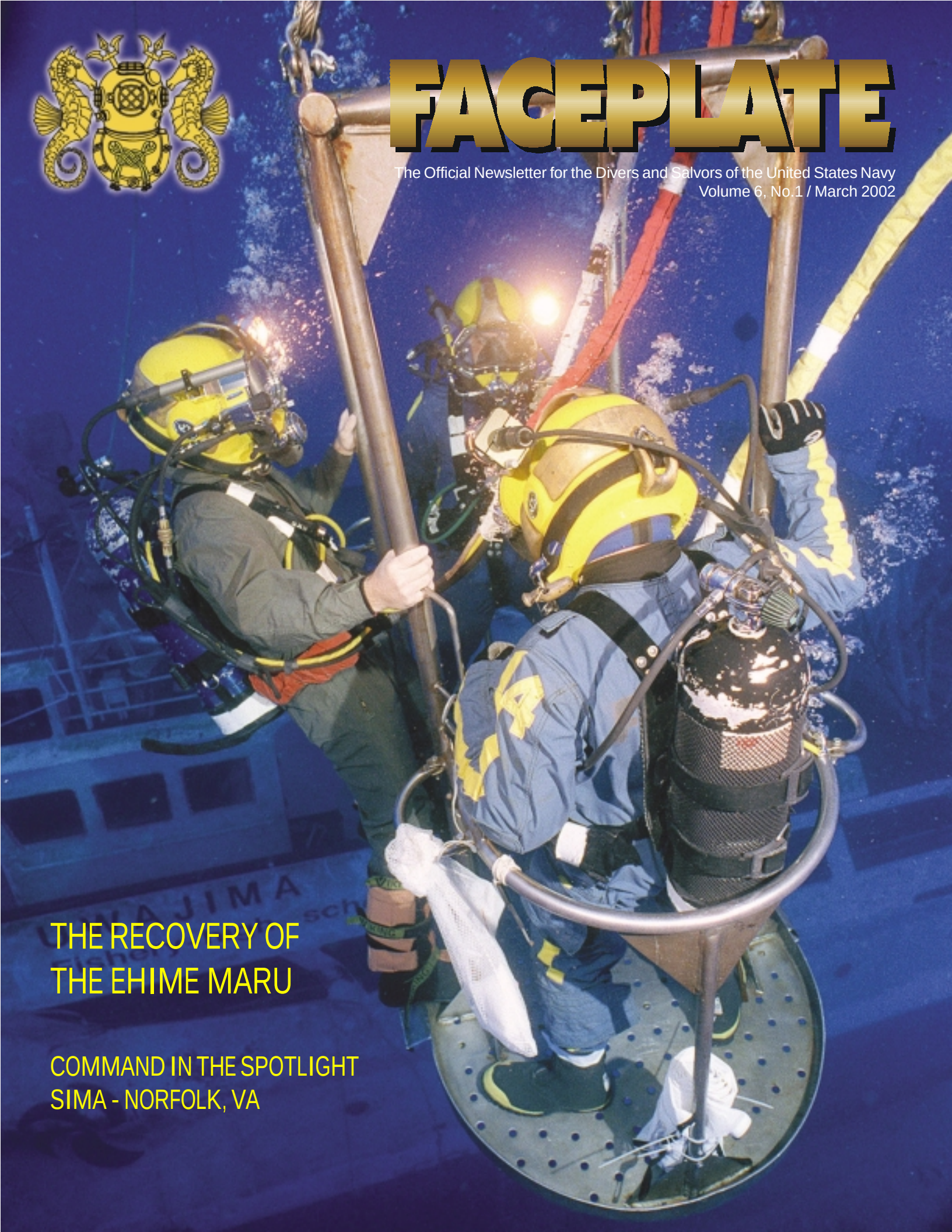

FACEPLATE

The Official Newsletter for the Divers and Salvors of the United States Navy
Volume 6, No.1 / March 2002

THE RECOVERY OF THE EHIME MARU

COMMAND IN THE SPOTLIGHT SIMA - NORFOLK, VA

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.

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SUPSALV SENDS

This issue is full of information that you, as a Navy diver can use; everything from how we successfully lifted EHIME MARU and MDSU One recovered the remains of eight of the nine lost in the sinking to highlighting SIMA Norfolk's outstanding UWSH work. I urge you to read and take pride in what your community has accomplished. As I mentioned to the MDSU ONE Divers, when assigned to determine if raising the EHIME MARU and recovering the remains was feasible, I knew I had an ace-in-the-hole with the MDSU located at Alpha docks on Hickam AF Base. My confidence was fully justified. They not only succeeded in recovering the remains and personal items, they became America's best Ambassadors to Japan. Through their meticulous awareness of cultural issues and the establishment of an exceptional working relationship with their Japanese counterparts, they restored trust between our two countries. I urge you to heed the wise advice of MDV Schlenkerman for we all have a responsibility to evaluate every dive we do. To my knowledge, we have yet to find a way to transplant a set of gills onto a diver and until that happens the oceans will remain an alien environment, one that demands our respect and requires constant vigilance on everyone's part.

CAPT Bert Marsh, U.S. Navy Director of Ocean Engineering and Supervisor of Salvage and Diving at the Naval Sea Systems Command, describes to the media the plans for the lifting process of the Ehime Maru. Photo by: PH3 Lolita D. Swain.

To those old salts who went through school at NSDS here in the Washington Navy Yard, there is a move to establish either a memorial or at least a plaque along the water front, where NSDS/EDU stood. If you are interested in supporting this initiative, contact Lee Wolford Code 00C 22C here in our Salvage Operations Division. His phone number is 202-781-0950, or e-mail him at wolfordEL@navsea.navy.mil. Finally, as the last article in this issue relays , Jim Bladh, our *FACEPLATE* editor and a stalwart in Navy salvage**,** retired after 58 years of outstanding service to his country, the Navy, and our diving community. We all owe Jim, not only for his trail blazing in the salvage arena, but also for his determined efforts to resurrect *FACEPLATE* as your magazine.

Front Cover Photo: Deep sea divers from Mobile Diving and Salvage Unit ONE, Pearl Harbor, descend 115 feet to the ocean floor to begin their dive on Ehime Maru. Photo by PHC(SW/DV) Andrew McKaskle.

In This Issue

Several boats and aircraft were involved during the moving phase of the EHIME MARU recovery operation including the ROCKWATER 2 (left). Photo by PH2(AW/NAC) Keith W. Devinney.

By: LCDR Gregg Baumann

EHIME MARU RECOVERY SUCCESSFUL

On February 9th, 2001 USS Greenville (SSN 772) was conducting submarine exercises 13 miles off the coast of Oahu, Hawaii. While attempting an emergency main ballast tank blow procedure, the submarine struck and sank the Japanese fishing and high school training vessel EHIME MARU in 2000 feet of water. The collision, which took the lives of nine personnel aboard, created tension and at times strained relations between the Japanese and United States governments. As a sign of sorrow and good will, the U.S. Navy promised to locate and recover the missing remains if it were technically possible. What followed was one of the most ambitious and technically challenging salvage efforts of its kind.

In the days immediately following the accident, search and recovery crews scoured the ocean surface for survivors. As search efforts showed no signs of any of the missing crewmembers, attention turned to locating the sunken vessel on the sea floor and searching it for trapped crewmembers. Due to the extreme depth, divers would not be able to be used. The Commander in Chief, Pacific Fleet (CINCPACFLT) called on the Supervisor of Salvage and Diving (SUPSALV), and Submarine Development Squadron 5 (SUBDEVRON 5) from San Diego to mobilize their Remotely Operated Vehicles (ROVs) and accomplish a subsurface search. Both activities quickly mobilized and flew their equipment to Honolulu. SUPSALV used ROV DEEP DRONE and the Shallow Water Intermediate Search System (SWISS) side scanning sonar system while SUBDEVRON 5 using the ROV SCORPIO, quickly located the vessel and visually searched the exterior and surrounding seafloor. After working around the clock for over two weeks in adverse weather, the subsurface search was called off. None of the missing crewmembers were located.

The lower lifting rig that will be used to relocate the sunken Japanese fishing vessel EHIME MARU is lifted from a barge off the coast of Oahu, Hawaii. Photo by PHC(SW/NAC) Spike Call.

With relations between the U.S. and Japanese governments strained because of the incident, the U.S. Navy made the commitment to the surviving family members that if it were technically feasible to raise EHIME MARU the U.S. Navy would do so. Under direction from CINCPACFLT, Captain Bert Marsh, Richard Asher, and Tom Salmon from NAVSEA 00C assembled a feasibility study team composed of NAVSEA 00C, NAVSEA 05, Japanese technical and various contractor personnel. The salvage firms SMIT International from Singapore and SMIT TAK from Rotterdam functioned as the prime contractor based on pre-existing salvage contracts with NAVSEA 00C.

After transporting EHIME MARU to the final relocation site more than 12 miles south of Barbers Point, the Crowley 450-10 barge released the ship in more than 8,500 feet of water. Photo by PH2(AW/NAC) Keith W. DeVinney.

