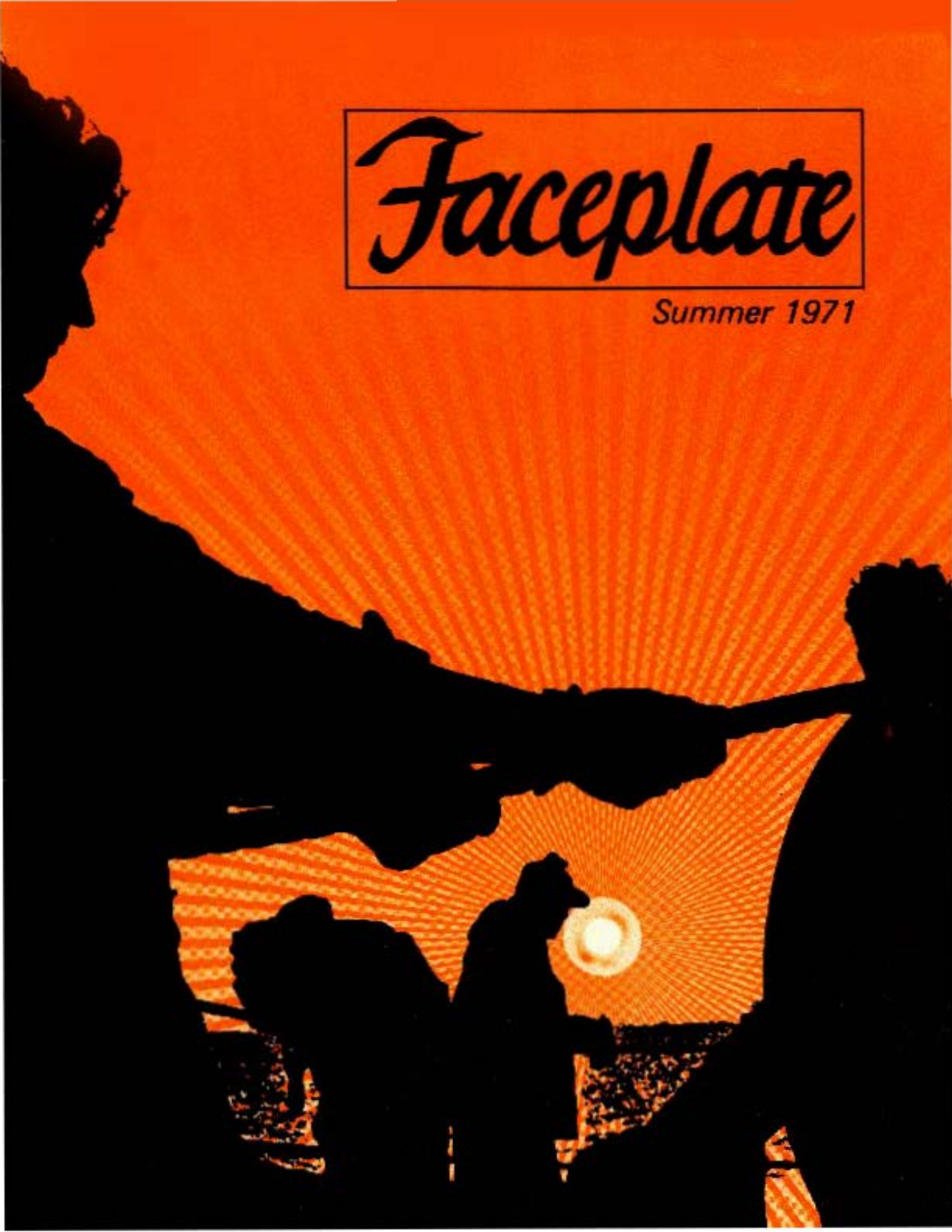
# Faceplate

Summer 1971



CAPT C.H. BLAIR
Commander, SERVRON-8
(see page 18)

# Faceplate

Vol. 2 No. 2

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

*FACEPLATE* is published quarterly by the Supervisor of Diving to bring the latest and most informative news available to the Navy diving community. Articles are presented as information only, and should not be construed as regulations, orders, or directives. Discussions or illustrations of commercial products do not imply endorsement by the Supervisor of Diving or the U.S. Navy.

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THE COVER: Never a nine to five job, salvors work into twilight to complete a salvage operation. Picture contributed by Harbor Clearance Unit Two, Norfolk, Virginia.

