



FACEPLATE

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

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In This Issue...

Aquarius

CSS Georgia Recovery

Year of the Military Diver

USS TAYLOR (FFG 50) Controllable Pitch Propeller Hub Waterborne Replacement

FACEPLATE

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

Articles, letters, queries and comments should be directed to the Commander, Naval Sea Systems Command, NAVSEA 00C, 1333 Isaac Hull Ave. SE Stop 1070, Washington Navy Yard, DC 20376-1070. (Attn: FACEPLATE). Visit our website at <http://www.supsalv.org> to view/print Faceplate.

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NDCS/MDV Eric Wilson, LT. Ryan Stancil, NDC Diego, NDC Trevallion and Mike Massaro flying the flag at Aquarius on 9/11 2014.





Let me first start by giving a shout out to ND1 Frost at NEDU! ND1 Frost was just selected as the NAVSEA Headquarters Sailor of the Year. Great work shipmate!! Your hard work, dedication, and professionalism are what earned you this esteemed recognition and which are inherently characteristic of a Navy diver. I commend you and your family for this outstanding achievement! I look forward to seeing you continue to move up the Sailor of the Year selection process.

In the last Faceplate issue, I talked about the changes coming as a result of the DOA IPT. While the latest revisions to the OPNAV 3150 instruction and dive manual are still working their way through the admin machine, I'm very encouraged at the progress I'm already seeing with the implementation of the needed changes they contain. This is a result of the broad collaboration we had across the fleet in drafting the changes. I'm confident that we'll get both of these documents signed out and promulgated to the fleet soon. Captain Shultz (OPNAV N97) and Captain Kraft (SUP-DIVE) are continuing to lead the charge in getting both of these documents signed out.

Speaking of DOA IPT, we're continuing to make progress at improving safety in our diving operations. Good on ya! We're not down to 'zero' yet but we are making significant improvements. We had a handful of MK-16 safety mishaps this year, but thankfully there were no serious injuries. The positive to be taken away from them though is that the incidents were reported, fully and openly investigated for root cause(s), and then the lessons learned were pushed back out to the fleet. Continue to self-report mishaps, as is required, and then fully investigate for the root cause(s). SUPSALV and NEDU stand ready to assist in helping you investigate any incident. We need to continue to push our safety record down to zero incidents per year. Your and your shipmates' lives count on it!

Shifting gears, I'll now talk about some of the business that you all do. First, is Salvage...If you're not familiar with our "Salvage Triad" concept, let me take a minute to explain. As our Navy has downsized since the Cold War, so has our diving force. As a result, we've had to reshape how the Navy responds to salvage. The word "Triad" in Salvage Triad refers to



three providers of resources for salvage incidents. Specifically, the Fleet provides the MDSU divers, fleet sailors and Command and Control; NAVSEA provides equipment resources, commercial contracting, and technical support; Military Sealift Command (MSC) provides the ships. Three salvage ops this year highlighted how this teaming model works and proven successful. The first is the flooding of the ex-USS Shadwell (LSD-15), a test ship in Mobile, AL. Over the 4th of July holiday, the ship took on water until it finally rested on the bottom at her shallow berth. The collective responses were swift, professionally carried out, and most importantly successful. MDSU 2 provided a team of divers, while SUPSALV provided a salvage contractor, equipment assets, and technical support. Soon after the flooding incident took place, the team had the ship patched and refloated back to her normal draft. The second op was much more labor intensive. This op was the archaeological salvage of the Civil War iron clad ship, "CSS Georgia", in the Savannah River. For this, MDSU Two provided the divers while SUPSALV provided equipment resources, headquarters personnel, and commercially contracted barges, cranes, and towing services. The team recovered over 10,000 artifacts, 241 pieces of ordnance, 5 Dahlgren cannons, and accomplished 274 dives with no mishaps. Lastly, was the grounding of the USNS KOCACK, a 921 ft Roll On/Roll Off ship, off Okinawa, Japan. In this case, MSC provided ship lightering assets, SUPSALV provided the salvors and commercially contracted as-

sets, and USS Bohomme Richard (LHD-6) provided damage control sailors and equipment. The team successfully removed the stranded ship without spilling any oil into the environment while saving millions of dollars from a catastrophic loss of USMC / USA equipment due to flooding.

Another critical role you serve for which you are often unsung heroes is in the area of Underwater Ships Husbandry (UWSH). Few non-divers understand or fully appreciate just exactly what it is that you all do beneath the surface in inspecting and permanently repairing the fleets' ships and submarines. What they do know and fully appreciate though is that you save the fleet millions of dollars every year and more importantly raise the Operational Availability of the fleet. SUPSALV continues to impress upon the N43 maintenance staffs that small investments in your UWSH capability provides big returns on investment (ROI).

UWSH is an area where we're continuing to push the envelope in terms of demonstrated capability. The example I often give is that just over a decade ago we showed we could replace a CPP blade in the water. Next, we proved we could change not only 1 blade but all blades, then build and install a cofferdam to replace the hub as well. And now this year, we've newly demonstrated we can be a cost effective solution in new ship construction as well. The DDG 1000 program office brought us in to remove the temporary brake wheels (used for engine & shaft testing) and install 60,000 lb fixed pitch propellers in the strong currents of the Kennebec River in Bath, ME. The 30 plus day job saved both critical construction schedule and ship procurement dollars. Right after that, the LCS program office quickly picked up on what we did and immediately called on us to install two water jet thruster extensions between sea trials for LCS 5. RMC divers and NAVSEA 00C5 jumped on the task and knocked it out without having to put the ship back in dock. A big BZ to all in the UWSH business! Keep pushing the capability envelope. If you're not sure whether a ship maintenance requirement can be accomplished waterborne, give 00C5 a call. They like new challenges.

Be safe out there! Hoo yah!!!



CSS GEORGIA Recovery

By: LCDR Daniel Neverosky

Over 150 years after Confederate forces scuttled the CSS GEORGIA in the Savannah River, the U. S. Navy was called upon to raise artifacts from the river bottom. CSS GEORGIA, was an ironclad gunboat built locally in 1862 to help Confederate forces protect the city of Savannah from Union troops. The vessel was initially designed to operate under her own power but the weight of the vessel and the tidal conditions in the river rendered it a floating battery located down-stream from the city and directly across the channel from Fort Jackson. In December 1864, General W.T Sherman's Union Army captured Savannah. Rather than allow Union forces to seize CSS GEORGIA, Confederate forces scuttled the vessel in nearly the exact location in which it lies today.

CSS GEORGIA is listed on the National Register of Historic Places in 1987 and sits in the area that will be impacted by the proposed channel modifications

for the Savannah Harbor Expansion Project (SHEP). The SHEP will widen and deepen the channel to handle the larger Post PanaMax ships for the benefit of the US Economy. In order to mitigate the adverse impact on historic wreck site, the U.S. Army Corps of Engineers (USACE) and the U.S. Navy History and Heritage Command (NHHC) established a plan to recover the remains of the vessel for historical preservation and the U.S. Navy dive and salvage community was an integral element in this recovery plan.

The U.S. Supervisor of Salvage and Diving (SUPSALV) was tasked by USACE to conduct the artifact recovery. Additional units tasked to provide aid were Mobile Diving and Salvage Unit (MDSU) 2 from Little Creek, Virginia and Explosive Ordnance Disposal (EOD) Mobile Unit 6, Detachment Kings Bay, Georgia. They worked together to salvage the historic artifacts and to recover the discarded military munitions

(DMM) strewn about the wreck site..

All units arrived in Savannah on June 23, 2015 and following two days of preparation and equipment load out, recovery operations commenced. The recovery phase was divided into a number of segmented operations with separate objectives and planned approaches. Segmented operations were divided into four categories: DMM recovery, large artifact recovery, case-mate recovery and mechanical recovery.

DMM Recovery. DMM consisted of four potentially loaded cannons and approximately 135 rounds of ammunition for the six guns CSS GEORGIA was known to be carrying. Five guns were eventually recovered including a rifled 32 pounder, a 24-pounder howitzer, a 6-pounder and two 9-inch Dahlgren cannons (one previously unknown to the wreck site).

The EOD Mobile Unit Six was tasked with the safe handling and transfer of the DMM recovered from the



Grapple Operation



A segmented section of the East Casemate is rigged for recovery.

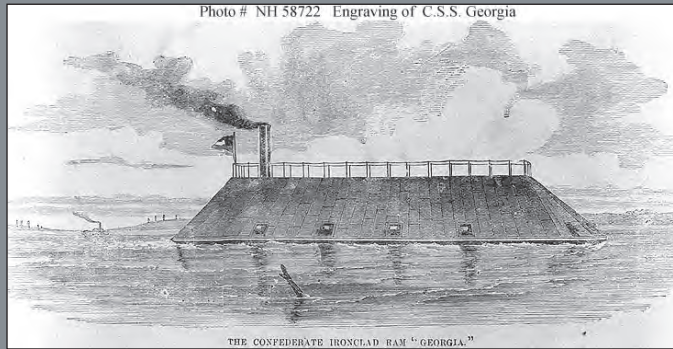
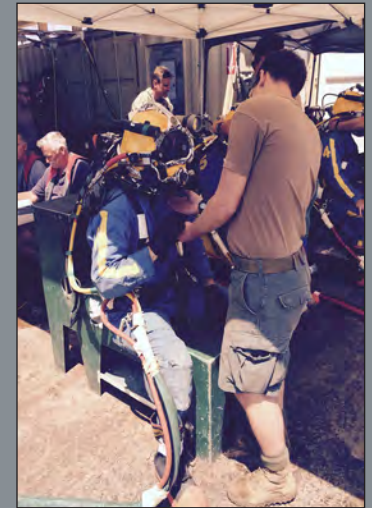


Photo # NH 58722 Engraving of C.S.S. Georgia

THE CONFEDERATE IRONCLAD RAM "GEORGIA."

The Confederate Ironclad "Georgia" Line engraving published in *The Soldier in Our Civil War, Volume II, page 31* depicting CSS GEORGIA. U.S. Naval History & Heritage Command Photograph.



MDSU 2 Divers make preparations for artifact recovery dive.



Artifacts found from the mechanized recovery.



Propellor and shaft being recovered on deck.

2015 when excavations concluded. The casemate and artifacts were then transported to the Conservation Research Laboratory at Texas A&M University in College Station, Texas where preservation efforts for the artifacts will commence.

CSS GEORGIA RECOVERY by the Numbers:

- Field Work Days: 269
- Archaeological Dives: 167
- MDSU/EOD Dives: 107
- Clamshell Picks: 1441
- Grapple Picks: 661
- Material Recovered: 299 Tons
- Material Not Selected For Immediate Conservation: 134 Tons (10 Containers)
- Artifact For CRL To Conserve: 165 Tons (18 Containers)
- Ordinance Recovered: 241 (Includes Bolts And Solid Round Shot)
- DMM Inerting: 186
- Cannon Recovered: 5
- Artifacts: 10,000+
- Accidents: 0

wreck site. They were present for the known DMM recovery, but were also called on for immediate response when the team recovered DMM during the mechanized recovery phase.

Large Artifact Recovery. Large object recovery enabled the dive team to recover large, non-casement items that had been identified by archeologists in previous surveys. Propulsion machinery such as boilers, propellers and shafts were among the artifacts recovered during this operation. Each artifact was rigged by a MDSU2 dive team and recovered on deck by one of the barge cranes.

Casement Recovery. Several segmented sections of casemate were re-

covered by MDSU2 (totaling more than 20 tons of material), but the majority of casemate was left in the river due multiple factors which prevented recovery during the current operation. Planning is underway to determine a strategy to reposition the large casement sections in such a way that they do not effect SHEP dredging projects.

Mechanized Recovery. The final phase of recovery was using a Salvage Grapple and Environmental Clam Shell to excavate the area for all recoverable artifacts that remained at the wreck site. Alternating between the grapple and clam shell rigged to the crane, artifacts and bottom material was dredge up and dumped on to the barge. Once on deck, archeologist from Panamerican Consultants combed through the river bottom in search of artifacts. This process continued until the end of October

Article Title Photo: First Cannon recovered.

LCDR Daniel Neverosky is an Engineering Duty Officer and Diving Officer currently serving as Assistant for Salvage at NAVSEA 00C.

YEAR OF THE MILITARY DIVER

What it really Means



*By: Naval Diving Salvage
Training Center Public Affairs*

Divers at the Home of Military Diving located in Panama City Beach, Florida kicked off a grassroots campaign 10 months ago to raise awareness and educate taxpayers and the electorate about military diving, and so far it's been very successful.

The idea was kicked off in the fall of 2014 by Naval Diving Salvage Training Center Commanding Officer Cmdr. Hung Cao, USN, who said he wanted to share the great history, heritage, and relevance of the Department of Defense's dive communities, to include saturation, salvage, explosive ordnance, combat divers, diving medical officers – all of them.

“What we do is nothing short of a calling, and I think it's important that Americans understand what military divers have meant to our nation's history in times of peace and war,” said Cao.

Cao formed a team in Panama City, Florida led by ND1 Brandon Zachry—who was commissioned an Ensign in September 2015. This team of event planners delivered their core messages predominately to the local Bay County, Florida and the military dive communities. A week-long Year of the Military Diver (YOTMD) celebration was held May 4-8, 2015, with the capstone event held May 6th.

“We hosted over 3,500 people at NDSTC May 6th – it was an incredible success,” said Cao. “We had over 1,000 Bay County students visit us and military divers from today and yesterday all came together to learn about what we do. Retired divers who live in the UAE, from the Korean War, and family members of World War II divers heard about our event through local press or news stories that made their way

across the nation came to this event – it was nothing short of fantastic.”

Related milestone anniversaries commemorated this year include the 100th anniversary for the MARK V dive system, the 70th anniversary of the Navy base in Panama City, Florida, the 40th anniversary of women in Navy diving, and the 35th anniversary of NDSTC in Panama City, Florida. The year 2015 is officially the Year of the Military Diver – as proclaimed by Florida Governor Rick Scott (R-FL), the Secretary of the Navy and Congresswoman Gwen Graham (D-FL), who is also a member of the House Armed Services Committee. Graham also drafted language for the 2016 National Defense Authorization Act that proclaimed 2015 as the YOTMD.

