadership to frame out the larger schedule. More to follow on this exciting initiative as the broader way ahead and sequence of events continue to come into focus.

One double tap to close out the article: please send us your Faceplate feedback – the more candid, the better. Looking forward to seeing you on the waterfront!

CWO4 Potts is the Fleet Diving Officer at NAVSEA OOC.

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/>

E-2D HAWKEYE SALVAGE

BY: LCDR LUKE MARION

On the evening of March 30, 2022, an E-2D Hawkeye assigned to VAW-120, based out of Norfolk Naval Station Chambers Field, crashed in the vicinity of Chincoteague Island, Virginia, near Wildcat Marsh, at approximately 7 feet of seawater. Due to the tragic loss of one of the crew members on board the aircraft, as well as the sensitive and emergent nature of the associated salvage mission, Mobile Diving and Salvage (MDS) Company 2-2 responded within 18 hours of tasking.

Once on site, the team immediately set to work deploying an oil boom, defueling the aircraft, and recovering sensitive items to protect classified information and aid in a forthcoming Aircraft Mishap Board investigation. The following days involved long hours of searching and accounting for all sensitive items, while also planning and coordinating for the eventual removal of the aircraft from the wildlife nature preserve. Under the direction of Commander, Naval Air Force Atlantic (AIRLANT), MDS Company 2-2 simultaneously coordinated with NAVFAC, NAVSEA, civilian contractors, USCG, and NECC's tailored Task Force to develop an orchestrated salvage plan that ensured not only the safety of those involved, but also the preservation of the environment and the aircraft itself.

By April 2, the team had recovered all sensitive items and had fully developed their plan to successfully remove the aircraft from the water while mitigating the difficulties presented by the shallow-water nature preserve in which it sat. The first step of the plan involved conducting an initial underwater survey to assess the breadth and density of the debris field, which was quickly accomplished by MDSU TWO's Area Search Platoon.

Once completed, the dive company removed the aircraft's propeller blades and utilized a diamond wire saw to cut and remove both wings outboard of their engines. The removal of these sections would later allow for the uninhibited movement of the aircraft through the Chincoteague Road Drawbridge on its way to NASA Flight Facility Wallops Island for storage and follow-on investigation.

As the team worked through the first two steps of the plan, contracted shallow-draft barges made their way to the crash site. With a maximum draft of 30 inches fully loaded, these special-purpose barges would prove to be the linchpin for the successful execution of the remainder of the salvage operation. Once they were in position, the team conducted a series of lifts using the barge's 210 ton crane, to include separate lifts for the tail section, the fuselage, and each of the previously removed wings. Luckily, the team was able to coordinate with VAW-120 to make use of an airframe-specific lifting sling to easily raise the fuselage section of the aircraft without removing the aircraft's dome.

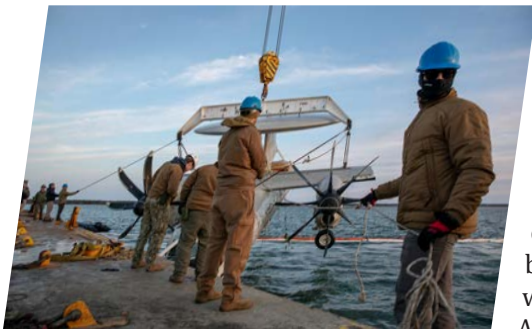
Having positioned and secured all sections of the aircraft onto the shallow-draft barges, the team conducted a high-tide-only transit from the incident site to Wallops Island where each section was again lifted and placed on the back of flat-bed trucks for transport to the NASA Flight Facility and final turnover to the Aircraft Mishap Board. The last step in the plan was to clean up the incident site debris field and conduct a post-salvage survey and assessment to ensure all components were recovered. Once all aspects of the plan were complete, MDS Company 2-2 and ASP redeployed to Virginia Beach, VA to reset and prepare for their next mission.

MDSU TWO continues to stand ready to support the Fleet in any time and place. We only hope that our efforts will serve to honor the brave pilots and aircrew involved in the tragic crash and will assist the Aircraft Mishap Board in their detailed investigation to determine how the events unfolded, ultimately resulting in measures to mitigate similarly tragic occurrences in the future.