Due to the depth of EHIME MARU, the team was limited in the techniques they could employ for the recovery. Since saturation divers were out of the question and other means of gaining entry into the vessel at depth had very low probabilities of success, the team had to look at moving the vessel to an area in which personnel could safely search the interior of the vessel. Before being able to say this was feasible, a structural analysis of the damaged ship had to be performed.

With information gained from the initial ROV search, Tom Packard and Ed Kadala led a team of engineers and naval architects from NAVSEA 05P in developing a structural model of the roughly 850-ton ship. Using a hull model based on a beam type finite element of over 200 nodes and the shipbuilder's lightship weight distribution, the group generated

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numerous bending moment curves for a number of different lifting arrangements. Incorporated into each analysis were reduced section moduli in way of the damaged areas which assumed a worst case damage scenario. The result of the analyses was that EHIME MARU could withstand a static steady state lift but that the dynamic effect imparted by ocean swells could be a problem. Concurrent with this effort, SMIT engineers conducted an independent analysis and came to the same conclusion.

Based on the detailed structural analyses and a concept of recovery operations from SMIT, Captain Marsh concluded that that it was technically feasible to raise EHIME MARU and estimated that there was an 80 percent chance of success. The results of the feasibility study and the odds of success were sufficient to convince CINCPACFLT to pursue recovering the fishing vessel.

The concept of operations called for placing two large lifting straps beneath the ship and carrying it into shallow water where divers could safely enter and search the vessel. This required that a site be chosen where the ship could be relocated without causing damage to the environment. To prove this, CINCPACFLT had to accomplish an Environmental Assessment before the operation could begin. CINCPACFLT N45 (Environmental Division) was chosen to head up this effort. Drawing on assistance from EDAW Inc. from Irvine, CA, numerous subcontractors, NAVSEA 00C25 pollution engineers, and SUPSALV Emergency Ship Salvage Material (ESSM) contractor personnel, CINCPACFLT N45 conducted the assessment in less than 13 weeks at a cost of nearly $2 million. The Environmental Assessment culminated with (CINCPACFLT) signing a "Finding of No Significant Impact" (FONSI) for moving EHIME MARU from its current location to about a mile off the Honolulu airport.

While the environmental assessment progressed, mobilization for the recovery operation began in earnest. To accomplish the rigging and lifting operations, specialized offshore equipment was mobilized from Singapore, Europe, Philippines, Texas, Louisiana, and California. Additionally, the Haliburton Corp. oil field drilling and diving support vessel ROCKWATER 2 was contracted as the host work platform. Since the ROCKWATER 2 was already operating in eastern Asia, it was outfitted for the operation in Batangas, Philippines and was used to transport some of the lifting equipment to Hawaii. Three separate ROV systems, a coiled tube drilling unit, and rigging equipment were mobilized from the Gulf coast to Port Hueneme, CA and barged to Honolulu on the Crowley Marine 250-6 barge.

Once the ROCKWATER 2 and remaining support equipment arrived on-station, Pacific Shipyard was subcontracted to complete vessel outfitting. This entailed welding down the ROV equipment, installation of portable generators for the deck equipment, and welding of additional rigging equipment for the deep ocean lift. While the ROCKWATER 2 was in the process of being mobilized and outfitted, a separate ROV support vessel was contracted to conduct preliminary support operations on EHIME MARU. The cable laying ship OCEAN HERCULES was brought in to remove the center mast of EHIME MARU since it was determined to be an obstruction to the lifting hardware. For the mast removal, Jet Research Corp. from Texas was subcontracted to cut the mast off using underwater explosives. OCEAN HERCULES was also used to accomplish dredging of bottom sediment in way of the lift straps and to place a constellation of underwater ROV navigational transponders around the sunken vessel.

After outfitting was complete, the ROCKWATER 2 immediately transited to EHIME MARU site to begin recovery operations. The first order of business was to calibrate the navigational transponder constellation so that the ROV pilots could maneuver the ROVs in limited to no visibility conditions. Once calibration was complete, the recovery team went to work on putting two large lifting straps beneath the hull. The first attempt at doing so incorporated a technology called "coiled tube drilling." This technology is routinely used for drilling into oil wells. It had never before been adapted to deep ocean salvage work nor operated by ROVs. The general principle of coiled tube drilling is to pump high pressure water through 2-inch steel pipe outfitted with a drilling nozzle on the end to essentially "drill" with the high pressure water through the soil. While the modified technology was successful in drilling at 2000 feet, it was not successful in placing the lift strap messengers under the vessel.

The next attempt at placing the lift straps beneath EHIME MARU incorporated lifting the vessel via the stern and slipping the straps beneath it while suspended. The first try at lifting the stern resulted in the temporary lift strap breaking when it slipped onto and around the rudder post. On the second try, the team used a cable reinforced lifting strap. This time, the team was successful. With the stern lifted, the ROV pilots pulled a messenger wire underneath the after area of the hull. The team was unable to install the forward lifting strap messenger.

On the aft deck of the ROCKWATER 2 is equipment that will be used in the recovery of EHIME MARU. Photo by PH3 Joshua L. Pritekel.

After the stern of the vessel was set back down the ROVs were then used to rig one end of the aft messenger wire to the lifting strap and the other end to a heave compensated crane aboard the ROCKWATER 2. With this setup, the crane was successfully used to pull the after lifting strap underneath the hull.

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The forward strap posed a new challenge. With two forward lift strap installation procedures having been attempted and unsuccessful, the recovery team developed a third technique. With the aft strap installed, they rigged a temporary lift wire through the anchor chain hawse pipes and lifted the bow over and onto the forward lift strap. This turned out to be a difficult procedure since the bow had buried deep into the sediment when the stern was lifted. The solution to the problem was to dredge the material from around the anchors. While the procedure was effective, the time it took to conduct the dredging was considerable.

Once the temporary lift wire was rigged through the hawse pipes, the recovery team then placed the lower spreader bar assembly above EHIME MARU. The spreader assembly was designed to be buoyant so that when it was placed above the vessel and attached to the lifting straps, it would keep the lifting straps tensioned against the ship. Since they had deviated from the original plan, they had to reconfigure the rigging. Instead of attaching both the forward and aft straps to the spreader assembly, only the aft lift wire was attached. In order to balance the spreader assembly, one of the heave compensated cranes aboard ROCKWATER 2 was attached to the other end of the assembly. The temporary lift wire through the hawse pipes was then rigged directly to the linear winch. With this configuration, they could now lift the entire vessel and move it laterally onto the originally designed forward lift strap. This procedure was a success as the team now had both the forward and aft lift straps attached to the lift assembly as originally designed.

The next step was to lower the upper lift assembly down from the ROCKWATER 2 with the hydraulic linear winches. The two 500-ton linear winches were installed such that their lift wires and associated sheaves went over the side of the ROCKWATER 2 and down to the lower spreader assembly. Once the sheave was at depth (approximately 1900 feet) it was then stabbed and connected into the lower lift assembly. The entire connection process was accomplished using the ROVs, the two heave compensated cranes on the ROCKWATER 2, and the two linear winches. With all the rigging hardware connected, EHIME MARU was ready to be lifted as soon as favorable weather conditions appeared.

After closely monitoring the weather forecasts, an acceptable window finally presented itself. With seas less than 6 feet, the team commenced the relocation process by raising EHIME MARU approximately 25 feet above the seafloor. With the vessel lifted, the ROVs maneuvered beneath the ship so that the area damaged by the submarine rudder could be inspected. The inspection confirmed that the structural damage was well within the estimates made in the feasibility study. All conditions were "go" for relocating EHIME MARU to shallow water.

Transiting with an armada of other support vessels, the ROCKWATER 2 began its slow trek to the shallow water site. Ensuring there were no undiscovered problems with the lift, the initial transit speed was set at 0.2-0.3 knots. Since the ROCKWATER 2 was outfitted with a dynamic positioning system for navigation and station keeping, this low speed was achievable. Once the team was comfortable with the lift arrangement, the speed was slowly increased to 0.5-0.7 knots. Speeds were kept under one knot so that the dynamic loading on the lift system were kept to a minimum. The speeds were also kept low so that EHIME MARU could be slowly raised with the winches as shallower water was approached. After completing the 13 mile journey, EHIME MARU was set down at the 110 foot shallow water site without incident.

The next phase of the operation called for the Mobile Diving and Salvage Unit ONE (MDSU ONE) divers to penetrate the sunken vessel and search for the missing crewmembers. After monitoring the ship for 48 hours to ensure that it was stable, the Navy Divers began their difficult task. They dived with surface supplied equipment that was staged aboard a 400-foot work and accommodations barge that SUPSALV hired from Crowley Marine Services. Using knuckle cranes with stages attached, the divers were lowered to the vessel. Once on the bottom, the MDSU ONE divers climbed a ladder to gain entry into the ship. Working under low to no visibility conditions, they searched every compartment of the ship for the missing crew members. After 29 days and 534 dives, MDSU ONE successfully recovered 8 of the 9 missing crewmembers as well as a significant number of personal effects.