# New Test for MarkIII Lifejackets

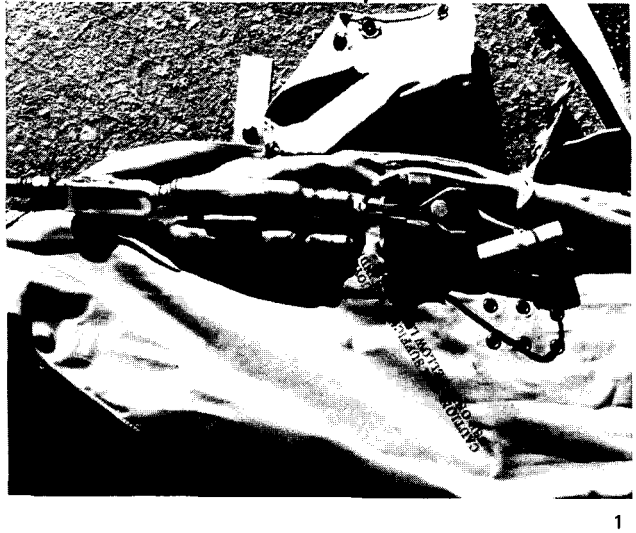
*The following safety procedure was contributed by the Basic Underwater Demolition School (BUD/S), Naval Amphibious Base, Coronado, California.*

The Mark III lifejacket is used extensively in the course of instruction for UDT divers. In this function the cartridge assembly passages from the cartridge holders to the stem, and the stem valves themselves become clogged with salt, sand, and other residue. The usual oral inflation test of the lifejacket does not expose this condition.

Personnel assigned to the BUD/S Division Diving Locker Naval Amphibious Base, Coronado, California, have developed a test device that is inexpensive and easily constructed from materials located in most diving lockers. It is efficient for testing, and in all but severe cases, clears the cartridge assembly passages.

The test procedure is simple. The device is inserted by hand into the cartridge holder assembly of a deflated Mark III lifejacket. Low pressure air is blown through the device. If the passage and stem valve on that side of the holder assembly are clear (or are cleared by the test air pressure) the lifejacket will start to inflate. The test device is then removed, turned over, and reinserted in the cartridge holder assembly. This is necessary because LP air travels through only one side of the test device at a time. Air is then blown into the other side of the holder assembly. If either side of the holder assembly fails to allow air to enter the lifejacket, it is assumed that the holder assembly passages are fouled. This could cause only partial inflation in an actual emergency.

The test takes about one minute per lifejacket and is performed at BUD/S Division between each training class, which is six times per year, or after approximately 20 dives in salt water.



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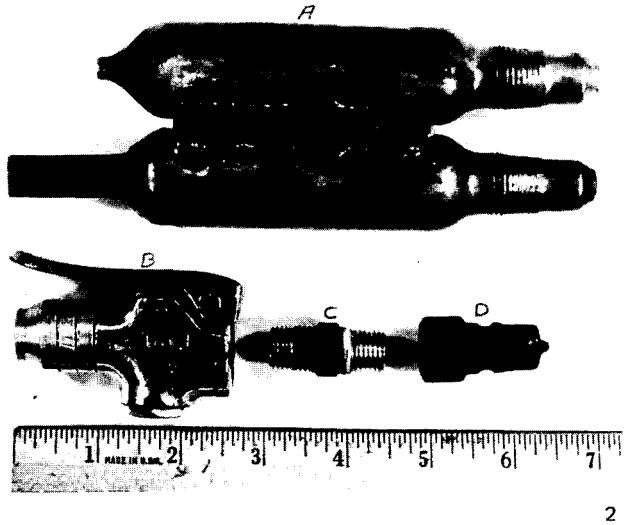


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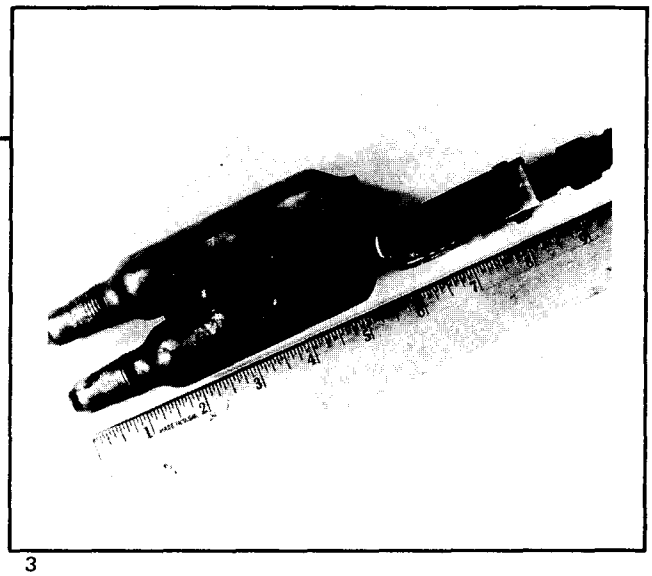

