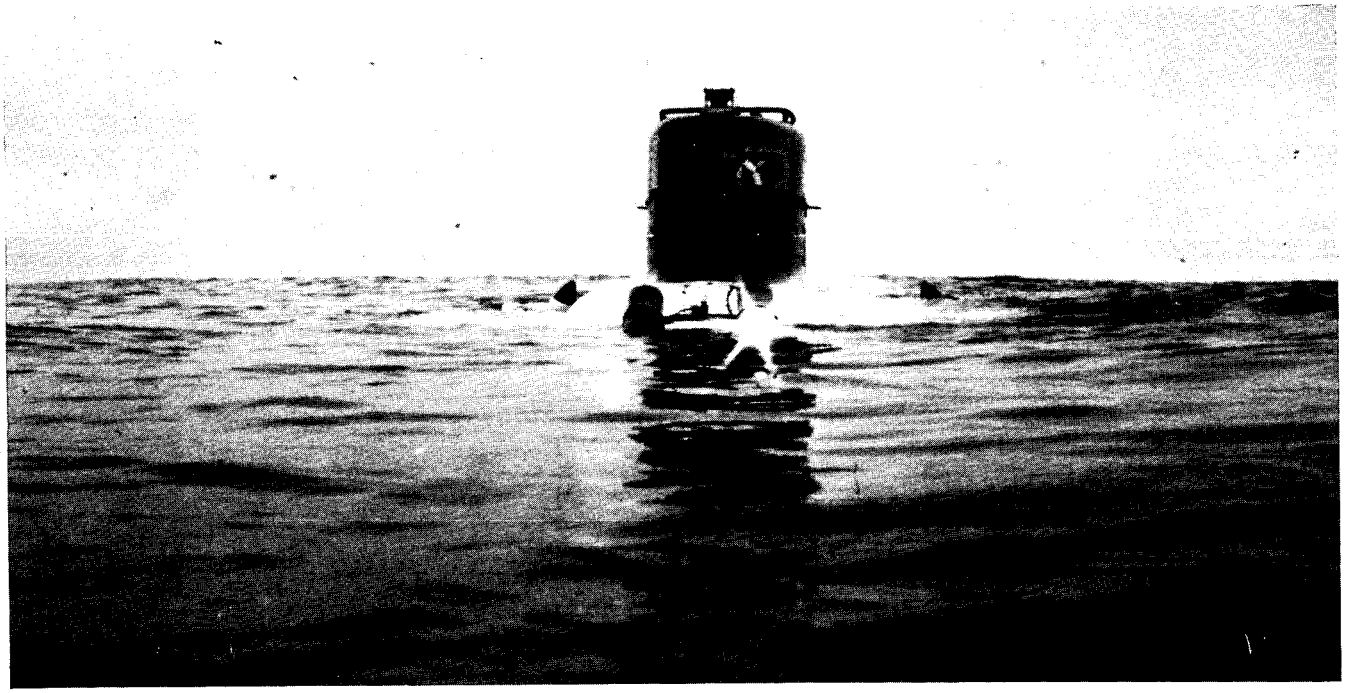
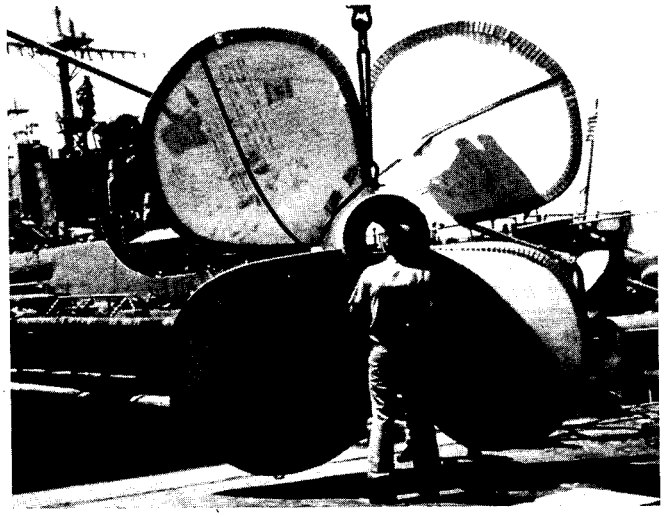
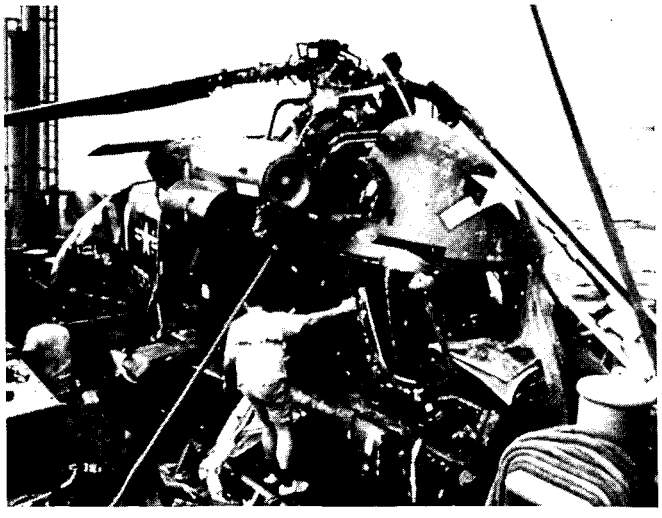
FACEPLATE

Fall
1980







FACEPLATE

. . . the official magazine for the divers of the United States Navy

VOLUME 11, NO.3

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Front cover: Photo taken during Mk 16 UBA TECHEVAL. Inside cover: Top, TURTLE breaks the surface. Middle, left: CAPT Jones (left) presents MSM to CAPT Spaur; right: Mk 16 TECHEVAL exercise. Bottom, left: HCU-1 DET propeller change; right: Helicopter wreckage recovered by CURV III aboard RECOVERY (ARS-43). Back cover: TURTLE descending.

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SCUTTLEBUTT

SCIENTISTS REACH NEW WORLD RECORD PRESSURE

At 7:00 pm on Saturday, November 1, 1980, two civilian scientists from the Physiological Laboratory of the Admiralty Marine Technology Establishment reached a new world record pressure equivalent to 660 meters (2,165 feet) of sea water. They were Mark English, age 24, and Martin Yarrand, age 28 years. This simulated dive was the deepest of a series of target depths formulated some years ago: 180 meters (600 feet, 300 meters (1,000 feet), 420 meters (1,400 feet), 540 meters (1,780 feet), and 660 meters (2,165 feet). Depths of 180, 300, and 420 meters had been reached quite successfully, with the volunteers in good physical and mental condition.

A recent attempt by two professional divers to work at 540 meters (1,780 feet) of seawater had met with a number of difficulties (because of high pressure nervous syndrome (HPNS)) similar to those encountered by the divers in the USN dive at the Navy Experimental Diving Unit in Panama City, Florida. All these dives in the U.K. and U.S.A. had been accomplished with divers using oxygen-helium as the breathing gas. Although it seemed possible to achieve a depth in excess of 500 meters (1,600 feet) with men in good condition, it was clear that the compression times involved were becoming extremely long—several days or weeks. Accordingly, the opportunity was taken to test a tri-mix breathing gas of 10 percent nitrogen, 90 percent helium, on top of 0.4 (4m) bar of oxygen pressure.

The subjects were in quite good condition at 540 meters, i.e., eating well, little or no tremor, no nausea, etc. In view of this outcome, the progressive step was taken to compress to 660 meters. The men remained in good condition until 3 hours after reaching this maximum depth, when their state altered and they became quite ill.

After 37 hours at 660 meters with no adaptation or improvement observed, decompression at 24 meters (79 feet) per day commenced. It is clear that this breathing mixture does not permit you to reach 660 meters in a condition suitable for normal diving tasks if the compression follows the profile adopted in this simulated dive. Nevertheless, this was an informative and useful experimental dive which has provided data for the next steps being considered.

CAPT SPAUR DEPARTS NEDU, RECEIVES MSM

CAPT William H. Spaur, MC, USN, has departed the Navy Experimental Diving Unit (NEDU), Panama City, Florida, for duty in clinical medicine in Norfolk, Virginia. At his departure, CAPT Spaur was presented with the Meritorious Service Medal (MSM) by CAPT Colin M. Jones, USN, Director of Ocean Engineering/Supervisor of Salvage. The Citation read as follows:

"For outstanding meritorious service as the Senior Medical Officer [SMO] of the Navy Experimental Diving Unit from August 1970 to October 1980. CAPT Spaur's superb performance of duty during this period was instrumental in the development of critical diving equipments and procedures for the United States Navy. CAPT Spaur singularly conceived and directed the implementation of a pioneering program to develop unlimited duration excursion tables and saturation diving procedures which are now accepted as established standards and practiced throughout the worldwide diving community. He personally defined physiological standards to be met in the design of all underwater breathing apparatus, and then developed the necessary test and evaluation procedures to ensure equipment adequacy for manned use. Because of CAPT Spaur's total commitment to safe diving, the newly developed U.S. Navy Mk 12 Surface Supplied Diving System and Mk 14 Closed Circuit Saturation Diving System represent the safest and most physiologically adequate underwater breathing apparatus in the world today. His intellectual courage and deep personal conviction, complemented by his outstanding professional technical competence, have made a positive and lasting contribution to both deep and shallow Navy diving." CDR Edward Thalmann, MC, USN, has relieved CAPT Spaur as SMO at NEDU.

BMC(DV) J.H. BLOECHEL REENLISTS

BMC(DV) James H. Bloechel, USN, reenlisted for a final 2 years of duty on July 30, 1980. Of Chief Bloechel's 28-plus years of Navy service, 23 years have been in the Explosive Ordnance Disposal (EOD) community. Upon reenlistment, he officially commenced his "twilight" cruise at the Navy Experimental Diving Unit in Panama City, Florida.

BMC(DV Bloechel (left) "signs up" for another 2 years, assisted by CDR Cwiklinski, Executive Officer of NEDU.

MARINE TECHNOLOGY '80

The Marine Technology Society held its yearly conference on October 6-8,

1980, in Washington, DC. The theme was "The Decade of the Oceans." CAPT Colin M. Jones, USN, Director of Ocean Engineering/Supervisor of Salvage, served as Chairman of the Military and Commercial Diving Session. During that period, selected allied countries presented papers on their respective countries' overall military and civilian diving programs. Diving equipment, diving techniques, and recent noteworthy diving achievements were also presented.

TRANSITIONS

CDR OIEN ARRIVES AT OOC

CDR Harley M. Oien, USN, reported to NAVSEA OOC on November 17, 1980, as Assistant Supervisor of Salvage. He relieves CDR Charles Maclin, USN, who had previously moved to the position of Deputy Director of Ocean Engineering, also at OOC.

Before his arrival at NAVSEA, CDR Oien served as Resident Supervisor of Shipbuilding in Tacoma, Washington, in the area of new construction procurement.

MR. EARL BAKER RETIRES

Congratulations to Mr. Earl Allen Baker, who retired on September 26, 1980, from his position as Logistics/Program Manager in the Office of the Supervisor of Salvage. Earl, known as "Mr. ESSM Base," will be sorely missed.

He first arrived at OOC in early 1967 as a Logistics Specialist, providing total logistics support for U.S. Navy diving, salvage, and ocean engineering systems and equipment. Among his awards, Earl was presented with a Superior Performance Award in November 1974.

He and his family are moving to a new home in Ilion, New York.

MR. RON GREEN DEPARTS

Mr. Ron Green, Production Superintendent (Shop 72) at NAVSEA OOC since 1974, leaves December 12, 1980, for the Portsmouth Naval Shipyard in Kittery, Maine. As Shipyard Production Superintendent, his duties will include responsibility for all rigging, diving, and sailmaking at the shipyard.

WHAT'S WORTH 1,000 WORDS?

A good photograph. And *Faceplate* is looking for contributions to use on future covers of the magazine. Anyone who has an interesting or dramatic diving and/or salvage photograph to contribute should send it to *Faceplate*, Supervisor of Diving, Naval Sea Systems Command, Washington, DC 20362. Credit will be given for those used.

NAVAL RESERVISTS REMOVE WRECK

The 18 officers and men of the U.S. Navy Reserve Harbor Clearance Unit Two, Detachment 101, Portsmouth, New Hampshire, completed the salvage of a 50-foot-long wreck in their own back yard near Jamaica Island recreational area in the Piscataqua River.

Commanded by LCDR Ernest Dickson, the unit undertook the task during its annual active duty for training exercise. The 23-ton LCM (Landing Craft Mechanized) is believed to have been civilian-owned when a gale blew it into the muddy cove approximately 20 years ago. Since that time it has rusted away, filling with mud and debris. Partially exposed at low tide, the wreck was both a navigational hazard and an eyesore. Its removal provided an excellent opportunity for the citizen-sailors to enhance their diving and salvage skills and to work together as a team.

Most of the salvage was accomplished using assets and materials available at the Portsmouth Naval Reserve Center. Fifty-five-gallon drums and other watertight tanks were secured in the wreck at low tide, and air hoses were used to clear away mud from around the hull. The salvaged wreck was taken ashore and cut into manageable pieces for disposal at Portsmouth Naval Shipyards' Scrap Facility.

Navy Reservists during their annual Active Duty for Training exercises help clear the Piscataqua River of a navigational hazard and an eyesore in the form of a wrecked LCM.

NEDU REPORTS

Navy Experimental Diving Unit Report No. 9-79. *Evaluation of the Diving Systems International Superlite 17B Helmet.* J.R. Middleton.

Abstract: The Diving Systems International Superlite 17B helmet was tested by NEDU in accordance with MIL-R-24169A. Results of unmanned testing that evaluated breathing resistance, sideblock pressure drop, and breathing work showed that the helmet is not recommended for inclusion on the list of equipment Authorized for Navy Use because the USN currently has no requirement for this type of equipment in addition to its own USN Mk 1 Mod 0 Mask.

Navy Experimental Diving Unit Report No. 10-79. *Evaluation of the Boatman, Inc. Armet F.R.S. 1000 Helmet.* J.R. Middleton.

Abstract: The Boatman, Inc. Armet F.R.S. 1000 helmet was tested by NEDU in accordance with MIL-R-24169A. Results of unmanned testing that evaluated breathing resistance, pressure drop out of the first stage regulator, and breathing work showed that the helmet meets or exceeds all mil spec requirements. The helmet is not recommended for inclusion on the list of equipment Authorized for Navy Use because the USN currently has no requirement for this type of equipment in addition to its own USN Mk 1 Mod 0 Mask.

Navy Experimental Diving Unit Report No. 11-79. *Unmanned Evaluation of U.S. Navy UBA EX-16 Prototype Closed-Circuit Rebreather.* James R. Middleton.

Abstract: The Navy Experimental Diving Unit (NEDU) evaluated the prototype U.S. Navy Underwater Breathing Apparatus EX-16 in the following configurations: (1) standard hoses with Mk 6 mouthpiece; (2) enlarged breathing hoses with Mk 6 mouthpiece; and (3) enlarged breathing hoses and the AGA full face mask. A series of unmanned tests was conducted to determine performance characteristics of the various EX-16 configurations. Data derived from these tests will be used in follow-on development and testing of the EX-16 UBA. Results indicate the AGA full face mask with its larger breathing hoses to be the optimum combination for low diver respiratory work. The scrubber canister design is deemed adequate and further modifications are unnecessary.

Navy Experimental Diving Unit Report No. 13-79. *Manned Evaluation of the NCSC Diver Thermal Protection (DTP) Passive System Prototype.* LT C.A. Piantadosi, MC, USN; HMCS (DV) D.J. Ball, USN; M.L. Nuckols; and CDR E.D. Thalmann, MC, USN.

Abstract: Twenty-eight long duration manned air dives were performed at the Navy Experimental Diving Unit in 35° – 42°F (1.7° – 5.6°C) water and depths of 10 FSW and 70 FSW to evaluate the effectiveness of the NSCS Diver Thermal Protection (DTP) prototype included body core temperature, mean skin temperature, and mean body convective heat loss. These measurements were compared with currently accepted physiological criteria for thermal exposures in divers to obtain guidelines for use of the system.

Results indicate that the DTP Passive System Prototype can safely support a working diver for up to 6 hours and a resting diver for up to 3 hours in 35° – 42°F (1.7° – 5.6°C) water. Depth dependent degradation of suit performance was not observed, as suit insulation averaged 1.0 clo at both test depths. Attempts by cold, resting divers to rewarm themselves with intermittent leg exercise were sometimes associated with a small body core temperature afterdrop, which could be overcome by continued exercise. Problems requiring additional design and test effort were encountered with inadequate thermal protection of the extremities, particularly the hands, and inadequate sealing of the dry suit outergarment.