The week's events included ceremonies to remember and to honor those in the military diving community who made significant contributions, like U.S. Army Cpt. Shawn English who died after an improvised explosive device killed him in Iraq in 2006. English was the former Commander, Delta Company 577th Engineering Battalion from 2004 to 2006 located at NDSTC. The new facility is named the Cpt. Shawn Levi English Physical Training Facility in his memory.

On April 24, 2015, Sec. of the Navy Ray Mabus presented Prisoner of War medals to six former Navy Divers that were held hostage for 19 days after the



Navy Diver 1st Class Michael Fox and Navy Diver 2nd Class Todd Slayden prepare to be lowered into the water in front of a crowd of students during the public visitation as a part of the Year of the Military Diver (YOTMD) celebration at the NDSTC.



Women Hall of Fame members and guests pose in front of the “Jake” statue to commemorate the 40th anniversary of women divers in the military and the Year of the Military Diver (YOTMD) at the NDSTC.

Hezbollah terrorist hijacked their commercial TWA flight in 1985. The Divers were members of Underwater Construction Team One, Detachment November Mike 85, Lt. Stuart Dahl, Chief Warrant Officer Three Tony Watson, Master Chief Equipment Operator (DV/SCW) Jeffrey Ingalls, Master Chief Constructionman (DV/SCW) Kenneth Bowen, and Construction Electrician 1st Class (DV/SCW) Clinton Suggs. The brother of Steelworker 2nd Class (DV) Robert Stethem, who was killed by captors, accepted his award on his behalf. The USS Stethem (DDG 63) was also commissioned in Stethem’s memory.

Cao. “Thanks to the overwhelming work and support from the Women Divers Hall of Fame, we obtained permission from the Master Chief Petty Officer of the Navy to promote CE1(DV)Suggs, USN(Ret.), one of the survivors, to Chief Petty Officer.

Stevens passed along a sincere message to Suggs for the ceremony held May 8, 2015 at NDSTC.

“I was a young airman in VQ2, Rota Spain in 1985 and remember the hijacking of TWA-847 like it was yesterday,” said Master Chief Petty Officer of the Navy (MCPON) Mike Stevens. “I have thought about you all, off and on over the past 30 years and it is an honor to call you my Shipmates. I thank each of you from the bottom of my heart for your service to our great Nation and Navy.”

For 40 years, the U.S. Navy has suc-

cessfully integrated women into its dive program and the week-long celebration also welcomed the Women Underwater Construction Team Divers held captive by Hezbollah aboard TWA 847 in 1985,” said

“These women paved the way for today’s military divers, and I am honored to have them come to Bay County during our Year of the Military Diver celebration,” said Cao. “The U.S. Navy



Panama City Mayor Greg Brudnicki (middle) presents the Year of the Military Diver (YOTMD) proclamation to Rear Adm. Michael White, commander of Naval Education and Training Command (left) and Cdr. Hung Cao, commanding officer of NDSTC (right) during the YOTMD proclamation ceremony at NDSTC.

has had female divers for 40 years and many members of the Women Diver Hall of Fame opened the barriers for the women divers who presently serve, like the two now stationed at NDSTC.”

“All of these events came together and it’s been a very successful year.”

So, what’s next – beyond 2015 and the YOTMD? Cao said he will continue to carry the diving outreach torch well beyond his command tour at NDSTC.

“I am so proud of our divers and this nation – this is all about our divers, not me. It’s all about what our communities have done in the past and what we are going to do in the future,” said Cao.

Article title photo: Navy Diver 2nd Class Valerie De Freitas enters the training pool for a Mark V familiarization dive to commemorate the Year of the Military Diver (YOTMD) at NDSTC.

U.S. Navy photos by: Mass Communication Specialist 2nd Class Harry Andrew D. Gordon /Released



U.S. Representative Gwen Graham, representing Florida’s 2nd congressional district, addresses the crowd during the public visitation as part of the Year of the Military Diver (YOTMD) celebration at the NDSTC.



UCT 2 DIVERS CONDUCT MISSION IN KWAJALEIN ATOLL

BY: JORDAN VINSON

A crew of divers from the Navy's Underwater Construction Team 2, headquartered in Port Hueneme, California, executed important training dives off U.S. Army Garrison-Kwajalein Atoll.

The 10 men of UCT 2's Construction Dive Detachment Bravo worked off US-AG-KA vessels for several weeks to prepare for the installation of Reagan Test Site (RTS) mission assets at the garrison. "The project is a joint effort between the Air Force, a heavy user of the test site, the Navy, and the Army, is poised to boost quality of service to those who rely on the test site," said Henry McElreath, an RTS Engineer, who worked extensively with the men of Detachment Bravo.

"This mission is about providing the best support possible to the Air Force and other customers," McElreath said. "RTS and Kwajalein Range Services personnel have participated in the design and installation of these new assets, and they will serve as the operations and maintenance team once installation is complete."

Supported by contractors and Department of the Army civilians on the program, the eight divers, one mechanic, and one communications technician worked together off the garrison's Great Bridge and Patriot vessels for the better part of two weeks. "The relatively short mission the divers were sent to the atoll to perform was actually preceded by many hours of preparation on land and topside on the boat decks," said Bravo leader Chief Petty Officer Jason Cortez.

"Practice makes perfect," Cortez said during a training dive off the Great Bridge a couple of miles south of Roi-Namur. "Everything is going really well today. I'm definitely pleased with how the detachment is handling these workups. Not only is it great diving, but it's great training also."

The rationale behind so much preparation for a short mission was made evident by the heaps of high-tech, deep diving gear the divers surrounded themselves with on the deck of the boat. Work-

ing out of four large storage containers, the divers prepared hundreds of feet of air supply umbilical hoses, scuba tanks, banks of large cylinders containing oxygen and air, diver-to-surface communications equipment, special deep diving helmets, and hydraulic cutting tools. All of it necessary for even a short, routine mission. The scene was a strong reminder that, tethered to the other end of those umbilical hoses, were crewmen submerged in an environment that could easily kill them if something catastrophic impaired their equipment, or if their topside teammates performed carelessly.

"When we've got guys in the water, there's no room for error. Their safety is my number one priority," Cortez said as his team tweaked air regulators on the divers' equipment and dialed in the controls on a large air supply control station that the team calls a surface-supplied system. "We're doing these dry runs to make sure we work out any and all kinks there might be."

With the help of topside crewmembers remaining on deck, divers wedged their heads into the heavy, yellow helmets fit to resist pressures of up to 800 feet in depth, and after a lengthy equipment check, leaped off the deck of the Great Bridge into the warm, turquoise-colored water, and began their descent.

“Divers are travelling,” yelled a topside crewman, hunkered over a small monitor that provided the crew a first-person view from the divers’ helmet-mounted cameras. Connected to another part of the helmet was the suite of umbilical tubes feeding the divers with the air they needed to survive. A pair of crewmen topside tended to the divers below, feeding the hose to them as they descended to the lagoon bottom and moved about.

After the first pair of divers reached the required depth, performed the required procedures underwater and ascended to the surface, it was another pair’s turn. And then another. It went like

that for much of the day, the entire diving crew rotating in and out of stations, some tending to the divers underwater, others monitoring air consumption rates at the air supply control station, and others gearing up for the next dive or working as stand-by divers. Giving each team member regular experience in every possible role is crucial to the detachment’s success, Cortez said.

“We all work together really well,” the Chief Petty Officer said. “It helps that we’ve all worked together for several years. It helps develop

teamwork and makes our process on the job smooth and efficient.”

For Construction Mechanic 2nd Class Tristan De Delva, the June 9th dives off the Great Bridge were

a learning experience. The group’s early dives presented a couple of obstacles that the team hadn’t expected but was able to learn from and adjust to in later dives. “The training is going well,” De Delva said. “We hit a few bumps along the road, but this team is flexible, and we adapted to the things we learned during the first few dives. This is a good group of guys, and there’s nothing we can’t do. I think that when the live mission comes, these guys are going to kill it. I’m pretty stoked.”

Underwater Construction Team 2 does missions on mili-



Geared and up and ready to go, Builder Chief (SCW/DV) Joshua Sisson gets some last-minute help from his teammates before getting the green light to hit the water south of Ennubirr June 9. Photo by: Jordan Vinson



BU2 (SCW/DV) Matthew Dawson with Construction Diving Detachment Bravo, Underwater Construction Team TWO, hits the water south of Roi-Namur during a subsea cable repair project. Photo by: Jordan Vinson

tary and civilian assets along the United States’ west coast, throughout the Pacific and into Asia. The training mission on Kwajalein Atoll is but the latest stop for the men of Construction Dive Detachment Bravo. Out on a seven-month deployment from their home base at Port Hueneme, Bravo has completed work in San Diego, the Philippines, the Solomon Islands and Korea. After a final, follow-up mission in Korea, the men will head back to their friends and families in California.

Jordan Vinson is the Associate Editor of the Kwajalein Hourglass magazine publication.

Article title photo: ITSN Ryan Marsi helps SW2 (SCW/DV) David Miller back aboard after Miller completed the first dive of the day. Photo by: Jordan Vinson

Mark V Monument Scholarship Project

By: Dave Sullivan Mark V Monument Scholarship VP, T, & S

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.

Military Divers are among the hardest working people that willingly labor at one of the highest risk and toughest jobs in country. They generally do not earn enough to bear the high cost of college education for their family without some kind of financial assistance. Therefore, the Mark V Monument Project is in its second year of a new mission to generate funds that will provide scholarship assistance to the children, grandchildren, and spouses of U.S. Military Divers. We are excited to now focus on this new and worthy mission, and are grateful for the donations and volunteer efforts that enable us to operate toward success. We recently distributed the annual scholarship awards for 2015.

The recipients of the 2015 Mark V Monument Scholarships are:



Megan Baughman

daughter of

Capt. Robert Alan Baughman
Megan is attending Marquette University, majoring in International Affairs.

Hoo-Yah Megan



Sierra Raine Spann

daughter of

CWO5 Raymond Christopher Spann
Sierra graduated from Gulf Coast State College with her AA degree (Cum Laude). She will be attending UWF majoring in Clinical Laboratory Science.

Hoo-Yah Sierra



Jayde Stansel

daughter of

Steve Wargo BMCS (DV) (SS) Ret.
Jayde is attending Florida State University, working toward her Pre-Med major in Exercise Science.

Hoo-Yah Jayde



Brashear Foundation Presents First Ever Military Diver of the Year Award

By: Tony Palm

At the annual Military Divers Training Continuum (MDTC) in Panama City, FL, with over 200 active-duty Navy Divers in attendance, Phillip Brashear, President of the Carl Brashear Foundation, presented the first annual Military Diver of the Year Award to Navy Diver First Class (DSW/EXW) Spencer Puett.

Brashear, son of legendary Master Diver (MDV) Carl Brashear, the Navy Diver whose life was immortalized in the movie, Men of Honor, is an Army Reserve Chief Warrant Officer and a Weapons Program Manager at the Defense Logistics Agency in Richmond, VA.

Puett, a 2003 graduate of Central High School, Saint Joseph, MO is the son of Alice and Ron Puett, also of Saint Joseph, and grandson of Harold and Dorothy Dughes, of Dawn, MO. He enlisted in the US Navy 2005 as a Construction Mechanic (Seabee) and completed his initial diver training at the Navy Dive and Salvage Training Center (NDSTC), Panama City, FL in 2007.

Upon graduation, he reported to Explosive Ordnance Demolition (EOD) Mobile Unit Three, San Diego, where he supported Navy EOD operations while deployed to the Western Pacific on board the USS Ronald Reagan, CV-76.

In 2012 he reported back to NDSTC for advanced diver training, graduating as a 1/C Diver, and immediately afterward reported to Mobile Dive and Salvage Unit Two (MDSU 2), Little Creek, VA. While assigned to MDSU 2, Puett deployed to



CWO Brashear, President, Carl Brashear Foundation
ND1 Spencer Puett, USN
Tony Palm, Brashear Foundation, Board of Directors

Brashear went on to say, “Petty Officer Puett, I am confident in stating that were my father still alive, he would be extremely proud to have chosen you for this award. Your exemplary behavior is in keeping with the highest ideals of Courage and Determination set by Master Chief/Master Diver Carl Brashear and are in keeping with the greatest traditions of the United States Military Diving Community and the United States Navy.”

Brashear concluded the citation by presenting Puett with a custom-made paddle. “I’m blown away by this award, and believe it will help me to make Chief Petty Officer”, Puett said. “The Brashear award is a big deal to the Diving Community and gives junior personal something to shoot for”.

Puett’s wife, Stephanie, also of Saint Joseph, along with his parents and step-mother Sharon Samuelson all traveled to Panama City to attend the ceremony.

BMC (SW/DV) Tony Palm, USN (Ret) is the Public Relations/Development Officer of the Carl Brashear Foundation and president of TP&A, an independent staffing consulting company focused on assisting veterans in a job search.

www.carlbrashear.org

the FIFTH and SIXTH Fleet Areas of responsibility (Middle East & Africa) as part of Task Group, FIVE SIX Point ONE.

In the award citation, Brashear quoted Puett’s nomination which was written by the MDSU 2 Executive Officer, LCDR Daniel Bailey, “ND1 Puett’s contributions rivaled, and often surpassed those typical of far senior enlisted and commissioned leaders. His superb leadership of subordinate sailors during 14 highly successful diving, ships husbandry, and force protection operations was surpassed only by the team’s impeccable safety record.”

