Bert Marsh Relieves Chip McCord
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FACEPLATE

The Official Newsletter for the Divers and Salvors of the United States Navy
Volume 4, No. 1 / April 1999

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SUPSALV Sends

I am excited by this opportunity to return to the diving and salvage community, as you truly optimize a "can do" attitude that makes me proud of the MK V pin on my chest. That type of enthusiasm was readily apparent during my recent dive with class 99-20-1C at NDSTC and still burns brightly in all of those old shipmates I met at the SEALAB reunion in Panama City. Your accomplishments made briefings I recently provided to COMFIFTHFLT and COMSERVFORSIXTHFLT meaningful, as both ADMIRALS were very appreciative of the work being done by this community. Keep up the good work and keep sending in articles to FACEPLATE that describe your accomplishments.

Jim Bladh, editor of FACEPLATE, asked if I wanted to change anything. I have two simple goals for FACEPLATE; it should highlight the entire diving community's accomplishments and it should inform you on issues that can affect your careers. With those tenets in mind, for our next issue I am

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SUPSALV Sends *(continued from page 1)*

anticipating articles from GRAPPLE's successful recovery of an SH-60 in the Red Sea, MDSU TWO's successful YFU salvage in Puerto Rico, and SALVOR's recovery of an AIR FORCE F-16 off Korea to compliment this issue's emphasis of UWSH, UCT, and SDV operations. Your articles can be written in just about any language, but include pictures with captions and a bio for the author.

To ensure issues that concern you are addressed, I am having a "hot link" established on our NAVSEA 00C web site that will allow you to submit your comments via e-mail. As an example of an issue that can affect your careers, our DMOs have provided an explanation of what recent refractive eye surgery techniques are currently approved for NAVY divers and what is planned in this field.

Let's dive safe and ensure you have a RS "OK red" for every LS.

CAPT B. Marsh
Director of Ocean Engineering
Supervisor of Salvage and Diving

E-mail: marshb@navsea.navy.mil

Captain Bert Marsh

Navy's 21st Supervisor of Salvage and Diving

Captain Bert Marsh relieved Captain Chip McCord as the U.S. Navy's Supervisor of Salvage and Diving (SUPSALV) and Director of Ocean Engineering on January 26, 1999, at the Naval Sea Systems Command in Arlington, VA.

Captain McCord is scheduled to report to the Massachusetts Institute of Technology in April as a Professor of Naval Construction.

Captain Marsh rejoins the SUPSALV team from an assignment as Assistant Chief of Staff for Maintenance and Logistics on the Commander Logistics Group Western Pacific Staff in Singapore. He served as a salvage engineer with SUPSALV from 1989 to 1991, directing numerous ship salvage operations. Included among these operations were the salvage of the U.S. Coast Guard buoy tender Mesquite in Lake Superior, the Exxon Valdez oil cleanup, the refloating of a U.S. Navy patrol hydrofoil in the Corpus Christi channel, and the critical salvage engineering analysis in saving USS PRINCETON (CG 59) when it struck a mine during Operation Desert Storm. Commissioned in 1975, Marsh has served aboard USS GRAPPLE (ASR 7) and USS PIGEON (ASR 21), at Puget Sound Naval Shipyard in Bremerton, WA, as the U.S. Navy's diving exchange officer to the Royal Navy, and as Commanding Officer of the Navy Experimental Diving Unit in Panama City, FL. An Engineering Duty Officer, Marsh received a Master of Science degree in Mechanical Engineering from the Naval Postgraduate School in Monterey, CA.

Captain Bert Marsh (left) with Captain Chip McCord (right).

Further information on the SUPSALV team is available on their web site at www.navsea.navy.mil/sea00c.

FACEPLATE is published by the Supervisor of Salvage and Diving to bring 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, 2531 Jefferson Davis Highway, Arlington, VA 22242-5160. (Attn: FACEPLATE). Visit our website at **http://www.navsea.navy.mil/sea00c.**

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St. Lucia

By CM1 (DV) Daryn Holty

On 19 July, 10 divers from UCT One Air Detachment Charlie began construction on a heavy timber pier on the small Caribbean Island of St. Lucia, one of several projects being conducted simultaneously as part of the joint command exercise New Horizons. UCT One divers, led by Officer-in-Charge BUC(SCW/DV) Roy Ronkowski and project supervisor CM1(DV) Daryn Holty, were tasked with constructing a 193-foot long × 12-foot wide pier, which included a 90-foot small craft fendering system. Air Detachment Charlie arrived via C-130 with all required equipment on hand. They immediately set up camp on an abandoned runway alongside a detachment from Naval Mobile Construction Battalion-7. There they would spend the next 30 days eating, sleeping, and showering in a tent camp, while fending off swarms of mosquitoes and dodging grazing cattle.

The next order of business would be to line up their TRC. Due to the dangerously high temperatures encountered when pressurizing personnel in this type of climate, careful considerations, like packing the chamber in ice to cool it down, are taken to help prevent heat disorders. The pier was constructed with 3- and 4-inch rough cut salt treated southern pine, 60 penny nails, 6- and 12-inch lag bolts, and 21- to 30-inch through bolts. All timber piles were wrapped with pile guard from the mud line through the splash zone for preservation purposes. A variety of specialty equipment was selected for this project, including a complete hydraulic power tools system with hose reel and hydraulic tools and accessories, gas powered chain saws, portable generators, and specialty drill bits. Diving evolutions included pile wrapping for preservation and hydraulic drilling for cross brace installation. Scuba was used for both of these evolutions because the average depth was approximately 15 feet. Det Charlie, originally having only thirty days to complete the $40,000 pier, lost a week of construction time due to weather delays during the installation of the piles. But, this hard charging group was not to be denied. Everyone pulled together like a well-oiled machine, completing the pier in just 13 working days, one week ahead of schedule. The addition of this pier will unmistakably be a tremendous asset to the St. Lucian Coast Guard in their drug interdiction efforts.

Pier under construction.

CM1(SCW/DV) Daryn W. Holty is currently assigned Air Detachment Charlie at Underwater Construction Team One in Little Creek, VA. He graduated number one in his class from First Class Dive School in 1993 and has been in the Seabee Diving Community for ten years.

Diver connects pile cap to pile.

Completed pier.

Emergent Shaft Seal Repairs on USNS WATSON (T-AKR 310)

By Tom McCue

The Navy's Strategic Sealift Program office supplies large carrier vessels to the Military Sealift Command to transport and pre-position military equipment around the world. One such ship, USNS WATSON (T-AKR 310), is a roll-on/roll-off carrier, equal in size to a nuclear aircraft carrier. Recently, USNS WATSON underwent an emergent drydocking to correct a faulty bearing, and, upon departure from drydock, it was discovered that the ship was ingesting seawater into the main shaft lube oil system. The leaks were discovered 9 November 98 after undocking and enroute to Charleston, SC, where a vast amount of infantry equipment awaited loadout for a mission to the Arabian Gulf at the time when US-Iraq tensions were high, thereby increasing the urgency of WATSON's mission. As soon as the ship arrived in Charleston, diver inspection revealed that the leaks to this complex system would require extensive efforts to effect the repairs prior to deployment.

USNS WATSON underway.

The T-AKR's are operated by the Merchant Marine and are regulated ("Classed") by the United States Coast Guard (USCG) and American Bureau of Shipping (ABS). One of the many requirements of these classifying organizations is that each ship must have oil lubricated propulsion shaft bearings versus the typical water lubricated bearings seen on most of our Navy ships. These oil lubricated bearings are difficult to repair underwater. The following is a brief description of the system, the damage discovered, and the repair operation.