The last phase of the operation was to place the ship back in deep water. Due to the cost of leasing the ROCKWATER 2, it was decided that the diving support barge provided by Crowley Marine would be used as the hoist platform. Instead of using linear winches to lift EHIME MARU from the shallow water sea floor, SUPSALV and Crowley opted to use ballast water to accomplish the lift. This was done by ballasting the barge down to a draft of 20 feet at the stern and connecting the lower lift frame assembly to four chains that were suspended from the rear of the barge. Once connected, the barge was then deballasted to a draft of 13 feet. The lift went without incident and EHIME MARU was successfully towed back to sea and laid to rest in 8500 feet of water on 25 November 2001.

Despite all of the difficulties presented during this operation, the combined CINCPACFLT, NAVSEA, MDSU ONE, and contractor team made history in carrying out this recovery effort. The full impact of the success of the operation will probably never be known. What is already clearly apparent is that eight families of those nine unfortunate crewmembers have been able to bring home their loved one and that the ninth family has been greatly assisted in their grieving process. Everyone who participated in the recovery has assisted in accomplishing an act of kindness that will be remembered for a long time.

LCDR Gregg Baumann is currently the Assistant for Salvage for NAVSEA 00C. LCDR Baumann served as a NAVSEA salvage engineer on EHIME MARU project from February 2001 to December 2001.

EHIME MARU - Environmental Considerations

By: Bill Walker

SUPSALV V-boom skimmer system intercepting oil sheen down-wind of dive barge Crowley 450-10. Photo by Howard Beecher.

Introduction: Navy diving and salvage professionals know that marine salvage operations will invariably involve more or less extensive efforts to protect the environment from oil and hazardous substance (OHS) spills. The OHS pollution may result from the casualty itself or may arise during the salvage operation. In some cases, Navy salvors will be required to coordinate their efforts with other Navy or commercial teams responsible for environmental protection. In others, as with EHIME MARU operations, Navy divers and salvors are directly involved in efforts to protect the environment against damaging releases of oil and hazardous substances. Whether directly involved in or simply coordinating with ongoing environmental protection efforts, it is important for Navy divers and salvors to have a basic understanding of environmental protection considerations relative to marine salvage operations.

In addition to describing the environmental protection efforts undertaken during EHIME MARU recovery operations, this article is intended to provide Navy divers and salvors with useful environmental protection information. This information will make you a more complete Navy salvage professional and may save you, your command, and the Navy from embarrassment and even adverse legal action during future Navy salvage operations. Navy salvors should have a basic knowledge of applicable environmental laws and regulations, the National Response System for spills in U.S. waters, applicable U.S. Navy guidance and organization for environmental protection (worldwide), and some of the environmental protection resources (tools and services) available to the Navy salvor. The EHIME MARU recovery operation was certainly not a typical Navy salvage operation in many respects, but since it required the Navy to operate under the spotlight of intense public and federal and state agency scrutiny, and because it allowed ample opportunity for response planning, should prove a useful example of how environmental considerations can and should be integrated into Navy salvage operations.

Background:

When USS Greenville collided with EHIME MARU, the Japanese fishing vessel quickly sank, releasing an oil slick estimated by the U.S. Coast Guard (USCG) to contain from 500 to 20,000 gallons of oil. No effort was made to contain or recover the oil at sea. The priority at the time was saving lives. In addition, the prevailing trade winds moved the slick further offshore and caused the relatively light diesel oil to naturally disperse without threatening any sensitive resources. The Navy learned that at the time of the collision, EHIME MARU had approximately 65,000 gallons of fuel (marine diesel) and approximately 1200 gallons of lubricating oil on board, in addition to very small quantities of kerosene, paints, solvents, and various compressed gasses. In planning the recovery operation, salvors addressed a potential "worst case spill" of 45,000 gallons, but assumed much less oil remained on board. In terms of potential environmental impact, it is significant that the Navy intended to move EHIME MARU and re-

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maining on-board pollutants from a deep (2000 feet) offshore location (9 miles offshore) to a shallow (115 feet) near shore location (3/4 mile offshore). The potential pollution source was to be relocated from an area of relatively low environmental sensitivity to an area of relatively high environmental sensitivity virtually on the shores of Oahu.

Environmental Assessment:

For legal reasons that are beyond the scope of this article, the EHIME MARU operation was considered a proposed federal agency action that required the Navy to prepare an Environmental Assessment (EA) and to conclude a Finding of No Significant Impact (FONSI) before initiating the operation. The bottom line of this requirement was that ADM Fargo, CINCPACFLT, went on record up front by stating that the Navy salvors would not significantly affect the environment while conducting the EHIME MARU operation. Our environmental protection "mitigation measures" described in the EA (the use of helicopter surveillance, oil containment booms, oil skimmers, dispersants, etc.) were a rigidly pre-established requirement. In addition, the ten-week EA process (normally taking up to a year) involved extensive Navy coordination with various federal and state "trustee" agencies (explained below) and as a result, when the operation was finally implemented, the salvors were under much greater trustee scrutiny than would normally be the case.

National Response System:

Various federal laws and regulations, including the National Oil and Hazardous Substance Pollution Contingency Plan, prescribe how we must respond to OHS spills in U.S. waters. OPNAVINST 5090.2B assigns responsibilities and provides guidance for Navy compliance with these federal (and state) laws and regulations. As a minimum, what Navy divers and salvors need to know is:

1. It's illegal to spill or release OHS into U.S. waters (even during salvage operations).
2. If OHS is released into the water, it must be reported to federal and state authorities.
3. The spiller must clean up the spill.
4. Federal and state On-Scene Coordinators (FOSC and SOSC) have authority to terminate or take over your salvage (and clean-up) operations if you do not protect the environment in accordance with applicable laws and regulations.
5. Other federal and state "Trustee" agencies (e.g. the U.S. Fish and Wildlife Service) have regulatory authority to protect various sensitive resources and may insist upon reviewing Navy salvage plans and overseeing operations (generally through the FOSC or SOSC).
6. Most federal and state agency personnel are trained to participate in joint (multi-agency) operations under the National Interagency Incident Management System (NIIMS) Incident Command System (ICS) or simply "ICS". They expect the Navy to be familiar with the ICS organizational structure and the ICS project management process.
7. (Finally, and here's the good news) Navy On-Scene Coordinators (NOSCs) have been pre-assigned for all Navy operating areas to coordinate Navy environmental protection efforts and to provide liaison with federal and state (and foreign government) authorities on environmental issues.

Lift Ship Rockwater 2 with Ehime Maru approaching SWRS moorings. Note two SUPSALV V-boom skimmer systems and OSRV 'Clean Islands' in foreground and towed containment boom astern of RW2. Photo by Bill Walker.

Navy salvage authorities should coordinate marine salvage planning and operations with the cognizant NOSC. The NOSC can relieve salvors of most of the headaches associated with items 1 through 6 above and can keep us out of trouble. If necessary, the NOSC can facilitate salvage operations by mobilizing spill response resources from Navy, other government agencies, or commercial sources, as described below for EHIME MARU operations.

Response Organization:

The organizational structure for EHIME MARU operations was a hybrid of the ICS to address multi-agency environmental concerns and the standard Navy operational structure for the overall recovery operation. Briefly stated, CINCPACFLT directed the operation, with the Supervisor of Salvage (SUPSALV) providing Navy salvage contractor support for EHIME MARU lift and relocation, and Mobile Diving and Salvage Unit One (MDSU ONE) providing diving services at the shallow water site. RADM Klemm from the CINCPACFLT staff directed the overall Navy recovery operation and was the "Incident Commander" for the ICS organization.

As one of three members of the ICS "Unified Command", RADM Klemm coordinated with the USCG FOSC and the SOSC, from the Hawaii Department of Health on all decisions affecting environmental protection efforts. The Unified Command, at the top of the ICS organization, provides a command structure that recognizes the responsibilities and authorities of all three government officials under applicable environmental law. Under the standard ICS organizational structure, marine salvage efforts are directed within ICS two organizational levels below

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the Unified Command. For EHIME MARU operations, the USCG FOSC allowed recovery efforts to be managed external to the ICS structure, perhaps because RADM Klemm headed both recovery and environmental protection organizations and ensured close Navy coordination with federal and state agencies. *The control of marine salvage operations under the ICS Unified Command, when there is significant risk of serious environmental impact, is an open and potentially troubling issue for Navy salvors.* It is important that we understand the issues and recognize the legal authorities and responsibilities of the FOSC, SOSC, and the various Trustee agencies. A little cooperation and diplomacy could prevent your operation from being prematurely terminated or taken out of your hands. And, as noted above, the pre-designated NOSC can and should be your liaison in these matters.

Due to the nature and scope of the EHIME MARU operation, CINCPACFLT, as the Area Environmental Coordinator over all NOSCs in his Area of Responsibility (AOR), assumed the NOSC responsibilities from the subordinate Regional Commander NOSC. CINCPACFLT was fortunate to have a highly experienced former NOSC representative from Commander Naval Region Hawaii, on his staff. She became RADM Klemm's Deputy Incident Commander under the ICS organization and directed day-to-day environmental protection operations and liaised with the FOSC, SOSC, and trustee agency representatives. Regional NOSC Spill Management Team (SMT) personnel as well as SUPSALV and contractor personnel served on the Deputy IC staff.