Top to bottom: MDSU TWO Sailors guide the wreckage as it is lifted out of Chincoteague Bay and onto a barge during recovery operation; ND3 Nate Champagne climbs into a RHIB following searching efforts during the recovery of sensitive items.



Top to bottom: ND1 Jason Myers prepares a wing of the E-2D Hawkeye for removal during recovery operations; ND3 Jack Widman throws a diamond wire to Sailors on a barge during Hawkeye recovery operations; ND1 Butler supervises MDSU TWO Divers as they lift the nose cone of the E-2D Hawkeye from the water during recovery operations.



LCDR Luke Marion is an EOD Officer and has been serving as Executive Officer of Mobile Diving and Salvage Unit TWO since Aug 2021.



20th Anniversary of USS MONITOR Turret Recovery Reunion

By: Bobbie Scholley, CAPT, USN (ret)

Being surrounded by over 100 Navy Deep Sea Divers on August 5, 2022, wasn't quite the same as being surrounded by over 100 of some of the very same Navy Deep Sea Divers on August 5, 2002. Most of us had long since retired from the Navy and some even retired from second careers. I won't even comment on grey hair, larger waistlines, or the increase in reading glasses. The one thing that was the same though was the immediate feeling of diver family again. That connection never goes away no matter how many years seem to pass. Especially for those Navy Divers who were fortunate enough to have been involved in one (or in several cases more) expeditions to the USS MONITOR!

Let me start at the beginning though, with a quick history lesson. I think we all remember that the civil war ironclad ship, USS MONITOR, sank off the coast of North Carolina during a terrible storm on New Year's Eve, 1862. She wasn't located again until August 1973. The US Navy became involved in mixed gas diving operations first aboard USS EDENTON (ATS-1) in 1995 to begin the salvage of the propeller. With the decommission of the EDENTON the Navy didn't get involved again until 1998 with MDSU 2's certi-

fied Fly Away Mixed Gas Dive System (FMGS) onboard a vessel of opportunity. MDSU 2, with support of divers from commands throughout the Navy and the addition of a commercial Saturation System, continued to provide diving and salvage support for the MONITOR Expeditions from 1998-2002 and 2004. USS GRASP and USS GRAPPLE both supported operations in 1999 and 2001 respectively. In addition to helping to stabilize the wreckage site, hundreds of artifacts including the iconic steam engine and revolving gun turret, and at least two sets of human remains were recovered. You can read about the MONITOR Expedition 2002 in Faceplate issue November 2002 or the MONITOR Expedition 2001, Steam Engine Recovery, in Faceplate issue September 2001. A more in-depth discussion of the all the MONITOR Expeditions and the Navy's role in them is found in John Broadwater's book USS MONITOR, A Historic Ship Completes Its Final Voyage, with proceeds going to the National Marine Sanctuary Foundation.

On August 5, 2002, specifically, many of us remember waking up early on a Monday morning with some dread and lots of hope. We were on the Wotan barge off the coast of Cape Hatteras, having been working on MONITOR

Expedition 2002 all summer. The mission was coming to an end, one way or the other. We were either going to be able to make the lift of the turret and its guns today or the weather was going to turn on us so severely that it could shut us down for the rest of the season. We had already had to suspend operations for the past two days due to weather and strong currents, so today looked like our best shot. As history shows, the weather wasn't perfect, but it turned out to be good enough and the crew was able to bring the 160-ton turret safely off the bottom and onto the barge. Working with NOAA, The Mariners' Museum, and our contractors, it was the culmination of planning, preparation, experience, teamwork, determination, and maybe a bit of luck.

Fast forward to 2022. There had been many discussions over the years about having a "MONITOR" reunion. Different groups of divers would bring it up at various events. It seemed like it wasn't until the magic number of 20 years rolled around when it finally stuck. The Team got back together for another mission. John Broadwater the former Director of NOAA's Monitor National Marine Sanctuary, Chris Murray, CAPT (ret); Frank Perna, CWO5(ret); Tane Casserly from NOAA's Monitor



MONITOR Expedition 2002 Team, including U.S. Navy Divers, NOAA Archeologists, The Mariners' Museum Historians, Manson Marine's Wotan Barge Crew, Phoenix International and Global Marine Services. Photo courtesy of U.S. Navy.

National Marine Sanctuary; Howard Hoege, President of The Mariners' Museum, and myself. We knew that this was the year that we needed to get as many people together as possible for a MONITOR reunion that did not just include the divers, but all the MONITOR Expedition players and it should be on the 20th Anniversary of the turret coming off the bottom.