MDSU 2 WRAPS UP DEPLOYMENT IN SEARCH OF MIA WWII AIRMEN

BY: ND1 RYAN CONLEY

U.S. Navy Divers from Mobile Diving and Salvage Unit TWO, Company TWO FOUR, assigned to Commander Task Force SIX EIGHT capped off their 2015 AFRICOM deployment with a 60-day Defense POW/MIA Accounting Agency (DPAA) mission in the North Adriatic Sea. The goal of the mission was to recover potential remains and material evidence from a submerged WWII bomber crash site.

On 28 February 1945, a U.S. Army Air Corps B-24J Liberator went down with a crew of 11 personnel after taking enemy fire while returning from a daytime bombing mission. This crew was known as the “Hanson Crew”, named after the pilot 1st Lieutenant Howard Hanson.

The aircraft crashed in 55 feet of seawater, leaving five personnel killed in action and six missing in action. For their bravery and sacrifices in service to their country, they will never be forgotten.

This mission allowed for Navy divers to flex a wide range of skills. The primary means of diving was surface supplied air, using both in water and surface decompression options. With plenty of available tools, the dive team also used SCUBA and remotely operated vehicles to aid operations. Primary recovery efforts were carried out by the use of dredges for excavation of the sea bottom. The excavation process involved the placing of a meticulous grid system in 4 x 4 meter units to ensure proper site documentation and the fullest possible accounting. After placing the grids divers sucked up a predetermined amount of seafloor from each grid through eductor powered dredging hoses. To conduct the excavation, one six inch diameter and one four inch diameter hoses were run simultaneously. Both hoses received power from the ships fire main system and ran at a pressure ranging between 130-150 PSI. These hoses then discharged into an enclosed salvage basket. Once the basket was full or the grid was complete, up to 5,000 pounds of excavated sea floor, including sand, shell, and material evidence was then lifted onboard the ship and

transferred to sifting stations where personnel onboard screened for evidence.

The platform used for this job was an ARS 50 class Rescue and Salvage Vessel, USNS Grasp (T-ARS 51). The ship was instrumental to mission success. With preinstalled diving systems, cranes and capstans for heavy lifting, and ample deck space for all support personnel, it provided all the resources needed to carry out the mission.

During this operation divers from Mobile Diving and Salvage Unit TWO completed 220 dives, for 380 hours of dive time to include 98 hours of decompression. The divers were able to excavate 1,008 square meters of seafloor. To put this in perspective the excavated area was equal to that of an entire football field one meter deep for an estimated total of 315,000 pounds of material raised from the sea floor. The combined efforts contributed by Mobile Diving and Salvage Unit TWO, DPAA and USNS GRASP are highly notable and bear true faith and allegiance to the DPAA mottos of “Keeping the Promise” and “Until They are Home”.

Photo Above: Navy Diver 2nd Class Jason Thurston tends ND2 Justin McGee, of MDSU TWO, as he descends to a submerged Defense POW/MIA Accounting Agency excavation site in the Adriatic Sea Sept. 2, 2015. (Photo by Mass Communication Specialist 1st Class Charles White, Fleet Combat Camera Pacific)

Navy Diver First Class Ryan S. Conley is currently assigned to MDSU2 Company two four.

Navy Diver 1st Class Sean Dargie, with MDSU TWO, uses a four inch dredging hose at a Defense POW/MIA Accounting Agency excavation site in the Adriatic Sea Sept. 5, 2015. (Photo by Mass Communication Specialist 1st Class Charles White, Fleet Combat Camera Pacific)





The "Hansen Crew"



1st lieutenant Howard Hanson



Sailors from MDSU TWO pose for a photograph onboard rescue and salvage ship USNS Grasp (T-ARS 51), Sept. 4, 2015 in the Northern Adriatic Sea. (Photo by MCI Charles White, Fleet Combat Camera Pacific)

Navy Divers with MDSU TWO are hoisted up from a Defense POW/MIA Accounting Agency excavation site in the Adriatic Sea Aug. 27, 2015, after looking for evidence of American Service Members missing in action at a B-24 Liberator wreck site near Grado, Italy. (Photo by MCI Charles White, Fleet Combat Camera Pacific)

UCT 2 DIVERS TRAIN SOLOMON ISLANDS POLICE FORCE

By: Builder 1st Class Joshua G. Sisson

Underwater Construction Team (UCT) 2's Construction Dive Detachment Bravo (CDD/B) conducted advanced dive technical training with the Royal Solomon Islands Police Force (RSIPF) Explosive Ordnance Disposal (EOD) unit, and Maritime divers on Tulagi Island, May 4-15.

The training was in support of the U.S. State Department Humanitarian Mine Action (HMA) program, which aims to assist countries in developing the means to remove and dispose of unexploded ordnance (UXO) and explosive remnants of war (ERW) that can endanger local populations.

The Solomon Islands, and Guadalcanal specifically, were the targets of intense bombing during World War II in one of the first major offensives by Allied forces, also known as the "Battle of Guadalcanal". The offensive lasted from August 7, 1942 to February 9, 1943, and resulted in Japanese forces evacuating and forfeiting the islands to the Allies.

Remnants of the Battle are still evident on the islands today, from sunken bombers to intact fighting positions. Along with these historical remains are thousands of ordnances and remnants. The training taught the RSIPF how to safely find, mark, and remove the items.

During the training, CDD/B instructed twelve RSIPF EOD and 2 maritime divers in advanced diving techniques, such as, casualty management, full-face mask operation, advanced underwater searching techniques, and underwater lifting procedures utilizing open and closed-bottom lift bags.

The training began on the remote island of Tulagi in early May 2015. Initial training with RSIPF divers was conducted in a classroom environment, in conjunction with hands-on segments



Hospital Corpsman 1st Class William Schliesman, assigned to UCT 2, supervises a casualty management training scenario as Royal Solomon Islands Police Force divers respond to a simulated unconscious diver.



Senior Chief Equipment Operator Emory Cole, assigned to UCT 2, teaches Royal Solomon Islands Police Force Explosive Ordnance Disposal divers proper regulator maintenance procedures.



Construction Mechanic 1st Class Adam Cooper, assigned to UCT 2, demonstrates how to rig and inflate an open-bottom lift bag during training with Royal Solomon Islands Police Force Explosive Ordnance Disposal divers.

for each part of the curriculum.

When asked about how it felt to participate as an HMA instructor, Construction Mechanic 2nd Class Tristan de Delva said, "It's an honor. To give training on something as important as this, it really is just a rewarding experience."

After the classroom phase, the divers took to open water to apply the classroom training in an operational environment, and started with searching underwater for inert ERW. After locating an object, divers were required to surface and describe what they found. This was followed by lifting procedures, where divers raised large objects off the ocean floor by utilizing open-bottom lift bags. Throughout the diving evolutions, casualty management scenarios were imposed on the divers to simulate real world emergencies.

"I'm thoroughly impressed with the RSIPF divers," said Hospital Corpsman 1st Class William Schliesman. "Every day they bring their A-game. It challenges us to give them the highest level of training we can."

Underwater Construction Teams provided a capability for construction, inspection, repair, and maintenance of ocean facilities in support of Navy and Marine Corps operations including the repair of battle damage. The teams have the capability to support a Fleet Marine Force (FMF) amphibious assault, subsequent combat service support ashore, and self-defense for their camp and facilities under construction and in an emergency or disaster, conduct disaster control and recovery operations.

Article & Photos by: Builder Chief (SCW/DV) Joshua Sisson checked into UCT TWO in February 2015, and was previously an instructor at the Naval Diving and Salvage Training Center in Panama City, Florida..



Enclosed Space at Altitude

By: NDCS (MDV/EXW/SS/SW) Frederick F. Heimgartner

In conjunction with routine and emergent ship's husbandry, Puget Sound Naval Shipyard & Intermediate Maintenance Facility (PSNS&IMF) Detachment Everett Dive Locker has been engaged in supporting various Seattle District Army Corps of Engineering (USACE) operations throughout the summer and fall of 2015. These jobs have been spread over the State of Washington and include potable water tank inspections at altitude, large lock gasket replacements of the Hiram M. Chittenden Locks, Native American artifact identification, and continued maintenance of the Lake Washington Salmon Habitat Conservation Gates.

The Yakima Training Center (YTC), Joint Base Lewis-McChord, is a U.S. Army training center used for maneuver training, and land warrior system testing and live fire area, located in the south central portion of Washington State. It comprises 327,000 acres of land, most

of which consists of shrub-steppe, making it one of the largest areas of shrub-steppe habitat remaining in Washington state. The training center is also used by the Japan Ground Self-Defense Force for exercises. Over the course of 10 days Detachment Everett certified 12 potable water reservoir tanks spread over 300 square miles of desert with altitudes reaching 2,813' elevation above sea level.

Using a trailered Transportable Recompression Chamber System (TRCS), Interspiro Divator DP2, Diving Unlimited International (DUI) dry suits, and a variety of decontamination equipment, the team inspected tanks ranging from 20,000 gallon in-ground tanks, up to 600,000 gallon above ground tanks. For this enclosed space operation at altitude, the use of the "highly portable" DP2 was critical to rapid mobility and the safe execution of diving in tanks reaching heights up to 60' above ground. The

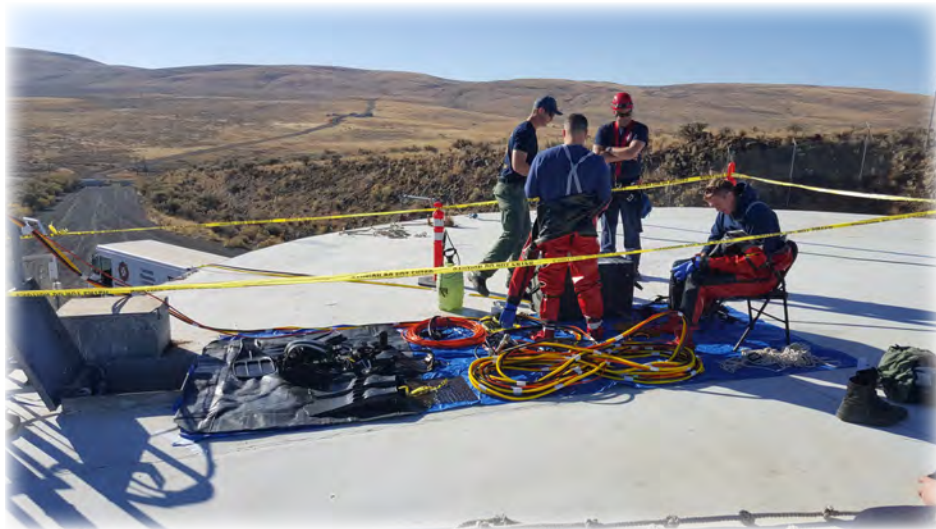
dive team, led by NDC Gray Ladd and ND1 Kevin Levey, meticulously planned to provide a completely mobile decontamination station that allowed immediate transfer of "clean" equipment between tanks divided by 35 miles of high desert with altitude fluctuations greater than 1000'. Historically, Navy Divers are accustomed to performing decontamination procedures when exiting the water, not prior to entering, in a desert environment, with the risk of contaminating water that will be consumed by United States and Japanese war fighters.

This mission could not have been accomplished without the combined efforts of the Seattle District U.S. Army Corps of Engineers, YTC Training Center Federal Fire Department, YTC U.S. Army Air Ambulance Department, and YTC Public Works Department. All of the team members involved integrated seamlessly enabling a smooth execution throughout the operation. While this is not recovering a sunken vessel from the sea floor, it was a unique task that required detailed planning and unusual preparation. Navy Divers are highly resourceful and truly appreciate challenges that develop our ever-growing skillsets and capabilities. Hoo-yah Det Everett and Hoo-yah Deep Sea!!!

Title photo: Det Everett dive team, the federal fire department, and the public works department make preparations to dive an above ground tank.

NDCS (MDV/EXW/SS/SW) Frederick F. Heimgartner is currently serving as the PSNS&IMF Detachment Everett Dive Locker Master Diver.

Photos by: NDC (DSW/EXW) Gray Ladd



ND1 Levi Hill assists ND1 Kevin Levey and ND2 Tucker Ludy as they don dry suits. Federal fire department standing by for emergency response.

USS TAYLOR (FFG 50) Controllable Pitch Propeller Hub Waterborne Replacement

Forward Ship Sustainment Activity (FSSA) Naples supported by NAVSEA 00C, two NSSA Dive Teams, GPC (00C's Emergency Ship Salvage Material (ESSM) contractor), a Phoenix International dive team, and Navy Aegean Dive Company conducted operations to remove and replace the Controllable Pitch Propeller (CPP) Hub and all associated propeller blades on the Guided Missile Frigate USS TAYLOR (FFG 50) after running aground on the inbound track into a port in Samsun, Turkey on 12 February 2014. The USS TAYLOR, home ported in Mayport, FL, was scheduled for a brief stop for fuel, then return to the Black Sea in support of theater and maritime security operations in the U.S. 6th Fleet Area of Responsibility. Several TAYLOR crew members noted a slight shutter rocked the ship, then main propulsion was lost immediately following the grounding. Not sure what actually happened, ship's force went into action to restore the casualty that set the ship adrift dangerously close to charted shoal waters. Auxiliary Propulsion Units were brought on line and utilized to provide some means of propulsion to control the ship until the engineering plant could be restored. Once the ship was out of immediate danger and with main propulsion restored, a visible oil sheen was observed on the surface of the water just aft of the ship. This was the first indication that damage had occurred to the ship's propulsion system, the extent was unknown. Diver support was needed immediately to identify and report damage so an assessment and repair recommendation could be made with the goal to return her back to the fight.

The 6th Fleet Diving and Salvage Officer, LCDR Andrew LaValley was immediately notified of the situation and urgent need for divers. He immediately organized and mobilized the First Response Dive Team. This dive team consisted of

7 Navy Divers stationed with EODMU 8, home ported out of Rota, Spain led by Master Diver Michael Allison and LTJG Phillips. The team arrived on station 13 February; only 12 hours after the initial grounding report. The team's initial tasking was to conduct a preliminary damage assessment on the ship's propeller blades, with a secondary mission to conduct an open water survey of the suspected grounding site to help ensure safe navigation upon the ship's departure.