Environmental Protection Plan:

The greatest risk to the environment during EHIME MARU recovery was the potential for release of remaining diesel fuel. Other environmental concerns are addressed briefly below. With the ship in 2000 feet of water, there was no practical way to quantify the actual oil spill risk or to remove remaining oil prior to moving the vessel. As noted above, we assumed a worst-case spill of 45,000 gallons of diesel fuel. The mitigating measures prescribed in the EA for this worst-case spill included helicopter surveillance, up to four offshore oil skimmer systems, several thousand feet of containment boom, and a dispersant capability. These resources were kept in ready standby at the pier or deployed for on-scene standby, depending on anticipated risk during the four key phases of the recovery operation.

Under OPNAVINST 5090.2B, SUPSALV is responsible for providing offshore and salvage-related spill response equipment to Navy operational commanders. At the request of the NOSC, SUPSALV offshore spill response equipment and contractor personnel from the Emergency Ship Salvage Material (ESSM) system were mobilized to implement the environmental protection plan. CINCPACFLT contracted for the services of the local commercial industry oil spill cooperative, Clean Islands Council, to provide an additional Oil Spill Response Vessel (OSRV) and the necessary dispersant capability. (Dispersants are chemicals that may be applied to a floating oil slick to break up the slick and disperse the oil as tiny droplets into the water column. Dispersant use in US waters remains controversial, but the USCG FOSC had authority to approve their use if the booms and skimmers failed to adequately protect sensitive Hawaiian resources). The photos on pages 6 and 7 show a SUPSALV V-boom skimmer system with a pair of towboats positioned to intercept an oil sheen from EHIME MARU during Shallow Water Recovery Site (SWRS) diving operations.

Other environmental concerns addressed in the EA and impacting recovery operations included physical damage to sea grass and coral at the SWRS due to vessel anchors and mooring systems, displacement of sea turtles and other endangered or threatened species due to recovery activities at the SWRS, casualty or salvage debris such as cargo nets or fishing gear left on the bottom that could entrap marine life, and introduction of "alien" (non-indigenous) species to Hawaiian waters on hulls or in the ballast waters of diving and salvage platforms mobilized from foreign waters. These concerns were addressed through mitigation measures prescribed in the EA and through the ongoing coordination of the NOSC with trustee agencies.

Protection Plan Implementation:

The EHIME MARU environmental protection plan was implemented as planned. As expected, very little oil remained on board due to collision damage and probably also due to partially filled tanks being crushed as the vessel rapidly descended to 2000 feet. Very little oil was released to the environment during recovery operations. Oil that was released formed very light sheens on the surface that rapidly dissipated naturally.

The EA specified that prior to final relocation to deep water from the SWRS, remaining OHS would be removed from EHIME MARU, "to the maximum extent practicable", with diver safety the overriding concern. SUPSALV ESSM personnel developed an oil removal plan for EHIME MARU and assembled prototype systems tailored to the requirement. MDSU ONE divers operated these systems with topside support from ESSM personnel. The systems included a "mini-hot tap" for thru-hull access to fuel tanks, a diver-held suction wand for over-head removal of oil from vessel spaces, a topside sampling and distribution manifold, and a variety of pumps for various applications. All systems were successfully operated, but very little oil remained to be removed. Small quantities of paint, solvents, and compressed gas cylinders (freon, acetylene, oxygen, and CO_2) were located but for safety reasons spaces containing these materials were secured in lieu of removal.

Summary:

It is fortunate that nearly all EHIME MARU fuel and lube oil were released well offshore prior to EHIME MARU recovery operations and likely caused no significant environmental impact. It is unfortunate but true that this could not have been predicted with certainty prior to the recovery operation. Final hot tapping at the SWRS confirmed that the tanks most likely to contain fuel were in fact open to the sea

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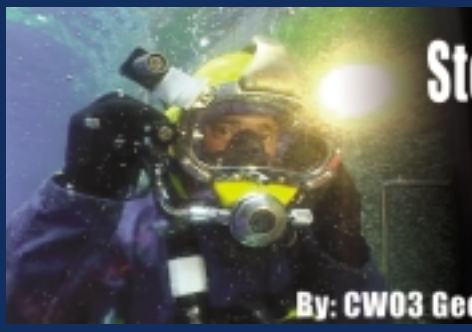


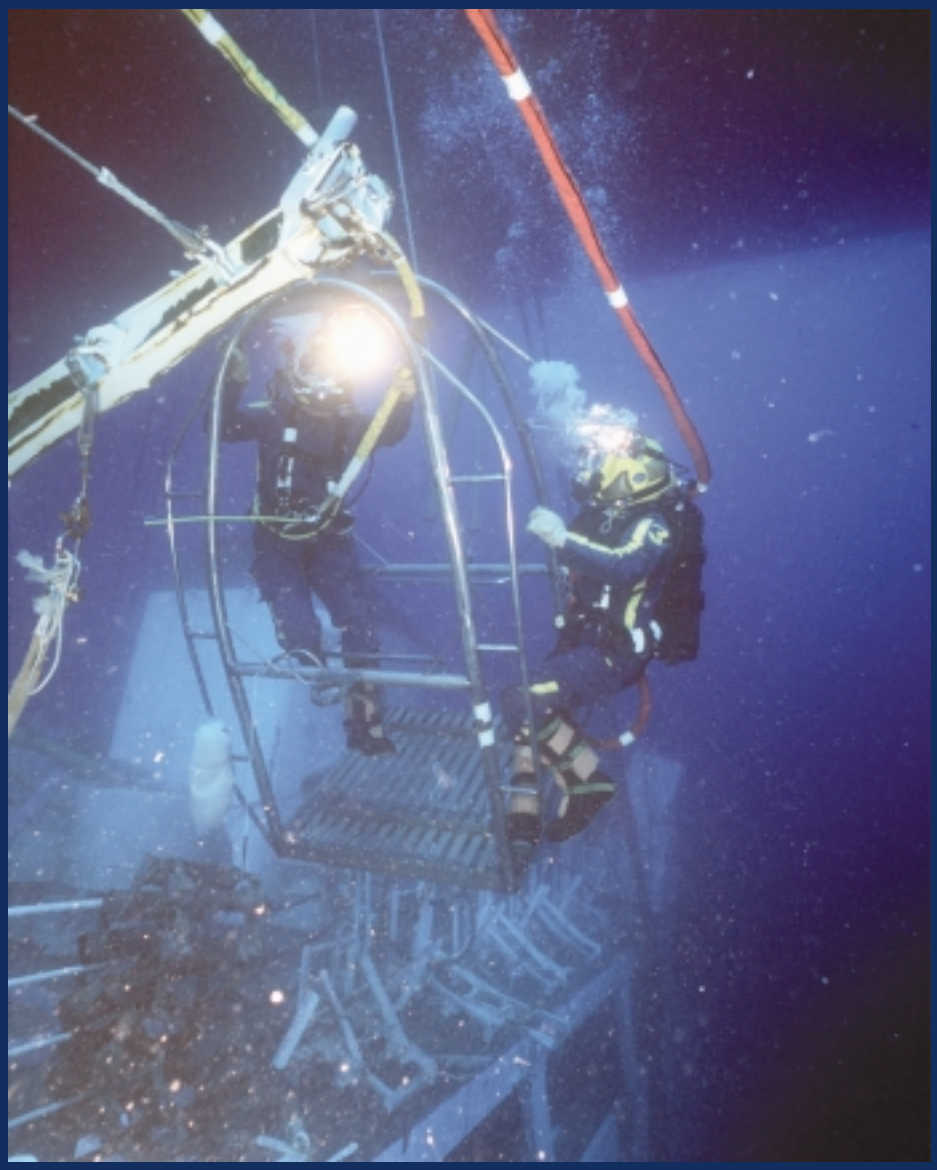
Story of Mobile Diving and Salvage Unit ONE's Efforts in Support of the Japanese Fishing Vessel EHIME MARU

By: CWO3 George R. Primavera

Following the tragic collision which resulted in the sinking of the Japanese fishing vessel EHIME MARU on 9 February 2001, the Navy accomplished the monumental task of relocating the EHIME MARU from 2,000 feet of sea water to a depth of 110 feet off Reef Runway, near Pearl Harbor, Hawaii. Once the ship was relocated, Mobile Diving and Salvage Unit ONE (MDSU ONE) was tasked to conduct all diving and salvage operations in an effort to accomplish five specific mission objectives. Those mission objectives involved recovery of the nine missing crewmembers, collection of all personal effects, recovery of unique shipboard items, performing hazardous liquids and material mitigation actions, and rigging the lifting assembly connections to the contracted barge for EHIME MARU's movement to the final relocation site.

To ensure the accomplishment of all objectives during this international diving operation, MDSU ONE planned the mission and developed a very detailed Concepts of Operation (CONOPS) guide that established a road map for accomplishing the five mission objectives. With the On-Scene Commander's decision to conduct only day-light diving, CONOPS required 70 divers, divided into two separate dive stations, working 16 hours a day for 33 days. The team was comprised of our three Oahu Mobile Diving and Salvage Detachments and divers from Ship Repair Facility, Yokosuka, Japan, Explosive Ordnance Disposal Units THREE and ELEVEN, Naval Submarine Training Center, Pacific, Dive School and USS SALVOR.