These research reports have been issued by the Navy Experimental Diving Unit, Panama City, FL. Non-DOD facilities desiring copies of reports should address their request to National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22151. DOD facilities can obtain copies from the Defense Documentation Center (DDC), Attn: DDC-TSR-i, Cameron Station, Alexandria, VA 22314. Prices vary according to the individual report.

Diver 2nd Class School Reopens

August 1, 1980, marked the first graduation of a Second Class Diver class from the school's new location at the Naval Amphibious Base, Coronado, California. CDR James E. Roper, USN, Supervisor of Diving, was guest speaker at graduation ceremonies. CDR Roper emphasized the need for graduates to continue their diving education in the Fleet as professional Navy divers.

Originally assigned as a division of Service School Command, San Diego, the school had been located at the 32nd Street Naval Station aboard the diving barge YFNX-24. In June 1979, the last classes were completed, and construction commenced on the new facility at the head of Pier 5 on the Naval Amphibious Base. The school became a department of the Naval Amphibious School on October 1, 1979, with new Director, LT Pete Herlin. LT Herlin relieved LCDR "Whity" Weir.

Scuba Diver classes commenced in February 1980, while work on the facilities continued. Students and instructors alike contributed numerous extra hours, making the school "first class," compared to the old location. As of this date, the school's air system remains under construction by school personnel with expected certification in late 1980. Deep Sea Diver training of both Second Class Divers and Mk 12 Orientation continues, however, with a new Fly Away Diving System (FADS).

Top, left: First two graduating classes. Above: CDR Roper (right) and LT Watson.

The Department's assets include an LCM-8 with a complete surface supplied air system and chamber, one LCPL, three Boston Whalers, a diving float with air system, two open tanks, and Building 107—which includes two classrooms, offices, shower and locker rooms, and diving equipage lockers.

The locale, new facilities, and new command combine to make the Diver Second Class Training Department better than ever.

VIEW FROM OOC

CAPT Colin M. Jones, USN
Director of Ocean Engineering/
Supervisor of Salvage

Initially, I had intended to have an article in this issue of *Faceplate* on the subject of maintenance. However, after I prepared it, my staff persuaded me that it might be a bit strong, and that, before I published those remarks, they ought to get a little more review. Therefore, that article will be saved for a future edition.

I would like to comment on some of the interesting salvage operations we have had recently. The most significant one involved two sections of AFDB-7, which went aground in the Azores. I am just delighted at the response provided by the Fleet in conducting this salvage operation. My hat goes off to the personnel from the Harbor Clearance Unit in Norfolk, as well as the other personnel from SURFLANT commands who participated. A "WELL DONE" to all. It was a tough situation; and I think the job was well managed. Certainly, the bottom line here is that it was a successful salvage operation. We will see more on that job in the future, when we receive an article from LCDR Delaplane.

On the west coast, we had a mishap with one of our swimmer delivery vehicles. The recovery of the vehicle was accomplished by the Submarine Development Group in San Diego. We certainly appreciate the difficulty of this operation, and the effort that was put into it.

We have, in addition, been involved in the salvage of an aircraft in Cold Lake, Canada. This operation was undertaken by personnel from the Pacific Salvage Forces in a most inhospitable climate. I am sure they learned a number of interesting lessons; I hope we will see an article in the future discussing some of them.

The reserves have been busy working on an aircraft salvage operation off the coast of Maine. This task has provided them with a unique opportunity to utilize many of their people and to get involved in a tough operation. Once again, we can all look forward to a future article on that operation—one that, I think, will also include some interesting lessons learned. It has presented a diving environment in which I think most of the operations were conducted using surface decompression on oxygen (although it was not absolutely mandatory). Of course, scheduling and managing such a complex diving operation is always a challenge.

The Atlantic Fleet Salvage Force also conducted salvage operations for the recovery of an aircraft lost out of Pax River and for one lost by the Marines off the coast of North Carolina. In summary, we have had many busy times for the Fleet Salvage Forces; and I think they have certainly acquitted themselves well.

In the diving area, it looks like the Mk 16 is moving right along. The preliminary findings from the Operational Test and Evaluation Force indicate that the equipment will be given service approval, and we will be going on to the procurement of this equipment for the EOD forces. The production and delivery of Mk 12 equipment continues to progress. As we become more experienced with it, we are finding a few things that need to be fixed. We will continue to do this for as long as it takes to get the bugs worked out. We appreciate the good feedback and communications we have been getting from the Fleet on this equipment. My perception from here is that, although we have had a few minor problems with the Mk 12, the Fleet divers like it and find it to be not only a very useful tool, but also a good replacement for the old Mk 5. We are also continuing with the development of the Mk 14 push-pull equipment.

In an area of great interest to me and of general interest, I hope, to all of you, we continue to struggle with the business of trying to update and review our various manuals. This is a never-ending task and one in which

all of you can assist us. As you review the various technical manuals and other directives which come from our office, we would very much appreciate some feedback on any errors you find. If you have constructive comments or criticisms to offer, either mark up and reproduce a copy of the instruction or page, or write us a letter and tell us what your ideas are.

Most of the manuals that we produce, at least the ones like the Diving Manual, and most of the various underwater working manuals—the Welding Manual, the Towing Manual and so forth—have seen many revisions through the years. These manuals today are the product of effort put in by many of our Fleet personnel over many years. It is often difficult for me to trace the origins of these manuals. Some had their beginning in the Naval School of Diving and Salvage, where they were written initially as notes to be used by instructors and were subsequently modified and put out as instruction manuals. Others were written by Fleet personnel from various commands; in some cases, they were written by an individual working on a specific task. However, in almost every case, these manuals have seen careful review by the Fleet with a lot of good input—that is one of the elements that makes them so valuable. We need to continue this fine tradition; and I would, in addition, appreciate any background or comments you might offer that you think would be of interest to our readers about the inception of any of these manuals.

I am sure many of you who read *Faceplate* know more about the early history of some of these manuals than I do. An example of this sort of interest was a rather long letter I recently received from Herman Kunz on the *Underwater Welding Manual.* Herman had obviously spent a lot of time going through the manual, and he offered a number of criticisms on it which I think were well thought out and certainly reflected the effort he had put into it. The next time we revise this manual, we will endeavor to take advantage of his thoughtfulness and perception.

I would like to close with a few words on the subject of training. Training of our new divers and, for that matter, our old divers, is the responsibility of each command that is assigned divers. In order for a diver to be safe, in order for a diver to be effective working in the water, he has to get in the water, and he has to get in the water regularly. It is up to each of these commands (having divers assigned) to ensure that those personnel are kept proficient, that their equipment is maintained properly, and that their diving locker is ready to perform when needed. I have, for years, stressed that it was my view that requalification dives need not emphasize *depth,* but instead ought to emphasize *frequency.* I think that many of us in the past have placed too much emphasis on how deep a requal dive was, rather than emphasizing getting our divers in the water and doing work on a regular day-in and day-out basis. Certainly, in many of the underwater ship husbandry tasks we are called upon to do, doing these jobs repeatedly and regularly is the only way to have a diver who is proficient at them. Underwater welding is probably the most difficult task from the standpoint of retaining proficiency. But, all of the tasks that we do require keeping the divers proficient, keeping then trained, and keeping their equipment up to date and ready to go--that is the responsibility of each command. It cannot be done from here anymore than we can legislate safety. We can put out lots of general instructions, but even that will not ensure safety. The only thing that will ensure safety is you, just as the only thing that will ensure training and readiness is you.

CHANGE OF COMMAND AT NMRI

Ms. Mary M. Matzen
Naval Medical Research Institute

On September 12, 1980, CAPT James Vorosmarti, Jr., MC, USN, relieved CAPT Walter F. Miner, MC, USN, as Commanding Officer of the Naval Medical Research Institute in Bethesda, Maryland.

The change-of-command ceremony took place on the front steps of the Naval Hospital at the National Naval Medical Center. Among the attendees were five of the 10 previous Commanding Officers of the Naval Medical Research Institute, including CAPT O.E. Van Der Aue, MC, USN, who was one of the early diving medical researchers.

Funding and support problems of the biomedical research community were themes that appeared to be a springboard for each speaker's comments.

CAPT Tor Richter, MC, USN, Associate Dean, School of Medicine, Uniformed Services University of the Health Sciences, gave the principal address. He discussed the relationship between the "patron" (the funder and receiver of the services) and the scientist. Today, the patron has evolved from an individual to administrative offices, advisory panels, interest groups, research teams, and laboratories. Complexity further develops when it is realized that the money belongs to none of the principals involved. Ownership has become "stewardship" [the administration of goods or duties entrusted to one's care]. "Neither the patron [administrator] nor the recipient [scientist] owns what the one is giving away and what the other is spending–this fact alters their relationship in a way that is easy to sense, but difficult to describe."

CAPT Richter, who has served as Program Manager and as NMRI's Commanding Officer (from July 1970 to May 1974), stated: "I vividly remember ...feeling at times as if I was gambling at Las Vegas with my father's credit card. One never seems to have enough data or advice on which to make a decision."

To optimize communication between administrator and researcher, CAPT Richter believes that the administrator should keep up with the technical and professional aspects of the work he supervises; ideally, he should continue to do it. The scientist can aid in the communication with the administrator by putting aside an attitude of elitism when he is dealing with the administrator.

CAPT J. F. Kelly, DC, USN, the Commanding Officer of the Naval Medical Research and Development Command (NMRDC), described NMRI "as a unique Navy asset--an asset that must be carefully nurtured to assure that the Navy will derive benefit from its existence." He defined "nurture" as "furthering development and growth."

He continued, "In an organization such as NMRI, functioning in an organizational relationship with the Medical Research and Development Command, the process of nurturing cannot be effectively accomplished without a sense of mutual understanding predicated on respect and a clear understanding of purpose. This relationship has been occasionally strained because of the very difficult problems that face Navy biomedical research. We have many masters and pleasing them all is no easy task. In attempting to do so, mutual under-

standing and sense of purpose are severely tested. I view as my principal responsibility the need to sustain that understanding through meaningful communication—communication that helps NMRDC and all of its laboratories clearly define the research goals that exist in relation to Navy needs."

CAPT Kelly challenged NMRI scientists: "carry out your responsibilities in such a way that our professional credibility will be absolutely assured. This is the foundation of our organization and with mutual trust and understanding I am fully confident that Navy biomedical research can flourish even in an era of constrained resources, and that those outside our organizational boundaries will understand and support our efforts."

CAPT W. F. Miner echoed the concern about funding, support, and management of science. "Science thrives in an atmosphere of stability. It cannot be done by fits and starts. To the extent possible, funding and direction must be knowns, not variables." CAPT Miner also noted that "scientists will tolerate anything if they can do good science. If they can't, they leave. Without the scientists, buildings and equipment are nothing."

Regarding science management, CAPT Miner commented: "The fleet operator is best able to pose the question. The bench scientist is best able to generate the answer. It makes sense for them to communicate ... directly." CAPT Miner leaves NMRI to serve as Regional Health Care Coordinator, Naval Regional Medical Center, Portsmouth, Virginia.

CAPT JAMES VOROSMARTI, JR.:

CAPT James Vorosmarti is well known to the diving community. During the years that he was earning his medical degree at Jefferson Medical College in Philadelphia, he was an Ensign in the Naval Reserve and served on active duty at the U.S. Naval Hospital in Philadelphia. After his internship at the U.S. Naval Hospital in Portsmouth, Virginia, he graduated from the Naval School of Diving and Salvage and the Naval Submarine School. Assignments thereafter included duty as the Medical Officer of the precommissioning crew of USS JACK (SSN 605) in 1961, duty in USS JOHN ADAMS (SSBN 620), as Medical Officer at the Naval Submarine Base in Pearl Harbor, with additional duty as Medical Officer for the Submarine Escape Tank and Diving School under Commander, Fleet Submarine Training, Pacific. He was one of the Medical Officers on the SEALAB III project and was qualified as an aquanaut.

CAPT Vorosmarti took postgraduate training in diving and environmental physiology at the University of New York at Buffalo in 1970-1972. He then served 3 years as Exchange Officer with the Royal Navy at the Institute of Naval Medicine and the Royal Naval Physiological Laboratory, with additional duty to the Office of Naval Research, London. Between 1975 and 1978 he served as Executive Officer of the Naval Medical Research Institute. From 1978 until his present assignment, he was Program Manager, Diving and Submarine Medical Research at the Naval Medical Research and Development Command. He is a qualified Submarine Medical Officer and is entitled to wear the Diving Officer insignia. He is a Diplomate of the American Board of Preventive Medicine, a Fellow of the American College of Physicians, and a Fellow of the American Academy of Family Physicians.

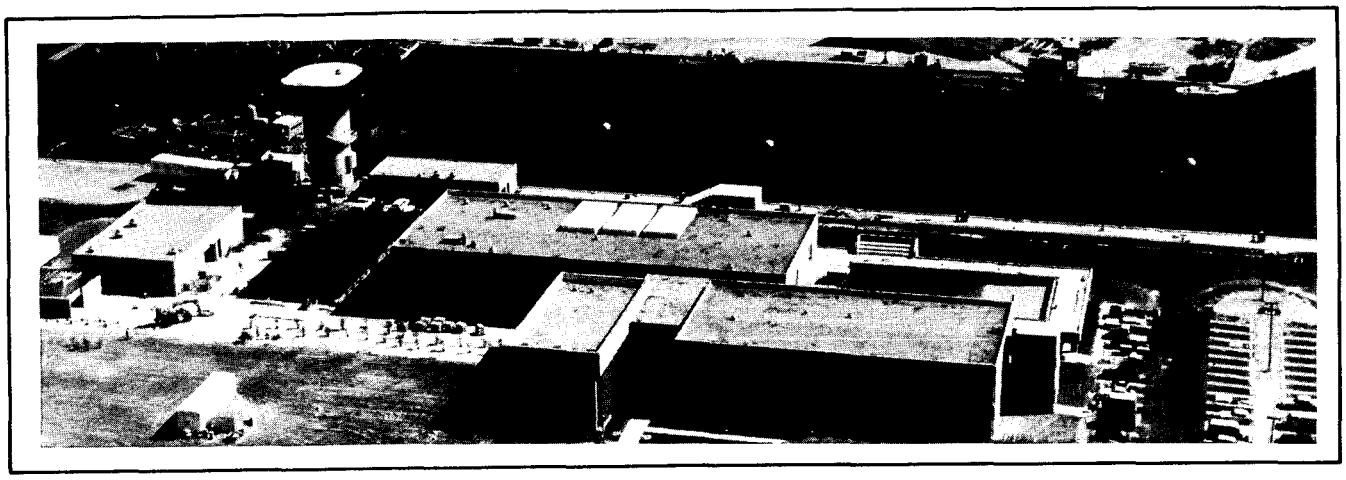
NAVAL MEDICAL RESEARCH INSTITUTE:

The Naval Medical Research Institute (NMRI) was commissioned in 1942 to conduct Navy medical research in infectious diseases and operational problems. From its modest beginning, NMRI is now the Navy's largest biomedical research facility. It is housed in a complex of buildings that occupy approximately 222,000 square feet at the National Naval Medical Center in Bethesda, Maryland, and at a Toxicology Detachment at Wright-Patterson Air Force Base in Ohio.

Today, the mission of the Institute is to perform basic and applied research and development concerned with the health, safety, and efficiency of Navy personnel in direct support of Fleet operational problems. To fulfill this mission, more than 100 approved research projects are currently in progress. These projects are organized into five program centers, in which related projects can benefit from the close association of investigators with similar interests.

These program centers are identified as Casualty Care, Environmental Stress, Hyperbaric Medicine, Infectious Diseases, and Research Support.

Above: CAPT Miner reviews NMRI troops for the last time. Page 10: CAPT Vorosmarti reads his orders.



NDSTC: Officially "Open for Business"

The mission of the Naval Diving and Salvage Training Center is "to train selected officer and enlisted personnel in diving, ship salvage, and submarine rescue, and to perform additional tasks assigned by the Chief of Naval Education and Training."

A new era of Naval diving training began on October 1, 1980, with the official dedication and opening ceremony of the Naval Diving and Salvage Training Center (NDSTC) in Panama City, Florida. Designed to be the most modern complex of its type in the world, NDSTC is the first U.S. Naval Diving Training Facility in many years to be planned and built primarily to train divers.