On the following day, 14 February, initial assessment of the blades was conducted with unfavorable results. The report indicated that 3 of 5 blades were damaged and required replacement. The CPP Hub condition remained unknown considering that all blades would have to be removed to allow a closer look at the underlying hub internal components before its condition could be evaluated. The initial report indicated that 4D Blade had oil continually dripping from several of the blade bolt holes and around the blades palm circumference. Also, the blade sealing software on 4D was protruding and dislodged from the 4D palm face; all strong indications that extensive damage occurred to the hub itself. However, until the blades were removed a more comprehensive and conclusive inspection was impossible. Because a hub internal inspection could not be completed in a timely manner and in attempts to not impede progress, the decision to replace "just" the blades was made.

A ship set of CPP blades is installed as a balanced set. Meaning, if you need to replace more than one blade, best practices dictate replacing all 5 blades considering all 5 blades were specifically manufactured to be installed together as a complete set. With this in mind, it was decided that all 5 blades would be changed out, not just the 3 damaged blades. In order to facilitate such a repair, a 10 man Dive Team was identi-

fied and mobilized from Norfolk Ship Support Activity (NSSA) Dive Locker. Due to the high visibility of the grounding event, the nature of the blade damage and the unknown condition of the hub, SUPSALV technical support of the operation was requested. SUPSALV provided two UWSH Engineers and an UWSH Operations Specialist to oversee the blade removal and replacement operations. ESSM gear to support blade replacement was sent from Williamsburg, VA to Samsun, Turkey. The 6th Fleet Diving and Salvage Officer reported on scene to oversee and coordinate the entire operation. Lastly, a replacement set of blades was located at Yorktown Naval Weapons Station, Cheatham Annex, VA and made ready for immediate transportation via MILAIR coordinated via CTF63's LCDR Jared Jacobs. All gear, hardware, and personnel required to support a blade change-out operation arrived in Samsun, Turkey by 18 February.

When the NSSA Dive Team arrived in Samsun a "follow-on" damage assessment dive was conducted to verify the results as noted earlier by the preliminary dive team. Once the status was verified, the blade removal process was immediately initiated. The decision was made to remove 4D blade first since this blade appeared to be the most damaged. For the next several days the dive teams struggled with 4D removal due to several complications that nearly shut down the blade removal efforts. One such complication was the inability to remove 2 of the 8 blade bolts used to secure the blades to the hub port. Chain-falls, pipe wrenches, and pry-bars were ineffective at removing the blade bolts from the hub; therefore, the team was forced to use a Blade Bolt Milling Machine. This machine cuts down through the blade bolt head, relieving the clapping force to free the bolt. It is important to note that removing the bolt head has only been at-

tempted two other times in naval history. As it turned out, each bolt head took approximately 6 to 8 hours of continuous milling to completely cut through the bolt head. In fact, the milling operation was so difficult that 5 cutting blades were shattered in the milling process as seen in figure [1]. However, through trial and error the team managed to cut off the heads of these bolts then forcefully removed the 4D blade with sledge hammers and a series of chain-falls. Not standard operating procedure by any means, sledge hammers were required considering one the dowel pins was bent which bound the blade in place, thus making it extremely difficult to remove. As a backup plan to removing the blade an 8 man underwater cutting dive team from Phoenix International Holding, Inc (Phoenix) was identified and placed on "standby" in CONUS in the event their services were needed to physically cut the blade off hub. After 6 days of continuous effort, 4D blade was finally removed thus allowing the 4D hub blade port to be inspected. From the initial inspection, it was evident that catastrophic damage occurred to the hub internal components. Once 4D Blade was removed, oil was noted leaking from nearly every bolt hole in the 4D blade port and the port cover plate itself was displaced from ¼ to ½ inch in the port. Additionally, 1 of the 4 center post sleeve cover bolt heads, located in the blade port, was sheared in half, and the dowel pin bent and stuck in place. All of which is solid evidence that the CPP Hub internals were also compromised. It was clear that the CPP Hub would ultimately require replacement.

The news of the hub replacement was not taken lightly by Commander US Sixth Fleet (C6F). After all, removing and replacing a CPP Hub waterborne had never been attempted before in naval history. Not to mention that the ship was in the middle of deployment, half way around the world, and stuck in a foreign port that was not conducive to allowing this magnitude of repair effort to occur. To add insult to injury, the procedure for such an undertaking was non-existent and the estimated time required for replacing the CPP hub waterborne was approximately 4 to 5 weeks as compared to only

1 to 2 weeks if the repairs were done in a dry-dock. Factoring in dry-dock availability and the time to contract the dry-dock the overall time required to actually perform the repair in a dry-dock greatly exceeded the projected replacement time for the waterborne operation. Therefore, replacing the CPP hub waterborne became the clear COA. On 24 February, the decision was made to replace the CPP waterborne vice a dry-docking facility.

On the day before permission was granted to proceed with waterborne hub removal and replacement, the 6th Fleet Diving and Salvage Officer made the decision to go to 24/7 diving operations to facilitate the removal of the remaining 2 blades. After all, the protracted effort to remove 4D blade put the dive team considerably behind schedule. To support the 24/7 blade change out diving operations, a 2nd NSSA Dive team was identified, mobilized, and arrived on station only 2 days after initial request. At this point in the operation the dive teams now consisted of two 10 man dive team working on a 24/7 basis. As a direct consequence to this shift in OPTEMPO, the remaining blades were quickly removed, and the operation slowly shifted from a blade change-out operation only to full CPP hub and blade replacement operations. Figure [2] shows the NRFI blade being yard and stayed pier side.

Once the last blade was removed, and upon Host Nation permission to proceed with repair efforts, the decision was made to proceed with a waterborne CPP hub replacement in Samsun, Turkey. However, due to several Port Authority financial disagreements and political turmoil, the decision was made to change the repair location to Souda Bay, Crete.

The next issue tackled was getting the ship from Turkish waters to Souda Bay. Mike Herb and Jim Ruth of NAVSEA 00C led the effort for a contracted tow. Don Jon Marine was the company identified to support the nearly 850nm towing operation. Ship's force also went into high gear by preparing a load plan that would include all the diving gear on station as well as the 5 Ready-For-Issue (RFI) replacement blades, and 5 Not Ready-For-Issue (NRFI) blades. This was a challenging load plan consider-

ing there was limited area to stage this gear and the fact that the ship needed to be trimmed by the stern nearly 3 to 4 feet to support an optimal tow. The load plan had to be detailed and comprehensive. Therefore, NSSA Engineering Team lead by Mr. Mark Palsha, NSSA Chief Engineer, was also deeply involved in the load plan preparation and helped to ensure this plan was optimal.

To fully support this effort, and considering the first EOD centric team was demobilized a week earlier, a 3rd dive team was identified to support 24/7 hub replacement operations. The 3rd team, brought onboard was from Phoenix International Holding, Inc (Phoenix); SUP-SALV's diving support contractor. Phoenix was brought in on this operation for its extensive underwater operation acumen as well as having waterborne CPP Hub removal experience. In 2005, Phoenix divers performed a waterborne hub removal on the ex-USS AUBREY FITCH (EX-FFG 34). The decommissioned FFG's hub removal effort was a cannibalization operation that did not require a hub reinstallation; just the removal.

The RFI CPP Hub was located and delivered to Oceania Airport Terminal FFT to Souda Bay, Crete. The hub itself weighed approximately 32K lbs., therefore increased logistic support was required to handle, ship, and unload from the aircraft this extremely heavy part. None of this heavy lifting gear was available in Souda Bay, Crete, therefore a special mission airlift was arranged by CTF 63 that delivered the CPP Hub, Cofferdam, and all associated gear directly in to Sigonella, Sicily which did have the capability. Getting the gear to Souda Bay from Sigonella was another issue. Ground transportation was arranged to ship the CPP Hub directly into Souda Bay as well as a follow-on MILAIR flight arranged to deliver the cofferdam and associated diving support equipment directly into Souda Bay. Once all gear arrived in Souda Bay, it was immediately delivered pier side in preparation for the ship's arrival.

Back in Samsun Turkey, permission to get underway while under tow was given on 07 March and the ship departed the following day. After an 850 nm towing event through the Turkish



Figure 1

Straits the ship arrived in Souda Bay, Crete on 12 March and moored on the east end of Marathi Pier, starboard-side-to, at K14; see Figure 1. The Advance Party ensured there was adequate space between the quay wall and the ship's skin by breasting out the ship nearly 20 ft. using a combination of barges and Yokohama fenders. Breasting out the ship allowed for ample space to extract and install the hub/cofferdam combo without the danger of exceeding the cranes reach and lifting capacity. Additionally, in anticipation of the 48Klbs CPP Hub and

seen in Figure 2, several tents were erected to protect critical gear, all diving support systems were made functional, support service ordered, to include, external lighting for night time operations, back up air and power sources, etc. Lastly, Phoenix dive team integrated into the repair effort. A total of three 10 man dive teams working on a 24/7 basis was the corps work ethic. More specifically, it was decided

that each dive team would work a 10

the hub and shaft; approximately 1100 Gallons of oil required removal. Unfortunately, none of these events went according to plan. For instance, the rigging beams had to be removed after being fully installed because the Delrin spacers of both beams were not flush to the hull due to interferences with the strut pads. Both beams were removed, the Delrin spacers tailored to fit and then re-installed. As seen in figure 3, the rigging beams are attached directly above the hub and are attached to the ship's hull by two U-bolts in the 8 inch lifting tunnels.

It proved to be very challenging to fully de-oil the ship's CPP system through the damaged hub. The seals on the hub were completely compromised making isolation for the surrounding water extremely challenging. To mitigate oil leakage from the damaged hub Souda Bay Oil Spill Response Team, led by LT Johnathan "Chris" White, was called into action to fully contain and clean up any oil spilled. In an attempt to mitigate oil loss and promote collection of the oil, the PA system was plugged with expansion



Figure 3



Figure 2

hour day with 1 hour overlap with each on-coming and off-going shift. This work schedule supported 8 hours of in-water diving and allowed the teams set up and break down periods with minimal work stoppages between shifts.

The first Souda Bay dive was conducted on 13 March follow-

ing pier lay-down completion at approximately 0100L, the evening of the ship's arrival in port. The team immediately went to work successfully removing 1A Blade port cover and installed the hub davit that would be used to help remove the rope guard. At the same time, both port and starboard rigging beams installation started, as well as the de-oiling operation of

Cofferdam combo heavy lift, great care was given to crane placement and ship position relative to one another to ensure the lifting capability of the 200Klbs capacity crane was not exceeded.

Upon arrival and shifting colors, the vessel was immediately unloaded. Its entire cargo, including both the NRFI and RFI blades (10 total), were removed from the ship and staged appropriately on the pier. The dive side was set up and fully geared for 24/7 operations; as

ing pier lay-down completion at approximately 0100L, the evening of the ship's arrival in port. The team immediately went to work successfully removing 1A Blade port cover and installed the hub davit that would be used to help remove the rope guard. At the same time, both port and starboard rigging beams installation started, as well as the de-oiling operation of

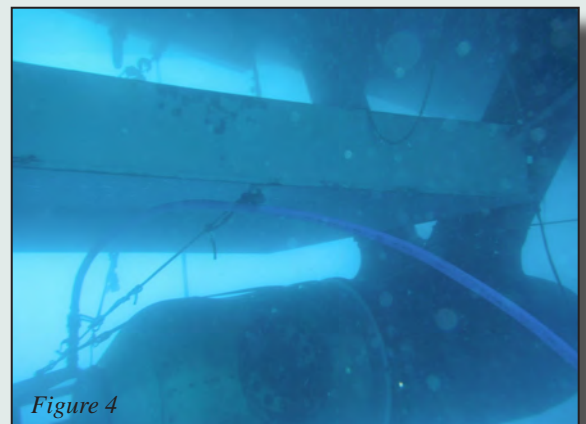


Figure 4

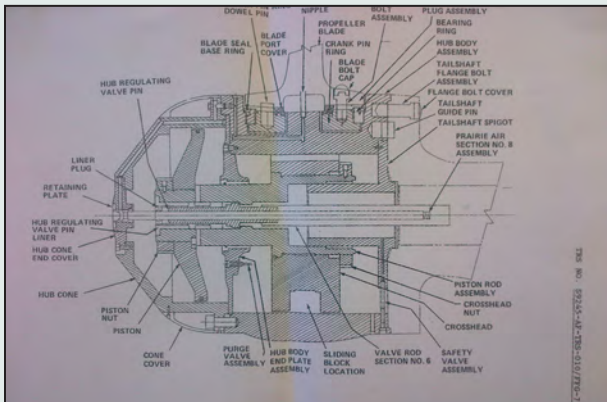


Figure 5

Additional safeguards were put into place to stem the loss of oil, for instance, NAVSEA Engineer Justin Pollock devised a method to de-oil the shaft independent of the hub body by inserting a bypass tube directly into the hub at the hub internal relief. Figure 5 shows how the bypass tube successfully isolated the CPP hub from the shaft thus facilitating oil removal.

The next significant issue the dive team had to overcome was the loss of the CPP system itself. The emergency pitch pump was used to cycle the blade into the proper position for de-oiling the hub. This included FULL AHEAD and FULL ASTERN. But the emergency pitch pump system failed during the process. The overall cause of the failure is unknown and the team was running out of ideas to make the system work.

To help trouble shoot this problem Mr. Rich Krewinghaus of NSSA Engineering reported on dive site on 19 March. The team decided to use the full hydraulic power that the CPP system could provide in order to move blade pitch to FULL AHEAD. To use the system, the only option was to refill the entire CPP system with oil and as a direct consequence the team would have to de-oil the system for a 2nd time. On 21 March the engineering team restored the CPP system and successfully repositioned the blade pitch to FULL AHEAD. The next step in the process was to install the cofferdam. However, de-oiling the shaft and hub were still a priority, but the team de-

cid to install of the cofferdam at the same time the team de-oiled the shaft.