On 14 October 2001, the EHIME MARU was relocated to the Shallow Water Relocation Site (SWRS) off Reef Runway. MDSU ONE, aboard the Crowley 450-10 barge, sailed from Pearl Harbor to reposition in a six-point moor over the EHIME MARU.



U.S. Navy and Japanese divers prepare to jump from their stage to the deck of EHIME MARU to salvage personal effects and remains from the vessel off Honolulu International Airport's Reef Runway. Photo by PHC(SW/DV) Andrew McKaskle.

Following a twenty-four hour period to allow EHIME MARU to settle, SCUBA divers conducted an external inspection to verify accesses to the ship's interior spaces were clear and to place inclinometers on the vessel to monitor ship stability before surface-supplied diving operations could begin for internal work.

(EHIME MARU continued on page 10)

Mobile Diving and Salvage Unit ONE Gold Team Red diver removing fouled items topside to support entry inside the EHIME MARU. Photo by PHC(SW/DV) Andrew McKaskle of Combat Camera.

(EHIME MARU continued from page 9)

Forty-eight hours later, divers donning MK-21 helmets equipped with the helmet-mounted camera and light system, wearing dry suits for contaminated diving, entered the vessel and cleared debris in an effort to locate and recover the nine missing crew members. Simultaneously operating two dive stations, divers entered the ship to find total destruction of bulkheads, overheads, and debris fouling every passageway inside the ship's four deck levels. Following extensive debris removal, passageways were cleared and made safe for deeper excursions. Using approved diver tending techniques and meticulous search procedures, divers located and recovered eight of the nine missing crewmembers.

Following the recovery of crew member remains, divers proceeded to objective two to collect all personal effects. The MDSU ONE dive team searched four decks, clearing 120 compartments of over 2,500 personal items for return to the EHIME MARU crew and family members.

Objective three was the recovery of unique shipboard items that would be used as a memorial artifacts. Items collected included the ship's helm, bell, and anchors. Certain family members requested collection of unique items that the missing crew members would have used in the performance of their shipboard duties including radio equipment and engineering control handles.

Objective four shifted diver priorities to removing hazardous liquid materials from EHIME MARU. This was a critical phase in preparing the vessel for removal to the final relocation. Due to the hull damage and rupture of fuel tanks, there was a large amount of diesel fuel and lube oil in the overheads and spaces which required removal. During preparation for diving in a contaminated environment, divers designed and manufactured a first-of-its-kind decontamination shower station for the dive teams. Once topside, divers proceeded to the shower for scrub down, then back to their benches for undress prior to entry into the recompression chamber to complete the Surface Decompression using oxygen requirements.

To clear diesel fuel, lube oil and other hazardous liquids, divers used hand-held suction wands for removing pocketed fluids trapped in the compartment overheads. To access fuel tanks that were not compromised, divers utilized a technique called "Hot Tap" to install two valve flanges onto the fuel tank side-walls. The valve flanges provided a connection point for hoses that led to an oily waste holding tank on the contractor barge. MDSU ONE divers accessed a fuel storage tank and emergency generator service tank to remove fuel. Accessing these tanks was completed successfully without any loss of hazardous pollutants to the environment.

To complete objective four, MDSU ONE divers had to clear all topside materials deemed hazardous to the environment and marine life. Divers performed this ship-wide titivation by clearing and removing over 127,680 meters of fishing long-line and an estimated two tons of miscellaneous topside debris. All debris and material was brought to the surface or secured inside the ship. These efforts ensured there would be no environmental impact once the vessel was moved from the SWRS to the final relocation site.

The final objective was to prepare and rig the EHIME MARU for lift which required the connection of all lifting wires

(EHIME MARU continued on page 11)

BMCS(SW/MDV) Fred Orns Assumes Duties as Fleet Master Diver

That's right, I have the side. A lot of you already know me, and if you don't you soon will. I have served a fair share of years in the diving community at a variety of commands including 3 salvage ships, submarine and ship husbandry, and a training command. With some "big shoes to fill" from the departure of MDV Dave Davidson, I am committed to improving the diving community and am always listening and open to new ideas. Give me a call anytime as I am looking forward to this challenging job and expect to be an asset to all of you.

Not to be forgotten, we bid ENCM(SW/MDV) Dave Davidson a Hoo-yah and great diving in his return to Guam. As Dave moves on, we would like to thank him for his tenacious yet humorous personality and immense contributions to our community during his tenure. MDV Davidson is moving on to COMNAVMARIANAS Dive locker.

BMCS(SW/MDV) Fred K. Orns
ornsfk@navsea.navy.mil
com.202-781-0526
dsn.326-0526

MDV Fred Orns

(EHIME MARU continued from page 10)

and plates. The contractor barge was used to perform a ballast lift of the 830 ton EHIME MARU for the 14-mile transit to the final relocation site. MDSU ONE divers connected the lifting plates and spreader bar assembly to the contractor barge, connected exothermic cutting devices on the lift wires, and acoustic "pingers" to enable position fixing once the EHIME MARU was finally released at the deepwater relocation site.

Throughout the thirty-three days of diving, MDSU ONE logged over 650 dives totaling 625 hours of bottom time without diver mishap to accomplish a task of a complexity not seen since the Pearl Harbor salvage work over 60 years ago. The two separate dive teams accomplished the five mission objectives and ensured that Japanese cultural sensitivities were honored. This is a testimony to the pride and professionalism of the Navy Divers.

As a show of patriotism and specific remembrance for the September 11th tragedy victims, the MDSU ONE team proudly displayed a 50-by-30 foot American Flag from the massive crane on the contractor barge.

Chief Warrant Officer Primavera reported to Mobile Diving and Salvage Unit ONE in June 1998 and was assigned as Officer in Charge of Detachment FIVE and SEVEN, and eventually was assigned as Operations Officer until February 2001. In February 2001, following the tragic sinking of the Japanese fishing vessel EHIME MARU, Chief Warrant Officer Primavera was relieved as Operations Officer to assume full time duties as Officer in Charge of diving for the EHIME MARU.

UNDERWATER SHIP HUSBANDRY

Advisory Diving Around ICCP Systems

By: Tom McCue

Underwater Ship Husbandry (USWH) plays an important role in maintaining the operational readiness of US Navy vessels and extending the periods between scheduled drydockings. UWSH divers should be aware that securing shipboard systems for diving can have adverse as well as beneficial effects. Securing the impressed current cathodic protection (ICCP) system unnecessarily for extended periods for diving operations can result in underwater hull corrosion and require costly repairs.

The ICCP system plays a vital role in preventing corrosion of underwater portions of a ship's hull and appendages. Although the underwater coating system provides the primary barrier to corrosion on all surface ships, submarines, and aircraft carriers, the ICCP system protects the hull and appendages when the coating system is damaged and the underlying steel is exposed to seawater. The ICCP system is designed to protect up to 12 percent bare metal. The ICCP system provides insurance that these bare metal areas are adequately protected until the anti-corrosion coating can be replaced either waterborne or in drydock. Whenever the ICCP system is secured, the ship loses the ability to prevent corrosion in areas where the coating has been damaged. Corrosion is most severe when the ICCP system is de-energized for extended periods. The frequency and duration of inactivation of the ICCP system should be minimized.

Securing the ICCP system when diving operations are to be conducted should be carefully considered and appropriately incorporated into the tag out process. The ICCP system should remain on whenever possible. Guidance for turning off the ICCP system to allow divers to work in the vicinity of ICCP hull fittings is detailed in the *U.S . Navy Diving Manual section 6-6.9.2*, and quoted below:

- Ship impressed-current cathodic protection (ICCP) systems must be secured, tagged out, and confirmed secured before divers may work on an ICCP device such as an anode, dielectric shield, or reference cell.
- When divers are required to work close to an active ICCP anode and there is a risk of contact with the anode, the system must also be secured.
- In situations other than those described above, the ICCP is to remain active.
- Divers working within 15 feet of active systems must wear a full dry suit, unisuit, or wet suit with hood and gloves.
- All other underwater electrical equipment shall be secured while divers are working over the side.

For additional information contact Mr. Tom McCue (NAVSEA 00C55) at (202) 781-0742, DSN 326-0742, or via email: mccuetp@navsea.navy.mil.

Mr. McCue has over ten years of experience in corrosion prevention and is the Hull Cleaning Program Manager in the Underwater Ship Husbandry Division of NAVSEA. Mr. McCue has performed extensive underwater hull inspections, coating evaluations and applications in the pursuit of improving materials for use by Underwater Ship Husbandry Divers.

Forward 4-foot long anode and dielectric shield.

Typical ICCP reference cell (9-Inch Diameter).

Example of a good shield.

Typical anode. The flaming pattern above the anode is a normal bleaching on hull coating systems.