USNS WATSON has two propulsion shafts that penetrate the hull via stern tubes that run all the way down to the main struts. These stern tubes enclose the shafts and are welded to the forward end of the main strut barrels to allow lube oil to supply each of the shaft bearings. Aft of the main strut shaft bearing is the dynamic seal assembly, which is designed to keep the lube oil in and the seawater out. This seal assembly is comprised of a seal housing, which is bolted to the strut casting, and a compressed spring assembly, which bares against a liner bolted to the forward face of the controllable pitch propeller hub. The entire seal assembly is protected by a stainless steel ropeguard welded to the cast steel strut barrel. During transit to Charleston salt water contamination was discovered in the lube oil reservoir for the starboard propulsion system, and it was speculated that the aft seal assembly was leaking.

Upon arrival in Charleston, a local commercial diving company was hired to investigate and repair the leak. The initial repair plan was to perform an air test and confirm that all mechanical fasteners were properly torqued. The Supervisor of Salvage and Diving's (SUPSALV) Underwater Ship Husbandry Division assisted in the initial inspection and repair efforts. Approximately 3300 gallons of lube oil were removed from the starboard stern tube and air was then supplied to the stern tube. The SUPSALV representative directed a video inspection through access holes cut in the rope guard. It was discovered that the leak originated from a porous epoxy material used to level and center the bearing inside the strut barrel. This leak was beyond the perimeter of the seal assembly, and, therefore, mechanical repairs would not solve the problem. This repair would require extensive efforts to remove the porous epoxy, install new epoxy, and seal weld a mild steel plate over the epoxy groove.

The repairs commenced on 12 Novem-

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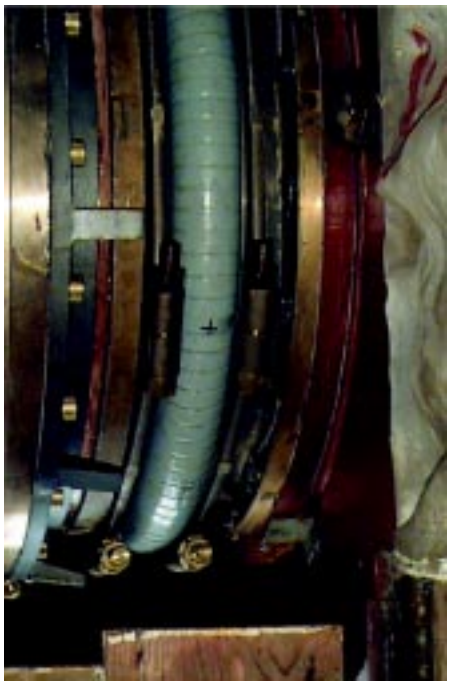

Close up of seal assembly; propeller hub on left.

(continued from page 4)

ber. To gain greater access to the seal assembly and epoxy groove, local divers began the stainless steel ropeguard removal. It took over 48 hours of precision grinding to remove the ropeguard. This careful grinding would later prove beneficial during the installation of the new ropeguard. At the same time, the SUPSALV diving services contractor was mobilized to perform the underwater repairs. These repairs included replacing the epoxy, seal welding a closure plate, and installing a new rope guard.

A team of fourteen divers, welders, and technicians were on-site the next morning to start this intense 24-hour per day diving operation. After the entire rope guard was removed, the divers focused on removing the porous epoxy. Air was continuously supplied to the stern tube while the divers excavated cracked, brittle, and leaking epoxy. Air was then secured and Sea Going epoxy putty was installed in the excavated areas and allowed to cure. After the Sea Going epoxy cured, the surface was ground flush and a ¼-inch deep concave groove was ground into the circumference of this epoxy channel. This groove was then filled with a cord of HP-2 Elastoloc, which acted as an o-ring between the epoxy channel and the cover plate. The cover plate was then pressed in place and seal welded directly to the aft face of the strut barrel and outside diameter of the seal housing. After the extended cure time, an air test was conducted and additional leaks were detected around a few of the bolt heads securing the seal housing to the strut barrel. This was caused by insufficient sealant applied on the fasteners. The repair plan was appended, each fastener was backed out, HP-2 was wrapped around the bolt shank, the bolts were re-torqued, and epoxy was applied over the bolt heads. After another extended cure time, another air test was performed and witnessed by the USCG and ABS. No leaks were detected. The only remaining step was to install the ropeguard.

The rope guard installation also posed technical challenges. Remember, the original rope guard was made of stainless steel and the strut barrel was cast carbon steel. First, the overall joint design and thickness of the ropeguard material made it impractical to accomplish a wet groove weld using an austenitic (stainless steel) electrode. Secondly, there were no repair activities (Navy or Commercial) that had Navy or ABS approved procedures and qualified personnel to perform stainless steel wet welding. Consequently, we were required to get both NAVSEA and ABS approval for the deviation of replacing the stainless steel rope guard with one made of carbon steel. The next challenge was the area in which the ropeguard would be attached to the strut barrel. This area had a significant amount of contamination in the heat affect zone of the old ropeguard installation. This was resolved by positioning the new ropeguard and attachment weld further aft to avoid the contaminated area. The ropeguard was also modified structurally since the rope guard was positioned further aft.

The initial mechanical repairs turned out to be a case of seemingly endless epoxy repairs to leaks in a complex system. By the end of this eleven day operation, 1767 man hours were expended with over 127 hours of diving to repair each leak and allow the ship to conduct sea trials. With a successful sea trail, WATSON returned to port, completed loadout of the infantry material, and sailed for the Arabian Gulf on 10 December. NAVSEA continues to monitor the repairs, and, as of March 99, no leaks have been encountered.

Mr. McCue is the program manager for the Navy's Underwater Hull Cleaning initiatives and has been the project engineer on numerous repairs to control surfaces, which includes the development of techniques and procedures for waterborne seal repairs on such items as rudders, fin stabilizers, and stern tubes.

HP-2 Elastoloc applied to seal housing bolt.

U.S. Navy Master Diver Billets

BUPERS FLD COMP, Millington, TN ..... BMCM Barry Burgess
LOGGRUTWO, Earle, NJ ..... QMCM Brendan Murphy
SAFETY CENTER, Norfolk, VA ..... HTCM Lino Matteoni
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SURFPAC, San Diego, CA ..... MMCS Tom Stogdale
SUBTRAPAC, Pearl Harbor, HI ..... ENCS John Reiss
NDSTC, Panama City, FL ..... BMCM Dale Sturms
MMCM Schnoering
HTCM Brick Bradford
BMCS Jim Daniels
HTCM Burt Cosson
EMCS Dave Dryden
BMC Pascal Balesi
BMCS Scott Ledbetter
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MDV Furr*
EODMU 3, San Diego, CA ..... HTCM Jim Phalin
EODMU 5, Guam ..... HTCS Chris Spann
EODMU 5 DET BAHARAIN ..... MMCS Dean Holliday
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EODTEHDIV, Indian Head, MD ..... ENCS Cal Lindsey
EOD SCHOOL, Englin, FL ..... BMCS Jimmy Plummer
BMCS Phil Myers
EODTEU 2, Ft. Story, VA ..... HTCS Pat Trautman
NCCOSC, San Diego, CA ..... ENCM Bob Charmichael
NRLSITE, Port Heuneme, CA ..... HTCM Dave Selby
NSWC CSS, Panama City, FL ..... BMCM Rich Campbell
NUWES RANGE SUP, Bangor, WA ..... ENCM Dan Briggs
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Camp LaJune, NC ..... BMCM Rick Bettua
MARINE EXPEDITIONARY FORCE,
Camp Pendelton, CA ..... EMCM Rick Bedard
MARINE EXPEDITIONARY FORCE,
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BMC Doug Heater
MDSU 1, Hawaii ..... ENCM Tim Joines
BMCS Johnson, JK
QMCS Danny Boyd
ENC Ron Skala
MDSU 2, SEADUTYCOMP,
Little Creek, VA ..... BMCS Ken Brown
HTCS Scott Heineman
BMCS Doug Roberson
MDSU 2, Little Creek, VA ..... MMCM Russ Mallett
BMC Mark Leet
MDSU 2 DET, Roosevelt Roads, PR ..... BMCS Phil Myers
USS F. CABLE (AS-40), Guam ..... HTC Paul Grdina
USS GRAPPLE (ARS-53),
Little Creek, VA ..... BMCS Donny Dennis