The cofferdam was prepared and ready for install the moment the procedures called for it. However, this particular cofferdam was originally designed for a Cruiser with critical components modi-

holes. The hub Stool connects the CPP hub body to the cofferdam, also designed for a cruiser, outside shell and supports the weight of both the cofferdam CPP hub body combination. To mitigate this issue, local Host Nation machining services were employed to elongate the attachment holes; essentially aligning 2 of the 4 bolt holes with room to make fine adjustments and help ensure a proper cofferdam/hub stool bolt hole alignment.

The team struggled with the lineup for nearly two 8 hours shifts before proper mating of the cofferdam to the hub stool was achieved. Figure 6 shows the CPP hub stool mated with the cofferdam.

Once the cofferdam was fully installed and completely blown down, the team moved to separate the hub from the shaft flange. The installed hydraulic ram system located inside the cofferdam was used to separate the hub and



Figure 6

fied for a Frigate. It had not been test fit to ensure the as designed configuration matched actual ship construction. With that said, some modifications needed to be made prior to installation to ensure proper fit. For instance, the bearing flange,



Figure 7

shaft flange. This process was slow and meticulous. Meaning, each push of the hydraulic ram moved the hub only a fraction of an inch. This movement was measured and verified each time. Each ram could be moved as a unit or individually, therefore control of the hydraulic rams was fairly precise. Once the separation was 12 inches in width between the hub and shaft flange, the hub was completely clear of the hub alignment pins, which were quickly removed. Once removed the diver could easily gain access to the PRAIRIE Air (PA) tube and the Valve Rod (VR) couplings as seen in Figure 7. To separate these couplings, the divers used a couple of large pipe wrenches to

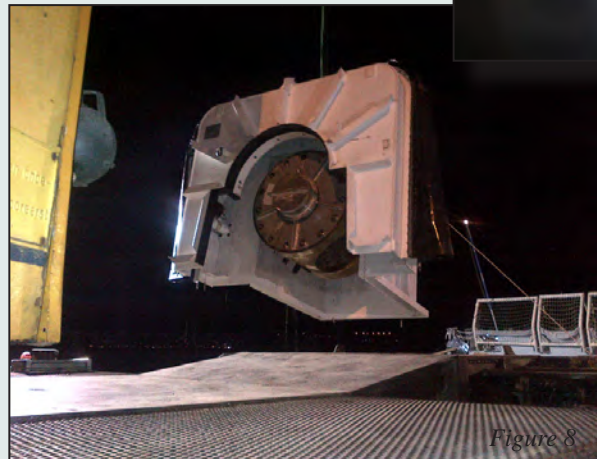


Figure 8

which connects the cofferdam's bottom door and main top door to the strut barrel, bolt hole pattern was misaligned with installed bolt which required 12 of the 14 bolt holes to be elongated for proper fit. Also misaligned were the hub stool bolt

grip and turn the VR couple. However, the PA couple was too far up the shaft and could not be reached by the divers. Therefore, the team decided to cut off the end of the PA tube vice disassembly of the couple considering the team had a brand new hub as well as associated internal components that would be installed. Later, an 18 inch long fitting was fabricated and attached to the end cap area of the PA tube internal to the ship's engine room that allowed the PA tube to be translated aft without compromising the watertight integrity of the ship or bubble in the cofferdam. This extension allowed the divers to reach the couple and remove the cut off section of PA tube making way for the new internal component installation.

Once all connections were severed, the cofferdam/hub combo was then yard and stayed to pier side; this took approximately 8 hours. There were several issues associated with the removal of the cofferdam. For instance, due to the ship being starboard side to, and the fact that the crane could only reach approximately 30 yards maximum with a 48Klbs Load, the hub/Cofferdam combo had to be lifted from the water on the starboard side vice the planned port side. The issue was that the rudder is mounted slightly to starboard of ship's center line; therefore there was insufficient room to easily remove the cofferdam without making contact with the rudder. To counteract this, the rudder was repositioned 35 degrees to starboard providing 18 additional inches of clearance. Once the cofferdam was clear of the bearing flange, the load was dropped to a depth of 50 ft. where it was transferred to the 200Klbs crane. The rest of the hub removal operation was uneventful and the hub-cofferdam combination was safely yard and stayed to the pier as indicated in Figure 8.

On 28 March after a delay due to high winds, the team managed to yard and stay the new hub-cofferdam combination into the water and secure it to the rigging beams. The cofferdam was then fully installed and de-watered again. The procedure for installation was straight forward and basically a reverse of the uninstal process. The PA tube was connected without issue, however the VR couple and the VR threads were damaged to the point that the VR couple would

not catch the first thread. Divers using "V" shaped hand files painstakingly reworked the threads on the VR over two 8 hours shifts. The VR couple needed to be removed entirely and was reworked in the ship's MR shop. Next was to fully seat the CPP Hub on the shaft flange; this tasking was completed the following night following the CPP hub dowel pins reinstallation. To ensure a proper fit, the dowel pins were stored in the ship's freezer effectively shrinking the metal a few 1000ths of an inch, thus allowing the pins to easily slip into place with little effort. Lastly, the hub flange bolts were installed and fully torqued to specifica-

tion. Once all hub bolts torques were verified the cofferdam was removed and the blades installed. The last blade was installed on 05 April. Operational testing followed and was completed on 11 April. Total repair time, including testing was 29 days upon reaching Souda Bay, Crete. Total Dive time was just over 41,466 minutes of incident free dive time.

LCDR Andrew M LaValley, is currently the 6th Fleet Diving and Salvage Officer and Assist Surface Ship Maintenance Officer U.S. 6th Fleet (N41A1). He acted as the On-Scene Commander for the entire operation.

Navy Dive Team Members:

LCDR Andrew M LaValley, US Sixth Fleet Diving and Salvage Officer; FSSA Detachment Naples.
NDCM Kelly Polk, Dive Master, NSSA Dive Locker
NDC Mark Sawyer, Dive Team Blue Team Leader, NSSA Dive Locker
NDC John McCulloch, Dive Team Gold Team Leader, NSSA Dive Locker
HM1 Erik Ketelsen, NSSA Dive Locker
ND1 Michael Langdon, NSSA Dive Locker
ND1 Crampton, EODMU-8
ND1 Samuel Elliott, NSSA Dive Locker
ND1 Eric Riggensbach, NSSA Dive Locker
ND1 Travis Arneson, NSSA Dive Locker
ND2 Joshua Mellott, NSSA Dive Locker
ND2 Sean Bast, NSSA Dive Locker
ND2 Nicholas Barna, NSSA Dive Locker
ND2 David Quesada, NSSA Dive Locker
ND3 Nathan Fisher, NSSA Dive Locker
ND3 Anthony Dandrea, NSSA Dive Locker
ND3 Trevor Colglazier NSSA Dive Locker
ND3 Cameron Klappas; NSSA Dive Locker
ND3 Mark Gignac; NSSA Dive Locker
Mr. Tom Naab, NSSA Dive Locker
Mr. Bobby Crawford, NSSA Dive Locker
Mr. Jacob Nessel, UWSH Propulsion Systems Engineer, NAVSEA 00C
Mr. Justin Pollock, Engineer, NAVSEA, SEA 00C
Mr. Scott Heineman, Operations Specialist, NAVSEA 00C
Mr. Curtis Yoder, FSSA Marine Surveyor, FSSA Naples Italy
Mr. James Hussey, FSSA Marine Surveyor, FSSA Naples Italy
Mr. Rich Krewinghaus, NSSA Tech Rep Code 254, NSSA Norfolk
Mr. Ray Burchar, ESSM Mechanic
Mr. Dennis Miller, ESSM Mechanic
Mr. Roy Ludi, ESSM Engineer
Mr. Ian Stifle, ESSM Engineer
Mr. Al Barter, Rolls Royce Naval Marine Inc. Tech Rep.

Refloating of EX-USS SHADWELL

By: LCDR Eric Brege



When they returned to work following the 4th of July weekend, the crew of the EX USS-SHADWELL were surprised to see her resting on the bottom of Mobile Bay, flooded to the waterline aft of Frame 36, and listing 8 degrees to STBD. After discovering the incident, the Naval Research Lab (NRL) immediately notified SUPSALV to begin recovery efforts. Within hours of notification, SUPSALV's East Coast Salvage contractor, along with CDR Chris Addington, a salvage officer from SUPSHIP Gulf Coast, provided the initial response.

Similar to most salvage operations, the symbiotic relationship between pollution control and salvage response existed for the EX-SHADWELL. When they arrived on station, initial responders were greeted with an unknown quantity of burnt diesel fuel which had been used for previous firefighting testing operations. In order to contain the fuel that was dispersed throughout the well deck, contractors deployed boom around the

ship, and absorbent pads throughout the spill area. Drum skimmers were also installed to recover the diesel fuel. The recovered fuel was then pumped directly to a bunker barge moored alongside.

As the pollution response phase was being executed, the salvage plan was finalized and approved, and additional salvage equipment and personnel were deployed. LCDR Eric Brege (SUPSALV) relieved CDR Addington as Project Manager, and several truckloads of pumping equipment were offloaded onto a crane barge for transit to the EX-SHADWELL. Executing the second leg of the Salvage Triad, NRL requested additional salvage support from MDSU 2 who then began preparations to deploy Company 2-2. While waiting for the main body to deploy, LT Sean Doherty and MDV Eric Eberle from MDSU 2 arrived on scene as the MDSU advance party.

Prior to commencing the next phase of the salvage operation, the salvage plan was briefed to the USCG and other

key stakeholders. The salvage plan was fairly straightforward and consisted of isolating leaks, cofferdaming the stern gate grating, and overcoming leakage with Salvage pumps. Before the salvage pumps could be installed, the watertight integrity of BLKHD 36 was compromised, and SHADWELL was flooded to the waterline over the entire length of the ship. The newly flooded compartments were sounded, and the POSSE Model was updated to reflect the most recent condition prior to commencing the dewatering operation. Additional salvage pumps were incorporated into the salvage plan to ensure dewatering occurred evenly throughout the length of the entire ship, and that sagging stress would be reduced while regaining buoyancy.

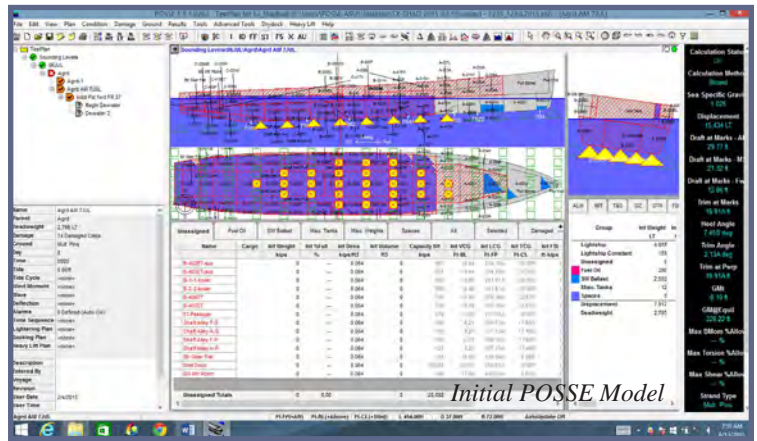
As the salvage pumps were being installed throughout the ship, the MDSU 2-2 advance party began templating and fabricating the stern gate cofferdam from sheets of plywood, rubber, and all-thread that were available on station. As



MDSU Divers Isolating Leaks



SHADWELL After Being Refloated



Initial POSSE Model

the stern gate cofferdam was being fabricated, the main body of Company 2-2 arrived on station. To ensure both contractors and MDSU personnel had clear tasking, MDSU was tasked with diving/patching, and contractors were tasked with continuing pumping operations.

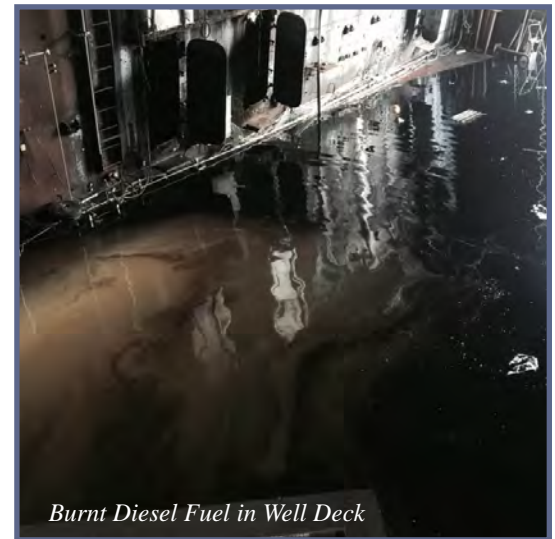
Because SHADWELL had been used for so many tests, her piping systems and hull penetrations had been modified several times over the years. The unmapped piping and hull penetrations presented many unique challenges to the divers as they worked to discover and isolate leaks. Another challenge the divers faced was the material condition of the hull. As patches and DC plugs were used to isolate leaks, the corroding metal around the patches frequently failed, requiring new, larger patches to be installed. The most challenging leak proved to be the gap between the lower edge of the stern gate and the top of the well deck. Divers ultimately used bintsuke and rolled up fire blankets that were cut to length in order to seal the lower stern gate leaks. Using 13 dives and nearly 20 hours of bottom time, MDSU divers fabricated and installed 4 major stern gate patches, 4 box patches, 10 DC plugs, and numer-

ous soft patches with epoxy reinforcement.

With the leaks patched and pumps installed, the salvage pumps were started with a capacity in excess of 20,000 GPM. The largest pumps (2, 12-inch pumps) were placed in the well deck, three 6-inch pumps were placed in the engineering spaces and midbody ballast tanks, and four more maneuverable 3-inch salvage pumps were placed in spaces and tanks fwd of FR 26.

After three full days of pumping the SHADWELL was refloated with minimal list and was trimming aft as expected. Pumping operations continued for an additional day to even the trim and place the ship in an acceptable ballast condition.