ESSM Diving Depot

By: Bob Kilpatrick

NAVSEA has established a diving depot at their Emergency Ship Salvage Material (ESSM) facilities at Williamsburg, VA and Pearl Harbor, HI for intermediate and depot level maintenance of diver life support systems (DLSS). These facilities were established to meet what was perceived as a need for quality, timely maintenance and repair capabilities for DLSS. Navy system certification imposes very specific requirements for procedure, quality and documentation for all work performed on equipment identified as within the scope of certification. Many commands have experienced difficulty in locating local companies with the capability to perform the work required, while complying with all procedural and documentation requirements. It needs to be said up front that it is not the intention of the ESSM Diving Depot to replace local companies who provide quality service to the fleet. The ESSM Diving Depot was established to give the fleet an option where this service is not readily available locally or where the local firms cannot provide the service required in a timely fashion.

FADS III flasks being hydrostatic tested.

HISTORY

The ESSM Diving Depot actually grew out of a capability originally set up to maintain specified DLSS for use by the MDSU Reserve Detachments. This facility was originally set up at the ESSM warehouse in Stockton, CA. When that facility was closed, this function was transferred to the Cheatham Annex (CAX) warehouse in Williamsburg, VA. Primarily this facility maintained ready-for-issue FADS I systems and MK 12 sets with comms and umbilicals, which were provided to the Reserve Detachments when required for training or deployment. Since some maintenance and repair capability was required to perform this function, it was a small step to provide a limited amount of maintenance and repair for fleet DLSS. However, problems encountered both in Norfolk and Pearl Harbor resulting in significant operational down time made it clear that there was a critical need for reliable depot facilities to provide DLSS maintenance and repairs. It was decided that we could provide that service with minimal investment in facilities or manpower by using existing ESSM diving facilities. However, the demand for this type of support quickly outgrew what we were able to perform. NAVSEA made a commitment to expand the ESSM capability to meet this need. With that decision was born the ESSM Diving Depot. This depot was established at the Cheatham Annex facility. As word of this capability spread, it became apparent that a facility such as this might be of some value in the Pearl Harbor area as well. This past year, NAVSEA established a similar depot at the ESSM facility at Bishop Point in Pearl Harbor. This facility is less capable than the Williamsburg facility, but as demand at the Pearl Harbor facility grows, this will be re-evaluated. At this time, functions that are not within the capability of the Pearl Harbor facility are handled through the Williamsburg Depot.

CAPABILITIES

The ESSM CAX facility has the ability to perform almost all functions required for maintenance and repair of DLSS equipment. Where this facility does not have a needed capability, they have the ability to contract out for the needed work. One of the first capabilities that we added to ESSM CAX was the ability to perform hydrostatic testing of cylinders, flasks, volume tanks and filter housings. With the advent of the portable systems like the Lightweight Dive System (LWDS) and the Flyaway Dive System (FADS) III that use composite flasks, this has been an important part of what we do. Another important capability established was the ability to clean DLSS systems and components to MIL-STD 1330D. No complete depot capability was possible without this ability. ESSM Diving Depot personnel have also been trained to perform many of the repairs associated with the MK 21 helmet, including regulator repair and adjustment, and helmet shell repairs. The Depot also has the ability to perform gauge calibration for both air and O_2 gauges and can set relief valves as required. Compressor repair and maintenance are also among the capabilities at ESSM CAX. Another capability that is not actually part of the Depot, but uses ESSM personnel outside of the Depot is that of repairing HYDROCOM diver communication boxes. This was a capability that was missing within the Navy for a long time. Within the ESSM CAX facility there are many other capabilities that are used from time to time such as welding, and umbilical assembly pull or strength tests. While the facility at Pearl Harbor does not have all of these capabilities, it does have the ability to perform hydrostatic testing, O_2 cleaning, gauge calibration, and MK 21 helmet repairs.

Most of the personnel in the ESSM Diving Depot are retired Navy divers who are very familiar with the requirements of System Certification and re-entry control. Retired MDV Paul Schadon and Jeff Washburn head up the ESSM CAX Div-

(ESSM Diving Depot continued on page 14)

(ESSM Diving Depot continued from page 13)

ing Depot. Retired MDV Jimmy Johnson heads up the Pearl Harbor Diving Depot.

HOW DO I USE IT?

One of the biggest mysteries concerning the ESSM Diving Depot is "How do I use it?" ESSM was established many years ago to maintain a capability to respond to and support ship salvage and oil spill emergencies. Contractors staff ESSM facilities all over the world including the ones at Williamsburg and Pearl Harbor. GPC is the current holder of the ESSM contract. Because this is a NAVSEA 00C contract, all direction to perform work at the ESSM facility must come from designated 00C personnel. The textbook way to use the ESSM Diving Depot is to contact Bob Kilpatrick, SEA 00C33, with a clearly defined description of the work to be performed. E-mail has worked very well for this purpose. He works with ESSM Diving Depot personnel to develop a cost estimate that is then provided to the requesting command, usually within a day or two. The command must then provide the necessary funds in the form of a NAVCOMPT form 2276, Request for Contractual Procurement. In some cases a Form 1149 is used to transfer funding. The funding document is directed to Naval Sea Systems Command, ATTN: Bob Kilpatrick, SEA 00C33, 1333 Isaac Hull Avenue, SE, Stop 1073, Washington Navy Yard, DC 20376-1073. Funding documents are usually faxed to SEA 00C at (202) 781-4588. Once funding is received, it is placed on the contract and work is begun. It is expected that the command requesting the work will provide the proper re-entry control forms for the work to be performed.

Note that cost estimate provided is just that, an estimate, and although the work is usually completed within the estimate, it is possible that additional problems may be discovered while performing the requested work requiring additional funding. An example of this would be discovery of damage to a flask that requires replacement of the flask. Sometimes it is necessary to look at a piece of equipment before providing an estimate. These kinds of issues are dealt with on a case-by-case basis.

One of the most useful variations to this process is establishing an "account" on the ESSM contract. Commands that anticipate a lot of work during the course of a fiscal year can provide a block of funding which is placed on the contract, effectively establishing an account. Once the funds are on the contract, all that is required to get some work done is to provide a statement of work. This has worked very well for several commands.

One area where this Depot has proven to be very effective is serving commands that are located in remote locations

(ESSM Diving Depot continued on page 15)

(EM Environmental Considerations continued from page 8)

and contained only seawater. Despite frequent Navy and USCG surveillance overflights, only very low-volume (though frequent) oil sheening was observed throughout Navy operations. The Navy's extensive, and expensive, standby spill response forces recovered virtually no significant volume of oil. Never the less, all mitigation measures required under the EA were successfully implemented, and had a large spill occurred, the Navy would have been fully prepared.

The value of EHIME MARU standby spill response operations in terms of Navy preparedness for future marine casualties cannot be overstated. The Navy's next major spill response will likely be a true emergency response requiring mobilization in minutes and hours rather than months. For Region Hawaii's AOR, all elements of a successful major spill response have been properly exercised. Regional Spill Management Team (planning and response) personnel have now worked with and are familiar with most local/regional spill response resources, including SUPSALV's Pearl Harbor ESSM base, the local industry spill cooperative, and the largest regional spill response contractor, as well as several commercial work boat, tow boat, and other marine operations contractors. Valuable, positive working relationships have been forged within the National Response System – with the USCG FOSC, the SOSC, and the key trustee agencies.

The environmental message for the Navy diving and salvage community is that:

1. There are rigid prohibitions against releasing OHS into the environment.
2. There is an elaborate National Response System that will be activated should a spill occur during salvage operations in US waters. (The situation is similar in most foreign waters).
3. There is a worldwide Navy organization for dealing with Navy environmental issues, and regional Navy On-Scene Coordinators (NOSCs) should be involved early in salvage operations planning and should be notified immediately should a spill occur during salvage operations.
4. There are spill prevention and response tools available to the Navy salvor, including some SUPSALV ESSM systems (such as hot taps) available for operation by Navy divers and salvors.

Future issues of *FACEPLATE* will profile some of the ESSM environmental protection tools available to the Navy diving and salvage community.

Bill Walker is a former Navy Diving and Salvage Officer on USS Deliver (ARS 23) and USS Grapple (ARS 7) during the Viet Nam war. He is also a former SUPSALV civilian employee of 16 years who has recently returned to SUPSALV as a Salvage and Environmental Operations Specialist after 11 years of marine operations experience in the private sector.

The Old Master

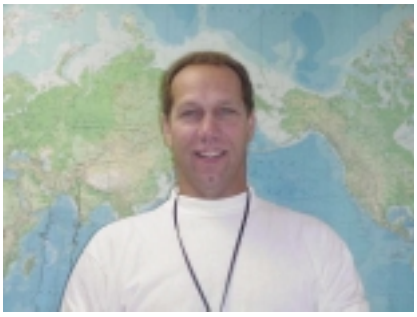
By: EMCM(DSW/MDV) E. Schlenkerman

These are thoughts that might go through your head while attempting to make the "right decision". Should we make this dive?

During a diver's career, he or she might have to make the decision of whether we should dive or not to dive. The U.S. Navy Diving Manual gives us guidance on how to plan a dive and what to look for in making that decision. But, are there other indicators that might help us in making the right call? What are those indicators and how will they help us? Some of those indicators are: the weather, the sea state, the proper equipment for the job, the divers, and the list goes on.

Recently, the dive Navy lost a diver. After reading the message from the Safety Center that described the events that led up to the loss, I personally asked myself, "Why was this dive even attempted, what was so important that it had to happen NOW!"? I don't have those answers but it stirred up some past experiences when I had to make a decision of "to dive or not to dive".