NDSTC was officially welcomed to the Naval Coastal Systems Center (NCSC), where it is a tenant activity, by CAPT Raymond D. Bennett, NCSC's Commanding Officer. In his comments, CAPT Bennett pointed out that the arrival of the training center to NCSC brings together the whole spectrum "from research and development to test and evaluation to the training of Fleet divers and salvors."

Keynote remarks were given by RADM Thomas L. Malone, Jr., USN, Chief of Naval Technical Training (CNTT), and by CDR James R. Nelson, USN, Commanding Officer of NDSTC.

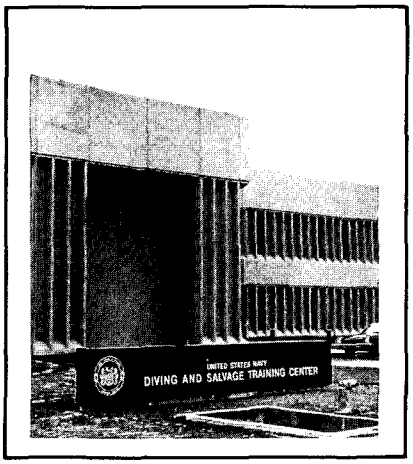
RADM Malone, as CNTT, is responsible for 57 commands in 27 locations around the nation that involve submarine, surface, and aviation schools for officers and enlisted personnel. He noted in his comments that there are 40,000 students on any given day in the training command, and that the process of training these students is a priority in the Navy.

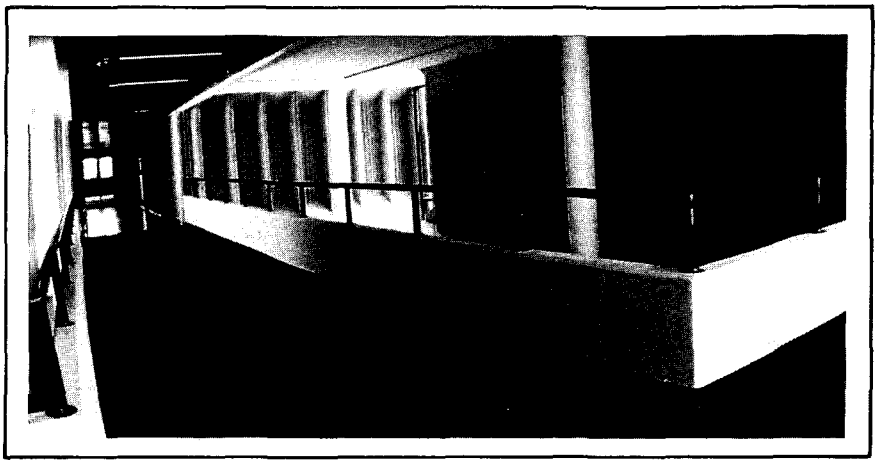
CDR Nelson called the commissioning of the facility the beginning of "a new chapter in U.S. Navy diving." With the location of both the School and the Navy Experimental Diving Unit at NCSC, "Panama City is the diving center--and possibly the diving capital--of the United States and possibly the world."

CDR Nelson also recalled the former Naval School, Diving and Salvage (NSDS) in Washington, D.C. In comparison, the new NDSTC is "a far cry from the dark working days, polluted waters, chilling winds, and sometimes icy water conditions" that could plague trainees and instructors alike at NSDS.

NDSTC is considerably larger in size than NSDS. When completed, it will house approximately 56,000 square feet and will be capable of training 207 students at one time. In addition to 10 classrooms and administrative space, the building complex has a machine shop, a carpentry shop, gas storage farm, physicians' office, examining room and operating room, a helmet and diving dress repair room, an electrical shop, a mixmaking room for helium-oxygen mixing, a power plant, three hyperbaric chamber systems, and three open diver training tanks. On the grounds, NDSTC operates a free ascent tower where students will receive free ascent training from 50 feet, diving bays with winches to lower underwater projects into the 27-foot deep water alongside the pier, and a storage building.

In addition to building improvements, NDSTC also offers dramatically improved logistics for diver training. At NSDS, students had to





cross the river to use a pool for SCUBA training. At NDSTC, it is outside the SCUBA locker door. The NSDS salvage project was a 10-mile drive from the school; it is right off the adjoining pier at the new complex. Also, instead of a 60-mile drive to conduct deep diving training, NDSTC personnel only have to go 12 to 15 miles offshore in the Gulf of Mexico.

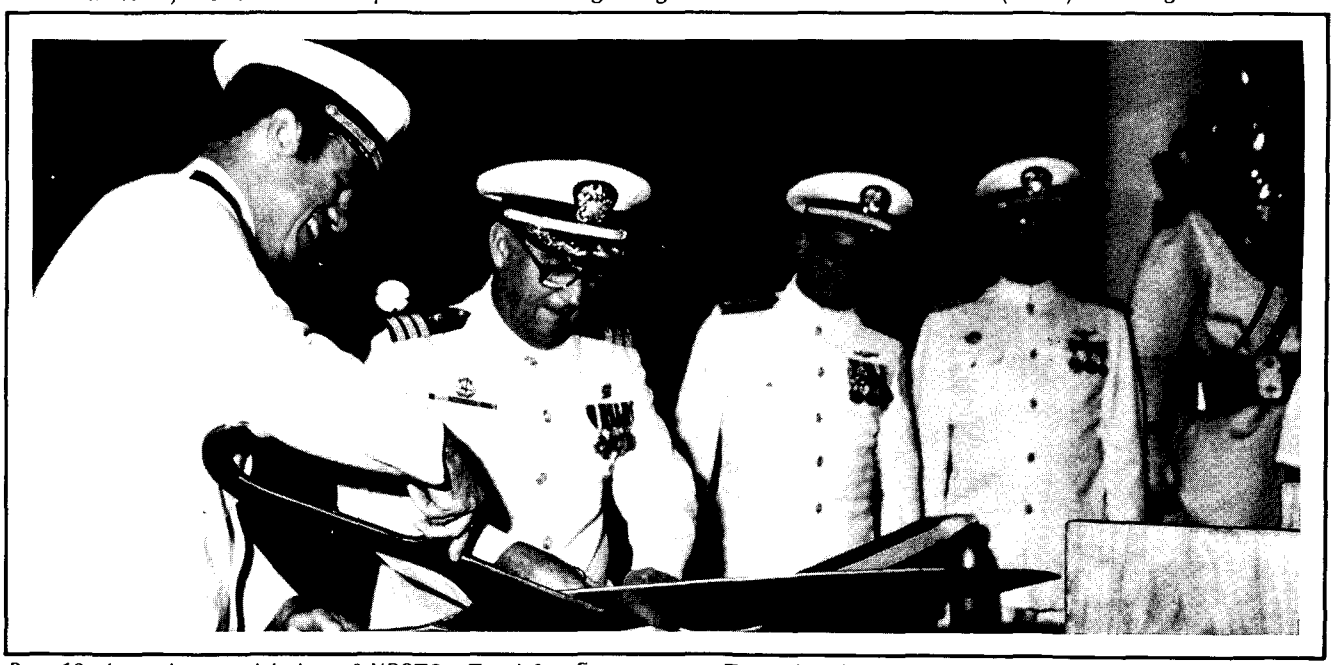
NSDS had a lot of memories, a lot of "heart and soul," and a lot of (overly) well-worn metal. NDSTC continues--and plans to improve--the legacy handed down to it with everything but that last ingredient.

NDSTC has a staff of 13 officers, 42 instructors, 18 servicecraft personnel, 16 maintenance support personnel, and seven civilians. Naturally, all are important to the management of the facility. Listed below, however, are several of the "key" personnel.

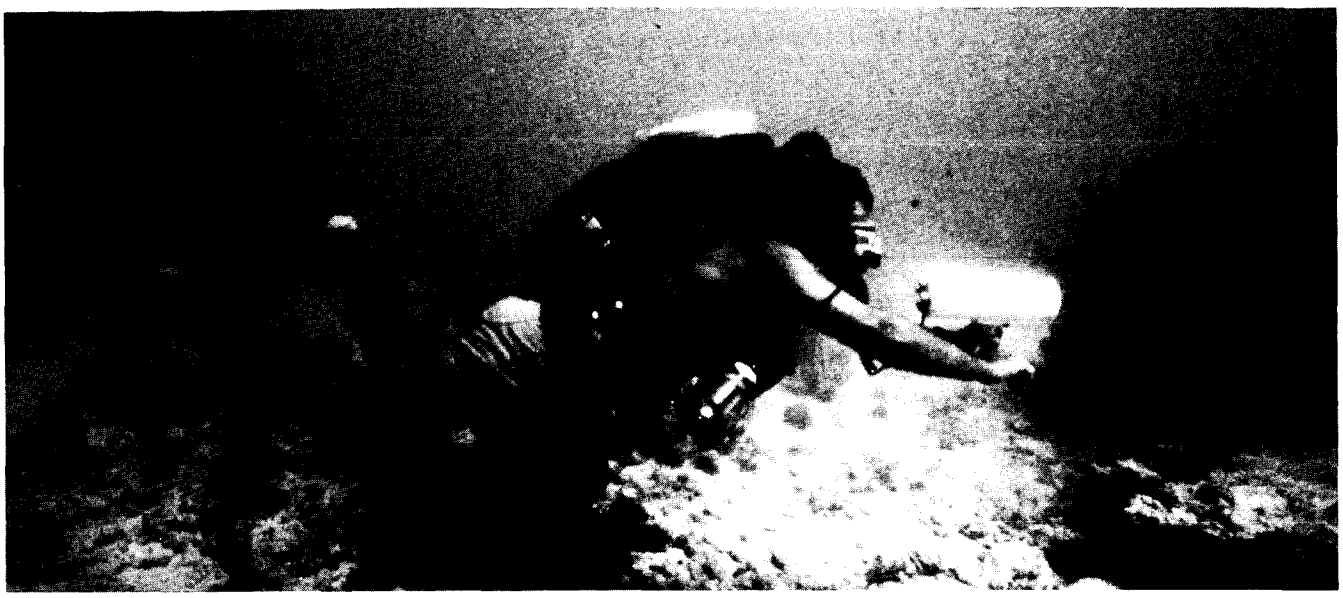
Commanding Officer
CDR J. R. Nelson
Executive Officer
LCDR Dave McCampbell
Training Officer
LT S.C. Butler
Administrative Officer
LTJG W. Wilson
Supply Officer
SKCM Stewart
Senior Medical Officer
LT Zwingelberg
Certification/Construction Officer
LCDR Wolford
Assistant Training Officer
CW04 Wilcox
Maintenance Department Head
CW04 S. Harless
Administrative Assistant
HTCM(DV) Curtis

Master Divers on board:

MMCM(MDV) Schunk (Command Master Chief)
HTCM(MDV) Schlegel
BMCM(MDV) Rhinehart
MMCM(MDV) Kinnard
ENCS(MDV) Gummel
BMCM(MDV) Einhellig



Page 12 photo shows aerial view of NDSTC. Top left: Entranceway. Top right: Modern interior of the school. Above: left--right: CDR D.J. Briselden (Southern Div., NAVFACENGCOM), CDR Nelson, RADM T.L. Malone, Jr., and CAPT R.D. Bennett at ribbon-cutting ceremony.



Mk 16 UBA UPDATE

BMC(DV) James H. Bloechel, USN
Navy Experimental Diving Unit

The Mk 16 Mod 0 Underwater Breathing Apparatus (UBA) is a low influence signature, closed-circuit, mixed-gas, constant partial pressure oxygen, underwater life support system. It was developed to support the low magnetic and acoustic signature requirements of the Explosive Ordnance Disposal (EOD) Community. On May 17, 1980, the Mk 16 Mod 0 UBA commenced its Technical Evaluation (TECHEVAL) and moved one step closer to replacing the antiquated Mk 6 UBA.

From May 17 through June 14, the Mk 16 was "put through its paces" at Key West, Florida, completing 193 dives in water depths varying from 12 to 150 feet of seawater (FSW). Total water time was 305.5 hours.

Some of the objectives of the Mk 16 TECHEVAL were as follows:

- Achieve at least 100 hours of bottom time at depths to 150 FSW;
- Evaluate the supportability of the Mk 16;
- Evaluate the adequacy of spare parts, tools, and test equipment; and
- Evaluate the proposed training course plan and human engineering factors.

Additionally, the Mk 4 life jacket was worn on all dives, and its users reported a high degree of acceptance. The Portable Recompression Chamber (PRC) was present for use as the onscene treatment chamber, and a 23-foot Monarch boat was tested as a possible future EOD workboat.

Various commands participated in the TECHEVAL of the Mk 16 UBA. In the Key West area—NADC Key West, EOD Detachment Key West, and the U.S. Army Special Forces Swim School provided work and pier space, logistic support, boat support, high pressure (HP) air, double-lock chamber, and invaluable information describing local conditions and dive sites.

The success of the Mk 16 Mod 0 TECHEVAL can be best stated by the fact that the Mk 16 Mod 0 Operational Evaluation (OPEVAL) commenced October 6, 1980, at Explosive Ordnance Disposal Group ONE, Hawaii, and was concluded on November 7, 1980.

Personnel participating in the TECHEVAL are listed below:

PARENT COMMAND

Naval Sea Systems Command
LCDR Stan A. Denham (Mk 16 Program Manager)

Navy Experimental Diving Unit:
PARTICIPANT
CAPT W. H. Spaur, MC, USN (On-scene Dive Medical Officer)
LCDR M. J. Harwood, RN (Technical Test Director)
LCDR J.T. Harrison, USN (Senior Dive Officer)
LT C.G. Gray, MC, USN
LTJG D. J. Styer, MSC, USN
CPO(D) C. A. Kidman, RN
ENC(DV) M. L. Alexander, USN
CE1(DV) M. R. Anderson, USN
HM1(DV) J. P. Blackshire, USN
HMCS(DV) C. K. Blair, USN
BMC(DV) J. H. Bloechel, USN
EMC(DV) C. W. Clackley, USN

EN1(DV) J. L. Daigle, USN
BM1(DV) J. E. Dearing, USN
MMCS(DV) D. E. Dodds, USN
HMCS(DV) T. G. Holmes, USN
BM2(DV) D. L. Hughes, USN
GMG1(DV) A. W. Paauwe, USN
BT1(DV) L. P. Siemiet, USN
EMCS(DV) C. P. Wilkinson, USN

Explosive Ordnance Disposal Group ONE:
LT N. G. Garon, USN
CPO(D) B. J. Furner, RAN

Group TWO/EOD Det, Naval Coastal Systems Center, Panama City, Florida:
LCDR J. W. Ennis, USN
CW02 W. A. Brindle, USN
UTCS(DV) J. J. Becker, USN
MM2(DV) C. W. Wentzel, USN

Navy Explosive Ordnance Disposal School:

MN1(DV) W. A. Bradfield, USN
ABH1(DV) R. S. Crowder, USN

Navy Explosive Ordnance Disposal Facility:

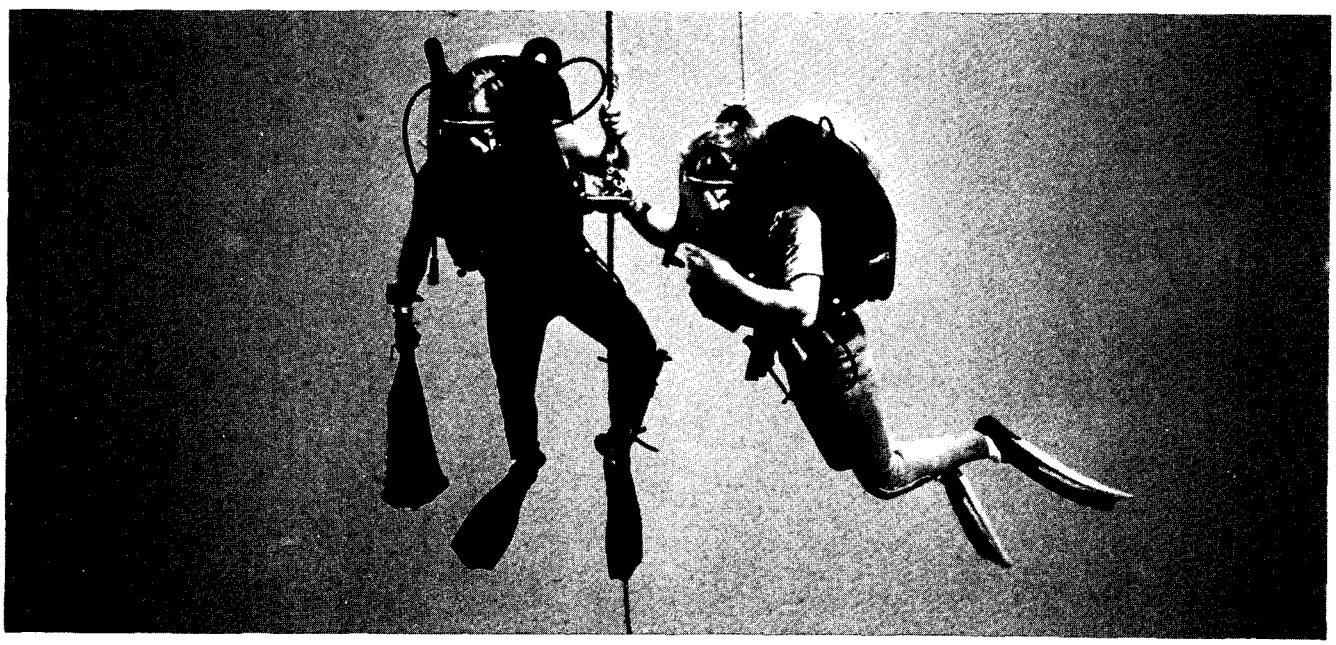
LT R. E. Darling, USN
MMCM(DV) J. Kerr, USN
Ms. D. McGill
Mr. P. Palmer

Naval Air Station, Pensacola, Florida:
ENC(DV) R. R. Shamberger, USN

Fleet Audiovisual Command Atlantic:

CW02 J. E. Penner, USN
PHCS(DV) D. J. Graver, USN
PH1(DV) T. E. Gruber, USN

Photos on pages 14-15 show various scenes from Mk 16 TECHEVAL.