The refloating of the EX-USS SHADWELL was a great example of how salvage operations can be conducted using both military and civilian salvors. In addition to being a suc-



Burnt Diesel Fuel in Well Deck

cessful salvage operation, it was an excellent learning opportunity and provided a platform for knowledge sharing between the organizations.

LCDR Eric Brege, P.E. is currently serving as Assistant for Salvage at NAVSEA OOC..



Seabees Complete Boat Ramp on NASNI

By: Mass Communication Specialist 3rd Class Emiline L. M. Senn, NPASE West

Seabees, assigned to Underwater Construction Team (UCT) 2, completed the conversion of an old seaplane ramp to create a new boat ramp at Naval Air Station North Island (NASNI), May 27.

The old Seaplane ramp, dating back to World War II, had been in use by various expeditionary and special operations units in Coronado but was unable to safely handle the weight of the Navy's newest boats.

There were no original plans or drawings for the seaplane ramp, according to Chief Builder Jason Cortez, project officer in charge. "We're estimating that the original ramp was roughly 80 to 100 years old."

The Navy began researching a replacement for the ramp. The cost for a contractor to do the project was estimated to be \$2.6 million, according to Dave Watts, facilities manager at Navy Expeditionary Combat Command Pacific.

UCT2 was able to work with Naval Air Station North Island to reduce the cost to \$1.2 million, saving the Navy \$1.4 million.

During the initial phase of the project, the Seabees determined that the majority of the old seaplane ramp was not structurally sound. This made the original renovation plan untenable, and forced the engineering design firm to go back to the drawing board. The new design add-

A Mark VI boat, fully loaded with the truck and trailer will weigh an upwards of 110,000 pounds. We built the ramp at an angle that will hold that weight."

The Seabees were able to use part of the old ramp and interweave the original foundation with the new design, which increased the overall load capacity.

"We used mechanical couplers to join the old piles to the new piles," said Builder 2nd Class (SCW/DV) Chris Farmer. "Anti-corrosive inhibitors were mixed into the concrete so it will last longer than the previous ramp."

Overall, the project took less than a year to complete.

"Construction took four and a half months [of] actively swinging a hammer," said Cortez. "But we've been at it closer to eight months; including site visits and the project package that was put together."

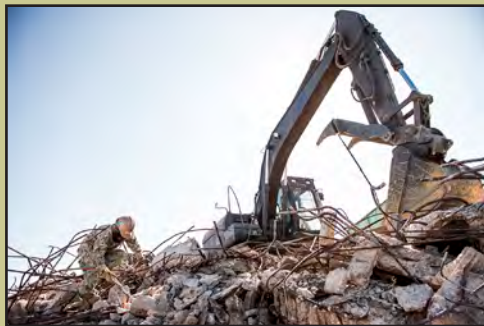
The boat ramp was completed in conjunction with Seabees from Naval Mobile Construction Battalion (NMCB) 3, NMCB 4, and Construction Battalion Maintenance Unit (CBMU) 303.

Navy Underwater Construction Teams provide a capability for construction, inspection, repair, and maintenance of ocean facilities in support of Navy and Marine Corps operations, to include battle damage repair. The Teams also maintain a capability to support a Fleet Marine Force (FMF) amphibious assault, combat service support ashore, and self-defense for their camp and facilities under construction, as well as emergency and disaster response and recovery operations.

Mass Communication Specialist 3rd Class Emiline L. M. Senn works for the Navy Public Affairs Support Element West.



Seabees assigned to NMCB 3 and UCT 2 reconstruct a historic seaplane ramp at Naval Air Station North Island. (Photo by Mass Communication Specialist 2nd Class Carlos M. Vazquez II)



Steelworker 1st Class Honer Villanueva, assigned to NMCB 3, cuts rebar beams with an oxygen acetylene torch next to a caterpillar 390b during a seaplane ramp construction project. Seaplanes had heavy use around Coronado, Calif., during World War II. (Photo by Mass Communication Specialist 2nd Class Mark El-Rayes)

ed significantly more work to the project, but the Seabees pressed on.

"We ripped out about 240 cubic yards of concrete and placed or poured 300 cubic yards," said Cortez. "It's a significant project for us. We laid an estimated 16,000 feet of steel and added a floating dock."

This is the only boat ramp on NASNI and will be used for riverine craft, special boat teams and port operations among other uses.

"This ramp was designed for daily port operations and special watercraft," said Cortez. "We specifically designed it for the Mark V and new Mark VI patrol boats.

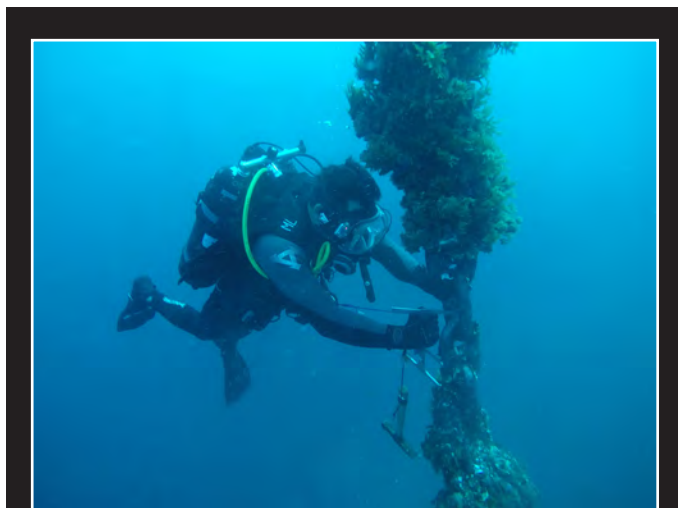
UCT ONE Inspects ATFP Port Security Barriers in Souda Bay, Crete, Greece

BU1 (SCW/DV) Christopher Kelly

USS COLE Memorial, Naval Station Norfolk, VA - “At 1118 on the morning of October 12, 2000, as USS COLE (DDG 67) was refueling in Aden Harbor, Yemen, suicide bombers detonated an explosive-laden boat directly against the port side of the ship. The resulting blast killed 17 Sailors, wounded 37 others, and tore a hole 40 by 60 feet in the ship’s hull. In the aftermath of the explosion, the crew of the USS COLE fought tirelessly to free shipmates trapped by the twisted wreckage and limit flooding that threatened to sink their ship.”

As outlined the House Armed Services Committee report “The Investigation into the Attack on The USS Cole” published in May, 2001, this tragic event provided a new level of awareness when considering anti-terrorism force protection (ATFP) measures against waterborne terrorist threats. U.S. Naval vessels are especially vulnerable to such attacks during resupply and refueling operations. An important force protection measure to ensure unauthorized vessels maintain appropriate stand-off distances is an ATFP Port Security Barrier (PSB), floating fences held in place by fleet mooring buoys designed to shield vessels from waterborne attacks while in port.

In June of 2015, Construction Dive Detachment CHARLIE (CDD/C) of Underwater Construction Team ONE (UCT ONE) carried out an inspection of an ATFP PSB located on Naval Support Activity (NSA) Souda Bay on the Greek island of Crete. NSA Souda Bay houses a Naval Fueling Station, in addition to other facilities and services that keep the Fleet combat ready. Twelve foot drum buoys,



Builder First Class Carlos Hernandez attached to Underwater Construction Team ONE (UCT ONE) measures a chain beneath a fleet mooring system in Souda Bay, Crete. Photo by EO1 Joey Rodriguez.

secured with 2 inch chains and 15 ton anchors, hundreds of feet below the surface require periodic inspections to ensure they remain up to the task of protecting U.S. and Allied forces. With a dramatic coastline as the backdrop, divers move to the water’s edge ready to go to work.

Ten divers conducted 60 dives at depths reaching 120 feet of sea water (fsw), totaling 1500 minutes of bottom time in order to complete the inspection. Use of the MK20 full face mask in SCUBA mode with through-water-communications allowed divers to report measurements, discrepancies, and areas of concern in real time. As a result, dives were more effective and data was collected more efficiently than that which divers would have been able to collect in traditional SCUBA rigs. “We used non-positive pressure regulators in the masks that supplied air on demand instead of at a constant flow”, Steelworker Second Class Billy Peacey said of the rig CDD/C used on the mission. “This conserved our

air which maximized our bottom times allowing us to get more done during each dive.” Typically, MK20 uses a positive pressure regulator which tends to free flow through the mask’s seal increasing air consumption. Divers descended upon their targets, cleaned marine growth, then measured components of the PSB using specialized tools, calipers, and rulers, all while digitally documenting underwater cameras.

Typical inspections begin at the anchor, move along the ground leg chains to sinkers and continue up to a ground ring where they connect to a riser chain up to the buoy. The most dangerous point of any fleet mooring inspection is the thrash zone, an area where

chains rise and fall on the sea floor as the buoy moves with the sea state, generally causing significant wear and requiring the most attention. Movement can be as gradual as the tidal change or as severe as the weather conditions, along with inherent dangers associated with diving operations when collecting data in the thrash zone. Divers must remain ultra-alert to avoid the added hazards.

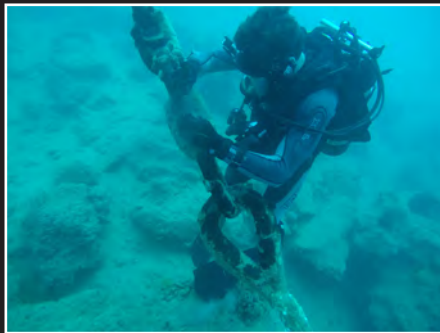
When anchor legs descend to depths beyond the reach of divers, Builder First Class Carlos Hernandez, Project Supervisor, deployed the Vectored Little Benthic Vehicle (VLBV) Remote Operated Vehicle (ROV). This robot facilitated a level one inspection with its mounted underwater camera, on-screen depth gauge and compass all controlled topside by the CDD/C ROV Team. A level one inspection is a swim-by, visual inspection of target components. “We were lucky to have the ROV on the side. It extended our reach allowing us to get



Steelworker Second Class Billy Peacey attached to Underwater Construction Team ONE (UCT ONE) measures the chain on a fleet mooring system sinker in Souda Bay, Crete. Photo by HMC Peter David.



Builder First Class Christopher Kelly attached to Underwater Construction Team ONE (UCT ONE) measures the diameter of a ground ring beneath a fleet mooring system riser buoy in Souda Bay, Crete. Photo by CAPT Brant Pickrell.



Construction Electrician Second Class Benjamin Coulson attached to Underwater Construction Team ONE (UCT ONE) measures the chain on a fleet mooring system in Souda Bay, Crete. Photo by BU1 Christopher Kelly.

visuals on every component of the PSB,” Hernandez said. Skillful navigation is required to ensure the umbilical (power cord) and ROV do not become fouled on buoy components or obstacles on the seafloor. “ROVs contribute to our well rounded, fully capable dive unit,” Hernandez continued.

In one of NATO’s most strategically beneficial locations, CDD/C’s inspection of this barrier system ensures it maintains operational capabilities and is crucial to the global security of the U.S. Fleet. As the mission comes to a close, and as an international fleet moves in and out of port, divers reflect on the completed job. A beautiful landscape, bright blue-green water, and the purpose of the mission. “It is incredible the impact that a small detachment of ten divers and two support personnel can have on anti-terrorism for the Fleet,” Steelworker First Class Liam O’Brien, CDD/C Assistant Officer in Charge, commented with pride. “It really hits home when you dive on a barrier just a few hundred yards from a U.S. ship.” Nothing can bring back those lost in the attack on the USS COLE; nothing can make up for the hardship endured by the crew. We can only honor them through preparation and an increased vigilance in hope of preventing a similar attack on the U.S. Navy. Divers of Underwater Construction Team ONE’s Dive Detachment CHARLIE take great pride in honoring the Sailors of the USS COLE by helping to facilitate a state of readiness at NSA Souda Bay.

Petty Officer Christopher Kelly joined the Seabee diver community in 2014, and has been stationed with UCT ONE since completing Basic Underwater Construction Technician training.



Hospital Corpsman Chief Peter David attached to Underwater Construction Team ONE (UCT ONE) approaches a fleet mooring system anchor in Souda Bay, Crete. Photo by SW2 Billy Peacey.



Builder First Class Adam Perry attached to Underwater Construction Team ONE (UCT ONE) takes a caliper measurement on a ground ring beneath a fleet mooring system riser buoy in Souda Bay, Crete. Photo by SWC Liam O’Brien.



Seabee Divers from Underwater Construction Team ONE (UCT ONE) enter the water to inspect a fleet mooring system riser buoy in Souda Bay, Crete. Equipment Operator Chief Jason Toth front steps into the water while his dive buddy, Builder First Class Carlos Hernandez, looks on waiting to perform their in water checks. Photo by BU1 Christopher Kelly

Saturation Fly-Away Diving System, (SAT FADS) Mission EX-USS HOUSTON Oil Recovery

By: MDV Timothy Murray and Mr. Paul McMurtrie



The SAT FADS team has been tasked to support the Supervisor of Salvage in the removal of oil from the heavy cruiser, EX-USS HOUSTON CA-30 in the spring of 2016. The EX-USS HOUSTON was originally commissioned as a “light cruiser” and later re-designated as a heavy cruiser for her 8” guns. She was sunk by the Japanese Navy on 28 February 1942 in a historic battle in the Baten Bay, Indonesia. Of the 1,061 crew only 368 survived. The site is considered a “war grave” by the US government. The HOUSTON left port with over 300,000 gallons of fuel oil and is actively leaking oil into Indonesian waters. The SAT FADS team, along with NAVSEA and MDSU ONE

Detachment will identify tanks holding the oil, drill into and remove the oil to protect the waters surrounding Indonesia.

The U.S. Government believes that this “show of force” diving on the HOUSTON will prompt the Indonesian government to enforce the restrictions against looting and illegal salvage of material from the site. Over the years a considerable amount of looting has taken place on the HOUSTON with disregard to the human remains and personnel possessions that are present on the wreck.