*Perspective Gains

USS GRASP (ARS 51), Little Creek, VA .... QMCM Tom Stock
USS LAND (EMORY S.) (AS-39),
Norfolk, VA ..... HTCS Frank Gorham
USS MCKEE (AS-41), San Diego, CA ..... BMCS Kyle Gaillard
USS SAFEGUARD (ARS-50),
Pearl Harbor, HI ..... ENCM Steve Wiggins
USS Salvor (ARS-52), Pearl Harbor, HI ..... BMC Fred Orns
USS SIMON LAKE (AS-33), La Mad ..... EMCS Dave Dryden
CONSOLIDATED DIVING UNIT,
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CSDG1, DIVING DET, Bangor, WA ..... TMCM Bill Romas
NAVSEA, SUPDIV, Washington, DC ..... HTCM Chuck Young
ENCS Dave Davidson*
NDSTC, Panama City, FL ..... HTC Bryon Van Horn

Welder/diver Scott Andersen welds the bellmouth on the towed array stowage tube. (Photo by BM1(DV) James Vaughan)

UWSH Provides In-Water Welding Repairs to USS PASADENA

by LT Ed Gallion, CEC, USN

It all started innocently enough, a periodic bubbling sound detected on the submarine's sonar system. From there began a search that would last nearly two months. The search was complicated by the fact that the leak only occurred intermittently, based on water depth and temperature. After determining when the leak would occur, each air system was isolated using triple and even quadruple valve isolation to finally localize the source of the bubbles to main ballast tank (MBT) 1 and a leak in one of the three high pressure air flasks.

USS PASADENA then moored in Sasebo where divers were able to confirm the location of the leak. As the submarine transited to Guam to meet USS FRANK CABLE (AS 40) for repairs, NAVSEA 00C was contacted about the possibility of performing an in-water repair to the leaking seal weld. The in-water repair was determined to be feasible, and 00C's repair contractor, Phoenix Marine, was mobilized.

The repair team met USS PASADENA in Guam. Unfortunately, the contractor's equipment container, along with various other shipments, did not make it to Guam. You know the old "absolute, positively, overnight" advertisement? Well, it absolutely, positively does not apply to Guam. With a lot of help from a local diving services contractor and FRANK CABLE shops and dive locker, the right equipment to complete the repair was assembled.

The location of the repair was out of the water but in a hyperbaric environment equivalent to 20 feet of seawater. The defective weld area was located using dye penetrant testing. About four inches of the seal weld was excavated to the original fit up line and then replaced using a Gas Tungsten Arc (GTA) welding procedure. After the repair was completed, the new weld was dye penetrant tested and the flask was pressurized. FRANK CABLE divers completed the job by leak testing and painting the repair area, while the SEA 00C contractor team moved on to another problem.

Damage to the starboard towed array sonar tube was discovered during a hull inspection conducted when PASADENA arrived. Apparently, the submarine struck the pier when it was moored in Sasebo and bent the tube inward into the stern plane. The bell housing was misaligned and most of the bolts were sheared. It was determined that skip-welding the bell housing to the tube could serve as a temporary repair for the duration of the deployment. After jumping through a few more logistical hoops, the proper underwater electrodes arrived on the island. The repair was completed just in time for PASADENA to get underway for the remainder of its deployment.

LT Gallion is currently assigned at the Naval Sea Systems Command, Supervisor of Salvage and Diving, where he works in the Underwater Ship Husbandry Division.

Diving with New Challenges

By T. David Hallam and J. Dana Labit

Contracted vessel used as diving platform for UCT welding project on ACMI towers.

On 10 August 1998, Underwater Construction Team One Air Det Bravo, led by CUCM (MDV) Marty Hierhozler, EOC (DV) Scott Overton (Det Officer in Charge), and CM1 (DV) Leonard McGuire (Det Project Supervisor), commenced deep sea diving to upgrade the cathotic protection system on the Tyndall AFB Air Combat Maneuvering Instrumentation (ACMI) System Range. On-site technical assistance for the project was provided by contract divers and the Naval Facilities Engineering Service Center (NFESC).

The scope of this project consisted of cleaning areas on the base of five towers, then placing and welding approximately 40 anodes to each one. These five towers were located 20–40 miles off the coast of Caravelle, FL. Typical tower construction was a vertical steel 10' diameter × 200' long cylinder, which was attached to a horizontal steel tower base on the bottom approximately 150' × 150' × 10'. The Air Force uses these towers for aircraft training. The diving platform was a 130-foot work vessel contracted out of Panama City, FL.

The first few days of the project saw Air Det Bravo loading out the vessel with two transportable recompression chamber systems, the MK 3 lightweight diving system (modified for 5000 psi air), and the FADS III air supply rack assembly. Several connex boxes, hydraulic sources, and a hydraulic winch were added to complete this phase.

Diving operations started upon arrival at the towers. Surface decompression with oxygen (Sur D O_2) was used to limit decompression time and to maximize time a diver could work at depth. The surface decompression phase of the dive would be completed in the transportable recompression chamber system (TRCS), and the second TRC was on line for emergencies. The first couple of diving days were used to train and familiarize the detachment in welding with Oxylance welding rods.

The project agenda called for cleaning, placing, and welding of anodes. Each anode weighed approximately 285 pounds and was 5-feet long. Pallets consisting of 10 anodes were lowered to the tower base using the ship's A-frame and winch. A hydraulic grinder, using a whirl-a-way disk, was used to clean the marine fouling on the weld surfaces. Moving the 40 anodes to the cleaned areas was initially accomplished with lift bag, however it was soon found that two divers could carry the anodes by hand.

Welding commenced after all anodes were in place. This would be the first time the UCT's conducted wet welding while using Sur D O_2 tables. Most diving was conducted on the 120 ft. Sur D O_2 table. The welding process utilized two divers: one to fit the anode tabs to the base and the other to complete the welding. NFESC divers performed conductivity and quality assurance tests following the completion of all welds.

The project was interrupted midway due to the arrival of Hurricane Earl. Air Det Bravo weathered this hurricane in Panama City, FL, and returned to the towers after the seas calmed. The effects of this storm on diving was seen by the increased sea state (2–3 feet) and the dropping of visibility from 70ft+ down to less then 1 ft, making the job very difficult and slowing progress tremendously. Work was further hampered by the arrival of a second major storm.

Air Det Bravo completed 9996 minutes of bottom time in 128 dives, while maintaining an excellent safety record. The experience gained by underwater welding added immensely to Underwater Construction Team ONE's readiness.

UCT diver conducting wet welds at 120 fsw.

PMS Corner

"Service to the Fleet"

The following is a summary of the MIPS/MRCS changes since the 2-98 SFR. Some of these changes did not make the deadline for SFR 1-99. Feel free to contact Nedu for updates since they will not be available until SFR 2-99.

5921/007 UDT Life Vest. MRC S-1R (B8 9ANX Y). Identified upper and lower inflation mechanism gaskets by part number and NSN.