At Lake Superior salvage: Left, MM2 Yost and QM2 Wojcicki; right: (1-r) CDR Chubb, LT Laporte, CDR Ingersoll, ENCM Starcher, and CPO Seeley.

RHCU-2 DET 813: "Ready and Able"

CDR Steve Chubb
CO, RHCU-2 DET 813

There has been, during the past several months, a lot of discussion in the news media about the readiness and ability of the U.S. Armed forces to meet a crisis wherever or whenever it may occur throughout the world. In light of the seizure of the U.S. embassy in Iran, the Soviet invasion of Afghanistan, and the outbreak of war between Iraq and Iran, the United States has been put in a position where it may be called upon or feel a need to utilize military forces to protect its own interests or the interests of its allies. There are some individuals who have stated that the U.S. armed forces are unable to meet these needs. That, no doubt, is a debatable subject. It is not the intent of this article to argue military preparedness, but to show how one particular reserve harbor clearance unit is ready to support its parent command whenever the need arises.

Reserve Harbor Clearance Unit Two Detachment 813 (RHCU-2 DET 813), located in Chicago, Illinois, is such a unit. The unit is made up of 22 dedicated individuals of varying backgrounds and training, resulting in a diversity of skills that enables the unit to handle the many diving jobs assigned to it. Detachment 813 has three salvage officers, three explosive ordnance disposal (EOD) officers, one Nurse Corps anesthesiologist, five second class divers, one diving medical corpsman, one UDT/SEAL corpsman, several divers in various stages of phase training, and support personnel.

Detachment 813 drills monthly at the Naval Reserve Center, Chicago, Illinois. It stresses physical fitness and the maintenance of a high level of training and qualifications of its members. Three-mile runs, calisthenics, and swims or dives are scheduled each month. During summer months, dives are conducted in Lake Michigan; during the winter months, swimming and diving training is conducted in the reserve center's swimming pool. Classroom training is conducted regularly on diving medicine, salvage, and other related subjects. Detachment 813 actively supports other reserve units and commands in the area by providing diving services whenever needed. The unit has conducted harbor and beach surveys to locate underwater obstructions for a reserve assault craft unit and has on two occasions conducted bottom surveys along the south side of Navy Pier before the visits of U.S. Navy ships to Chicago.

One of the most important roles that RHCU-2 Detachment 813 performs is to support its parent command, Harbor Clearance Unit Two (HCU-2), Little Creek, Virginia, during its 2 weeks of active duty training (ACDUTRA) during the

summer. It is during this 2 week period of ACDUTRA that the training and preparedness of the unit is put to a test to determine if the reserve personnel can "carry their share of the load" and perform in a satisfactory manner.

Such a test took place for RHCU-2 DET 813 in the summer of 1979. The unit was requested to provide reserve personnel to augment divers from HCU-2 for a most unusual salvage operation in Lake Superior. In 1975, the wreck of the S.S. INDIANA, an early screw-propelled steamship built at Vermillion, Ohio, in 1848, was discovered by a group of scuba divers headed by Mr. John Steele. The Smithsonian Institution desired to raise the propulsion system of the S.S. INDIANA because of the remarkably primitive nature of her hull and machinery, which preceded the earliest Great Lakes steam engine still in existence. For the first time, the primitive square-bladed screw propeller, the unorthodox steering quadrant, the single one-cylinder vertical steam engine, boiler, and condenser would be available for study and display. (See *Faceplate*, Spring 1980.)

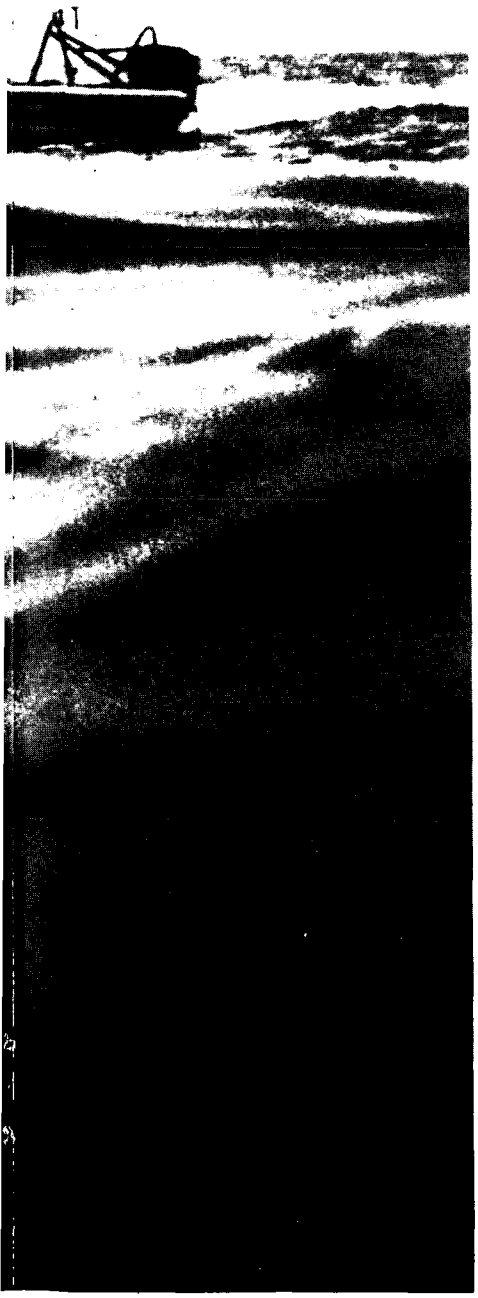
LCDR Rob Wells, then Commanding Officer of HCU-2, headed the salvage operation 4½ miles off Crisp Point in the southeastern corner of Lake Superior. Since the wreck was laying approximately 120 feet below the lake's surface in very cold water, special diving equipment had to be utilized. The new Mk 12 surface supported diving system and the Mk 1 surface supported diving system with hot water heated diving suit were used to provide maximum safety and comfort for the divers. About 200 dives were conducted without a serious accident, of which approximately one half were done by reserve divers using Mk 1 equipment. The highly successful salvage operation from July 31 through August 8, 1979, resulted in the recovery of the ship's steam condenser, steering quadrant and rudder, screw propeller, throttle mechanism, boiler, single piston steam engine, wooden firebox, and several other small parts. LCDR Wells summed up his appraisal of the reserves working on this operation as follows. "During this operation, the performance of the Chicago Diving Detachment was exemplary. Their diligence, professionalism, technical skill and persistence under adverse conditions were instrumental in the satisfactory completion of this effort and were the receipt of high praise from both the Smithsonian representatives as well as the members of my unit."

During the last 2 weeks of June 1980, the unit went on active duty in Little Creek. When the reserves arrived, there was a great deal of work for them to do. Because of several ongoing salvage operations, HCU-2 was in need of divers and glad to see the reserves arrive. Two different jobs had been set aside for RHCU-2 DET 813. One involved locating an anchor lost by the USNS POWHATAN during a training evolution off the assault training beach at Little Creek. The other job was in support of Explosive Ordnance Disposal Group Two, Detachment Dahlgren. This involved the explosive removal of four concrete pilings that were part of an old target range in the Chesapeake Bay near the Naval Air Station, Patuxent River, Maryland. Three EOD officers and three second class divers from the reserve unit were sent to Patuxent River Naval Air Station with a Master Diver and three scuba divers from HCU-2. During the week-long operation, the reservists gained valuable experience packing shape charges and setting up underwater demolition charges. This was one good example of active duty personnel and reservists working together to complete a dangerous operation without accident or injury. It also illustrated how the reservists were able to tackle a difficult job with a high degree of professionalism while working alongside their active duty counterparts.

QM2 Wojcicki.

On the 10th, 11th, and 12th of October 1980, part of the reserve unit flew to Little Creek for a weekend of training. When they arrived they discovered that HCU-2 was again short of divers and had several jobs to do. Part of the unit was sent to NOB, Norfolk, to survey a pier for underwater obstructions. When they completed this task Saturday afternoon, they joined the rest of their unit, divers from HCU-2, and another reserve HCU detachment from Norfolk at the Naval Weapons Station, Yorktown, Virginia, to assist in raising a sunken fireboat at the weapon station pier. HCU-2 and Detachment 813 personnel worked until 3 a.m. Sunday morning positioning lifting slings so the boat could be raised to the surface for dewatering later in the day. The presence of reservists during this operation proved to be crucial since they performed most of the diving and provided a great percentage of the diving equipment used.

It is apparent that there is a place and need for reserve divers and that they are capable of actively supporting their active duty counterparts. As illustrated by the activities of RHCU-2 DET 813, reserve divers are capable of maintaining their diving qualifications and skills and are fully capable of handling most tasks assigned to them. When given the opportunity to be trained on new equipment (such as the Mk 12 surface supported diving system), reserve divers are able to dive alongside their active duty shipmates and to provide support and personnel whenever needed.



TURTLE, a three-man deep submergence vehicle (DSV), is now certified to 10,000 feet of seawater (FSW). Aboard the support ship R/V TRANSQUEST, the DSV and its crew traveled 140 miles off the southern California coast on October 3, 1980, to achieve this goal. TURTLE was manned on the certification dive by LCDR Rick Norris (Officer-in-Charge), ENS Edwin Andrus (Engineering Officer), and Mr. Don Johnson (NAVSEA Representative). Because of various systems testing, the vehicle's descent lasted 4 hours. Then, after spending approximately 37 minutes at 10,000 FSW, TURTLE made its triumphant return to the surface in 90 minutes.

TURTLE is housed at the Submarine Rescue Unit, a unit of Submarine Development Group ONE in San Diego, California. Previously certified to 6,500 FSW, TURTLE underwent various modifications in preparation for its new depth capability. Included in these changes were an internal redesign of the sphere, a redesign of the variable ballast system, an increased battery capacity, a doubling of the capacity of the safety batteries, and extensive syntactic foam modifications. In addition, the old TURTLE hull was replaced with the ALVIN's hull, which had been pressure tested to 11,000 FSW.

TURTLE is a 26-foot-long vessel now capable of operating at pressures exceeding 2 tons per square inch. This is equivalent to each one of the five plexiglass viewports withstanding more weight than a large city bus distributed over its surface. The 1-1/3-inch-thick HY 100 steel personnel sphere must withstand 46,000 tons--the weight of 7½ Fleet Ballistic Missile submarines.

Should TURTLE become trapped or damaged while submerged, several unique emergency features exist which will enable the crew to return safely to the surface. These include the ability to jettison selective lead weights, the two manipulators, and the batteries.

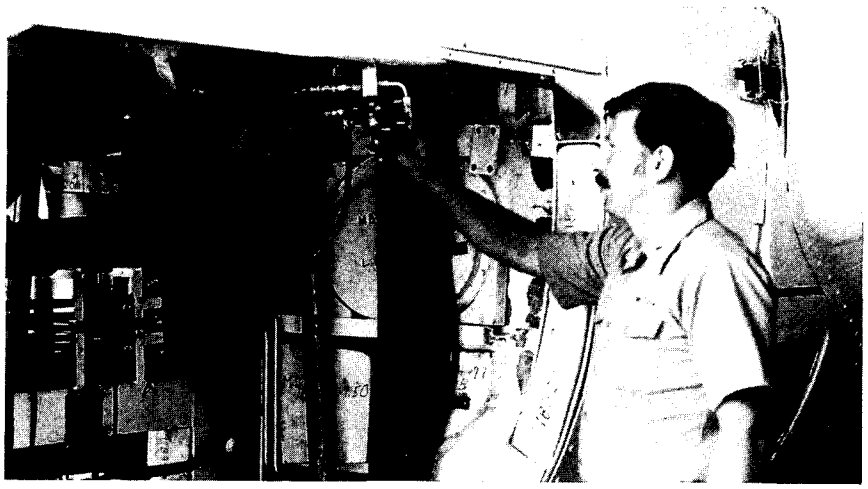
TURTLE is equipped with one television camera, a television monitor, lights, still and motion cameras, sonar, a gyrocompass, fathometer, an air purification system, and underwater and surface communications systems. The two hydraulically powered manipulators can be fitted with a variety of tools, including a drill, a cable cutter, and scissor and parallel jaws for retrieving small objects from the sea floor.

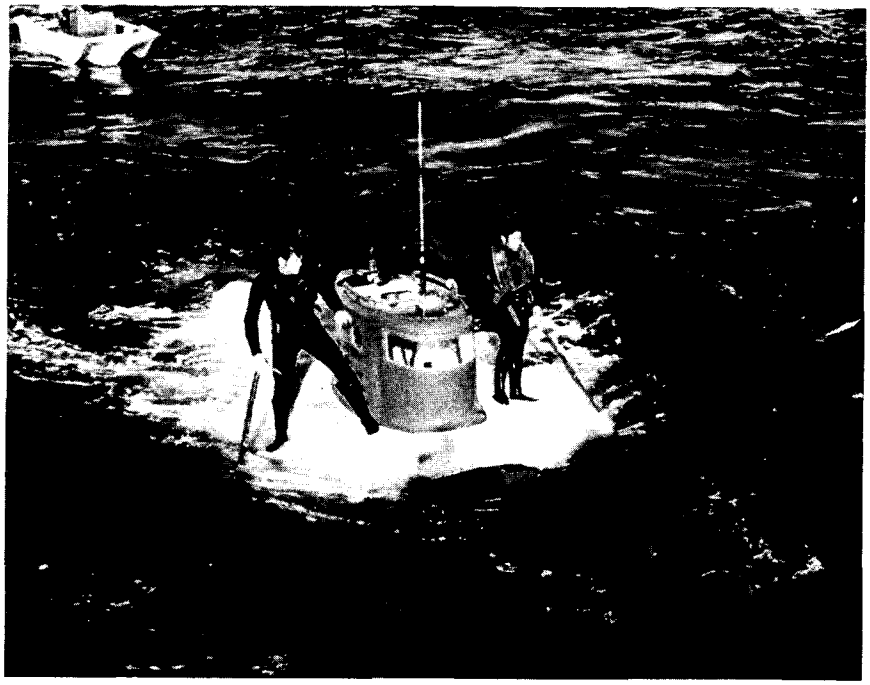
Battery-powered side propellers, which are trainable through 360° in both a clockwise and counterclockwise direction, provide the submersible with exceptional maneuverability at depths to 10,000 FSW. A hydraulically powered stern propeller is also available for cruising along the ocean floor. The 25-ton TURTLE can operate at speeds up to 2½ knots and remain submerged up to 8 hours.