We were incredibly fortunate that The Mariners' Museum was back in business after the long COVID shutdowns. The Mariners' Museum (<https://www.marinersmuseum.org/>), in Newport News, VA, was mandated by congress to be the official repository of the MONITOR artifacts and entrusted with their conservation and preservation. They had been a part of the team from the beginning. They quickly and generously volunteered to host the reunion, providing all the staff, equipment, supplies and most of the food & beverages for the reunion party on August 5, 2022. The evening was set up in the beautiful front lobby of the museum with dining tables and chairs, open beer and wine bar, and plenty of heavy hot hors d'oeuvres. As the guests arrived at the reunion, they were greeted by museum staff with a

MONITOR Reunion Challenge coin as a token of the evening. On display at the entrance were two beautiful paintings of Deepsea divers with the MONITOR Turret in the background painted by our own CW05(ret) Rick Armstrong. The paintings were raffled off later in the evening. The two lucky winners were CW03(ret) Jeff Annon who won the SAT painting and Mr. John Rayfield who won the Mixed Gas painting.

The evening started with a toast made at 5:47pm, which was the exact time on August 5, 2002, when the turret broke the surface of the water as it came up from the ocean floor. Most of the evening was spent catching up with shipmates, although there was a short program. Mr. John Rayfield, the congressional staff director who was critical in getting funding to support the MONITOR Expeditions in 2000-2002, was the guest speaker. Having been a part of the MONITOR journey from the very beginning, he was able to give a heartfelt tribute very eloquently to all involved in the success of the expeditions. He did give an extra special shoutout to Capt Chris Murray who was key in MONITOR Expeditions 1998-2002. The museum's media staff also searched through hundreds

of photos and video clips to put together a short video that paid tribute to the MONITOR divers. The video is available to view at <https://www.marinersmuseum.org/video/20th-anniversary-of-uss-monitors-turret-recovery/>. The entire evening was a huge success in bringing shipmates together, and the prevalent comment was "when is the next reunion?".

The celebration didn't stop on Friday evening though. The Mariner's Museum staff also set up an amazing MONITOR Family Day on August 6, 2022. This was in part to support those of us who were bringing family along, so that we could spend the next day showing them the many artifacts that we brought back from MONITOR all those years ago. There was a standing room only lecture by John Broadwater, highlighting the series of MONITOR Expeditions that lead to the turret recovery. John also made sure he was available to sign copies of his very popular book. There were behind the scenes tours of the conservation lab that the families were able to sign up for. I, along with John Broadwater, Chris Murray, Frank Perna, Rick Armstrong, and several other people were lucky enough to get the tour on Friday afternoon with Will Hoffman, the Director of Conservation and Chief Conservator. I was very pleasantly surprised that even my 19-year-old twin daughters were impressed with inspecting a 160-year-old steam engine that had been soaking in salt water for 140 years! Not only were many of the small artifacts recovered from MONITOR still being conserved for display, but the turret, Dahlgren guns, steam engine, and condenser were all being conserved in wet tanks in one of the largest conservation labs in the country. It just so happened that during this weekend, the steam engine's tank was drained as part of its conservation process and the tours allowed guests to peak in the tank to see the engine out of the liquid. To get more detailed information on the conservation process of each item recovered from MONITOR or updated status, you can visit The Mariners' Museum's conservation page



One of the impromptu group photos (left to right): Back row – BMCM(MDV)(ret) Kenny Brown, BMC(DV)(ret) Ruben Finger, CW05(ret) Paul Lawson, NDC(DSW)(ret) John Golden; Middle row – HMCS(DV)(ret) Scott Allison, CWO2(ret) Roger Riendeau, NDCM(MDV) Jorge Guillen, CWO3(ret) Jeff Annon; Front row - GMC(DV)(ret) Jim Urban and NDCM(MDV) Bill Wentzel. Photo courtesy of Jorge Guillen.

Peeking inside the drained down wet conservation tank that holds the MONITOR's iconic steam engine which was recovered during expedition 2001. The two Warrant Officers appear to be doing a QA inspection! Left to Right: Craig Mullen, CW05(ret) Rick Armstrong, CW05(ret) Frank Perna, Scholley daughters. Photo courtesy of Bobbie Scholley.