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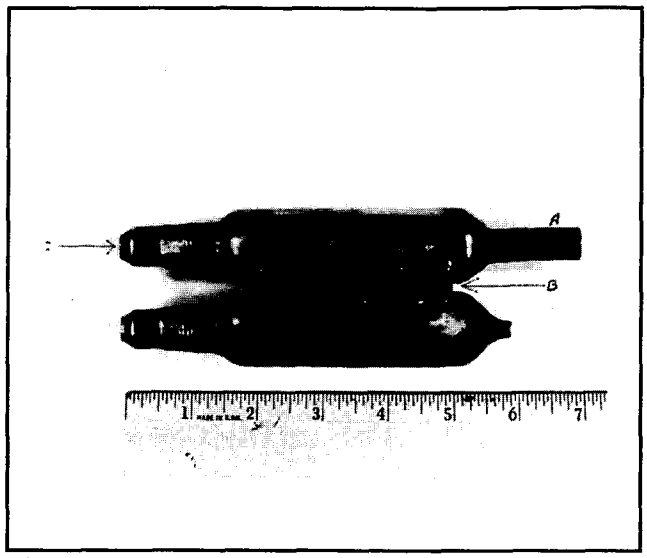


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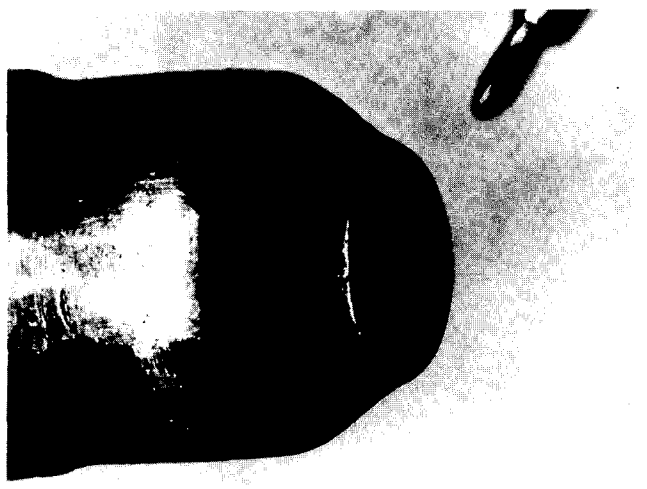
*1. Test device ready for testing the Mark III Lifejacket. Low Pressure (LP) air line is not attached to the test device. 2. "A" shows two standard Mark III $CO_2$ cartridges brazed together with spacers. In "B", standard LP trigger type air valve is shown. Part "C" indicates the quarter-inch pipe double male nipple. View "D" shows female end of quarter-inch Hansen quick disconnect fitting. 3. A closer view of the test device (less air source), assembled. 4. "A" shows half-inch copper tube ready to accept the LP air valve. The fit is tight enough to eliminate the need for welding or threading. "B" shows five-sixteenths-inch copper tubing brazed as spacers on both sides of $CO_2$ cartridges to insure easy fit into the double cartridge holder. Location of hole in one $CO_2$ cartridge is shown in "C". 5. Three-eighths-inch hole drilled in the threaded end of the $CO_2$ cartridge that has the air device attached during operation. Location is noted in photo 4. The other $CO_2$ cartridge is a blank or an expended cartridge with a pin hole, but serves as a blank during testing. 6. Cartridge threads are ground to a slight taper for direct fit into holder assembly without threading. The "O" ring in the holders prevents air leakage.*



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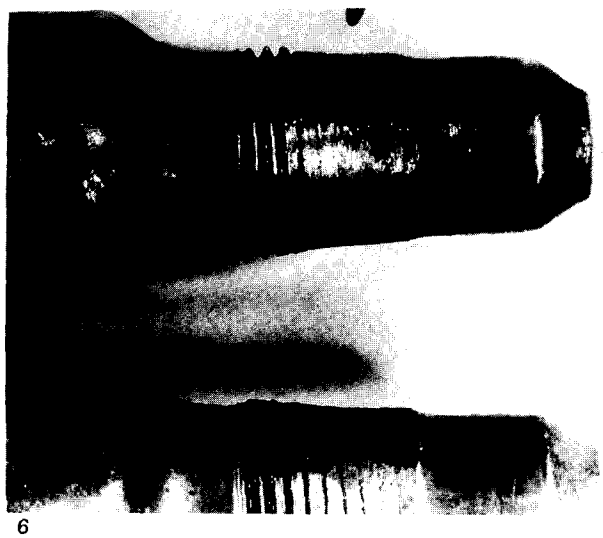