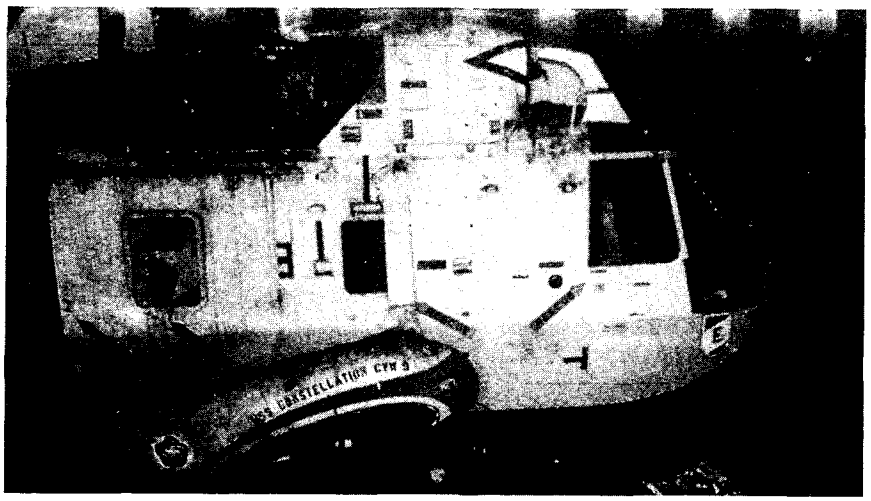
Missions performed by this unique submersible include search and recovery operations, underwater inspection and photography, and numerous activities concerning scientific research. Some of the recent users of TURTLE's capabilities are Scripps, the Volcano Observatory in Hawaii, Office of Naval Research, Massachusetts Institute of Technology, and the Lamont Doherty Institute of Columbia University. For the first two of these organizations, TURTLE has been used in trying to predict earthquakes by studying signs of shifting rock samples on the ocean floor. Any facility with an ongoing oceanographic department can request the services of this DSV on a cost-reimbursable basis.

History

TURTLE was designed and built by the Electric Boat Division of General Dynamics Corporation at Groton, Connecticut. The vessel, with her sister submarine SEA CLIFF, was launched on December 11, 1968. TURTLE's sponsor is Mrs. Edward J. Fahy, wife of RADM Fahy, Commander Naval Ship Systems Command at the time of launching.







Small research submarines are traditionally named after communities in the United States that denote oceanographic life and terms. TURTLE, originally designated AUTEC II, is named after Turtle Town, a small town in Polk County, Tennessee. TURTLE was also the name of the submarine built by David Bushnell and the first submarine used as an offensive naval submersible during the Revolutionary War.

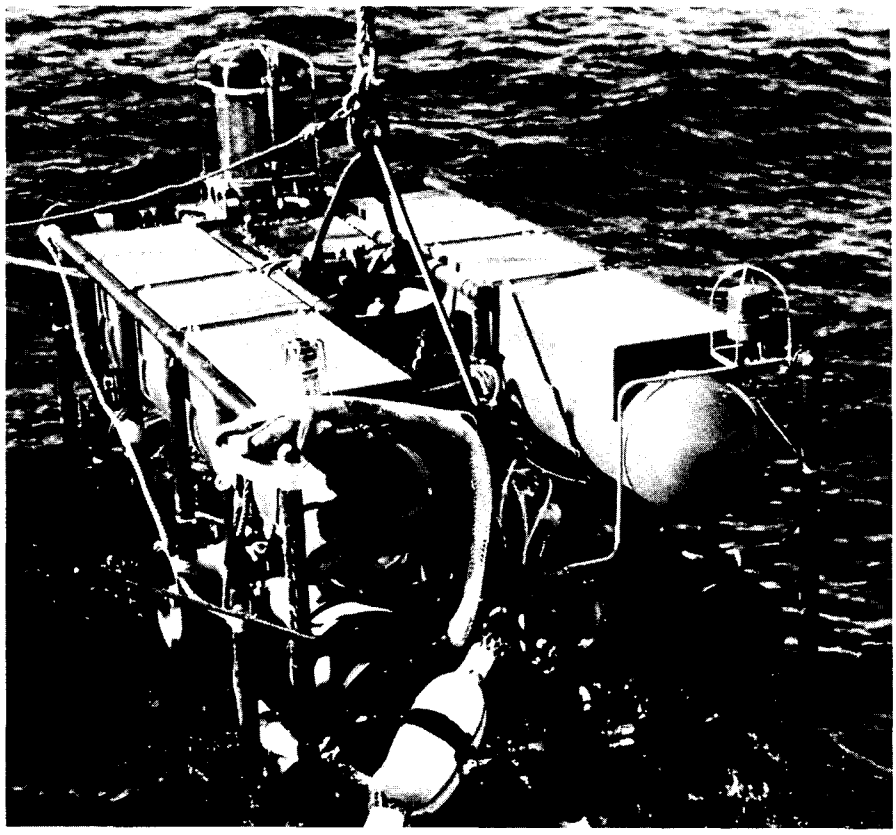
DSV TURTLE was accepted by the U.S. Navy on September 25, 1970, at Woods Hole, Massachusetts. Following initial acceptance, the new Navy crew--consisting of three officers and eight enlisted men--conducted extensive "shakedown" and training dives at Woods Hole Oceanographic Institution, Woods Hole, Massachusetts, before going to its present home in San Diego.

The following personnel were on duty with TURTLE during the 10,000 FSW certification dive operations:

LCDR Rick Norris, USN
LT Richard Willson, USN
ENS Edwin Andrus, USN
MM2(SS) Paul Beaver, USN
EM1(SS) John Boing, USN
STS2(SS) Dennis Blejski, USN
IC1(SS) Arthur Davis, USN
BM3 Larry Goyne, USN
ET2(SS) Steven Myers, USN
EM1(SS) Johnathan Reynolds, USN
FN Vincent Taylor, USN

Top left: TURTLE descending. Top: LCDR Norris checks refurbished area. Middle: Divers prepare TURTLE for boarding support ship. Bottom: TURTLE's photo of helicopter at 4,200 FSW off southern California coast.

DEEP DRONE RECOVERS HELO FROM 3,000 FSW



Mr. Tom Salmon
Office of the Supervisor of Salvage

Helicopter wreckage was located and recovered from over 3,000 feet of seawater (FSW) by the SUPSALV DEEP DRONE, NAVSEA's unmanned tethered vehicle.

The helicopter, a Navy SH-3G, crashed on June 15, 1980, off Frederiksted, St. Croix. Witnesses had observed the craft pitch nose down at approximately 2,000 feet and fall straight into the water. Because of the apparent catastrophic failure and a lack of information as to its cause, Fleet Composite Squadron Eight (VC-8) requested salvage assistance. On June 23, Chief of Naval Operations tasked the Supervisor of Salvage (SUPSALV) to conduct the recovery operation.

Because of the depth involved, it was apparent that either a manned submersible or an unmanned tethered vehicle would be needed to attempt recovery. After considering the high costs associated with manned vehicles, it was decided to use the unmanned alternative. At that time, DEEP DRONE was the only unmanned system capable of reaching 3,000 FSW; but it was undergoing refurbishment and had not completed sea trials. However, the high level of interest in this incident determined that the recovery efforts would commence immediately in spite of the risk involved in using an untested (beyond 30 feet) system.

To prepare for the operation, the DEEP DRONE contractor, Ocean Search, Inc., was directed to accelerate the refurbishment schedule and to "jury-rig" a cable handling system. Meanwhile, liaison was established with VC-8—which ascertained that the helicopter had crashed on the Atlantic Fleet Weapons Tracking Facility Underwater Range. The position was based on a SINS fix taken by an SSN that had witnessed the accident and on a range radar fix on the submarine when it arrived at the impact point (which had been within 2 minutes). Based on this information and on the fact that charts showed the bottom to be relatively flat, it was decided to rely on the DEEP DRONE sonar to locate the wreckage rather than bringing in a side scan sonar system.

Platform availability determined that USNS POWHATAN (T-ATF 166) would serve as the support ship and would await the arrival of DEEP DRONE and participating personnel at Roosevelt Roads, Puerto Rico on August 14.

Preliminary discussions involving SUPSALVREP Tom Salmon, LCDR Wright (VC-8), MAJ Corcoran (Naval Safety Center), and investigation board personnel on August 12-13 brought out the fact that, contrary to the initial request, more than just the engines and transmission were to be recovered. Additionally, the transmission/rotor head was likely to

be intact and would weigh approximately 3,000 pounds. In view of this, a 4½-inch x 6,000-foot lift line was shipped from the Cheatham Annex Emergency Ship Salvage Material (ESSM) base.

The first dive was made on August 17. When DEEP DRONE reached 600 feet, all signals were lost. The main connector had flooded, causing it to short out, so a day was spent fixing and wet-checking the vehicle.

On August 19, DEEP DRONE was functioning well, and after approximately 4½ hours of searching, a rotor blade from the helicopter was located—confirming that the crash site had been found and confirming that DEEP DRONE was back to its successful form.

During the next 35 days, 30 dives were completed—first documenting debris and then recovering wreckage. Initially, there were two impediments that had to be overcome. First, the tools available were designed for torpedo-like objects. Second, the aircraft technicians on board underestimated the size of attachment points on several occasions—a problem that is not unlikely since two-dimensional TV is poor at best for estimating size. After four unsuccessful attempts, the recovery approach was revised; in addition to a clamp, DEEP DRONE carried a wire rope choker as a back-up. This method proved to be most successful since it allowed DEEP DRONE to make two attachments to an object before attempting a lift.

The first object recovered was the transmission/rotor head, which weighed over 3,000 pounds. To make this lift, DEEP DRONE "flew" the 4½-inch nylon line down and attached it to the object, using a grabber and a choker. Once the attachment was completed, DEEP DRONE separated from the nylon and topside personnel commenced "heaving around." The same procedure was used for recovery of the fuselage/cabin section, which was estimated to weigh 4,000 pounds. For smaller pieces—up to 300 pounds—DEEP DRONE made a direct lift to the surface.

By August 28, all of the primary objects were recovered; however, no obvious problems were found in the engines or the transmission. Because of this, the Safety Center representative requested that the recovery efforts continue, which they did through September 21, when the operation was terminated.

On any operation of this nature, numerous problems may occur. The fact that DEEP DRONE successfully completed 30 of 32 dives in 2,700 to

Key participants included:

DEEP DRONE Crew:

SUPSALVREPS:
- T. Salmon (Program Manager)
- J. Teague (Program Engineer)
- E. Hammond (CAPT, USNR, on SPECAC to SUPSALV)

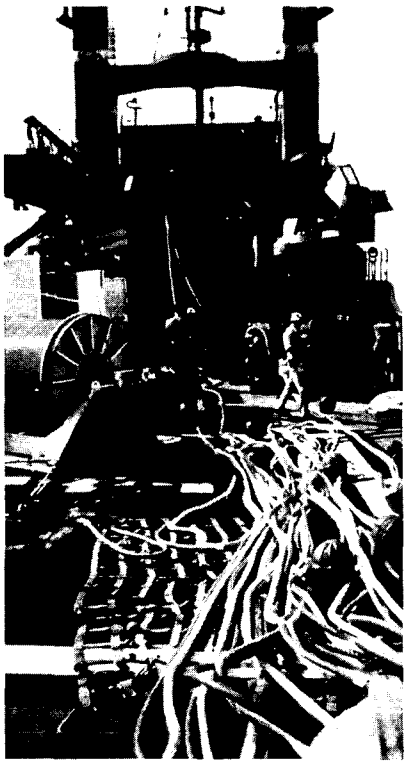
Ocean Search, Inc.:
- D. Dean
- B. Hamilton
- R. Ewing
- B. Brown
- B. Dombrowski
- T. Howe

3,500 FSW in a 38-day period illustrates the reliability and value of the vehicle. One aborted dive was caused by flooding of the main connector. The other unsuccessful excursion resulted from the fouling of the vertical thruster by a rag from the wreckage. The total dive time (surface to surface) during this operation was 184 hours and 50 minutes.

While DEEP DRONE was in the water, POWHATAN was required to maintain station within 600 feet horizontally from the vehicle. Utilizing the bow thruster and only one screw, the ship's master met this challenge tirelessly and, when necessary, stayed within 50 feet of the vehicle (which was 3,000 feet below). Considering the fact that the T-ATF was not designed as a salvage ship nor with dynamic station-keeping capabilities, her performance was excellent.

The successful completion of any salvage operation is never the result of a single individual effort; and it is seldom attributable to one particular group. In this situation, several groups joined forces to complete one of the deepest aircraft recoveries in history.

Obviously, the performance of DEEP DRONE was exceptional. Credit for this must go to the personnel of Ocean Search, Inc., the DEEP DRONE contractor. Their superior competence was clearly demonstrated by the success of the system. To make it all happen though, outstanding professionalism and cooperation were demonstrated by the crew of POWHATAN, personnel from VC-8, divers from Special Warfare Group TWO Detachment CARIBBEAN, St. Croix Range personnel, and Naval Station Roosevelt Roads personnel.



Photos on p. 22 and bottom of p. 23 show DEEP DRONE view of wreckage on bottom. Top, right: POWHATAN's deck is loaded out for recovery operation.

VC-8:

LCDR Barnes
LCDR Wright
ADC English
AMS1 Lapton
ADAN Alvales
HM3 Sawyer
PHAN Havens

NAVSPECWARGRU TWO DET CARIBBEAN:

LCDR Moser
BMC Finley
GMG2 Dobstaff
OM2 Dobstaff
GMG1 Felton
MM1 Die
PN1 Anderson
HMC Kane
ENC Howle (NAVSTA)
UT2 Palmer (NAVSTA)

NAVSAFECEN:

MAJ Corcoran

POWHATAN:

Captain Prieto (Master)
Captain Pouttu (Master)

CURV III Recovers SH-2F Helo

Mr. Joel Teague
Office of the Supervisor of Salvage

On May 28, 1980, the USS VREELAND was conducting flight exercises off the coast of Livorno, Italy. During these exercises, an SH-2F helicopter pilot, responding to a warning light, contacted VREELAND (FF-1068) with a message that problems had developed in the main gearbox. One minute later, the pilot realized the seriousness of the situation and transmitted a MAYDAY call.

Personnel aboard the USS SELLERS (DDC-11) observed the SH-2F crash, and reported that it hit the water at a 25° to 30° nose-up attitude with approximately 10 to 20 knots of air speed. It sank immediately, and SELLERS fixed the position of the crash site. The charted depth of the water was 480 feet.

The aircraft accident investigation board realized that this mishap was caused by some unique mode of failure and that the only way to properly determine the cause would be to recover the wreckage and examine the components in question.

Since the water depth at the crash site was beyond the diving capability of any normal surface-supplied diving unit, the deep diving cable-controlled underwater recovery vehicle CURV III was selected as the best asset for the salvage operation. CURV III, operated by Naval Ocean Systems Center (NOSC) personnel (of San Diego, California), has a 7,000-foot diving capability and is equipped with cameras, manipulator, and sonar. The vehicle has a seven-man civilian operating crew and can be flown easily to salvage sites in a commercial or military cargo aircraft. In this operation, CURV III would be used to attach a lift line to the aircraft as well as to provide documentation of the salvage efforts with its remote-controlled TV video tape cameras.

The salvage effort would be divided into two phases. The first was a side scan sonar search conducted by Submarine Development Group ONE (San Diego) to pinpoint the location of the wreckage. Second, the USS RECOVERY (ARS-43) and CURV III would work together in making the necessary line attachments and raising the helicopter. A ram tensioner would be used in the lift rigging once attachments had been made. The ram (supplied by the Civil Engineering Laboratory, Port Hueneme, California) was used to compensate for the differing motion characteristics of the aircraft and the support vessel, thus eliminating surge loading.

SUBDEVGRU ONE began the side scan operation on August 5. The next day, the aircraft was located and the position was accurately plotted. CURV III personnel immediately proceeded to prepare the vehicle for transfer to RECOVERY the following day. On August 9, RECOVERY cast off lines and made way to the salvage site. Once on scene, CURV III was powered up for a final check-out before making the first inspection dive to verify that the object located by SUBDEVGRU ONE was in fact the SH-2F.

The salvage plan, though sounding relatively straightforward, was impeded substantially by the presence of a large quantity of fishing net and wire rope that was draped over the wreckage. These items are a tethered vehicle's worst enemy—and they caused considerable problems for CURV III in this operation.

Initially, the plan was to launch CURV III and, using a grapnel hook with the manipulator, attempt to remove as much of the netting as possible. On the 10th of August, two dives were made using this method. Unfortunately, more netting was brought up in the thrusters than with the hook.

CURV III survived these incidents unscathed, however, and was in the water once again the next morning. Once on the bottom, CURV III moved into position next to the aircraft. The dive plan was to loop a wire noose over the end of the blade and carefully maneuver as close to the rotor head as possible, hoping to ensure a tight grip on some sturdy metal fixture. Unfortunately, the tip of the blade was still nicely draped with a curtain of netting. Not to be deterred, CURV III placed the noose over the blade and pushed down in an attempt to force the netting to cooperate. Before the noose could be placed in a satisfactory position, however, the thrusters became fouled.