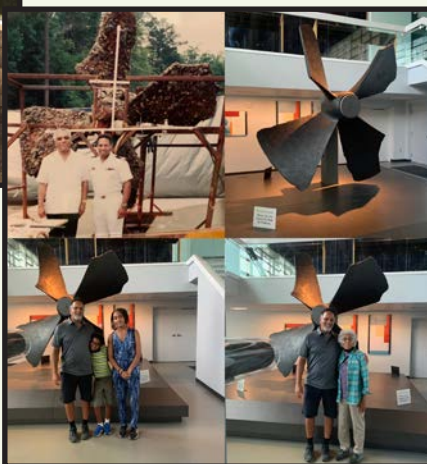
Lady Divers group Photo, all members of the Women Divers Hall of Fame (left to right): CDR(ret) Caron Shake, CAPT(ret) Deb Bodenstedt, NDC(DSW) Rebecca Jones, CAPT(ret) Bobbie Scholley, and CAPT Sara Olsen. Photo courtesy of Bobbie Scholley.



CW05(ret) Rick Armstrong with his donated painting of the mixed gas divers on MONITOR Expedition 2002. Photo courtesy of Rick Armstrong.



Behind the Scenes tour of the wet lab. left to right: CAPT(ret) Chris Murray, CW05(ret) Frank Perna, CW05(ret) Rick Armstrong, and Will Hoffman. Photo by: Bobbie Scholley.



LT Chris Johnson, part of the MDSU 2 team, stands with his father in photo on top left with the newly salvaged propeller. 24 years later, he stands in front of the restored propeller with his children, Christiane and Luke, and his mother. This is what Family Day was all about. Photo courtesy of Chris Johnson.



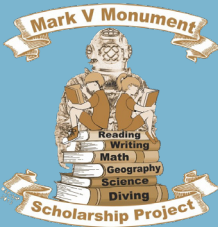
20th Anniversary Planning team (left to right): Howard Hoege, CW05(ret) Frank Perna, CAPT(ret) Bobbie Scholley, CAPT(ret) Chris Murray, John Broadwater, and Tane Casserly. Photo courtesy of Jorge Guillen.

<https://www.marinersmuseum.org/conservation/uss-monitor/>. The science combined with the history is incredible! Navy Divers helped make this happen, they are a part of this history.

Perhaps the hardest part of the whole reunion was trying to track down all the divers who had been involved with a MONITOR Expedition at any time during 1995, 1998-2002, 2004. There was an old list from MDSU 2 that seemed to have all the divers by name and rank from 1998-2002, however that didn't give us much to go by in current times. Fortunately using social media and some of the diver networks, we were able to contact over half of the 311 names that we had on that list. A few old dive logs also helped with some of the USS EDENTON, USS GRASP, and USS GRAPPLE diver names. There were still many divers that didn't get identified and even more divers that were identified by name that we were never able to find contact information for, to let them know about the reunion. Additionally, there were other non-Navy team members that we were unable to reach out to this time. Afterall, it just wasn't quite the same having a MONITOR turret recover reunion without Manson crane operator Bubby or deck supervisors Big G and Little G. We need to start planning the 25th Anniversary of the MONITOR Turret Recovery earlier. We still have our current list of contact names from this one to start building from. If any of you reading this article out there now didn't get contacted for the 20th reunion and you were a diver on MONITOR, that means we don't have you on the contact list. You can contact either Frank Perna or I through social media or the diver network if you would like to get on our list! Afterall, the 25th will be even bigger and better than this one and it's sure to make history.

Article cover photo: USS MONITOR Turret lifted to the surface at 5:47 pm on August 5, 2002 during MONITOR Expedition 2002. Photo courtesy of U.S. Navy.

Capt Scholley retired in 2005 after 24 years of active duty. She was the CO, MDSU 2 during the MONITOR Expeditions 2001 and 2002. She also served as CO, USS BOLSTER (ARS 38), SUPDIVE, and CO, NWS Earle, NJ.



Mark V Monument Scholarship Project

By: Steve Mulholland

'JAKE' is believed to be the most visited monument in the State of Florida and is formally dedicated to all U.S. Military Diver graduates. It celebrates the traditions of divers around the world who have given their life's work to underwater ships husbandry, underwater construction, salvage of ships lost at sea, combat, and clandestine missions.