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## HOSES WITH NEW $HeO_2$ HELMETS

New $HeO_2$ helmets have been received by the ordering activity with leader hoses and aspirator hoses attached. The leader hoses are of thin-walled construction similar to a garden hose and are undated. The aspirator hose is assembled with swedged connections. These hoses were used by the manufacturer in testing the helmets and are not intended for use in deep sea diving.

Activities receiving new $HeO_2$ helmets with leader and aspirator hoses attached should remove and discard the hoses. These hoses should not be used for diving.

## NAME OMITTED IN REPORT

In the FACEPLATE report concerning the Salvage Officer's Conference (Spring, 1971) held in San Diego, California, the name of Howard Placchi was inadvertently omitted from the list of speakers. LCDR Placchi, who has since retired from the Navy and is currently employed by Murphy Pacific Marine Salvage Company, spoke on "The Role of the Director of Diving, Salvage and Ocean Engineering Projects." FACEPLATE extends sincere apologies to Mr. Placchi for this error.

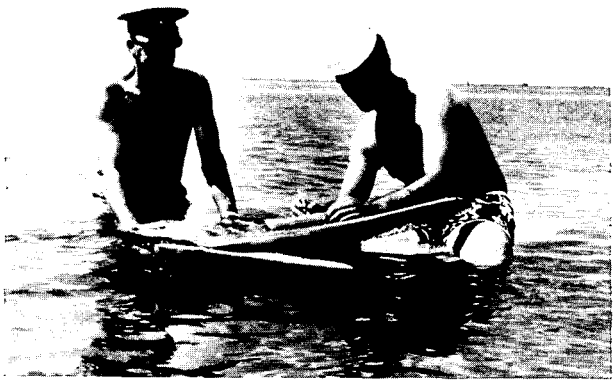
## "INFORMATION PLEASE"

Anyone with information regarding the origin, date of manufacture or other details concerning the helmet pictured at left is requested to contact Chief H. A. Warjonen, Escape Training Department, Submarine School, New London, Groton, Connecticut.

## NEW DIVING SIGNAL

A cardinal rule for undertaking any diving operation is, never send a diver down unless the proper diving signal is displayed. Change number eight to Volume 2 of ATP – 1 ALFA, the Allied Naval Signal Book revised the Navy's diving signal to the current International Diving Signal, CODE ALFA. CODE ALFA indicates, "I have a diver down, keep well clear at slow speeds," and is the proper day signal for diving operations. CODE ALFA should be displayed instead of the Four flag.

## "SURF'S UP!"



This is the way a Navy Diver reenlists, Hawaiian style. Signing his contract on a surfboard is MR1 (DV) Robert P. Arnold with LCDR Joe L. Bradshaw, Commanding Officer, USS CURRENT (ARS 22) looking on. The Salvage Rescue Ship CURRENT is homeported in Pearl Harbor, Hawaii.

## STEEL SCUBA BOTTLES

Steel SCUBA bottles currently in use are approved as substandard equipment and may be used by any activity having them on board. Full approval to use steel SCUBA bottles for all except EOD diving is expected in the near future. In the meantime, activities having steel bottles may use them but should replace them with standard aluminum bottles until steel bottles are authorized.

## COMPRESSORS TO BE PLACED ON DART LIST

NAVMAT Instruction 4790.10 established a program to identify and correct "the most serious shipboard equipment problems affecting the Fleet's material readiness." Known as the DART (Detection, Action, and Response Technique) Program, it will concentrate the necessary management attention, resources, and direction on the correction of severe problems.

With the recurrent malfunctioning of High Pressure Air Compressors used in Diver Compressor Air Systems over the years, the maximum use of this equipment cannot be realized. SUPDIVE believes that these High Pressure Air Compressors should be on the DART list.

Although the problems with these compressors are common knowledge in the diving community, SUPDIVE requires accurate documentation to back up its request for the compressors to be placed on this list. It is therefore necessary that various commands in the Fleet forward all comments and data pertaining to the many problems with these compressors to:

Office of the Director of Diving,
Salvage, and Ocean Engineering Projects
Naval Ship Systems Command
Washington, D. C. 20360

## WARNING: BREATHING BAGS

The Lightweight Diving Mask comes in two versions, one with a three-way valve which permits the use of a breathing bag, and one with a plain brass elbow. The performance of the two masks is identical and they may be used interchangeably. In accordance with the Diving Manual Article 2.1.3, when the mask with the three-way valve is used, the fitting for the breathing bag should be capped and not used.