The lift line was "heaved around" in hopes that the wire might hold or at least pull more of the netting free. When CURV III and the lifting assembly reached the surface, a large portion of the fishing net came up with it. That was not all, however, along with the net was 100 feet of polypropylene line, 200 feet of ¼-

inch wire rope, a grappling hook, and the aircraft's starboard cabin door. Divers wearing scuba gear were used to straighten out the CURV III umbilical, which had become twisted and tangled underneath the ship.

Later that evening, CURV III was again re-rigged and in the water for another attempt at the SH-2F. The weather up to this point had been ideal, but a cold front was beginning to pass through the area, causing winds and seas to pick up. The forecast for the next 24 hours called for 25-knot winds and 5-foot seas; therefore, a decision was made to continue operations throughout the night until the wreckage was on deck.

CURV III again looped the wire noose over the blade, but still not in the position that would have seemed necessary for a successful lift. As in the previous dive, CURV III had become fouled and there was little alternative other than to try another pull. As the lights went black and CURV III lost orientation, sensors on the ram tensioner indicated a heavy strain of 6,000 pounds on the lift line. CURV III's depthometer was simultaneously showing a decrease in depth.

Moments later, a long narrow blade broke the surface with the wire harness imbedded only a few feet from the blade's tip. CURV III was hanging underneath the helicopter in a web of netting and wire rope. Divers quickly worked to free the vehicle and added extra lift lines to secure the aircraft. Once CURV III was free (and, amazingly, still operational), the wreckage was pulled from the water and placed on RECOVERY's fantail. Several minutes later, a small flame and white smoke were noted beneath the pilot's seat. This proved to be several decomposing smoke floats reacting with the air. The area underneath the helicopter was then covered with AFFF to prevent a larger fire from starting–since fuel from the wreckage had leaked on the deck. All of the smoke floats and sono buoys were removed, along with the interior cabin lining–which was believed to be a fire hazard because of additional phosphorus absorption. A fire watch was set and the accident investigation team began surveying the aircraft immediately.

On August 12, RECOVERY broke its moor and headed for Sigonella to offload the helicopter and CURV III. Aircraft investigation personnel located the faulty component and removed it from the wreckage, successfully completing the SH-2F salvage operation.

The following list includes some of the key support personnel:

Naval Sea Systems Command

Joel L. Teague	SUPSALVREP

CURV III Personnel, Naval Ocean Systems Center

Larry K. Brady	Chief Engr. Technician
Denny D. Holstein	Engr. Technician
Elvis R. Musgrave	Engr. Technician
Charles E. Tallerino	Engr. Technician
Mark E. Rassmussen	Electronic Technician
Robert A. Bixler	Electronic Engr.

RAM Tensioner Personnel, Civil Eng Research Lab, Port Hueneme

Henry J. Lingg	Engr. Technician
Roman Krochowy	Electronics Engr.

Accident Investigating Team

LCDR Mark E. Davis	HSL 36
LCDR Bruce E. Nelson	Naval Safety Center, Norfolk
AMS1 Hollis	HSL 36
Robert Hintermister	MFG Rep
Fred Falconie	MFG Rep

USS RECOVERY (ARS-43)

LCDR Herbert Stephen	Commanding Officer

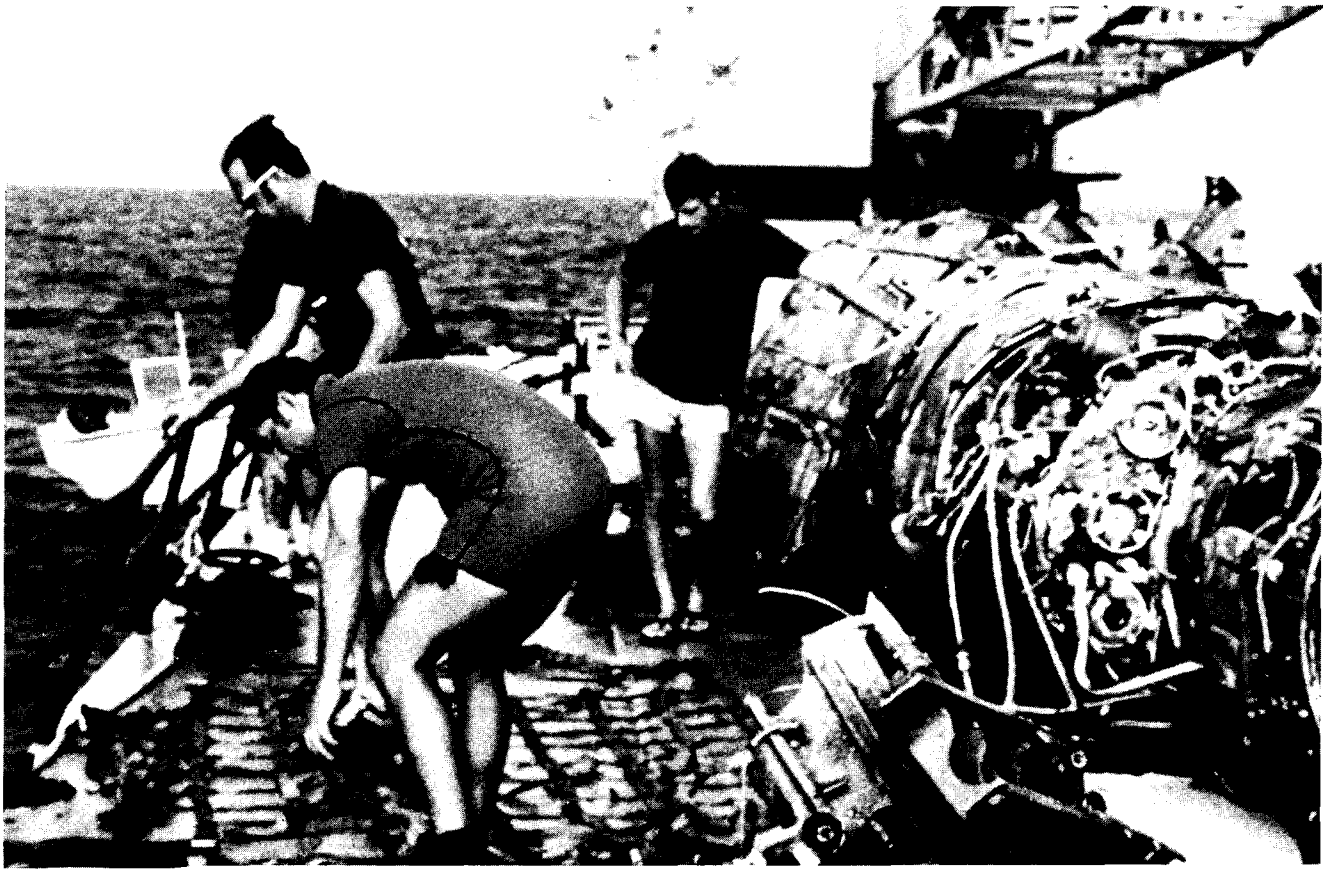
Diving Personnel:
LTjg M. Bell (Dive Officer)
LTjg R. Kessler
BMC (MDV) D. Williams (Master)
ENC (DV) G. Pope
EMC(DV) D. Gallagher
EN1(DV) R. Greeg
TM1(SS/DV) D. Merriman
HT2(DV) M. Hansen
MM2(SS/DV) D. Reif
HT2(DV) R. Fedak
BM2(DV) C. Boyer
IC3(DV) A. Smith
ET3(DV) J. James
MM3(DV) D. Nedwick

NEDU Enters Search and Recovery Arena

The Navy Experimental Diving Unit (NEDU), Panama City, Florida, proved that it can provide search and recovery services in addition to its test and evaluation capabilities after an Air Force jet crashed in the Gulf of Mexico in late August 1980.

An F-106, from Tyndall Air Force Base, Florida, crashed into the sea approximately 4 miles offshore St. George Island, Florida, on August 29. The pilot had ejected and was rescued uninjured.

The Air Force Accident Investigation Board requested the Navy to coordinate an effort to locate and salvage the wreckage. CDR Robert Bornholdt, USN, NEDU's Commanding Officer, was designated as the Officer in Charge of the salvage operation; BMCM(MDV) Pat Behling, also of NEDU, was appointed on-scene commander. Representatives from NEDU, the Naval Coastal Systems Center (NCSC), the Naval Diving and Salvage Training Center (NDSTC), and Tyndall Air Force



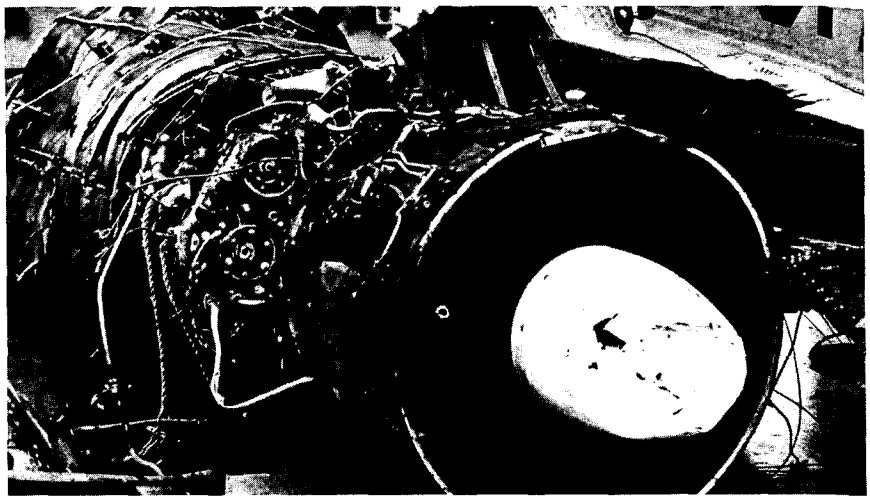
Base met to discuss the recovery with the Accident Investigation Board, headed by COL George Kersey. The Board at first required retrieval of just the F-106 engine. The meeting also included discussion with maintenance personnel and an inspection of an F-106 on the flight line to aid the recovery team.

Fortunately, an Air Force helicopter and a Missile Recovery Craft had been on the scene shortly after the crash and had established a rough longitude and latitude fix. An initial attempt to definitely pinpoint the wreckage and retrieve the ACMI recorder was made on September 8, using a 23-foot Proline 242 boat from NCSC and an Air Force Missile Recovery Craft. Meanwhile, an Air Force barge with a 20-ton capacity mobile crane on board was underway from Eglin Air Force Base, Florida. The eight-man diving team consisted of BMCM(MDV) P. Behling, HMCM (DV) T.G. Holmes, BMC(DV) G.M. Chancellor, EMC(DV) J.A. Cantale, HT3(DV) H.C. Skipper, and Mr. J. Pelton, all representing NEDU; and HT3(DV) S. Morris of NCSC.

Once the crash site was located, the team discovered that the wreckage was in two major sections, with debris scattered over approximately 100 square yards. The ACMI recorder was located and recovered 200 feet from the main wreckage. During this time, a UDATS system was rigged and 30 minutes of tape were recorded for future study.

The salvage team returned to the crash site on September 10 to begin recovery of the actual aircraft. Because of an absence of deck power on the barge, a two-point flying moor was executed upstream of the wreckage. Correct positioning was obtained by using the current and barge engines. Later that morning, moored on the downstream side of the wreckage, the engine and tail section were recovered using two 3/4-inch wire straps.

Because of the concern for fish trawlers and a further requirement to recover the cockpit controls, the

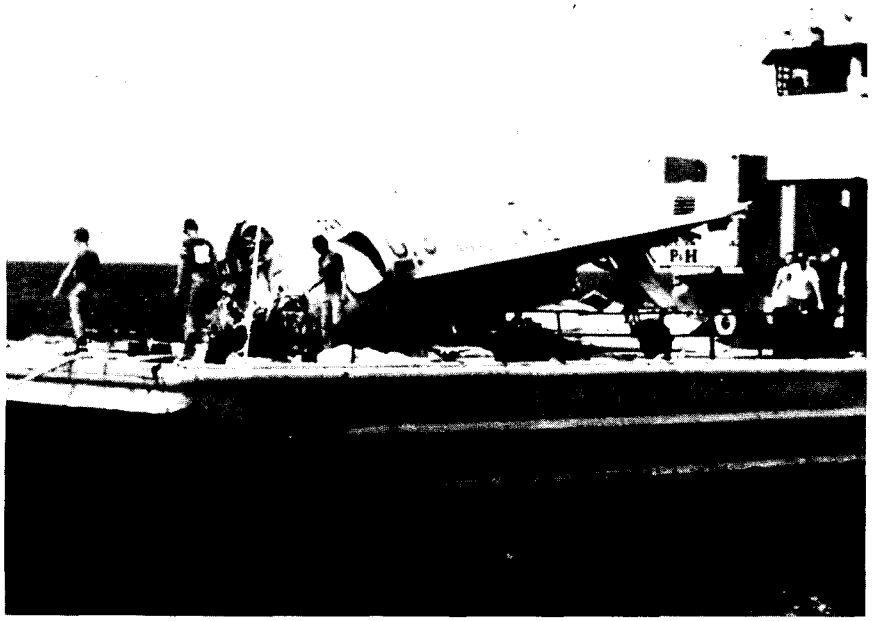


Accident Investigation Board representative wanted to recover the large pieces of the aircraft before sending the barge to Tyndall Air Force Base for unloading. Thus, salvage efforts continued on the 11th, until 90 percent of the aircraft was recovered. Included in the recovered items were the cockpit, landing gear, wing section, and other assorted pieces—which were lifted with 5/8-inch wire straps and cargo nets. Using a 23-foot Proline boat as a dive platform, divers then worked to clean up small debris in the area.

The next day, a fisherman reportedly snagged his net in debris in the crash site area, so the Air Force requested that NEDU return and continue the bottom search.

The dive team again rendezvoused with the Air Force Missile Recovery Craft, this time at the site given by the fisherman, which was 1 mile

Photos on pages 26–27 show various scenes from F-106 recovery as wreckage is hauled aboard barge.

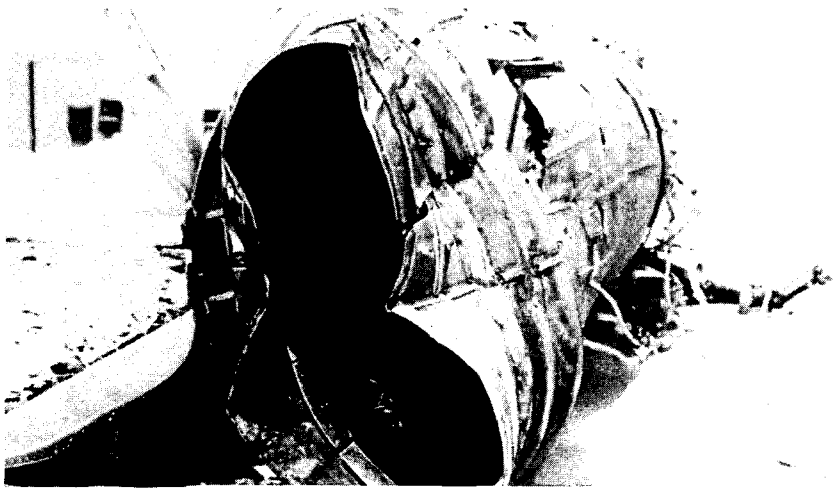


Photos show more F-106 wreckage recovered by NEDU.

from the previous work site. Using a 1,000-foot jackstay, bottom searches were conducted in the area, but no wreckage was discovered. The team then returned to the original site and continued searching, using the same method, until assorted components were discovered and recovered in an area southeast of the initial search area.

Several days later, on September 19, the Accident Investigation Board determined that additional items were required for the inquiry into the accident. NEDU was then asked to recover one fuel flow equalizing valve, three booster pumps, and two fuel shut-off valves. The Air Force Missile Craft would again be used as a diving platform, with an NEDU 19-foot Aqua-sport as a diver support craft. On the third day of recovering and inspecting debris at various locations in the crash area, the necessary wreckage items were recovered and concluded, finally, the salvage operation.

A total of 76 dives was made with a total bottom time of 63 hours. Since the F-106 had crashed in 40 feet of seawater, the impact created widely scattered wreckage, which made finding specific items considerably more difficult. The salvage operation was also hampered by frequent high seas and strong currents. Certainly, success was not a "given" element in this operation, and NEDU demonstrated that it "can do" when called on for search and recovery missions.