"The Mark V Monument Project" originally undertook a mission to obtain the necessary Navy approval and private funding to fabricate and erect a ten-foot-tall bronze/granite JAKE monument at the entrance to the Naval Diving and Salvage Training Center in Panama City, Florida. The monument was completed in October 2012, and dedicated to all U.S. Military Diver graduates, past, present, and future that go down in the sea to work. Since then, our mission has been to support the hard-working children of our Military Divers with their educational goals. We understand this small gesture will not completely fund the high cost of education of today's schools, but we hope our support will bring comfort in covering some of the smaller expenses incurred with attending college.

Between 2014 and 2021, there have been 21 students that have received scholarships ranging between \$1000 and \$3000 dollars. And thanks to generous donations from our friends, fellow Military Divers and fundraising events, we are pleased to be able to allocate \$9000 in scholarship funds for 2022.

Congratulations to the following students that were selected as recipients of the 2022 MKV Monument Scholarship:

Aaron Dumke of Ashburn, VA

Zoe Eberle of Chesapeake, VA

Derek Foos of Panama City Beach, FL

Collin McElice of Panama City Beach, FL

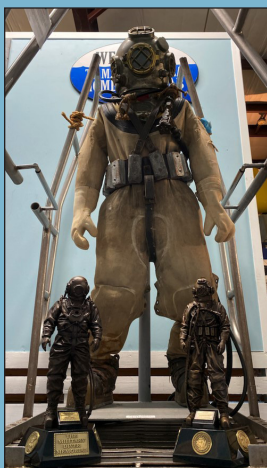
Maximillian Mcleod of Whiting, NJ

Annabeth Pisinski-Cutler of Easthamptom, MA

A colossal thank you to this year's sponsor, Deep Sea Divers Charity Golf. Mike Frey, Brendon Murphy, Eric Cress, and John Spires ran an awesome event and had a great team of supporters!

We are also honored to have teamed up with the board of directors from the Institute of Diving. Working with the Man in the Sea Museum, our combined efforts will ensure we continue this great scholarship and honor the legacy of Dave Sullivan, our founder.

If you would like information on how to apply for our 2023 scholarships or support one of our fundraising events, please visit us at: www.markvmonument.org.



2023 Raffle:

The winner will receive a pair of statuettes.
"The MKV Monument Project" #289
"The Military Diver Memorial Project" #289
Tickets sales will start in January of 2023.



Current fundraising:

Limited edition MKV Monument Pewter Statuette
<https://www.markvmonument.org/>



The Old Master

Well Deep Sea family the time has come to leave my last decompression stop and head to the surface after 33+ years. I'm confident that I've completed all of my "Deco" requirements and hopefully I have made a small positive contribution to our community, our Navy, and our Nation! Playing in Neptune's playground has been the most rewarding experience and something I will always miss.



NDCM (DWS/SG) Bill G. Dodd

Looking back, I can say without hesitation or reservation that I have been blessed to be a part of an amazing community, and I am a better man because of it and serving with you. The journey started as a 20 year old kid from small town Colorado who didn't understand anything about the U.S. Navy or Navy Deep Sea and is ending after serving alongside the finest Denizens of the deep and best professional divers on the planet! What we do and how we do it is truly remarkable and to be a part of this community is something I will cherish the rest of my life. The Mentors, leaders, and friends from the start of my career while attending 90-70-2C, to MDSU-1, Dive school Ford Island, SDS-5 (special projects), SRDD, NEDU, SRF Yokosuka, NEDU, and finally to NSD have been far too many to list by name, but I will never forget the impact both personally and professionally they have made on my life.

We as a community have experienced a lot of changes through the years and the snapshot of the last 33 years is no different. We have added new equipment and new procedures to make our jobs safer, more efficient, and effective...thank you NEDU! We have expanded our capabilities, HOOYAH bringing Satur-

ation diving back...thank you CAPT Jay Young, Robyn McGinn, Justin Pollack, and Eric Frank! We became a rate in 2006! We developed a better process for screening and evaluating/grading Master Diver candidates. We (the ND community) were adopted by EOD....I'll leave that one alone. JK. We grew as a rate and now have over 1200 ND's doing the business! We've developed procedures for diving on Dynamic Positioning vessels! I'm sure the next 33 years will see many changes as well, but one thing will always remain. Your ability to get things done and make the impossible possible. Continue to stay focused on developing and mentoring the best divers in the world, set the highest standards and hold each other to those standards! Always find opportunities to make our community relevant in the future as there are many who would be happy to take the man out of the sea and replace us with ROV's or UUV's. Keep Deep Sea - Deep Sea!