The Navy has changed in the 28 years that I have been in. We went from ignoring any rules (if we had any) to increasing the requirements. In the past, we (divers) would ask the Engineer if the ship was tagged out, and if the answer were yes, we would dive. Currently, we physically have one of our divers go and verify the red tags, see if it's signed, and if it's in the correct location. There are required pre-dive checklists that ensure our equipment is set up properly and that it will perform as required. We also have to do Operational Risk Management (ORM). This is another tool we have to make sure we are doing the right thing. We figure out what risk are associated with the evolution, diving in our case, and determine if it's high, medium, or low. Once that is done we conduct a dive brief or hold training prior to making the dive to discuss the risks involved and how to minimize those risks and what to do should something happen.



MDV Schlenkerman

I'm sure that we have all either seen or been in a situation where we thought that a dive does not need to happen. Someone was putting pressure on to make it happen without looking at the overall picture or didn't have the big picture. When do we say "NO", who is responsible to make that call? **WE ALL ARE!** The diver, the Diving Supervisor, the Master Diver, the Diving Officer, the XO and the CO all are responsible.

What is the right answer? Conduct an ORM Assessment, check the tags, and listen to what's going on around you. What are your divers saying? Are they asking why the rush? Are they enthusiastic about the dive or are they questioning the need for the dive? Look and listen. Make the best decision you can and stand your ground.

Navy diving is voluntary. Let's make the right decisions. HOOYAH, DEEP SEA.

(ESSM Diving Depot continued from page 14)

like Guam, Bahrain, Puerto Rico, Guantanamo Bay and the Mediterranean arena. ESSM is very effective at shipping equipment all over the world and we have used this capability to serve commands in these areas.

CONTACTING US

We are very interested in your feedback on how we are doing in meeting your needs for DLSS maintenance and repairs. On the NAVSEA 00C Web Site http://www.supsalv.org under 00C3 Diving there is a Customer Feedback form that automatically sends your feedback to us. We encourage you to take advantage of this survey to encourage us when we are doing well and to help us serve you better when we can improve our service. Any questions concerning the ESSM Diving Depot should be directed to Bob Kilpatrick, SEA 00C33, (202) 781-4359, e-mail kilpatrickrd@navsea.navy.mil. Questions specific to anticipated work may be directed to Paul Schadow or Jeff Washburn at (757) 887-7402.

Bob Kilpatrick is a Program Manager in the Diving Programs Division, Office of the Supervisor of Salvage and Diving.
He is the senior engineer for surface supplied diver life support systems and serves as the principal POC for the ESSM Diving Depot.

Command in the Spotlight

SIMA Shore Intermediate Maintenance Activity

By: CWO2 Dan Mikulski

Old screw being removed from USS SUPPLY AOE 6 Left to right: BM1(DV) Lafever and Mr. Tony Kriedler.

Located in the heart of the US Atlantic Fleet, Shore Intermediate Maintenance Activity (SIMA), Norfolk, VA is home to the largest dive locker in the United States Navy. The dive locker has 75 military billets and employs 29 DOD civilian divers who are all dedicated to providing Underwater Ship Husbandry (UWSH) repairs to surface ships and submarines in the Mid-Atlantic Region as well as forward deployed units.

With the decommissioning of the destroyer and submarine tenders at Norfolk Naval Base, intermediate level maintenance required by the ships homeported at Norfolk Naval Base became the responsibility of SIMA, Norfolk. In 1999, responsibilities were further expanded into a regional repair concept. This increased the original 18 diving billets to the current 75 military and 29 civilian employees. This took care of manpower requirements to accomplish the volume of underwater work requested by the Mid-Atlantic region. There were many other issues that needed tending such as platforms, facilities, job processing, Material Readiness Management System (MRMS) data, and a hyperbaric facility. All were major undertakings during the evolution of the locker.

Many individuals have had a part in building this dive locker. Master Divers (MDV) Tom Stock and Jeff Royce put their stamp on the way dive requests are processed from start to finish. None of their successors have chosen to change the process. MDV Frank Perna and MDV John Spires were instrumental in both the administration of personnel and the building of the state of the art facility we now occupy. While the MDVs were putting their pieces of the puzzle together, the Chief Petty Officers and Diving Supervisors took over the responsibility of accomplishing the work, which is now in excess of 10,000 production hours per month.

Preparing to install new propeller on USS SUPPLY AOE 6. Left to right: BM1(DV) Lafever and Mr. Tony Kriedler.

At present there are five active waterfront teams of approximately 15 people, each of which has a Master Diver and is headed by a Leading Chief Petty Officer or Civilian Work Foreman. There is also a production/administration and hyperbaric detachment. Each team and detachment operate independently during normal day to day operations or work as one large team when the situation dictates. We have relocated to an 8,000 square foot waterfront building and a 3,000 square foot hyperbaric facility. There are 7 diving platforms consisting of five boats and two mobile vehicles, including the $750,000 Dive and Drive.

Divers fresh out of second class school and others with limited ship husbandry experience are quickly exposed to the knowledge of seasoned professionals in the company of civilian divers with experience that dates back to the days of hardhat, MARK V diving. This mixture of youth and experience keeps the old young and gives the young a chance to learn from the UWSH experts. One such mentor is Ronnie "Frenchie" Le Bude. "Frenchie" attended dive school in 1966 as a First Class Petty Officer and is still diving deep with a true affection for his profession. A pair of beneficiaries from the SIMA experience are ENC(DSW/PJ) Kevin Jones and ITC(SW/DV) Rob Leos. Both divers checked into SIMA, Norfolk from Second class training as First Class Petty Officers, became Underwater Ship Husbandry Specialists, Diving Supervisors and are now Chief/First Class Divers running their own

(SIMA continued on page 17)

Historical Notes

Twenty years ago on January 20, 1982 Washington D.C. was cold and heavy snow was falling. The Potomac River was frozen and most of the D.C. Metro was shutting down. Around 3:59 PM, Air Florida flight 90 taxied out toward the runway to take off to the North in the direction of the Nation's Capitol. The Boeing 737 jet powered up, headed down the runway and lifted into the air. Shortly after takeoff, the jet descended rapidly and crashed into the Potomac River. Five people survived the crash.

The following day, salvage crews arrived at the scene of the accident to begin the work of retrieving the plane and its passengers. Army, Navy , and Coast Guard Divers worked in murky water with surface wind chills down to –47° F. Frozen gear plagued the team. Ice was broken on a daily basis. Divers also had to contend with high stress and low visibility. The mission was successfully completed with 95 percent of the aircraft, all critical parts of the wreckage, and 68 bodies recovered, thanks to the dedication, team work, and courage of the Divers.

CINCLANTFLT stated, " The performance you demonstrated in Washington is a classic example of what is meant by professionalism. Because of the high interest, you all were virtually operating under a microscope… and yet you came through with flying colors and you made the entire Navy and the Nation proud of you."

(SIMA continued from page 16)

SPM change out on USS SCRANTON. Left to right: HT2(DV) Bennet, BM2(DV) Woods, GM2(DV) Simon, and GMG2 Stradling.

teams preparing for MDV evaluations.

The types of jobs SIMA Norfolk accomplishes range from everyday cofferdams and inspections to propeller and auxiliary propulsion motor replacements. The recent 40-ton propeller replacement we successfully accomplished while TAD at Philadelphia Naval Shipyard has been one of the most exciting and rewarding jobs to date of the Diving Regional Repair Center.

SIMA is a command that ushers a person into a successful career as a Navy Diver. From UWSH operations, to hyperbaric chamber sessions, SIMA, Norfolk is the platform every Navy Diver needs to become a success in the water. Our command motto is a simple one that sums up our daily efforts - "We fix ships, underwater."

CWO2 "Diver Dan" Mikulski is currently the Diving Officer at Shore Intermediate Maintenance Activity, Norfolk, Virginia. He was Senior Chief Hull Technician, commissioned in March of 1999 and will transfer to SUBLANT for staff duty in July 2002.