NEDU Personnel:

BMCM(MDV) Behling, Patrick
HMCM(DV) Holmes, Thomas
BMC(DV) Chancellor, Gary
EMC(DV) Cantale, John
HT3(DV) Skipper, Horace
Pelton, Jerry

NCSC:

HT3 (DV) Morris, S.

Air Force Support Personnel:

On-Site Coordinator:

GMSgt Beecher, William H.

4756 ADS/Watercraft Branch
Tyndall AFB, Florida

Missile Recovery Craft:

SMSgt Cunningham, Kenneth D.
MSgt Honeman, George L.
TSgt Basarish, Robert J.
SSgt Shafer, Michael J.
SSgt Beacham, Marvin D. J.
SRA McGowan, Thomas L.

4756 ADS/Watercraft Branch
Tyndall AFB, Florida

Barge Crew:

TSgt Rathvon, Bryan P.
TSgt Broxson, Edward E.
SSgt Gibson, Phillip W.
Sgt Short, David D.
Sgt Smith, Gregory A.
A1C Rodgers, Jeffrey D.

3245th Test Wing, Marine Branch
Eglin AFB, Florida

Crane Operators:

TSgt McClellan, Robert
SRA Olive, James K.

3202 Civil Engineering
Eglin AFB, Florida

Salvor's Notebook

Entry: In the Summer 1980 Faceplate Salvor's Notebook, various recommendations were made from lessons learned during the Tau Island Harbor clearance operation. Three of those recommendations made definite suggestions concerning change of present equipment/procedures. They are reprinted here with responding comments from the NAVSEA 00C Office.

Item: Recommendation to modify the four fold blocks to increase the distance between the sheaves in the blocks and the inside plate in the block in order that there might be greater ease in cleaning this equipment.

Response: While increased clearance will facilitate cleaning the beach gear blocks of sand and mud, SEA 00C does not recommend modifying the present beach block design because of the following factors:

a. There is a greater possibility of the wire rope "jumping" the sheave and becoming wedged between the sheave and the adjacent supporting plate.
b. The pin diameter would have to be increased.
c. The sheave would have to be redesigned.
d. The block would be larger and significantly heavier.

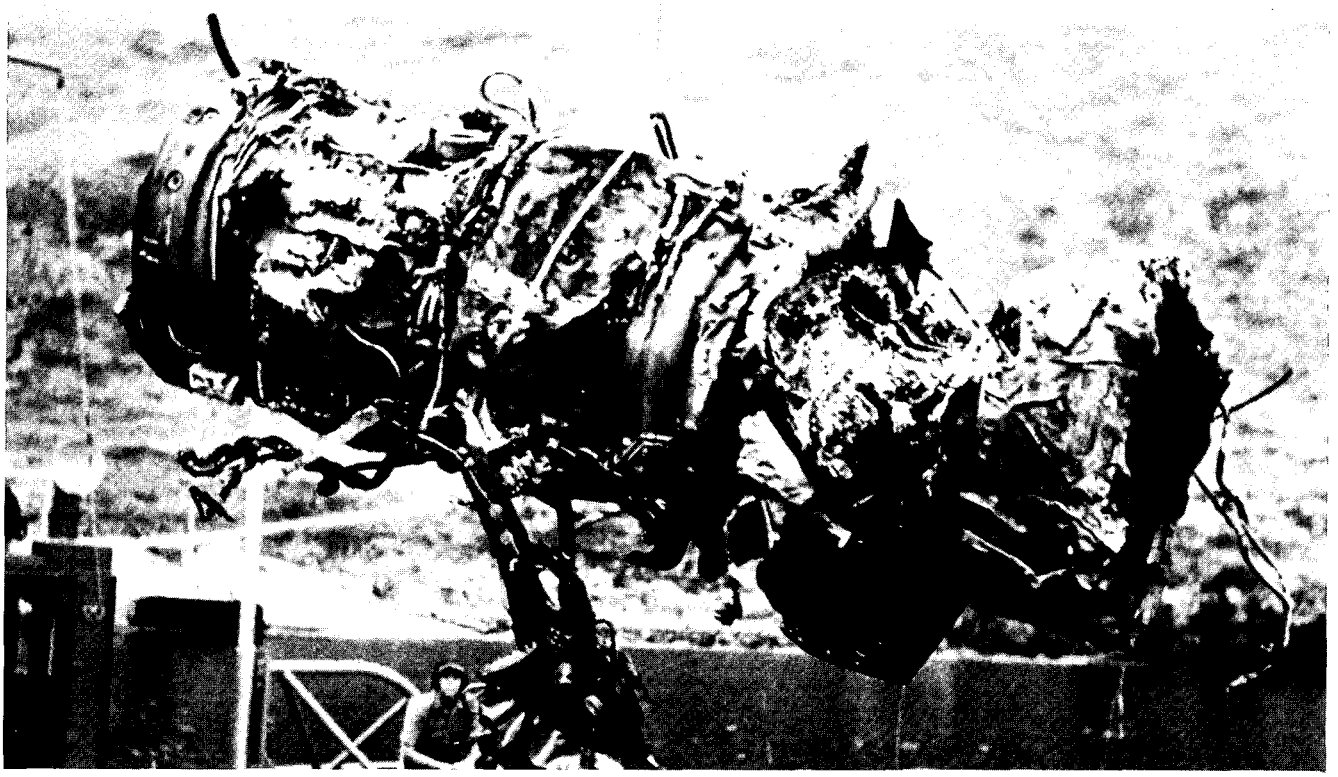
Item: Recommendation to procure a four fold block repair kit to reduce the time and cost involved in returning the blocks to operational status. Presently, the blocks must be replaced "in toto" and cannot be repaired.

Response: Beach gear blocks are considered a consumable item by the Naval Supply System and the components are not stocked. It is therefore recommended that additional blocks be planned into an operation when replacements are anticipated rather than develop a beach gear block spare parts kit.

Item: Recommendation to modify the maintenance requirements for oiling the carpenter stopper to allow the use of dry lubricants such as graphite, which could reduce and possibly eliminate the shearing of the copper screws that secure the copper shim to the stopper.

Response: Dry lubricants wash out easily with water, i.e., rain and surf, and are generally not recommended for Navy use. NAVSEA Code 05E4 will review dry lubricants that may be used on carpenter stoppers to avoid holding dirt as prescribed lubricants will. SUPSALV will purchase these lubricants if recommended by Code 05E4 and will turn them over to Harbor Clearance Unit ONE for test and evaluation during future operations.

The proper lubricant for the carpenter stopper is "MOLYKOTE" Type "G" paste, or an equivalent (i.e., lubricating grease, extreme pressure), an extreme pressure grease which has undergone a great deal of testing. The Federal Stock Number is 9G-9150-00-531-7854. Until some equally satisfactory grease is found, this should be the only lubricant used.



A-4M RECOVERED OFF SAN CLEMENTE ISLAND

An A-4M aircraft crashed 1 nautical mile west of San Clemente Island on August 29, 1980. Fortunately, a SUPSALV task force was already in the area, preparing for a search and recovery operation on an S-3A aircraft, when the request came for salvage assistance.

The S-3A had crashed approximately 2 nautical miles northeast of San Clemente Island, which lies approximately 50 miles off the southern California coast.

Depths at the S-3A site ranged from 1,200 feet to 3,600 feet. Because of those depths and the high relief bottom in that region, it was essential to mobilize a long tow cable and a high capacity, variable speed winch. Since such systems are few in number and are rarely available, SUPSALV provided its own 24,000–foot sonar tow cable, deep tow winch, and power unit to the contractor–Global Marine Development, Inc. (GMDI).

Mobilization for the S-3A had begun at the Naval Ocean Systems Center (NOSC) in San Diego, California, on September 5. After 3 days of testing equipment onboard the YFNX-30 in the San Diego harbor, all search/recovery items were placed aboard the IX-508 in preparation for the S-3A operation.

The IX-508 is a former LCU under the command of BMC R.A. Reno. The ship, with an overall length of 135 feet and a beam of 29 feet, had been modified with a garage-like superstructure aft and a 360° rotatable thruster forward. A 10-foot by 12-foot instrumentation shack had been constructed on the aft superstructure, which could house the required sonar and navigation equipment.

On September 8, CDR Charles Maclin, Deputy Supervisor of Salvage, notified the on-scene personnel that the S-3A effort would be cancelled to search for and recover a higher priority target–an A-4M aircraft belonging to the U.S. Marine Corps.

Mr. Ron Green–SUPSALV Representative, CAPT Robert Gautier (USN, Ret)–GMDI Project Manager, and Mr. Larry Brady–NOSC's director of the CURV III team, met with MAJ Dale of the USMC's Mishap Board the next day to obtain both the necessary facts of the crash

and the objectives of the search effort.

The A-4M operation was considered less difficult than the S-3A search because of the shallower water depths throughout the crash area (less than 325 feet). However, there were still definite factors to be considered.

The A-4M had broken up at an altitude of nearly 18,000 feet, with the tail section landing on San Clemente Island. Witnesses observed the remainder of the aircraft, engulfed in flames, fall into the ocean west of the island.

All equipment needed for the A-4M search operation was installed aboard NOSC's IX-508, and the ship departed on September 11 for San Clemente Island to commence search operations. As expected, there were numerous sonar targets within and surrounding the 1 square nautical mile area. Many of the total of 22 sonar targets appeared to be man-made.

The sonar search yielded several targets of particular interest. A high-resolution 500 KHz sonar was deployed for verification runs on these areas; however, because of the limited capability of the 500 KHz sonar to drive signals over long lengths of cable, this effort proved successful only in the shallow portions of the search "grid." In deeper areas, a 100 KHz sonar was used to make verification runs from various aspect angles. The search phase of this job was concluded on September 13. The next phase would be object identification and recovery.

Back at NOSC, mobilization for recovery of the A-4M commenced—with the support vessel changing to NOSC's YFNX-30. Under the command of BM1 M.E. Reberger, the YFNX-30 normally supports the CURV II vehicle; but, for this operation, the CURV III unmanned submersible vehicle was brought aboard. The YFNX-30 was ideally suited for the recovery effort because of its high degree of maneuverability with its two 360° thrusters and because of the experience of BM1 Reberger and his crew in "live boat" operations of this kind. No modifications to the ship itself were necessary. Besides CURV III, GMDI's precise local navigation equipment was brought aboard.

Mr. Tom Salmon (SUPSALV Representative), LT Fris (USMC), CPL Yerardi (USMC), Mr. Fred Newton (GMDI), and the CURV III crew headed by Mr. Larry Brady met the YFNX-30 at San Clemente Island on September 29 to begin the recovery operation.

Using CURV III, it was determined that targets # 1 and # 3 (close to each other) were not the A-4M wreckage. Diving on target # 2 after delay caused by heavy fog, CURV III intercepted the object at a depth of 196 feet. The two USMC representatives positively identified the target as the A-4M; and, after 10 minutes of video survey of the debris field, the 9-foot-long engine section was located. CURV III was redeployed with a choker line, and the engine (with most sections intact) was hoisted to the deck.

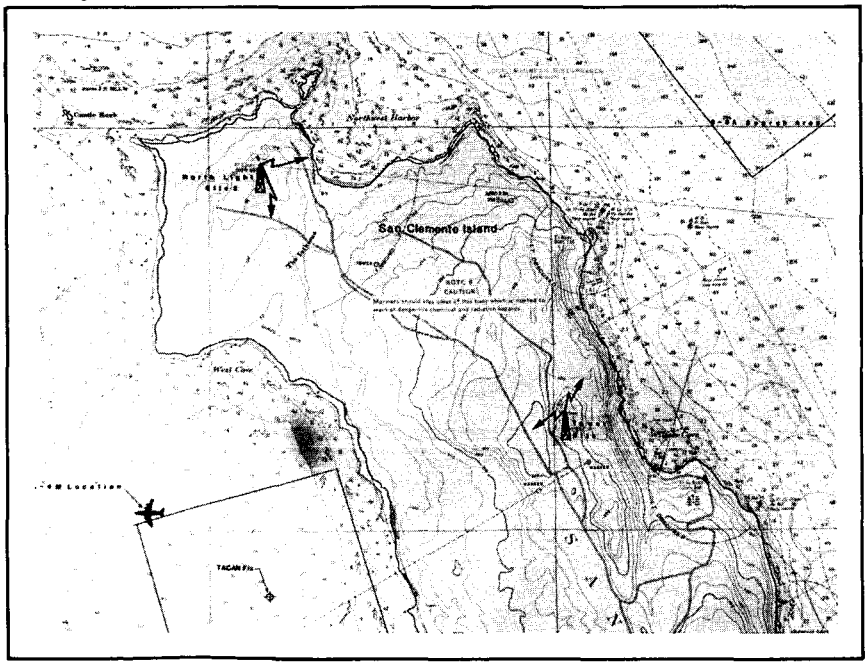
The engine tail pipe adapter section was still missing and of high interest, so a thorough survey of the A-4M debris field was conducted upon returning to the site on October 2. This item was found within an hour, grappled by CURV III's manipulator, and brought to the surface.

The objective of the recovery operation—as set forth by MAJ Dale and his on-scene representatives—was to recover the A-4M engine sections (including the engine and 60-pound tail pipe adapter). The remainder of the wreckage, which included numerous wing and fuselage sections, was not recovered because of its low value to the USMC Mishap Board. However, CURV III did conduct a television and photographic survey of the remaining debris before the conclusion of the operation.

The search and recovery of the A-4M was successful in all respects. The sonar search operations at the site extended for 48 consecutive hours (including all down time for repairs, record analysis, etc.). The recovery efforts at the site totaled 21½ hours. Despite the short duration of at-sea operations, a large quantity of data and documentary material was produced.

The ultimate success of this operation was a result of the cooperation and coordination between SUPSALV, Global Marine Development, Inc., the U.S. Marine Corps Mishap Board, and NOSC San Diego.

Page 30: A-4M engine. Below: Chart showing search areas for A-4M and S-3A.



When You Care Enough To Send The Very Best

LCDR Gary Cassatt, USN
Officer in Charge
HCU ONE Detachment

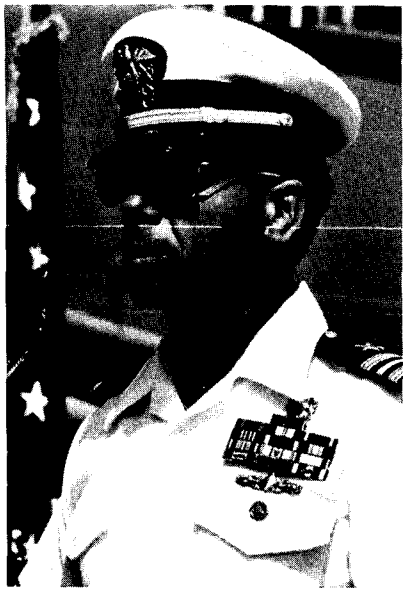
On August 1, 1980, the San Diego Diver Consolidation Program, after a 1-year pilot program evaluation, became Harbor Clearance Unit ONE Detachment (HCU-1 DET). The establishment of the Detachment marks a major milestone for the diving and salvage community and, in particular, for the San Diego area Intermediate Maintenance Activity (IMA) divers. A large percentage of the Detachment's divers come from San Diego-based tenders (AD/AR) and from Amphibious Construction Batallion ONE on a TAD basis. This consolidation to a parent activity specifically designed to provide a full-time, professional operational diving atmosphere has proven time and again to be cost effective, much more responsive to the underwater repair needs of the Fleet, and extremely conducive to upgrading diver morale and retention.