As we prepare for this mission, NAVSEA 00C has learned that the SAT FADS program is being defunded by OPNAV, and the system will return from the Ex-USS HOUSTON operation only to

be put into long term lay-up, “mothball” status. The U.S. Navy would most likely permanently lose this critical deep ocean salvage and submarine rescue saturation diving capability. There is however a fleet interest to take custody of the SAT FADS system from the Undersea Rescue Command (URC). If SUBFORCE agrees to sponsor this program, there still may be hope for retaining an operational saturation diving capability in the U.S. Navy.

Mr. Paul McMurtrie is the SAT FADS Program Manager at NAVSEA 00C. NDCM Timothy “Shawn” Murray is currently stationed at NAVSEA 00C3.

Photo Caption: SAT FADS in Seneca Lake, New York. Photo by: Mr. Marty Russell

LCS UWSH Procedural Development

By: CWO3 Joe Theodorou, UWSH Project Manager and LCS Program Manager

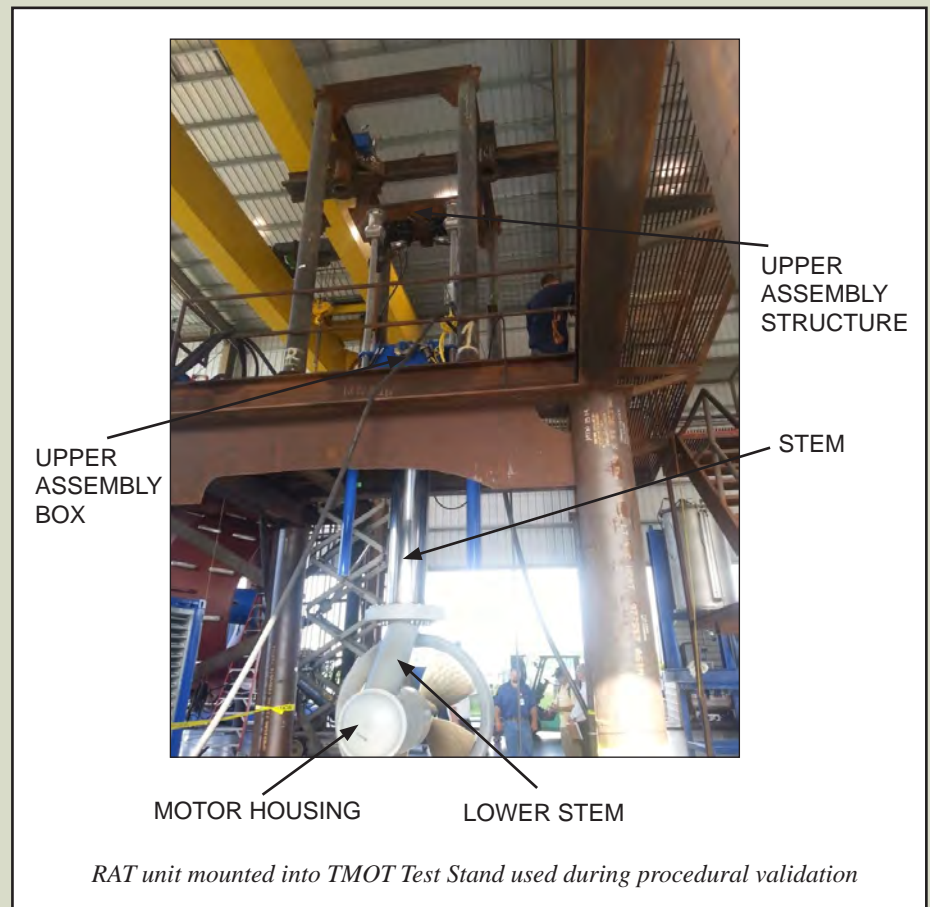
For the past two years, NAVSEA 00C5 has been working with the Program Executive Office to Littoral Combat Ships (LCS) with PMS 505 in developing waterborne maintenance and repairs needs for both LCS variants. Most recently, SEA 00C5, working with SUPSHIP Gulf Coast, Thrustmaster of Texas (TMOT), and PCCI, developed the removal and installation procedure for the LCS Independence Class Retractable Azimuthing Thruster (RAT), or to most of us the APU. Development of any procedure is a lengthy process to ensure safety of personnel and the integrity of the ship is not compromised. Below is a quick-look as to the overall procedural development implementation.

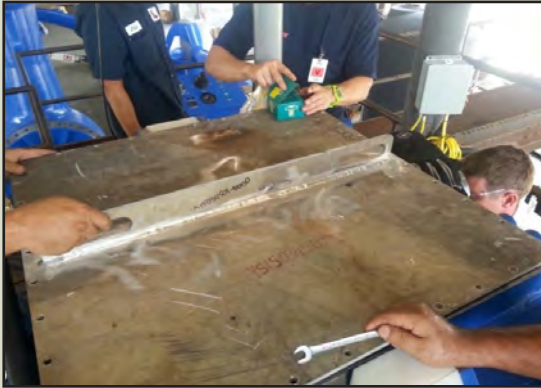
- Sponsoring command provides statement of work
- Establish funding from sponsoring command
- Determine in-house engineering or need to contract
- Request technical manuals and drawings
- Model design through programs such as Solid Works and CAD
- 00C5 Engineer approves concept designs
- Fabricate required support equipment if required
- Test fit and procedure on available vessel of opportunity (under-construction, dry dock, or waterborne)
- Validate and approve procedure and equipment

In July 2015, we were able to establish a week at TMOT, to verify our procedures and equipment to support the removal and replacement of the RAT. To give you a timeline, we started with this in August of 2014. As we know procedures are not always perfect, divers have always found ways to improve existing procedures or equipment to support jobs while maintaining safety of personnel and the integrity of the ship or submarine they are working with. Extending the opportunity to our fleet lockers, SWRMC and SRF-Yokosuka divers were able to remove and replace in a RAT in the test stand at the TMOTs facility; three divers from SWRMC and four divers from SRF-Yokosuka were in attendance.

“Being directly involved in validating these procedures was extremely beneficial in ironing out and identifying problems that only a diver can relate to. By having a firsthand look into the process it allowed us to come up with better ways and improve a few of the steps versus having to discover this later on. This saves a lot of time and resources and minimizes having to go back to the drawing board later on.” said NDC Jose Nunez of SRF-Yokosuka

Our Navy is consistently changing with new ships being built and the opportunity to affect future repairs can be changed if we know about it. We can't fix what we don't know, so send us your change requests.





RAT Upper assembly temporary top plate and (2) side plates. (1) temporary side plate shown with ball valve, test gauge, and relief valve. 8 psi is added to overcome hydrostatic pressure. Prior to installation of plates, system is drained of hydraulic fluid with only residual in hoses.



Motor housing cover removed and cofferdam attached to support (4) hydraulic hose removal and capping. Cofferdam is portable to support immediate flyaway needs worldwide.



(left to right) NDC Jose Nunez (SRF-Yokosuka), Masaki Kanno (SRF-Yokosuka) Chihiro Yama (SRF-Yokosuka) NDC Jacob Tarajkowski (SWRMC); ND3 Guillermo Olvera (SRF-Yokosuka); TJ Guthrie (PCCI) Craig Moffatt (PCCI); NDC Jeremy Wagner (SWRMC); CWO3 Joe Theodorou (SEA 00C); Casey Smith (SWRMC)



RAT is rigged FWD and AFT with slings. 5 ton chain hoists are connected above to the RAT frame stiffeners. RAT stem to lower unit is disconnected and lowered for removal. As soon as RAT motor is on surface, divers will install a cofferdam over the hydraulic hoses and bolted to stem flange and then dewatered. Reinstallation is completed in the reverse.

SERMC Outfitting New Diver Support Boat

By: Dan Smithyman, Southeast Regional Maintenance Center Public Affairs

The Dive Locker at Southeast Regional Maintenance Center (SERMC) has a new \$3 million toy, but this toy is built for serious business.

A Diver Support Boat (DSB) arrived in Mayport in mid-March amid little fanfare, but those who would benefit from this new vessel greeted her warmly. The 65-foot vessel is one of 20 distributed around the fleet replacing a hodgepodge of dive boats that are mostly reconfigured Landing Craft Mechanized (LCM), or “Mike” boats.

“This (DSB) was specifically designed and built to support dive operations,” said Chief Navy Diver Josh Miller. “This is an all-in-one platform.”

The DSB’s features are impressive: twin Cummins diesel engines powering two propellers, a bow thruster, two generators, one low, and one high-pressure air compressors, one hydraulic pressure unit, air conditioning, a tankless hot water heater, a 600-pound winch and aft cameras for view-

ing from inside the cabin. The aluminum alloy construction prevents rusting and eliminates the need for painting.

The main deck includes an enclosed cabin containing a diver’s equipment console, diver’s prep station, workbench, storage and an embarked electronic system. The open aft deck will be home to much of the divers’ equipment and can be enclosed with a removable canopy to protect personnel and equipment from harsh weather conditions.

Below deck, a galley includes seating for six people, microwave, refrigerator, sink, refrigerator, hard-piped industrial sized coffeemaker and stainless steel countertop. The shower/changing room and head are also below deck. The engineering spaces contain the engines, generators, air compressors and a hydraulic pressure unit. The DSB has a 1,000 gallon fuel capacity.

Navy Diver 1st Class Edward Briggs said the boat came to SERMC as part of a NAVSEA (Naval Sea Systems) initiative to standardize the dive boats used across the fleet. He said a small company, Marine Group Boatworks, from San Diego has been building them for several years.

“The two submarine tenders were the first to receive them a few years ago,” Briggs said, referring to USS Frank Cable (AS 40) and USS Emory S. Land (AS 39). “And there are a few variations



based on location and specific mission.”

Briggs said the DSB serving the Groton, Connecticut base has aluminum bulkheads completely enclosing the aft deck because of the cold weather. Other boats are a few feet shorter, and some have longer aft decks.

“We’ll be able to perform more work pier-side,” Miller said. “Dry dock is expensive, and working from the pier can sometimes be hard because we need a place to park our truck. This boat allows us to have everything we need to do work from outboard of the ship.”

Navy Diver 2nd Class Kevin Swanson, said many of the jobs the SERMC divers perform can go 36 to 48 hours. Working from the pier does not protect them from the elements, and finding a head or a meal can also be challenging, he said.

“This boat removes those challenges because it provides us with a

place to rest, shower, eat or use the head during long dive operations,” Swanson said. “We can keep working and still escape the heat or cold or rain.”

The new boat is not quite ready for work. SERMC divers still have to move aboard with their dive equipment such as hoses, tanks, dive suits, and assorted tools.

“We’re still learning all the systems and writing our procedures for start-up and regular maintenance,” Briggs said.

“We’re also going to send a few guys to San Diego to coxswain school and a few to engine repair school.”

While the boat was designed for harbors, channels and rivers, it can negotiate the open ocean as long as the sea state is not too high.

“It can handle sea state 2, but not recommended for sea state 3,” Briggs explained.

In sea state 2, winds are at least nine knots, with waves at least one-and-a-half feet high. Sea state 3 is defined as waves up to four feet. Because the draft of the boat – the vertical distance from

the waterline to the lowest part of the boat in the water – is only 3 feet, the DSB is not as stable as deep-draft vessels.

The framed bumper on the bow of the boat allows it to tie up without damaging other vessels whether it be a surface ship or submarine. On the stern is a dive platform where divers can enter and exit the water using a built in ladder.

A new Diver Support Boat (DSB) arrived SERMC March 19. The DSB will be used by SERMC Navy divers to conduct ship husbandry maintenance on the ships homeported or visiting Naval Station Mayport. The boat is a self-sustained, complete repair system that replaces a reconfigured Landing Craft Mechanized (LCM) “Mike” boat as the diver support vessel.

Dan Smithyman is the Senior Chief Mass Communication Specialist, now the Public Affairs Officer at SERMC.

AQUARIUS

BY: MDV TIMOTHY MURRAY

Down in the Florida Keys lays a unique underwater habitat used worldwide for training and oceanographic research. Aquarius is the name of the platform that sits on the seafloor, and is owned and operated by Florida International University (FIU) located in Miami, Florida. Aquarius Reef Base (ARB) is located in Islamorada, Florida. ARB is maintained and operated by a group of retired Navy Divers and civilians managed by Roger Garcia HMC (FMF/DV) (ret).

Aquarius is approximately 5.4 nautical miles off the coast of the Florida Keys. It was placed in a marine sanctuary, Conch Reef, in 1993 and rests in approximately 60 feet of seawater (FSW). This enormous 82-ton double lock pressure vessel sits atop a 120-ton baseplate. It is 46 feet long, 10 feet in diameter, and can house six aquanauts. The six man team is typically comprised of aquanauts and 2 habitat technicians. The technicians control the pressurization, decompression, and habitat atmosphere throughout the dive.

Aquarius was built by Victoria Machine Works and designed by Perry Submarine Builders in 1986. It was first deployed in the Salt River Canyon in St. Croix and was managed by Fairleigh Dickenson University. This original base was destroyed by Hurricane Hugo on September 17th of 1989. In 1990 Aquarius was recovered and moved to North Carolina for refurbishment and found itself under the management of the University of North Carolina Wilmington.

In the early 90s' the new shore base was established in Key Largo and the baseplate and habitat were placed on the seafloor of Conch Reef. The habitat was last surfaced and refurbished in 1996 and after a short surface interval, it left surface again in 1997. Aquarius is now a part of this beautiful coral reef and a home to the abundant sea life.

In 2013, Aquarius and its team found themselves under the operational control of FIU, which continues to lead the way

in the stewardship of the Florida National Marine Sanctuary and reef ecosystems worldwide. As a saturation platform it is ideal for long-term monitoring of coastal oceans and coral reefs. Aquanauts working from Aquarius can dive for up to nine hours a day to depths to nearly 100 FSW. U.S. Navy Divers and NASA have conducted numerous saturation and training missions utilizing Aquarius in the past, and as recent as this year. Teams have used it to develop new techniques and give personnel the saturation experience in the optimum underwater conditions.