5921/019 Open-circuit SCUBA. A-3 (29 6WGD N). Review note 2. A piston type first stage regulator like the Poseidon Odin can not be used to perform maintenance on J-valves.

5921/033 Flexhoses. Review scheduling aids #5 and #6 and MRCs A-1R and R-1. Hyrdos are only required if discrepancies are found during the visual inspection. The hose may remain in service if it passes a hydro test or it can be replaced. Maximum service life of a rubber hose is a 12 years. The R-4 has been deleted from the MIP. The definition of a non-permanently installed hose is any portable hose that is routinely connected and disconnected during system/equipment set-up, flask/bottle charging, or flask/bottle change-out. All other hoses will require an annual visual inspection.

5921/034 DLSS. Three MRCs were added to this MIP but did not make the 1-99 SFR. There is a 84M-1R for moisture separators that meet MIL-F-22606 to do the hydro at 7 vice 3 years. An A-10 was added for testing mixed gas systems. Also, a 144M-2R was added for flask meeting MIL-C-1511, MIL-F-2809, and 51F10, and HP flask that meeting requirements of NSTM Ch 551if the flask is charge using an approved compressor and filtration system listed on the ANU.

5921/063 Compressors. Added Bauer Model K220 and Mako Model BAM-09E3 to MIP.

5921/156 Roper Cart. Since there is not a differential pressure indicator on the filter housing, the 50 pisg pressure differential requirement has been deleted. Unfortunately, this did not make the 1-99 SFR.

5921/171 MK 3 MOD 0 LWDS. Review scheduling aid #3. The R-1 may be deleted if the charging source is from a compressor with an air purification system found on the ANU section 6.1 or HP source delivering air at a dew point of 50°F or lower.

5921/177 TRCS. Changes that were included in 1-99 SFR are: S-1R was changed to ensure the safety wire breaks and to ensure the relief gag valve is wired in the open position after the test, A-6R was changed to inspect the interlock o-ring and only replace it if inspect reveals damage, and R-3 was added to drain moisture from HP flask. Changes that are not in the 1-99 SFR are: R-2 was changed to accomplish whenever damage is suspected, M-2R was added to test chamber communications and clean and inspect the chamber, R-4 was added to clean, inspect, and disinfect the BIBS mask, and R-5 was added to inspect the CO_2 scrubber.

H-012/078 FADS II Oxygen System. A-9 and 36M-1 have been changed to reflect the new relief testing criteria and the procedure for test operating the regulator has been revised on the M-3.

H-012/150 Diving System Module. Review scheduling aid #3. 84M-1 has been added for MIL-F-22606 moisture separators.

5519/017 BAUER CD Compressor. Use this MIP for interim maintenance for the Bauer Capitano D (diesel), E (electric) and G (gasoline) model 5000 psi compressors. A 5921 MIP will be issued in the 2-99 SFR.

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British Hyperlite (trademark) EEHS may provide a means of transporting a stricken diver while under treatment for Decompression Sickness

NEDU Evaluating Emergency Evacuation Hyperbaric Stretchers

by Gary W. Latson, MD
LCDR, MC, USNR

Consider the following scenarios:

- *Submariners trapped in a disabled submarine off the coast of a third world country are forced to exit through the escape hatch and swim to the surface, only to develop crippling decompression sickness minutes later. The only rescue boats available are fishing trawlers and tugboats, and the nearest airstrip able to accommodate a cargo aircraft capable of delivering a recompression chamber is hundreds of miles away. Ships with recompression chambers will take at least 36 hours to arrive.*

- *A diver in a remote location, days away from a recompression chamber, suffers severe decompression sickness. Evacuation by helicopter over mountain passes could make his condition even worse due to decreased pressure at altitude. As the hours pass, his chances of recovery decrease.*

Dire situations like these require an imaginative solution.

Enter the Emergency Evacuation Hyperbaric Stretcher (EEHS)—a small, one-man recompression chamber made of flexible, lightweight reinforced fabric. Truly portable—less than 150 pounds and packaged so that it can be carried by a few men without heavy equipment—it can be used almost anywhere and can even be used to transport a patient while pressurized. The systems are capable of supplying oxygen at 60 fsw for a standard Treatment Table 6 and can rely on standard scuba cylinders for air and medical oxygen tanks for oxygen. This concept has evolved over the last few years, and the products of two European manufacturers, the SOS Hyperlite from Great Britain and the GSE Flexible Hyperbaric from Italy, are currently being tested at the Navy Experimental Diving Unit.

Italian version of EEHS under evaluation

The first proposed military use, and the driving force behind the current evaluation, is for the submarine rescue mission, but if the EEHS is found to be safe and functional, other uses will likely follow. It could be a valuable asset for rapid response teams deployed to remote locations or MEDEVAC units sent to retrieve stricken divers. The U.S. Coast Guard has plans for several units, and organizations in the far-flung regions of the South Pacific are considering them. Even NASA is evaluating the technology for the Space Station.

Preliminary results have shown that the EEHS has great promise. NEDU's team has put them through extensive operationally oriented drills, and they have performed well. Feedback to the manufacturers has resulted in several design improvements, and experience gained at NEDU will help define the situations where they may be useful. NEDU will also help develop the procedures and training that will be necessary for safe use.

There is still more work to be done before they find their way to the fleet, but in the future, for divers in dire straits such as the examples above, the term "help is on the way" may mean an EEHS.

Commands that have a potential operational requirement for the EEHS should contact the program manager, Mr. Stuart Yee, NAVSEA 00C37 at 703-607-2766 or DSN 327-2766.

Gary W. Latson, MD, LCDR, MC, USNR, is currently stationed at NEDU as Diving Medical Officer and research scientist. He is the Principal Investigator for evaluation of the Emergency Evacuation Hyperbaric Stretcher, as well as the Principal Investigator for Accellerated Decompression using Oxygen and involved in other Submarine Rescue projects. LCDR Latson is an anesthesiologist.

00C4 Certification Division

by Scott Lopez

This is an article about a group of professionals who you rarely hear about: the NAVSEA Diving and Hyperbaric Systems Safety Certification Authority (Code 00C4). As directed by the CNO, the purpose of the System Certification Program is to ensure high levels of safety through objective, independent oversight of the design, development, operation, and maintenance of all U.S. Navy shipboard or portable diving systems. This includes reviews of original designs, audits at manufacturer's facilities, and participation in tests and evaluations leading to final at-sea trials. After the initial System Certification has been granted, 00C4 division personnel perform periodic audits both shipboard and at the manufacturer's facilities to ensure that the equipment operates properly and that high standards are maintained.

The genesis of certification started during the tenures of SUPSALV Captain Mitchell and Captain Boyd in the early 1970's. The first civilian head of the Certification Division was Mr. Charlie Darley. Charlie moved on to NAVAIR in 1975 and was relieved by Alan J. Dietrich (Big Al, the Diver's Pal) who served as the System Certification Authority (SCA) until 1988. Since then, Gary Crawford has served the fleet as SCA and director of the certification division, Code 00C4. Presently supporting Gary in 00C4 are two senior Systems Engineers who are current or previously qualified Navy divers and three Certification Technicians who are retired USN Master Divers. These personnel include Robert Warren—Engineer, Scott Lopez—Engineer, J.J. Fenwick Lt USN (Ret)—former Master Diver, Michel Einhellig—retired Master Diver, and Paul McMurtrie—retired Master Diver. Included in this group at one time was Darrell Williams—retired Master Diver and Rupert Warren—retired Master Diver. This experienced group keeps a watchful eye on all safety related aspects of U.S. Navy diving.