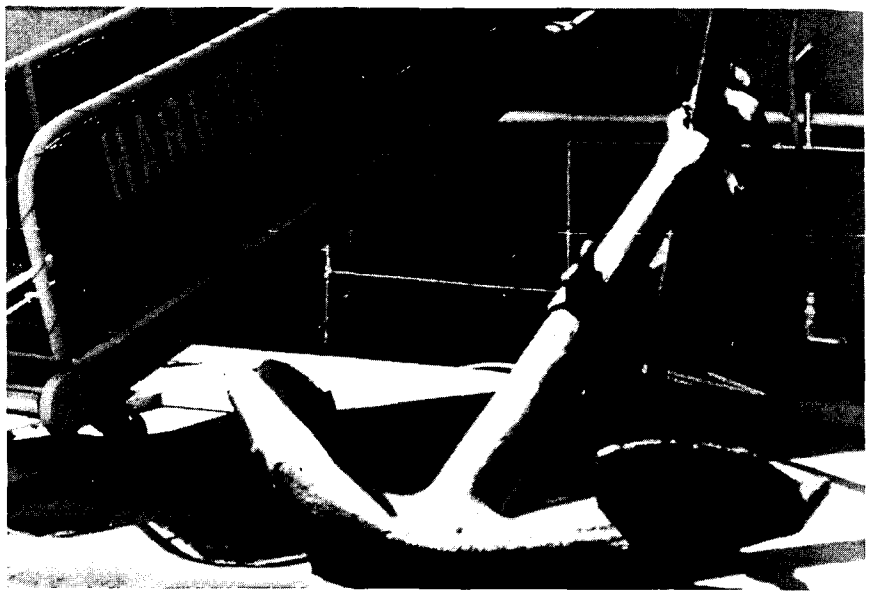
Diver consolidation, as many "old salts" know, has been in the offing for many years. The many successes resulting from consolidation has shown beyond a shadow of a doubt that the teamwork, crosstraining, and the operational results achieved make the Navy diver an indispensable asset with virtually unlimited repair potential to the Fleet.

The activation ceremony for HCU-1 DET was held at the Naval Station, San Diego, on August 1. Commodore Archie Campbell (Commander, Service Squadron FIVE) and LCDR Bruce Fisher (Commanding Officer, Harbor Clearance Unit ONE) were speakers at the event and officially welcomed the Detachment to the operating forces of Service Squadron FIVE. The Officer-in-Charge, LCDR Gary Cassatt, reported that the Detachment was "ready for duty"; and he meant every word.

Since activation, HCU-1 DET divers have been extremely active in Fleet repairs. Two major operations completed successfully in August are worthy of special note here. One task involved a major dressing of the propellers on the USS KITTY HAWK (CV-63), which had been producing an unacceptable level of noise and vibration. Accomplishing this task waterborne eliminated the

Above, l-r: LCDR Cassatt, CDR Campbell, LCDR Fisher, LTjg Bowles, and Base Chaplain at activation ceremony. Page 33: left, LCDR Cassatt; right: gangway to HCU-1 DET.





high cost of drydocking and precluded a possible propeller change. The second "event" was a double propeller change, while waterborne, for the USS HULL (DD-945).

The HULL propeller change was accomplished by divers from the USS PRAIRIE (AD-15) dive crew who were serving with the HCU-1 DET. Under the leadership of BMC-(DV) Paul Wicker, USN, the propeller changes were accomplished in a total of 4 working days—a considerable record in waterborne propeller changes of this magnitude. PRAIRIE divers worked long hours in the water and topside to ensure that the ship was ready in time to meet her operational commitments.

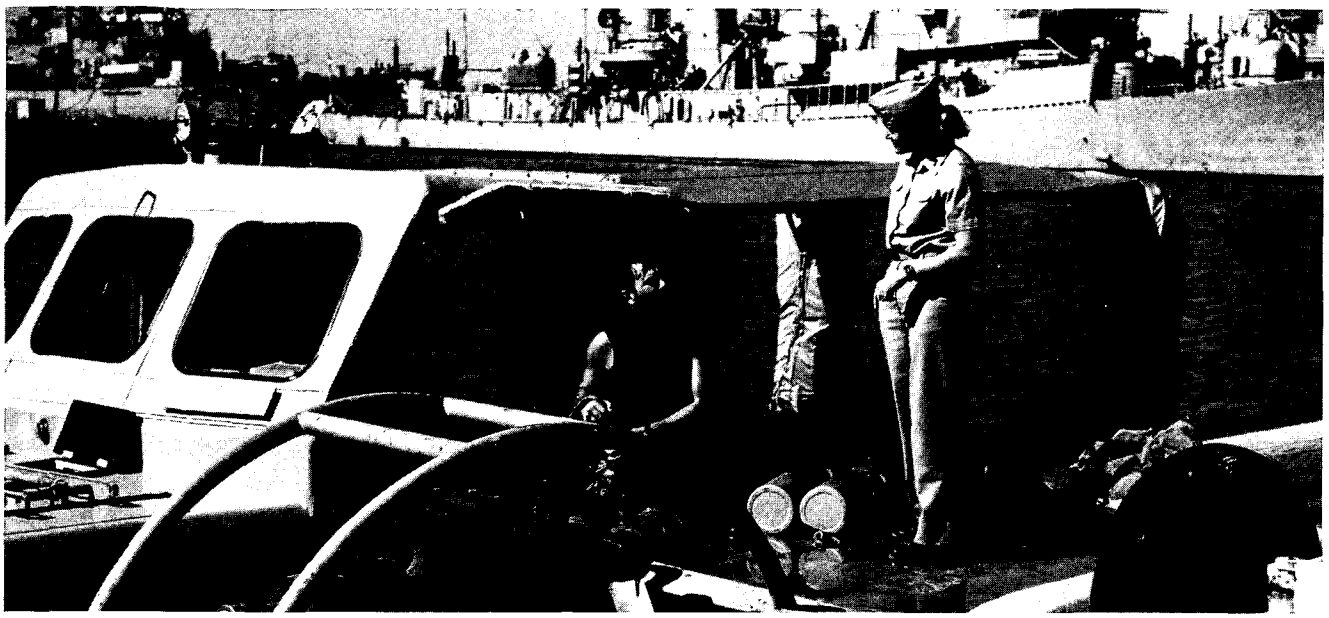
At present, there are three tender diving boats with crews attached to HCU-1 DET: the USS DIXIE (AD-14), the USS SAMUEL GOMPERS (AD-37), and the USS PRAIRIE (AD-15). PRAIRIE soon will be relieved by the USS AJAX (AR-6). When new tender divers arrive, they undergo 1 week of check-in and a thorough indoctrination, which includes diving safety, operational and waterborne repair procedures, administrative processing, appropriate qualification, updates, and outfitting with proper diving equipment—all to bring the new diver up to speed in conducting San Diego Harbor repair operations. In addition, whenever a ship is in drydock that is "new" to those onboard HCU-1 DET, a walk-through inspection is conducted in order that the divers are better prepared to work on such a ship when it is waterborne. Also, crewmembers are taken along as observers on "new" repair operations so as many as possible can learn whatever new techniques are used. Most training is on-the-job training, in which divers receive hands-on experience. Most TAD assignments to HCU-1 DET are 6 months to 1 year in length.

In addition to a proven repair capability, HCU-1 DET is also building salvage response expertise. With the Fleet introduction of the Military Sealift Command Civilian-manned Fleet Ocean Tugs (T-ATF) in 1980, the Detachment was tasked with manning a mobile salvage and diving crew, with equipment, to augment the capabilities of the ships. This new requirement, which will include a 19-man salvage/diving team, fly-away dive system (FADS), and heavy salvage equipment, provides for a mobile capability in support of Pacific Fleet salvage operations aboard the T-ATF anywhere in the Pacific. The salvage component of the DET consists of permanently assigned (PCS) personnel.

It is anticipated that the full complement of salvage personnel will report by mid-spring 1981, at which time intensive salvage training will commence in order that HCU-1 DET will be ready for heavy salvage by that summer.

Another area that is increasing in scope for the Detachment is underwater hull cleaning. Currently, work in this area is limited primarily to pre-hull cleaning inspection dives and post-hull cleaning quality assurance dives. In the near future, Detachment personnel will assume responsibility as the on-site Navy representative for the San Diego and Long Beach areas of California to coordinate surface ship hull cleaning activities.

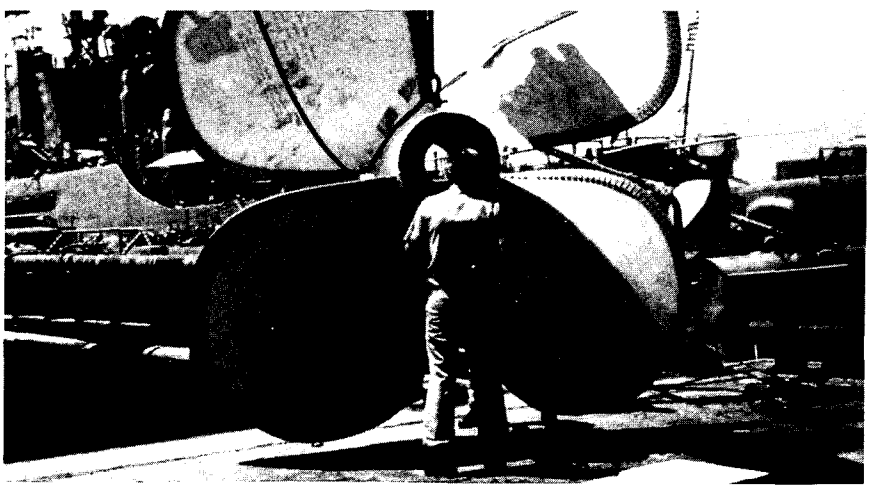
The successful efforts thus far of HCU-1 Detachment personnel are particularly noteworthy because they emphasize a very important point that the Navy diving and salvage forces must harken to: credibility and desirability are directly linked with the amount of professionalism and tenacity shown the rest of the Fleet in accomplishing underwater tasks. The Navy diver cannot afford the luxury of "kicking back" and resting on his special stature--he must perform. He must be innovative, professional, and aggressive, and must return from a job with a



success story under his belt. He must be both a student and a teacher, ever alert for new methodology, new experiences, and new knowledge. And, he must disseminate this information to his fellow divers continually. This hard-charging professional is the backbone of the diving community; and this is the modus operandi of HCU-1 DET. "We are proud of our proven capabilities and we invite the Fleet to call upon us 'when you care enough to send the very best'."

Key personnel of HCU-1 Detachment include the following:

LCDR Gary Cassatt, USN
(Officer in Charge)
LTjg John Bowles, USN
(Assistant Officer-in-Charge)
(USS JASON)
MMCM(MDV) Bud Kilbury, USN
(Master Diver and Fly Away Salvage Team Master)
CWO_2 Bill Tass, USN
(1st LT and Assistant Salvage Officer) (USS ARCADIA)
LTjg John Cenney, USN
(Salvage Officer) (USS SAMUEL GOMPERS)
LTjg Dave Tuebner, USN
(Repair Officer and Diving Officer) (USS DIXIE)
HTCM(MDV) Jerry Jennings, USN
(DIXIE dive crew supervisor)
ENCM(DV) Gary Decker, USN
(SAMUEL GOMPERS dive crew supervisor)
BMC(DV) Paul Wicker, USN
(PRAIRIE dive crew supervisor)
ENS Martha Herb, USN
(Administrative/Personnel Officer/Diving Officer)
LT Jack Strandquist, USN (Reporting in December 1980 from USS AJAX)



Top: ENS Herb (on pier) with member of diving crew. Left: LCDR Cassatt and MMCM(MDV) Kilbury. Above: scene during recent propeller change.

The Old Master

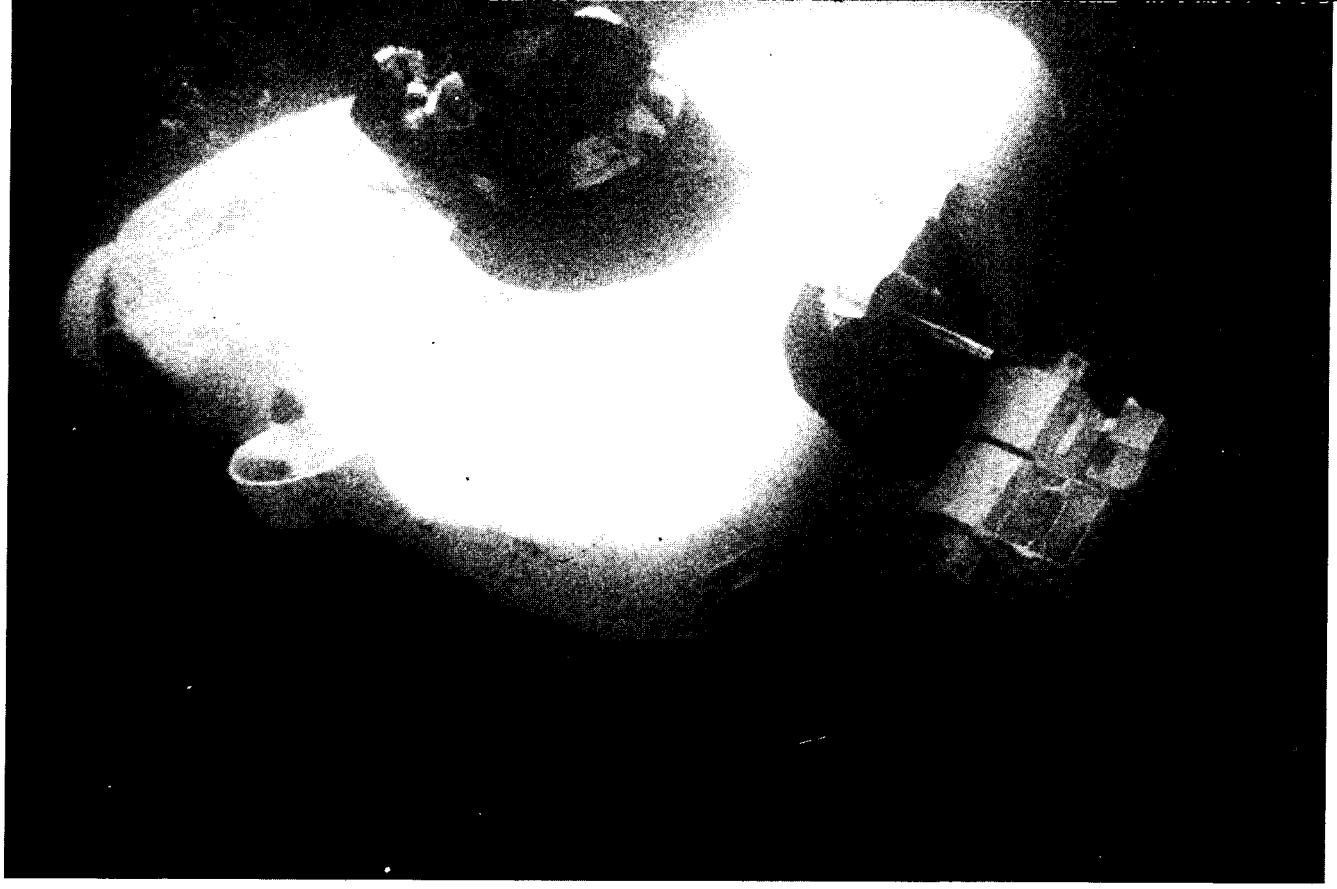
Certification – why does the Navy Diving Program need it? I am a Master Diver, and I have been in diving for over 15 years. Certainly, I don't need some Washington Bureaucrat to tell me how to do my job! It's ridiculous to think that I am going to hazard one of my divers with improper equipment or procedures! Why not use the money we waste on certification to buy better diving equipment? . . .

These thoughts used to be my honest opinion—many of my Master Diver shipmates have felt the same way—but I've been "converted." The "conversion" occurred by force, because I had no choice. CNO flat out declared that we had to get our system certified. Now that it's achieved, I believe in it—so I guess you could say that my "conversion" is now by attitude rather than by force or regulation. . . .

Why the "conversion"? Believe it or not, the process is meaningful! I have fumbled with P9290, but I finally realized that, as I read it instead of just griping about it, it made sense. Developing a PSOB wasn't that hard. It took some time and some thought, but it was a worth-while drill because it made me get my act together in an organized fashion. The SCA reviewed it and sent it back approved; maybe he isn't just a hard-headed sandcrab afterall. I had the Diving Officer send a message to set up a certification survey with the SCA, which was scheduled for a mutually agreeable date.

When the SCA first came onboard, I confess that I felt some open hostility. But as we started, I found out that he knew what he was talking about. It was evident that his attitude was not "I gotcha," but, "let's really look the system over." I was getting more confident and then—bang—two IA cards and five IB cards. Seven hits! I could have strangled him. I finally calmed down and realized that I really hadn't dug deep enough into my own system—the discrepancies he found were valid. He gave me a few tips on how to correct the discrepancies, and he also helped me improve the OPS and EPS. Needless to say, I corrected the discrepancies and answered the cards and, without too much flap, we received our certification.

Why do I relate this story here in *Faceplate*? Because I was wrong—and maybe some of you are. I got over my paranoia about thinking of cards as "hits." Certification can help us obtain and assure us of maintaining safer diving systems. It's not just paper—it does serve a purpose—and it's *attitude* that makes the difference. Attitude: How's *Yours*?



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