## COOPERATIVE EFFORT IN ARROW RECOVERY

In the "Soundings" section of FACEPLATE, Spring, 1971, under the heading of "Arrow Report Available", it was stated that at the request of the Canadian government the U. S. Navy undertook the salvage of the tanker SS ARROW. Nothing in this statement was meant to imply that all aspects of the salvage and the related pollution abatement undertaken as "Project Oil" were directed by the U. S. Navy, nor was it the intention to belittle in any way the significant and admirable efforts of the Canadian Armed Forces divers utilized in this operation. The removal of oil from SS ARROW was a cooperative effort which called upon the assets and expertise of many governmental and commercial agencies, both Canadian and American.

## NASA SPONSORS CONFERENCE

The NASA sponsored Second Conference on Portable Life Support Systems held at Moffett Field, California, May 11 - 13 drew considerable interest from the diving community. Approximately one-third of the attendees were primarily interested in diving. Presentations pertinent to diving included,

Design Configurations for Diver Breathing Gas Systems, Mr. O. R. Hansen, Office of the Supervisor of Diving

Advanced Deep Sea Diving Equipment, Mr. W. A. Danesi, General Electric Company

The Mark 10 Mod 3 UBA – Operation and Testing, LCDR W. I. Milwee, Jr., USN, Assistant Supervisor of Diving

Diver Suit Heating, A. P. Shlosinger, TRW Systems Group

Semi-Closed Circuit Atmosphere Control in Portable Recompression Chambers, Peter S. Riegel, Battelle Memorial Institute

Thermal Protection of Divers, LCDR P. F. Dowland, RN, Office of the Supervisor of Diving

Papers on mine and space life support systems brought out items of technology which proved to be of value to divers.

The Supervisor of Diving has arranged to acquire a limited number of the Conference proceedings when published.

## NEW "COMPUTER" FOR EDU


Insert shows actual inscription on the "computer."

The Experimental Diving Unit is continually striving to develop new techniques and equipment for the diving community. The newest piece of equipment recently acquired by the EDU Medical Department, those "hard-charging medicine men," is officially known as a Decompression Computer. Pictured above, the "computer" goes through preliminary tests with Medical Officer CDR J. F. Summit (left), and Senior Medical Officer CDR Bill Spaur (right).

# EDENTON-NEW SHIP on the SALVAGE SCENE

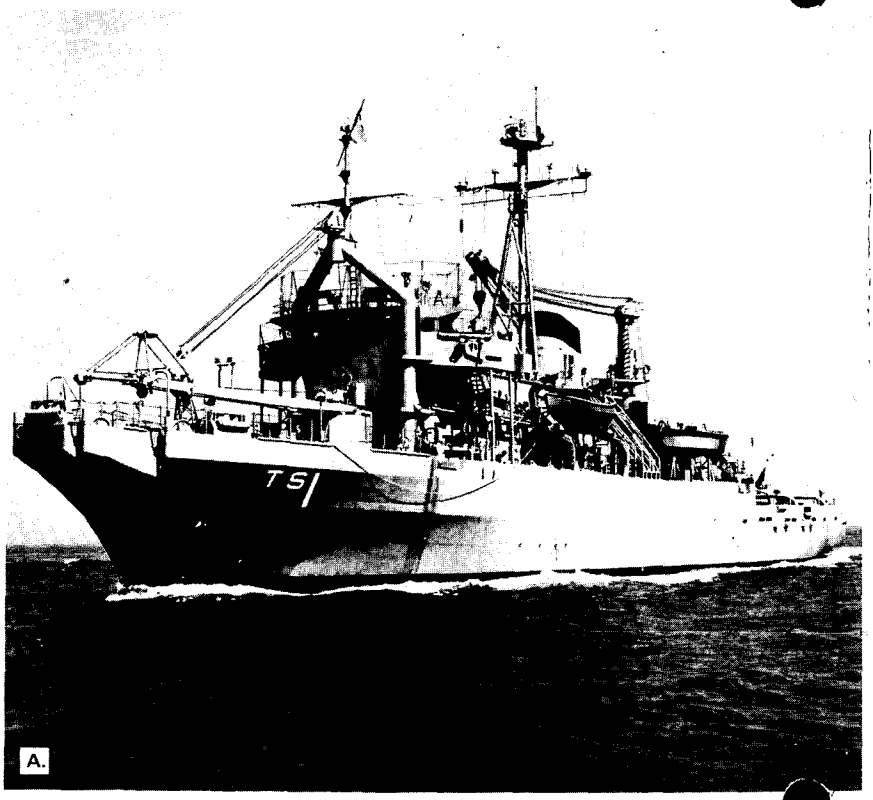
The USS EDENTON (ATS 1) joined the Service Force, U.S. Atlantic Fleet during commissioning ceremonies at the Norfolk Naval Shipyard early in 1971. EDENTON is the first of a new class of ships designed to provide the Fleet with the most advanced and comprehensive capabilities for ship salvage, diving, emergency repairs, and long distance towing operations.