Scott Lopez has worked as a mechanical engineer for 15 years with the U.S. Navy Office of the Director of Ocean Engineering and Supervisor of Salvage and Diving (NAVSEA code 00C). He is a qualified U.S. Navy diver, a USCG licensed Master, and is a Main Committee member of the ASME Pressure Vessels for Human occupancy (PVHO-1) design code.

BEWARE OF THE SLEEPING GIANT

Originally printed in FACEPLATE, Winter 1973, Volume 4, No. 4.

Here is his description
I am a compressed gas cylinder.
I weigh in at 175 pounds when filled.
I am pressurized to 2200 psi.
I have wall thickness of approximately ¼ inch.
I stand 57 inches high.
I am 9 inches in diameter.
I wear a cap when not in use.
I wear valves, gages, and hoses when at work.
I wear many colors and bands to tell what tasks I perform.
I am ruthless and deadly in the hands of the careless or uninformed.
I am too frequently left standing alone on my small base with my cap removed and lost by an unthinking diver.
I am ready to be toppled over—where my uncapped valve can be snapped off and all my power released through an opening no larger than the diameter of a pencil.
I have been known to jet away at great speeds.
I smash my way through bulkheads with the greatest of ease.
I fly through the air and reach distances of ½ mile or more.
I spin, ricochet, crash, and slam through anything in my path.
I scoff at the puny efforts of human flesh, bone and muscle to alter my erratic course.
I can, under certain conditions, rupture or explode. Beware!
You can be my master ONLY under my terms:
Full or empty—see that my cap is on straight and snug.
Never leave me standing alone.
Keep me in a secure rack or tie me so I cannot fall.

TREAT ME WITH RESPECT: I AM A SLEEPING GIANT

Note: The Sleeping Giant Is Still With Us.

Viewed from below, a SEAL Delivery Vehicle lifts away from the the submarine as the diver swims clear.

A Diver prepares the cradle to recover a SEAL Delivery Vehicle on the deck of an SSBN. The pilot of the SEAL Delivery Vehicle can be seen looking over the bow of the vehicle as he waits to make his approach. The track and cradle in the foreground is rolled out and back into the Dry Deck Shelter by the divers before and following each mission.

COMMAND IN THE SPOTLIGHT

SDV Team TWO

by CWO2 Daniel W. Mikulski

It's 1400, somewhere in the Caribbean, and you are on your first "sub trip" and have that restless feeling. Riding in a Dry Deck Shelter (DDS) atop a submerged nuclear submarine, you wait for the commands that will signal the beginning of the mission. You have been "jocked up" for the past hour; ¼-inch wetsuit, cheater top, and gloves, all covered by a camouflaged jump suit. The lighting is dim, you're sweating and irritable. Salvation finally arrives in the form of the three glorious words: Open Foxtrot-1. With the opening of the valve, the wonderfully cool water begins to fill the DDS. The sense of relief is almost surreal. Now totally submerged, you notice that restless feeling returning.

Today the mission is a "touch and go." Once outside the shelter, the SEAL Delivery Vehicle (SDV) is launched from the deck of the nuclear-powered submarine and then recovered, all in a clandestine manner. The SDV pilot and navigator are prepared for the mission.

The next command passed is important, yet almost anticlimactic, four simple words really: Open Hangar Outer Door (HOD). These words do not do justice to the event that is about to commence.

You are part of a team that has worked toward perfecting the difficult choreography of launching SEAL platoons for special operations worldwide from a nuclear submarine. When the HOD is opened, a sight seen by few people in the world, the water is so blue it hurts your eyes. Below the surface the water temperature is 82 degrees, the submarine is slowly cruising' and the clock is ticking.

As an observer during this dive, you move to your assigned position next to the secondary mechanical lock outside the HOD. You are in awe by the amount of movement and the quickness of execution. Divers, skilled in the execution of this crucial mission, prepare the SDV for launch. They deftly roll out the track and cradle from the DDS. The SDV pilot and the navigator conduct their final checks. The deck crew maneuvers the mini-sub into the slipstream after releasing the mechanical locks. Remembering the dive brief, you realize the SDV is awaiting confirmation of point Alpha (the exact position to disconnect the SDV).

While waiting, the realization of the difficulty and complexity of the entire operation sets in. You can not even fathom what is simultaneously happening below you inside the host ship. How do they (Submariners) know our position? How can they hold this massive submarine on such a steady course? How can a single person (the Diving Supervisor) keep track of the events happening in the water? Before becoming overwhelmed with this array of thoughts, movements begin again. No words are exchanged; everything is choreographed through special hand signals. The deck crew releases the SDV.

Now it's the SDV crew's turn to showcase their months of advanced operator training; it is immediately obvious that they learned well. The SDV turns to port, dissolves into the blue, and commences a 1000-yard racetrack. A touch and go mission. Five minutes later, the SDV is in sight and the divers begin the choreographed session in exact reverse. Before you know it you're back inside the DDS listening to "Shut Foxtrot-1, open Delta-1, and commence drain down." Now it is time to debrief, get a little rest, eat some dinner, and brief the next dive. As SDV Team divers, we have a job to perform that is crucial to the mission, and tonight we are going to

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repeat the entire scenario, but this time it will begin at 2200—and there is no moon!

SDV Team Two was commissioned at Little Creek Virginia in October 1978 as Underwater Demolition Team-TWENTY TWO. It was redesignated SEAL Delivery Vehicle Team TWO on 1 May 1983 and assigned Special Mission responsibilities by the CNO. Commanded by CDR Pete Wikul, the Team's mission is to provide theater combatant commanders combat ready SDV Task Units that can operate worldwide.

Today, SDV Team TWO is an elite SEAL team with a unique capability to respond to maritime contingency situations worldwide. SDV Team Two accomplishes this mission with submarine mounted Dry Deck Shelters, SDVs, and support craft, along with SEALs who focus their training on undersea mobility and reconnaissance and surveillance. The special capabilities of the team are designed to deliver SEALs and equipment to and from the target without detection.

Assigned to the Team are over 200 personnel with approximately 32 Navy Divers, 60 SEALS, and an extensive mix of support technicians. As SDV Team TWO is the most technically advanced SEAL team, the support technicians play a critical role, unparalleled in Naval Special Warfare.

For a diver, SDV Teams offer an exciting opportunity to work with a strategic capability. "Divers assigned to a SEAL Delivery Vehicle Team are part of a team that trains specifically to conduct combat operations. We provide the theater combatant commander with a significant stealth capability." said CDR Wikul. "My Divers are an integral part of the team and the mission; we couldn't conduct operations without them." CDR Wikul, who's first introduction to Naval Special Warfare was as a 19-year-old FTGSA assigned to Underwater Demolition Team Twenty One, believes that the nature of diving operations conducted by SDV Team Two divers is significantly different from salvage diving. Both have their specific challenges and rewards. "Training for combat operations in a DDS bolted to a nuclear submarine puts a bit more stress on the diver. I'm very proud of my Navy divers and the contributions they make day-in and day-out to the mission readiness of the command."

The team is structured to train and equip three deploying SDV Task Units in support of COMSIXTH Fleet operations and exercises. Divers assigned learn for a year, do the job for a year, and teach for a year. Most Divers departing SDV Team TWO agree that it was quite possibly the best tour of their career. The level of professionalism displayed on a daily basis is astounding, and rightfully so. We require and demand the best of the best during our screening process. However, once assigned, personnel are trained in the top schools the United States Navy has to offer.