I want to say Thank You to my amazing wife Amanda Dodd for allowing me to never grow up and letting me do what we do. Thanks to my kids Tiana, Tyler, Tanner, and Jordyn for letting me drag you all over the world. Thanks to my mother Bonnie Dodd for always supporting me and allowing me to follow my dreams. Finally I wanted to thank some great leaders who I had the honor to work for and with through the years. MDV's Jimmy Johnson (aka Jimmy John), Steve Wiggins, John Reiss, Bill Romas, Ken Willmoth, Brian Van Horn, Lyle Becker, Chad Leaman, and Jo Jo Johnson. CAPT's Keith Lehnhardt and Jay Young. CWO Tim Joines, Mr. Marty Russell, Mr. Mike Dean, and Mr. Mike Wisner! I'm sure I forgot a few on this list who have made a lasting impact but it wasn't on purpose...I promise! In closing I'll leave you with this, there are only two types of divers Sat and UN Sat!

HOOYAH DEEP SEA!!





HOOYAH, DEEP SEA! As I consistently strive to do in this venue, for this issue I am providing a general update of NAVSEA 00C3 efforts since my last “SUPDIVE SENDS”. Much of our day-to-day work is driven by your fleet requests and requirements. From answering diving policy RFIs, working with fleet stakeholders on FAR resolution, working with commands to conduct Risk Assessments to support unique mission requirements, or assessing new or existing diving equipment for either modification or approval via our ANU process, the NAVSEA 00C3 shop strives to be perpetually responsive to fleet diving needs and requirements. As I stated above, there is a common thread required for us to be “on target” with our focus and priorities within the office...and that common thread is YOU. Feedback in regards to your needs is critical for us to remain effective and value-added to the fleet diver! As dictated by the OPNAVINST 3150.27D, NAVSEA 00C is charged as the “technical authority for design, acquisition, system certification, and ANU designation for all Navy diving life support and manned hyperbaric systems.” Among other 00C services provided, our duties and responsibilities are clearly stated above that drive our focus. As such, following updates are provided for this issue of FACEPLATE!

UWSH and Regional RCC Manpower Study:

Over the past year, NAVSEA 00C3, in conjunction with OPNAV N97, has made significant progress on a critical effort that will help shape future ND manpower requirements, specifically an OPNAV N13-sponsored manpower study focused on assessing, defining, and refining UWSH and Regional Recompression Chamber manpower re-



quirements. This past year, NAVMAC was tasked and began basic planning to conduct site visits to UWSH commands and commands that maintain a “regional bends watch” to gather data on manpower requirements to inform future billet growth decision. Some commands have already hosted a cadre of NAVMAC personnel to “indoc” them into ND missions, duties, and services provided to the fleet to help inform future assessments. Data from these NAVMAC-executed assessments will help codify true ND manpower requirements going forward. If you have any questions regarding this effort, please contact CWO4 Jason Potts.

Diving TM Revisions:

NAVSEA 00C3 continues its work on Revision 8 of the U.S. Diving Manual. We appreciate all of the user feedback and conversations to date, as we systematically review and refine change requests received in support of this new REV with various stakeholders and reviewers. MDV Kyle Hubbard remains our Lead POC for all Diving Manual revisions and can be contacted for any questions. Revision 8 will be significant, as we look to refine the manual’s flow and content for end-user efficiency, effectiveness, and incor-

porate other diving technical guidance updates. Revision 8’s targeted release timeframe is Summer 2023.

Also being worked are revisions to NAVSEA TS500-AU-SPN-010, U.S. Navy General Specification For The Design, Construction, and Repair of Diving and Hyperbaric Equipment, a.k.a. “GENSPEC”, and NAVSEA SS521-AA-MAN-010, U.S. Navy Diving And Manned Hyperbaric Systems Safety Certification Manual, a.k.a. “MAN 10”. The Diving Division Director and Diving Technical Warrant Holder, Mr. Rich Schoenwiesner (NAVSEA 00C3), is working the bulk of the GENSPEC revisions with a targeted release date prior to the end of this calendar year. The Certification Division Director and System Certification Authority, Mr. Mike Frey (NAVSEA 00C4), is working revisions to the MAN 10 with a release after GENSPEC completion. Along with the U.S. Navy Diving Manual, these two core diving TMs will be worth a thorough review once the revisions hit the street. Expect AIGs from NAVSEA 00C3 upon their respective completions and release to the fleet.