Named for Edenton, North Carolina, as were two previous Navy ships, the 1971 version of the EDENTON was built in Lowestoft, England by seafaring people who have a long heritage of fine shipbuilding.

The most striking feature of the ship is the clean deck. All hatch coamings are faired so that everything will run over the hatches both fore and aft. Two electro-hydraulic winches on the forecastle provide infinite speed control. The three drum towing winch aft (capable of 70 tons static pull) has two main tow wires, 3,000 feet long with a one-inch wire on the auxiliary drum for target towing. A gear change kit provides for utilizing towing wires of 1-1/2, 2, and 2-1/2 inches. A completely enclosed towing control booth provides a comfortable operational environment with complete view of the fantail area.

Propulsion is by four Paxton diesel engines, each of 1500 BHP. Each pair of engines drive a controllable pitch propeller through twin input, single output gearboxes giving 150 RPM at the propeller. The four-engine arrangement allows selection of the number of engines to be used for cruising speeds, and for the low speeds necessary for certain operational duties, while overall engine efficiency can be kept at a maximum. A bow thruster permits excellent close-in maneuvering ability so often required in salvage operations.

The salvage, carpenter, and machine shops are a significant improvement over the present day ARS. Four main salvage holds (complete with bi-rail hoists in the after two for handling equipment) have excellent accessibility and above average storage ability.



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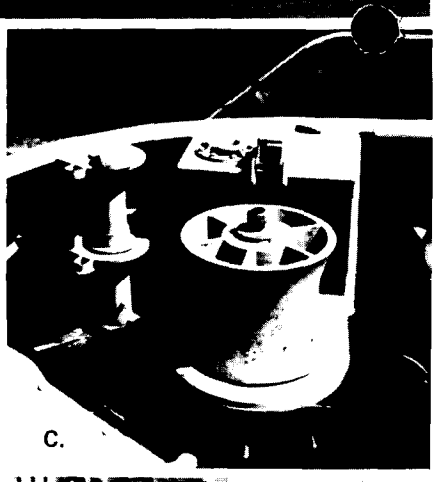
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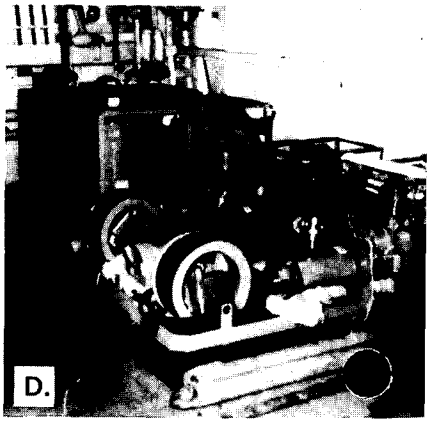

D.

*a; EDENTON, at sea for shakedown cruise. b. EDENTON's first Commanding Officer, LCDR Jack Furr. c. Capstan on the stern. d. Hold provides storage for pumps and other salvage equipment.*



*e. At Norfolk Shipyard, workman repairs a vent. f. Lift sheave will be put to use during future salvage operations. g. EDENTON leaves dock at Lowestoft, England.*

Three interchangeable shore-based suites provide EDENTON with a capability never before found in U.S. Navy salvage ships,

—— 300 ton bow lift capability
—— 850 foot deep diving capability
——submarine air salvage capability.

The number four hold is the focal point in providing the space for the Mark I Deep Dive System and the Submarine Air Blow System. Portable salvage machinery is removed in each instance while the DDS or Submarine Air Blow System is on board. When the DDS is not aboard, EDENTON can rely on a mixed gas capability of her own, enabling her divers to descend to 300 feet.