While aquanauts are saturated at approximately 46 FSW, they are supported by a team of FIU employees and other personnel topside. The topside team conducts daily diving operations utilizing ARB's diving equipment and boats. Topside divers deliver or "pot" necessary clothing and equipment to the saturated divers. Aquanauts exit the habitat via the "wet porch" to conduct their diving excursions. Excursions utilize Aquarius umbilicals and have communications back to the habitat supervisors.

The habitat is monitored by the Aquarius manager 24 hours a day at the shore base, which is 8.5 nautical miles away via the Life Support Buoy (LSB) above the pressure vessel. Critical information (air and oxygen pressures, habitat partial pressure and depth) is sent wirelessly from the LSB. The LSB houses the generators and compressors that support the mission. Adding to the safety of diving operations with FIU are two recompression chambers; a Transport-



able Recompression Chamber System (TRCS) onboard the boat named after George Bond, and a double lock chamber located at the shore facility.

For interested parties that would like to conduct dive training or missions at Aquarius but who are hesitant about living in a chamber 46 feet below the surface for days on end, have no worry, this is not the typical chamber we are accustomed to. Two giant portholes provide amazing views of the local fish population. Watch them swim by as you fall asleep in one of six racks. Use the internet to SKYPE with your family and children in classrooms around the world. Prepare yourself a hot meal in the microwave, that's right, a microwave in a chamber!! Then sit at the table and enjoy the view.

Valuable diving knowledge and experience can be gained through joint diving between military diving and FIU. For the U.S. Military Divers, NAVSEA 00C currently maintains two MOA's between the Navy and FIU. The MOAs explain the roles and responsibilities and requirements for joint diving operations. For waiver requirements and other information contact NAVSEA 00C or the ARB manager Roger Garcia at (305) 664-2916 Ext; 207.

NDCM Timothy "Shawn" Murray is currently stationed at NAVSEA 00C3.



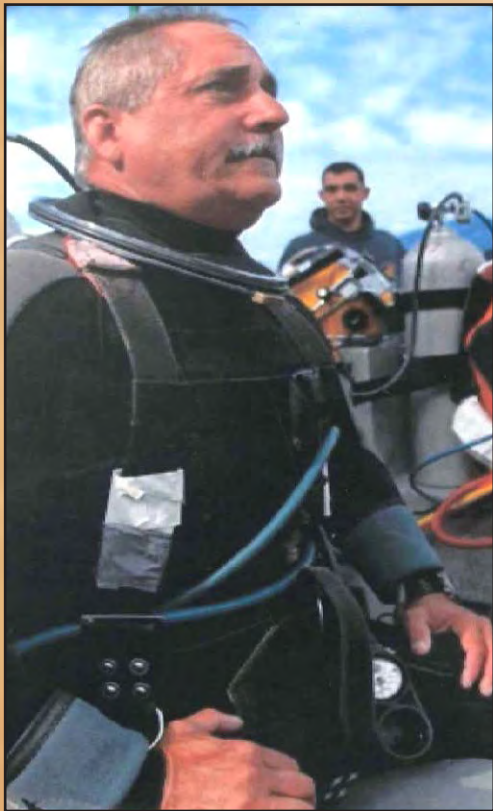
The Old Master

In Remembrance of

NDCM (MDV) James A. Mariano, Jr., USN, Retired

May 22, 1965

September 14, 2015



James A. Mariano Jr., age 50, of Mechanicsburg passed away Monday, September 14, 2015. He retired from the US Navy as a Master Chief Petty Officer/Command Master Diver after 28 years of loyal naval service including 22 years of experience in diving, salvage, and demolition operations.

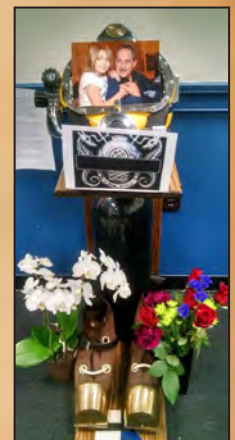
During his career, James directed and supervised the Bonhomme Richard search expedition in the North Sea, and his dive team made naval history as the first surface supplied navy divers to walk the bottom of the North Sea.

Working with the Joint POW/MIA Accounting Command (JPAC), he directed the successful penetration and search of a fully intact WWII aircraft and subsequent recovery of three service members missing for over 70 years.

During Operation Unified Response in Haiti, he assisted in opening Port-au-Prince Harbor for delivery of humanitarian aid. In addition, he diagnosed and supervised a 14 hour hyperbaric recompression treatment for a Haitian civilian, paralyzed from the waist down after a diving accident.

Jim was a member of the search and rescue dive team for the Flight 800 airplane disaster in Long Island Sound. In 2000, he was instrumental in the recovery of the propeller and shaft of the USS Monitor, a historic Civil War ironclad. Later, in 2002, he was the Project Master Diver of an operation which resulted in the recovery of the 210-ton gun turret and two Dahlgren cannons which are currently on display at The Mariner's Museum in Newport News. He served as Officer in Charge of an a-float salvage of two British helicopters in the Northern Arabian Gulf during Operation Iraqi Freedom.

Jim served during Operation Desert Storm, Desert Shield, Operation Iraqi Freedom and Operation Enduring Freedom, and received numerous Navy Achievement Awards including the Navy Commendation Medal and the Navy Achievement Medal.



FAIR WINDS AND FOLLOWING SEAS





Have you asked any good questions lately? That may appear to be a peculiar opener for my first “SupDive Sends” article, but I wholeheartedly believe it is, at its core, integral to our Force’s continued success – a broadly diverse Force that contributes daily and significantly to the safeguarding of our Nation. But let me first take a step back, briefly introduce myself, and then I will further explain why I chose to begin the way I have.

I came to be the Supervisor of Diving from the OPNAV staff in August, immeasurably grateful to be allowed to leave the Pentagon and more importantly, return to serve our Diving Community. My self-assigned focus for the first 30 days was simply to listen and learn. In doing so, I was immediately struck by the remarkably talented and dedicated workforce we have – that includes our Sailors, Civilians and Contractors. When you take pause, you can’t help but be impressed by the company we’re privileged to keep. If you are at all like me, and while it may have been a while since you consciously thought about it, this alone is the primary reason we do what we do. While what we are trained to do is unique and important, it is with whom we get to do that makes our job truly meaningful. Whether that is you’re Dive Buddy, the Instructor at NDSTC, or the Engineer in NAVSEA – I have realized anew that we are a group that loves what we do and does what we love. As that is precious rare, don’t allow yourself to take it for granted. Many of you participated in the Year of the Military Diver activities that we celebrated this past year. What a tremendous testimony to who we are. All of us should stay vigilantly mindful of our shared legacy. Last week, I was fortunate to travel to Panama City. I went with one goal – to keep my eyes, ears...and mind open. My takeaway? Resoundingly, we are served, most often behind the scenes, by an extraordinary cadre that is extremely bright, utterly dedicated and proudly patriotic. Know that there is nothing I would rather be doing; there is no one else I’d rather be doing it with.

After first focusing on listening and



learning at my new job, I endeavored to synthesize everything I’d seen and heard into a conceptual framework so I could think clearly about my responsibilities, about my opportunity to serve as your Supervisor of Diving. In short, I concluded that I come to work every morning resolute to do all that I can to “enable safe, successful and advantageous Navy Diving both today and in the future operational environment.” Let me pause here and ask: how clearly do you see, know and understand why you get out of bed each day? We all are busy doing what we do; if we are honest, we don’t always do what we should. Busy-ness often distracts us from seeing and doing what is most important; sometimes, we frankly lack the discipline to confront complacency or the willingness to challenge the status quo. (Have you asked any good questions lately?)

Upstream of my purpose statement – to do all that I can to make us safe, successful and advantageous – are four distinct but interdependent “lines of effort”. I think of these as channels of supporting activities that are more discretely and tangibly focused. These tasks, projects, and initiatives, taken together, advance our cause. Let me take this opportunity to tell you about one of those lines of effort, my most difficult. That is, to cultivate organizational learning.

Everyone should know about the recent Navy-wide Diving Operational Assessment (DOA). If you don’t, ask someone who does. Throughout that long, tedious and necessary self-assessment, we learned a lot about ourselves.

Ironically, one of the biggest takeaways we learned was that we, as a community, don’t always do a great job learning from ourselves. At the local Dive Locker level, I believe we do this best. But as you go up, out and across the breadth of our Force, it tends to unintentionally get harder to do. But at all levels – and especially across our entirety – we must be willing and able learners. As a Force, our relevance depends on it; our credibility depends on it; our lives depend on it.

With that in mind, how would you characterize the learning culture at your Locker? What are you doing to improve it: first, within yourself and then with your team? To that end, let me sow some seeds – things for you to consider and discuss. How can you better improve studying for the next advancement exam? How are you readying your buddy for his next qualification? What is the last innovation your Locker did? How have you recently contributed towards improving Navy Diving, writ large? When is the last time you boldly shared a near-mishap or a best practice? What was the last HAZREP you submitted? It starts with an intellectual curiosity; it is healthily contagious; it is the antibody to complacency. Have you asked any good questions lately?

We’ve got some big changes coming our way in Navy Diving. I see these as critical opportunities to aggressively put this otherwise squishy conceptual stuff into practice. First, the revised OPNAVINST 3150.27C, Navy Diving Policy and Joint Military Diving Technology and Training Program, is in final staffing. This draft instruction is the result of more than a year’s effort and implements corrective actions called out by the Dive Operation Assessment (DOA) and directed by the CNO. Generally speaking, and if we are honest, change isn’t popular; it typically is not preferred. This reluctance (or impedance) to change increases exponentially when there is a lack of organizational inquisitiveness. To that, I offer a provocative quote from Jack Welch, “If the rate of change on the outside exceeds the rate of change on the inside, the end is near.” Let me say again - our relevance depends on it; our credibility

depends on it; our lives depend on it.

On the heels of this new instruction, we will release Revision 7 of the Navy Diving Manual. Among the many changes in this revision, we've aimed to 1) give the Fleet more control over diving – providing a better planning process and guidance on how to dive instead of providing more rules to follow, 2) empower and strengthen the Diving Supervisor and 3) improve overall readability and usability. In both of these forthcoming documents are ample opportunities to study, learn... and ask lots of good, probing questions.

We're also eagerly preparing for next year's Military Diving Training Continu-

um (MDTC) in Panama City, 09-13 May 2016. The MDTC intends to ensure the Diving Community remains current on diving developments, equipment, procedures, and trends, and is designed to deliver education topics to everyone from the junior Diver to senior leadership. The selected topics assist in sharing best practices, examine and exchange lessons learned, provide updates and changes to established practices and policies and addresses community issues. I encourage you to actively help facilitate the coordination of this venue so we get it more right than we would otherwise. Moreover, I encourage you to plan to attend.

Come prepared to ask good questions.

So, I trust you now have a sense of who I am and what is important to me. Foremost, know that I'm a proud Navy Diver. I've been doing it now for 22 years and I'm acutely aware of how much more I still have to learn. We all know that hooyah can mean a lot of things. But the strange thing is we all know hooyah when we see it. Regardless of your paygrade, regardless of your experience, let me encourage you today to ask a thoughtful question. Do it every day to make yourself a better Diver; do it because of our proud legacy; do it to make us a stronger Force; do it for each other.

NDSTC Holds Recognition for USCG New Diver Rating

By: Mass Communication Specialist 2nd Class Fred Gray IV

The United States Coast Guard (USCG) is having a ceremony to officially recognize their 22nd rating, Diver, among their brothers in arms at the Naval Diving and Salvage Training Center (NDSTC) located at Naval Support Activity Panama City (NSA PC) May 5, 2015.

While the official announcement of the rating came Jan. 31, 2014, it wasn't until April 1, 2015 that the first group of Coast Guardsmen were established as Divers.

For the past 75 years we have always had collateral duty divers, and with this new rating we have established a platform for a proficient professional that was able to stay within their job rating, said USCG Capt. Tim Espinoza, commanding officer of the Maritime Safety and Security Team out of San Diego. "Our mission has always been validated."

The USGC has been undergoing diving operation as early as the 1940s, but has never been a sole job title for the men and women of the Coast Guard.

"To have our rate recognized at this venue feels pretty awesome," said Coast Guard Diver 2nd Class Jason Fields, attached to the Coast Guard Dunker out of Elizabeth City, N.C., from Fort Wayne, Ind. While training here the USCG students were always

told that the idea of a diver rating is far-fetched but it could happen, and when it did, I didn't look back, said Fields.

Throughout the past the USCG has played important roles in diving, by providing intelligence gathering and subsurface activities supporting the Office of Strategic Services, a predecessor of the Central Intelligence Agency. They were also assigned to the Navy Yard at Washington, D.C., to support salvage operations.

"Most people don't know what Coast Guard divers do," said Cmdr. Hung Cao, commanding officer for NDSTC. Among all the other divers within the military the Coast Guard has particular skill sets and geographical locations that are an incredible asset to our nation, Cao said.

The home for all Military Divers from every branch of service is located at NDSTC on NSA PC, and is currently in the middle of a week-long celebration known as the Year of the Military Diver (YOTMD). YOTMD encompasses such milestones

as: the 100th anniversary of the Mark V dive helmet, the 35th anniversary of NDSTC, the 40th anniversary of women divers and the 70th anniversary of the U.S. Navy presence in Bay County.

For more information about the YOTMD please visit www.yotmd.com, and like the Naval Support Activity Panama City and Naval Diving and Salvage Training Center Facebook pages for the most up to date information about the commands.



Capt. Tim Espinoza, commanding officer of the Maritime Safety and Security Team out of San Diego, addresses past and present Coast Guard divers at a ceremony held at the Naval Diving and Salvage Training Center (NDSTC) for the recognition of the Coast Guard's newest job rating "Diver". Photo by: Mass Communication Specialist Fred Gray IV

*Paintings By:
Rick Armstrong*