Failure Analysis Reports (FAR):

MDV Mike McInroy has been designated at the NAVSEA 00C3 FAR Manager and point of contact for FAR questions and resolution from a NAVSEA technical authority perspective. MDV has been working with our 00C3 engineers to clean up and resolve outstanding FAR issues as listed on the NAVSEA 00C3 secure site. We are currently in the initial stages of analyzing past and recently-submitted FARs to identify trends or commonly reported material failures that exist in our core diving systems. Accurate and timely FAR reporting is critical to our technical authority responsibility to fleet-wide diving, so please be detailed and

transparent in your initial report. MDV McInroy is ready to assist any command with FAR submission, resolution, or field questions you may have.

Authorized for Navy Use (ANU):

LCDR Matt Irwin and MDV Dumke are running the NAVSEA ANU Program, after our last program manager departed OOC earlier this year. Both can assist with ANU submissions, status of current ANU submissions, or provide answers to technical questions regarding currently listed equipment. Recent additions to the ANU List can be viewed on the ANU landing page on the SUPSALV secure site. Current equipment under review include extended EGS whips, completion of NEMO battery-operated underwater tool testing to support removal of the current suspension, Bauer Basic Fill Panel manifolds, and various gas transfer pumps. For efficiency and success of the ANU process, please contact either LCDR Matt Irwin or MDV Josh Dumke prior to submitting an equipment item for ANU consideration, as it is crucial NAVSEA OOC3

understands the “intended use” of the item to determine the technical rigor required (i.e. testing) for assessment and subsequent fleet-wide implementation. Our goal is to ensure the ANU process, and resulting approvals, yield equipment that is safer, more efficient, or provides greater capability to Red and Green diver, vice just ancillary equipment that is nice to have!

DORI Checklists:

Since late 2020/early 2021, the NAVSEA OOC3 DORI Team completed over 20 CONUS and OCONUS inspections across the NAVSEA, CNIC, BUMED, NAVO, and NAVFAC enterprises. Those inspections highlighted opportunities to improve our current DORI checklists in regards to line item references, specificity, applicability, and well as identifying shortfalls resulting from recent ANU additions, AIGs, or updated policy. Although the NAVSEA DORI Checklists only “apply” to NAVSEA dive-enabled commands, we understand other units leverage and tailor these checklists to meet their respective mission-specific in-

spection needs. Resulting from our past lessons learned and observations across multiple inspection, CWO4 Potts is leading the NAVSEA OOC3 revision of the current DORI checklists for future issuance and posting to the SUPSALV secure site.

As I wrap up this issue’s SUPDIVE Sends, I hope the above information provides you with more information and transparency on items and efforts NAVSEA OOC3 is working in support of the fleet diver. In future issues, I intend to provide additional details and fielding status regarding significant equipment efforts underway expected to both refresh and expand our current diving capabilities. As research, development, and testing concludes on some of these efforts, we will continue to communicate with community stakeholders when able! Look forward to connecting with you all again in June 2023’s issue.

As always, Dive Safe, Dive Smart, and support your teammates!...v/r SUPDIVE.

CAPT Marsh photo by: MC2 Daniel Cleary

Diving Advisories

- 22 - 07 INTERSPIRO DIVATOR SELF-CONTAINED/UNDERWATER BREATHING APPARATUS SLASH DIVE PANEL SUPPLY APPARATUS/EQUIPMENT UPDATE
- 22 - 08 DIVING EMERGENCY MEDICAL EQUIPMENT / UPDATE
- 22 - 09 OTS MILCOM 6000D WIRELESS DIVER UNIT / MANUFACTURER RECALL
- 22 - 10 CRESSI-SUB BUOYANCY COMPENSATOR DEVICE INFLATOR HOSE MANUFACTURER RECALL
- 22 - 11 APEKS EXOTEC BUOYANCY COMPENSATOR DEVICE / MANUFACTURER RECALL

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