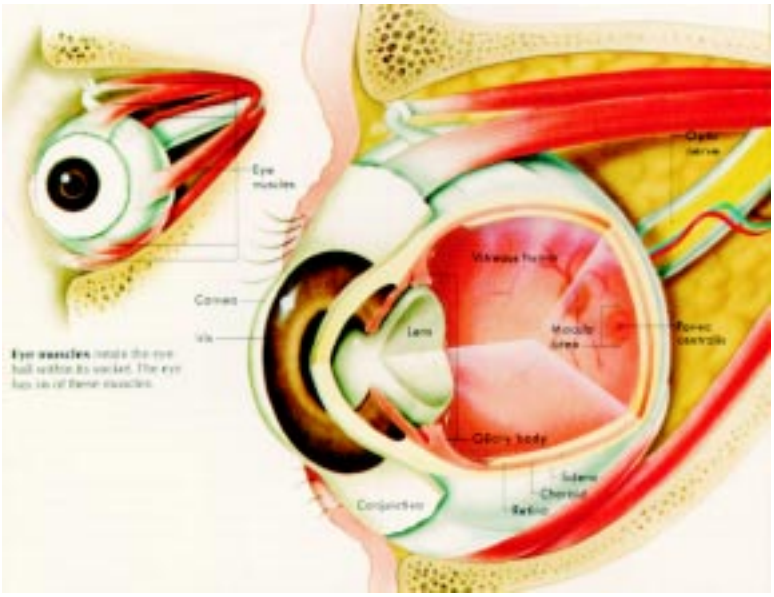
If you're interested in a new challenge and expanding your modus operandi, give one of the Master Divers a ring. They will answer all your questions. Hope we have the opportunity to serve together. Dive Safe!

"Diver Dan" Mikulski has served as a Navy diver for the past 15 years. He is currently Attached to SEAL Delivery Vehicle Team-TWO as a Diving Officer.

SDVT-2 Divers stand ready to attach the SDV as it prepares to approach the dry deck shelter on the deck of the submarine. Behind the diver can be seen the opened door to the Dry Deck Shelter with the SDV track and cradle rigged out on the deck. The pilot can be seen looking over the bow of the SDV.

Divers guide the SDV down onto the cradle and track during a mission recovery.

Refractive Eye Surgery for Navy Divers



World Book illustrations by Charles W

Compiled by CAPT Mike Curley

Refractive eye surgery includes radial keratotomy (RK), photorefractive (eximer laser) keratectomy (PRK), laser assisted in situ keratomileusis (LASIK) and other less common procedures. *Before* having any refractive eye surgery, you should be fully informed of both the medical risks/benefits *and* the potential Navy administrative consequences associated with having these procedures. So to help address your concerns regarding corrective vision surgery and your diving status, we asked the Director of Undersea Medicine, CAPT John Murray, and Naval Special Warfare's Director of Biomedical Research (a Diving Medical Officer and an Ophthalmologist), CAPT Frank Butler, to provide us with current Navy policy and clinical research efforts. Our thanks to them for providing the following update.

Description of Surgical Procedures

- Radial keratotomy (RK) involves making actual incisions in the cornea. RK is less predictable than the other procedures noted below, permanently weakens the eye, and increases its susceptibility to traumatic rupture. In addition, post-RK eyes are subject to marked changes in their refractive state when exposed to altitudes greater than 8000 feet.
- Photorefractive keratectomy (PRK) removes corneal tissue by precision burning of the cornea with a chemically cool ultraviolet eximer laser. PRK may cause significant postoperative pain, can result in corneal haze, and is less effective in achieving a precise and stable refraction when utilized to correct high myopes (refractive error of -5.00 diopters and greater.)
- Laser assisted in situ keratomileusis (LASIK) also entails laser reshaping of the cornea, but the laser beam is applied to the deeper tissues of the cornea after a superficial flap has been created by the surgeon. LASIK has several advantages over PRK: less post-operative pain, faster visual rehabilitation, decreased post-operative corneal haze, and better refractive predictability in patients with higher degrees of myopia. Reported disadvantages of LASIK include both intraoperative and postoperative flap complications and an increase in glare problems related to the flap interface.

Current US Navy Guidance

Initial Entry/Commissioning. Navy and Marine Corps - Memorandum from Chief, Bureau of Medicine and Surgery, Ser 25/96U114001266 of 29 May 97 states that with the approval of the CNO and CMC, BUMED will apply the following criteria in considering waivers for applicants on a case by case basis who have undergone refractive surgery procedures to correct myopia:

(1) Best spectacle corrected visual acuity of 20/20 in both eyes post procedure

(2) At least one year since the last procedure

(3) No significant visual side effects

(4) Stable refraction

(5) Pre-operative refractive error does not exceed –8.00 diopters

Diving Duty. BUMED message 151501Z May 97 revised Chapter 15 Article 15-66 (2) (c) (6) of MANMED to read: "The following will be cause for rejection for initial diving duty… (6) Radial Keratotomy and other forms of corneal surgery with the exception of eximer laser photorefractive (PRK)." *(Note: There are currently no plans to remove RK from the list of disqualifying conditions for Navy diving and Naval Special Warfare.*)

Candidates for entry into diving programs, including special operations, must wait 6 months following their most recent

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PRK before their qualifying exam *(i.e., PRK is not permanently disqualifying from diving duty, but the physical exam to accompany diving candidate packages must occur at least six months **after** the PRK procedure).*

Midshipmen. The United States Naval Academy is currently drafting an instruction, COMMANDANT OF MIDSHIPMEN INSTRUCTION 6490.1, addressing Vision Treatment. This directive draws upon BUMED memorandum addressing initial entry and commissioning policy with regards to corneal surgery, and the diving duty refractive eye surgery policy from MANMED, to provide direction on the handling of midshipmen requests for refractive surgery. Only requests for PRK will be routinely approved.

Bottom Line for Qualified Navy Divers. Current research indicates that PRK is associated with a very high percentage of favorable outcomes and a low rate of complications. In the majority of cases, stable refraction and release from further ophthalmologic follow-up occurs well before the six-month anniversary of the refractive surgery. ** ***Only*** *for qualified Navy divers who undergo PRK,*** BUMED-21 will support return to diving duty when returned to full duty by their ophthalmologist and after review by an Undersea Medical Officer.

The Future

LASIK - The Future of Navy Refractive Surgery? In 1993, the Naval Special Warfare Command began a research project to study the suitability of PRK for Navy SEALs. CDR Steve Schallhorn and his staff at the Naval Medical Center, San Diego, conducted this project with the assistance of the Naval Health Research Center. The results of the surgery were very successful and resulted in the removal of PRK from the list of disqualifying conditions for entry into Naval Special Warfare and diving duty in the Navy. PRK is now routinely performed in the Navy, both on SEALs and on members of other warfare communities. PRK is currently being evaluated by the Air Force as well.

Refractive surgery, however, is a rapidly changing field. Although the FDA approved PRK only 4 years ago, it may soon be outdated. The recently developed surgical procedure called laser in-situ keratomileusis (LASIK) is currently the procedure of choice for many refractive surgeons. An increasing number of applicants for entry into Special Warfare and other diving programs are currently being denied entry on the basis of having had this procedure. The advantages and reported complications of this newer refractive surgery procedure have been listed above, but there is no question that LASIK has a much shorter track record than PRK. The Naval Special Warfare Command and the U.S. Special Operations Command are currently preparing to collaborate with CDR Schallhorn and his fellow researchers at the Naval Medical Center San Diego to investigate the suitability of LASIK for Naval Special Warfare. A three-stage approach is planned:

Stage 1: Conduct animal studies to investigate the effect of LASIK on the pressure required to cause rupture of the globe. The attempted correction will not exceed that required for an eye whose refraction is -8.00 diopters, which is currently the highest refractive error with which applicants are allowed to enter the Armed Services.