Congressional Medal of Honor Recipient Frank W. Crilley

By: CWO4 Rick Armstrong

On March 22nd 2002, Consolidated Divers Unit located on Naval Station, San Diego, will sponsor a building dedication for Congressional Medal Of Honor recipient, GMC(MDV) Frank W. Crilley, USN. This ceremony will take place at the CDU compound. The Navy diving communities "Working Divers Conference" (WDC 2002) will be taking place that week in San Diego and all attendees are cordially welcomed at the ceremony and reception to follow. A sign up list will be routed at the conference

Frank William Crilley was born in Trenton, New Jersey, on 13 September 1883. Following enlistment in the Navy in March 1900, he became a Gunner's Mate and received training as a diver. One of the original members of Gunner Stillson's experimental dive team, he was instrumental in bringing hard hat diving to the Navy and played a pivotal part in developing submarine rescue procedures that are still utilized today. In 1915, while a Chief Gunners Mate, he made dives to over 300 feet during salvage operations on the sunken submarine F-4 (SS 23) off Honolulu, Hawaii. On 17 April 1915, he rescued a fellow diver who had become entangled at a depth of 250 feet. However, his heroic efforts were not actually brought to light until 1929, 14 years later, at which time he was awarded the Congressional Medal of Honor. His citation reads:

"For display of extraordinary heroism in the line of his profession above and beyond the call of duty during diving operations in connection with the sinking in a depth of water 304 feet, of the F-4 with all onboard, as a result of loss of depth control, which occurred off Honolulu, (Territory Hawaii), on March 25 1915. On 17 April 1915, William F. Loughman, Chief Gunners Mate, United States Navy, who had descended to the wreck and had examined one of the wire hawsers attached to it, upon starting his ascent, and when at a depth of 250 feet beneath the surface of the water, had his lifeline and air hose so badly fouled by this hawser that he was unable to free himself; he could neither ascend nor descend. On account of the length of time that Loughman had already been subjected to the great pressure due to the depth of water, and the uncertainty of the additional time he would have to be subjected to this pressure before he could be brought to the surface, it was imperative that steps be taken at once to clear him. Instantly, realizing the desperate case of his comrade, CRILLEY volunteered to go to his aid, immediately donned a diving suit and descended. After a lapse of time of 2 hours and 11 minutes, CRILLEY was brought to the surface, having by a superb exhibition of skill, coolness, endurance and fortitude, untangled the snarl of lines and cleared his imperiled comrade, so that he was brought, still alive, to the surface."

Frank William Crilley.

In 1917, Crilley was appointed to the rank of Chief Warrant Officer (Gunner(T), and in February 1918 became an Ensign in the Naval Reserve. He commanded the USS Salvor in 1919 and left active duty in July of that year. In the mid-1920's, he was involved with salvaging USS S-51 (SS 162), and returned to active Naval service in 1927-28 to work on the recovery of USS S-4 (SS 109). He was awarded the Navy Cross for his actions as a diver during that operation, the citation reads as follows:

"For extraordinary heroism and fearless devotion to duty during the diving operations in connection with the salvage of the USS S-4, sunk as a result of a collision off Provincetown Massachusetts, 17 December 1927. During the period 17 December 1927 to 17 March 1928, on which latter date the ill-fated vessel was raised, Crilley, under the most adverse weather conditions, at risk of his life, descended many times into the icy waters and displayed throughout that period fortitude, skill, determination and courage which characterizes conduct above and beyond the call of duty."

In 1931, Frank Crilley served as Second Officer and Master Diver during the Arctic expedition of the civilian submarine Nautilus. Also in 1931, he assisted with the salvage of USS Mayflower (PY 1). Transferred to the retired list in May 1932, he was again employed on Navy work in 1939, during the salvage of USS Squalus (SS 192). Ensign Frank W. Crilley died at the Naval Hospital, Brooklyn, New York, on 23 November 1947. One of the true pioneers of Navy diving, the Officers and Enlisted men and woman of Consolidated Divers Unit take great pride in dedicating their new diving facility in Honor of GMC(MDV) Frank W. Crilley a true American hero.

CWO4 Rick Armstrong served as the R-6 Division Officer, Ship's Diving Officer, and Decommissioning Officer on USS DIXON (AS 37) and USS MCKEE (AS 41). In December 1999, he reported to CDU as the Repair Officer. He is currently serving as the Executive Officer of CDU.

FROM THE SUPERVISOR OF DIVING . . .

By: CAPTAIN Chris Murray

This issue of *FACEPLATE* contains articles covering the raising, victim recovery, and then re-sinking of the Japanese training vessel EHIME MARU. This whole operation was very complex from the deep ocean recovery (2000 feet), the diving and search phase, environmental protection, to the final transport and re-sinking of this vessel. Several articles have been written to try to cover all aspects of this tremendous job. CAPT Marsh and LCDR Greg Baumann from this office were intimately involved in the planning, deep ocean recovery, environmental protection, and relocation to the final resting place. Mobile Diving and Salvage Unit One (CDR Rob Fink) did a magnificent job under an intense spotlight every inch of the way during the diving phase. I was extremely impressed by the whole MDSU ONE team and the divers from SIMA Yokosuka that dove with MDSU ONE.

Working Divers Conference (WDC 2002) March 19-21

Time to make your reservations and get in your point papers for WDC 2002. This year's WDC will be at the Admiral Kidd Conference Center in San Diego. Room reservations should be made using SUPSALV web site. A block of rooms are being held until 1 March and will be coordinated by signing up for the conference via our web site. This year's SUPSALV POC is MDV Fred Orns. He will gladly handle any questions you might have on point papers or reservations. MDV Orns can be contacted via e-mail at (Ornsfk@navsea.navy.mil). Point papers, sign up and reservations can be handled by going to www.supsalv.org and going to WDC2002.

Working Divers Conference

When: March 19-21
Where: Admiral Kidd Conference Center in San Diego
How Much: $40.00
Point of Contact: MDV Fred Orns
Ornsfk@navsea.navy.mil

Conference fee will be $40.00 that will cover admin, coffee, continental breakfast, and Wednesday evening social at CDU.

On March 22, 2002 CDU will hold a building dedication for Medal of Honor Recipient Frank W. Crilley. All divers are invited.

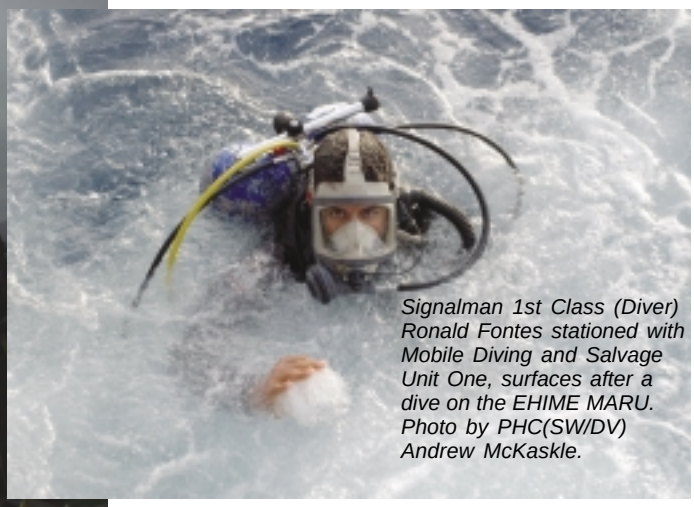
USS MONITOR Expedition 2002

The USS MONITOR expedition gives the Navy an excellent opportunity to perform operational Surface Supplied Mixed Gas Diving under some pretty aggressive conditions. This year we will again be using a civilian Saturation diving system as a proof of concept by Navy divers. Mobile Diving and Salvage Unit Two will again be heading up this year's mission with MDSU ONE providing a detachment for the op. The current plan has the loadout in June on a derrick barge for mid June to late July operation. This year's goal is to recovery the cannons and turret.

Jim Bladh Retires

Jim Bladh has retired from government service after 58 years of active duty and civilian service. This issue of *FACEPLATE* has an article on the last page that gives a short synopsis of his fantastic career. I would like to wish Jim the best of luck and fair winds and following seas.

Daylight runs out as U.S. Navy and Japanese divers are lowered. Photo by PH3 Joshua L. Pritekel. to the sea floor



Signalman 1st Class (Diver) Ronald Fontes stationed with Mobile Diving and Salvage Unit One, surfaces after a dive on the EHIME MARU. Photo by PHC(SW/DV) Andrew McKaskle.

Jim Bladh, Editor of FACEPLATE, Retires after 58 Years of Service to the Navy

I wish to take this opportunity to thank all of you for the outstanding support that I have received since re-introducing "*FACEPLATE*" in the spring of 1995. This issue will be the 18th that we have published. It was Captain Chip McCord who asked for *FACEPLATE* to be re-introduced, particularly to the "Diving Community". It has been truly a labor of love. It has allowed me to stay current and renew old acquantences. I believe each issue has been an improvement. This is due primarily to your input. I have tried to focus on publishing articles from the NAVY DIVER that will tell your story at the "deck plate level" showing photos with captions in order for our readers to know and appreciate what you are all doing. I particularly like "The Old Master" article. It has been a vehicle to introduce and show you what our most senior divers have accomplished and put a face to the name and hopefully encourage you in that direction.

I have initiated the paper work to retire effective 3 January, 2002. This will culminate over 58 years of service to the U.S. NAVY, 30 years active duty followed by 28 years here at NAVSEA working for the Supervisor of Salvage.

I was first introduced to diving when I completed EOD School at Indian Head, Maryland in 1952 and First Class Diver School in 1954 at the Washington Navy Yard as Chief Gunners Mate. After serving in several EOD billets, I was commissioned Warrant Officer and subsequently LDO retiring in 1973 as a LCDR. Since retirement from active duty I have been employed in the Office of the Supervisor of Salvage until my retirement on 3 January 2002.

Jim Bladh, former Faceplate Managing Editor with "Jake".

I hope through *FACEPLATE* we have brought your successes to the attention of many. Although there have been occasions during my years of association with the Diving community that we have been put on the back burner until needed in one crisis or another, you all have responded magnificently to every challenge. I am proud to have been a part of it. I will continue to track your progress through *FACEPLATE*.

DIVE SAFE
Jim Bladh