This shore-based equipment can be air-transported anywhere in the world for quick load-out and yet when not required, can be stored safely ashore, permitting EDENTON to function as any salvage ship with her portable salvage equipment stored aboard.

Having recently completed fitting out, EDENTON is presently undergoing shakedown training with the Fleet Training Group at Guantanamo Bay. Summer activities include an operational evaluation period, Final Contract Trials and an availability at Norfolk Naval Shipyard for initial installation and compatability checks with the Mark I DDS.

The ability of the EDENTON to provide the fleet with better support from a single ship will greatly enhance fleet mobility, increase its endurance in a combat zone, and decrease exposure time to enemy attack during salvage, diving and towing operations.

Principal characteristics include:

Sustained speed . . . 16 knots
Length . . . 283 feet
Maximum beam . . . 30 feet
Draft, full load . . . 15 feet, 2 inches
Displacement, full load . . . 3,120 tons.

A unit of Service Squadron Eight, EDENTON is homeported at Little Creek, Virginia. LCDR J. Furr is EDENTON's first Commanding Officer.

# Mark I proves mobility

*by Roy L. Sea, Project Engineer*
*Director of Diving, Salvage and Ocean Engineering*

After four months of refurbishment and a series of dives to 850 feet last fall, the Mark I Deep Dive System was air shipped to New Orleans, Louisiana from its home at the FMC Corporation in San Jose, California, and was installed aboard the YFNB 43, being redesigned at a commercial shipbuilder's there.

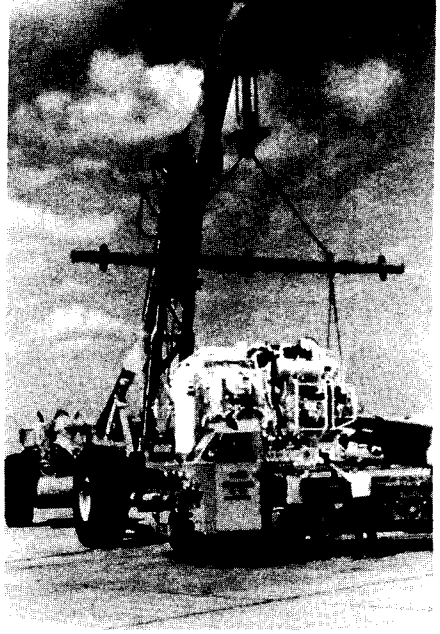
This unique "airlift" capability enables the Mark I system to be transported by the safest and most expedient means available, thereby fulfilling the requirement for a system of these capabilities.

During the first week of March, a test loading exercise was held in preparation for the actual airlift. Each component of the system was mounted on a pallet or aerial delivery platform designed to roll into a C-141 aircraft and lock into its rail system. Tie downs on each pallet were designed to meet the required restraint forces, and minimize the number of off-pallet tie downs. Air Force load masters and engineers were at the test load site, Naval Air Station, Moffett Field, for the exercise. After the pallets were inspected and approved, each of the Mark 1 components was loaded on the three C-141 aircraft positioned at Moffet Field for the test loading. The test loading, which was conducted to eliminate unforseen problems from a subsequent airlift, was considered highly successful.

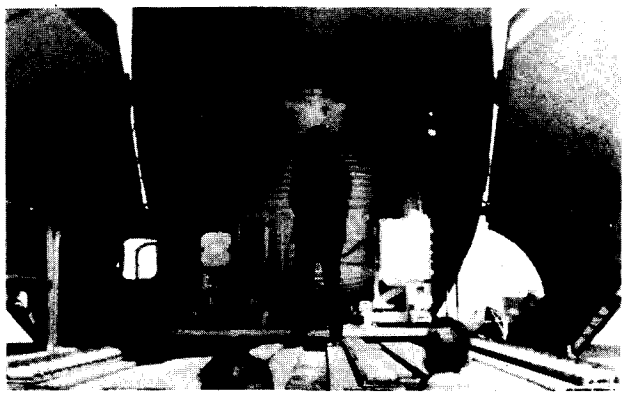
The actual airlift of the system took place the following week after Air Force approval for the loading had been granted and the necessary documentation had been produced. For four days a MAC (Military Airlift Command) C-141 cargo aircraft shuttled between NAS Moffett, California, and NAS New Orleans, Louisiana, carrying the three planeloads of deep dive system components.