Stage 2: Conduct human trials to investigate the effect of altitude exposures on post-LASIK eyes. Testing will be conducted over several days at an altitude of approximately 14,000 feet.

Stage 3: If appropriate as determined by the results of Stages 1 and 2, a pilot study will be conducted on the suitability of LASIK in Special Operations. This study will be coordinated with the offices of the command surgeons of all SOCOM components who wish to participate in the study and the offices of the Surgeons General of those components. The currently planned research effort is a three-year longitudinal study in which individuals who have had LASIK are accepted into Special Warfare and examined at 6 month intervals to determine whether or not there are any problems associated with the post-LASIK state in the Naval Special Warfare environment. If the results of this study are favorable, LASIK may then be considered by BUMED Code 21 for removal from the list of disqualifying conditions for Special Warfare and diving.

Additional Questions?

For policy/waiver issues, contact CAPT Murray, MC, USN, Bureau of Medicine and Surgery (Code-21) at DSN 762-3449 or commercial (202) 762-3449. For questions related to the anticipated COMNAVSPECWARCOM LASIK study, contact CAPT Butler, MC, USN, Director Naval Special Warfare Biomedical R&D, Naval Hospital Pensacola at commercial (850)-505-6754 (DSN 534-6754.)

CAPT Curley is Director, Biomedical R&D at NAVSEA (SEA00CN) and Head, NEDU R&D. A Saturation Diving Officer, he has led several major projects including bioeffects of low-frequency sound, long-term health effects of diving, and human engineering of diving gear.

Boeing 234 Chinook

Another Salvors' Tool for Wreck Removal

By Jim Bladh

AVR 7 grounded at Government Point.

Preliminary cuts being made at low tide.

In January 1999, the Office of the Supervisor of Salvage received a call for assistance for the removal of an 85-foot aluminum hull AVR. The vessel was stranded on private property belonging to the COHO ranch at Government Point, just south of the Point Conception lighthouse in the vicinity of Lompoc, CA. To complicate the problem, property adjacent to the casualty was sensitive as a possible Indian burial ground, and roads in to the casualty (7 miles) were fragile, preventing mobilization of heavy equipment to the site.

Initially, electronic equipment and approximately 1700 gallons of diesel fuel and hydraulic fluid were removed. After a survey determined the AVR was a total loss and could not be refloated, the decision was made to cut it into sections and use a Boeing 234 CHINOOK helicopter for removal. A six-man crew was used to section the vessel, working during low tides and daylight hours. All cuts were completed from keel to main deck, which was left intact (to keep the boat as one) until the final day when the CHINOOK helicopter arrived. At low tide, final separation cuts were made and the sections were airlifted to a staging area where they were reduced for final removal by truck. A total of nine lifts were required for removal, the heaviest being 23,000 lbs. Total airlifting took approximately 1.5 hours.

Because the boat was aluminum construction, O_2 cutting rods (44 x 3/8-inch diameter), called "Air Slice" manufactured by ARCAIR, were used, (no electric power is required to maintain a cut, only a striker with a DC 12 volt battery). In addition, 14-inch gas powered cut-off saws with special cutting discs were utilized. Special care was taken to remove both engines, generators, crane, and electronic equipment for

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A section of the wheel house being air-lifted.

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refurbishment or use as spare parts.

The wreck removal operation was completed with no adverse impact on the local environment, to the complete satisfaction of the COHO ranch owners.

It is interesting to note that on September 8, 1923, a squadron of nine destroyers en route to San Diego made a left turn in this very same vicinity. Seven of the destroyers were lost, and two were able to extract themselves.

Jim Bladh retired from the Navy in 1973 as a Lieutenant Commander after serving 30 years active duty. Since that time he has been a member of the operations branch for NAVSEA Supervisor of Salvage Code 00C and is presently the Head, Operations Branch.

From the Supervisor of Diving

Commander Bobbie Scholley

Where's the New Diving Manual?

Revision 4 of the U.S. Navy Diving Manual was signed out in late January. There have been some delays due to last minute corrections and negotiating a printing contract. The plan for distribution is to get a CD to all commands by the end of April and hardcopies by the end of May. Once distribution is started, an AIG will be promulgated to the fleet with guidance on implementation. Updates and revisions will be issued with the SupSalv CD at a regular interval. Also, you will have to wait until the SupSalv CD comes out later this year to be able to fully access the hyperlink features to the references used in the manual. As changes are made to Revision 4, they will be downloadable from the 00C web site (www.navsea.navy.mil/sea00c). The new manual TMINS is SS521-AG-PRO-010 and its' NSN will be 0910-LP-708-8000.

Revision 4 is made up of five volumes that have been completely revised and should be thoroughly reviewed. The intention behind the five volumes is to allow the supervisor to have only the applicable volume pertaining to the type of diving being conducted and reduce the amount of reference material required on dive station. Each volume is provided with a table of contents and an index.

MDV/CWO Conference

The MDV/Diving CWO Conference is tentatively scheduled for 12-14 May 1999 and will be hosted by the Naval Diving and Salvage Training Center. The conference provides an opportunity for senior enlisted and Chief Warrant Officer leadership throughout the various diving commands to collectively review and discuss current and future community issues. Our focus this year is determining the future mission and equipment requirements of the Navy Diving Program for 2005 and beyond – What role will we play in winning the war that cannot be outsourced? Other anticipated conference issues include divers' career path initiatives, training, qualifications, diving and salvage operational planning, maintenance, and safety. Get your point papers in. Our mailing address is:

Commander, Naval Sea Systems Command (SEA 00C36)
2531 Jefferson Davis Hwy.
Arlington, VA 22242-5160

You can also send papers by e-mail to youngch@navsea.navy.mil. The conference host point of contact is MMCM(MDV) John Schnoering at commercial (850) 235-4651, DSN 436-4651, e-mail john.schnoering@smtp.cnet.navy.mil, or fax (850) 235-5253. BEQ/BOQ rooms are available. Contact CSS Seashore Inns reservations at commercial (850) 234-4217 or DSN 436-4217 and ask for a room reserved for the MDV/CWO Conference.

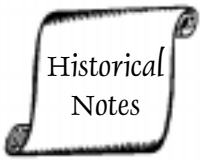
MDV Reunion

The MDV Reunion will be held on Saturday, 15 May 1999, at the Coastal Systems Station Marina, Panama City, FL starting at 1000. The point of contact for the reunion is ENCM/MDV(ret) Joe Gray at (850) 230-9217.

OBITUARY

L.J. "CHRIS" CHRISTOFFERSEN

L.J. "Chris" Christoffersen, 77, of Pensacola, FL, died Sunday, December 20, 1998. Chris retired from the Navy as a Senior Chief Petty Officer and a Master Diver. Chris joined the Navy in early 1938 and retired in 1960. During these near 23 years, he served aboard the following ships and stations: USS NEW MEXICO, USS ALCOR, USS SPERRY, USS SUNBIRD, USS FLORIKAN, USS PETREL, and the USS FULTON. Chris graduated from DSDS in Washington, DC, in 1943 and was an instructor and Master Diver at the Submarine Escape Training Tank, New London, CT. He then worked for American Motors for 10 years as Safety Engineer and then for 11 years as Safety Director for Taylor Diving and Salvage Co.



The following excerpt is from Chapter 15 of 20,000 Jobs Under the Sea, *by Torrance R. Parker, published by Sub-Sea Archives, Palos Verdes, CA, 1997.*

THE SECOND NAVY DIVE SCHOOL

Nearly forgotten in diving's early history is the Navy's second diver training facility established to train World War I divers. The closure of the Newport school did not mean that the Navy no longer needed trained divers. In fact, the war effort required even greater numbers of people trained in this field. To replace the Newport school, a new training facility was organized at New London, Connecticut. The civilian marine salvage contractor, T. A. Scott, operated it for the Navy.

In his written recollections of the T. A. Scott Company, Robert Beattie talks about this second United States Navy diving school:

Beginning at the north end of the property, there was an undeveloped steep bank along Pequot Avenue extending down to a stony beach. On that beach was the gutted hull of the old steam-powered submarine Plunger, hauled up there after the U.S. Navy diving school finished with her.

A wood pier extended out into the harbor about 250 feet. Extending southward from this pier on the land end was a bulkhead perhaps 100 feet long with a platform on wood piling in front of it, at high tide level, known as the diving ramp. From this platform and ramp A.J. Pahlberg operated the Navy diving school, training much-needed divers and tenders at the start of World War I. First lessons were given here and as the men progressed in learning and ability they transferred to the floating school in the then clear waters of Peconic Bay on white sandy bottom "salvaging" and "re-salvaging" the hull of the Plunger.

Alfred J. Pahlberg, mentioned above, was one of the most remarkable divers ever to be in this profession. He was a man who embodied all the best of our trade. Therefore, at this point, it is worth quoting what Frank Meier's 1940 book, *Up for Air*, said about Pahlberg:

Pahlberg dove for fifty-six years and retired at the age of eighty. This "wonder man" was short and slightly built, but a regular glutton for punishment. He outworked and outlived all the other old-timers. With headquarters at New London, Connecticut, he did most of his work Down East, between Connecticut and Maine, but occasionally he drifted into Southern waters and other districts outside of his regular haunts. I remember him as a fine, gentle old fellow, as honest as they come and a man of very temperate habits. He had snow-white hair and whiskers. This diver went through the whole mill, working on wrecks, handling dynamite, laying pipelines—everything in the line of expert diving. He dove around heavy foundations and tunnels for power and industrial plants, on bridges, in leaky reservoirs, and on marine railways. During his diving years, he recovered many thousands of dollars' worth of sunken property. Of course during those long fifty-odd years, he had his share of minor accidents, and even several close shaves, but he was always ready for a quick exit and used good judgement in emergencies.

At the end of World War I, the school was closed. Then, for more than a decade after closing the New London, Connecticut wartime school at the T. A. Scott company yard, and the Navy's first diving school at the Newport Torpedo Station, the Navy simply taught diving with standard-gear on board ships in the fleet.

The Old Master

by MDV Mike Washington

MDV Mike Washington

I'm writing this article on the occasion of my transfer from NAVSEA to a newly created SPECWARCOM Force Master Diver billet. My tour in Washington, D.C. was quite the learning experience. One thing that I learned during this tour is that there is a group of behind the scene professionals that make it their business to assist my fellow divers water front efforts. I salute my former co-worker in the Office of Director of Ocean Engineering Supervisor of Salvage and Diving and wish you all the best.

By now you're probably wondering if I completed revision 4 of the U.S Navy Diving Manual. The answer is yes. Revision 4 was signed out the 26th of January 1999. Currently, the final process for selecting who will print the Diving Manual is being conducted. I predict that you will see the CD-ROM version (with hypertext-link) and the hard copy by May. An AIG 239 will be released providing more information along with the effective date for use of Revision 4 as well as an article in this issue of Faceplate. Additionally, a summary defining the differences between Revisions 3 and 4 will be distributed. A special thanks goes out to all that assisted me in completing this mammoth project.

Next, I would like to update you on what is going on with Diving Operations Specialist Warfare (DOS). Two separate events have placed DOS on hold. The first one was an official tasking from the Chief of Naval Personnel (CNP) to our Community Manager. The second was an unofficial tasking from the Master Chief Petty Officer of the Navy (MCPON) to myself. Both tasking were on the same subject; review the impact a Diver rating would have on the Diving community. In regards to this review, a neutral tone brief is being prepared to take a 360-degree look at the pros and cons of a Diver rating. As you read this do not hit the panic button; understand that the focus is are we on track for the year 2000 and beyond or is a community course change required. As more information becomes available on this subject it will be disseminated.

The next update is on the Fleet Diver concept. This concept focuses on the career path for Navy Divers. The proposal designed to give the fleet a well-rounded diver, upon completion of dive school. Currently OPNAV N873 is forming a working group to further develop this concept. More to follow on this important subject.

As you read this understand that your leadership is focusing on the future. In order for us to be prepared for the future we must make some change. Without changes we cease to grow. With this said, focus not only on what will make your jobs easier today. Instead, communicate the things you envision that will keep the Navy Diving community as a valuable asset within the U.S. Navy's inventory of outstanding sailors.

At this point I will sign-off by saying although I'm transferring, I will continue to work for you. It has truly been my sincere privilege to have served you, while assigned as senior NAVSEA Fleet Master Diver.

Your Shipmate,

MDV Mike Washington

Medical Reminder

BUMED NOTICE 6120 of 30 Jul 97 replaces the guidance on Diving Standards as listed in the Manual of the Medical Department (MANMED), Chapter 15, section IV, article 15-66. Some specific items to remember:

- There are no waivers required for continuation of Diving Duty.
- All Navy divers will comply with the standards (for periodicity) in MANMED Chapter 15, section I, article 15-11. Medical examination will be completed on all active duty members and reservists as follows:
  a. Upon entry to enlisted or commissioned active duty.
  b. At intervals of 5 years through age 50.
  c. At intervals of 2 years through age 60.
  d. Annually after age 60.

DISC is *DIVING* into Prime Vendor

By Ralph Lund

In November 1998 , the Defense Industrial Supply Center awarded three prime vendor contracts that will provide reliable, flexible, cost-effective, prompt marine lifesaving and diving support to more than 125 military customers in three regions: the Pacific Northwest, including Alaska; the Pacific Southwest; and Hawaii, including Japan, Korea, Okinawa, and Guam.

"Diving organizations perform a wide variety of missions and their needs are very specialized, often placing divers in life-critical situations. Our challenge is to provide the equipment they need in accordance with all the necessary quality standards and technical requirements to ensure diver safety," said Ralph Lund, a DISC contracting officer. "With prime vendor, we can ensure they get the commercial items they need to do their jobs, whether its explosive ordnance disposal, ships husbandry, salvage, special warfare, search and rescue, or underwater construction."

Items covered under the contracts include regulators, masks, air lines, knives, valves, gauges, weights, filters, swim fins, boots, air cylinders, test equipment, and wetsuits. Other features include electronic on-line ordering, on-line access to usage and sales data, 24-hour customer and product support, readiness contingencies, improved delivery schedules, and competitive pricing.

Five pilot sites (see sidebar) can currently phone and fax orders direct to the prime vendor and will be ordering electronically by the spring. The remaining customers are scheduled to be on-line by September 1999.

The prime vendor solicitation for the Atlantic regions is underway. The Atlantic regions are: the Atlantic Northeast, including Europe, and the Atlantic Southeast, including Puerto Rico, Cuba, Panama, and the Bahamas. Once awarded, the contracts will support over 200 customers in the Atlantic.

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Pilot Sites

Consolidated Divers Unit,
San Diego

Explosive Ordnance Disposal
Mobile Unit 3,
Coronado, CA

Explosive Ordnance Disposal
Mobile Unit 11,
Oak Harbor, WA

Explosive Ordnance Disposal
Mobile Unit 5, Guam

Mobile Diving and Salvage Unit
One, Hawaii

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NAVAL SEA SYSTEMS COMMAND
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Official Business