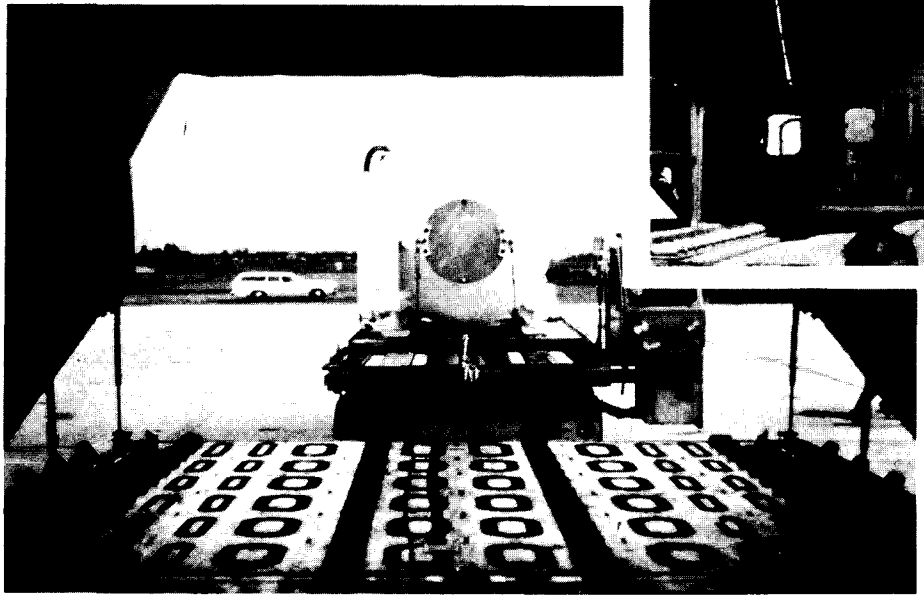
An integral part of this, like any other airlift operation, was the ground support. In this operation, a specially designed vehicle called a K-loader was utilized as well as a mobile crane. The K-loader (shown in photo) is a self-propelled rubber-tired vehicle with an elevated platform that can be precisely aligned with the floor of the aircraft at the rear door opening. On the deck of the K-loader are rollers similar to those on the deck of the aircraft. Once a pallet has been placed on board, the K-loader is aligned with the deck of the aircraft, and the pallet is winched or manually pushed off. When the aircraft is unloaded, each pallet is rolled onto the K-loader and pushed off with a crane. Loading and unloading the Mark I System without the crane and K-loader would be an extremely difficult operation. With this equipment, total time for loading and unloading each aircraft was less than four hours.

The use of a pallet system for transporting the Mark I components eliminated the need for tying down each piece of equipment to the aircraft. On all but two of the components, the properly positioned pallet was locked right into the deck rails of the aircraft. The locking and unlocking procedure takes less than a minute. In two cases, chains were required to secure the components to the deck of the aircraft because of the massive size and weights involved. Generally, though, it was the simplicity of the pallet system that greatly contributed to the rapid loading and unloading.



The successful airlift of the Mark 1 DDS added another dimension to the versatility of the Navy's only operating deep dive system. Given the ability to be transported to a work site by land, sea, or air, maximum utilization of this system can be made. With this move made by air, the concept was proved.





# AWARDS to men of the diving world

Military rewards are varied and sometimes intangible. The men pictured on our center section are only a few who have done their jobs in an exemplary way and will wear an appropriate medal for their efforts. Also shown here are retirement ceremonies, recipients of letters of commendation and reports of advancements.

ENC (SS) (DV) Vincent G. Clifford (1) is piped over the side by fellow Chiefs during Clifford's retirement ceremonies aboard the USS ORION (AS 18). After 26 years of service, Chief Clifford is retiring to James Island, Charleston, S.C. with his wife Marie and two daughters. CWO Warren D. Thomas (Ret.) (2) recently received the Navy Commendation Medal for outstanding leadership during his service in a salvage operation in 1966. Mr. Thomas is now a Vice President with Murphy Pacific Marine

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a framed copy of a Group Achievement Award from NASA on behalf of U.S. Navy Underwater Salvage Team for the work in the success recovery of a solar eclipse package lost at sea during the 1970 eclipse. A recognized for their expertise in organizing the package recovery were C John Orem, then Deputy Supervisor of Salvage, and Mr. Earl Lawren Senior Salvage Master in the Office of the Supervisor of Salvage, w received Letters of Commendation from NASA. Presenting awards officers and men of Harbor Clearance Unit-One was CDR Joe D. Edwa HCU-1 Commanding Officer. LTJG Lloyd A. Bornmann III was recipient of the Navy Commendation Medal. ENS James E. Howard, (10) received a Letter of Commendation from Commandant Sixth Na District for his outstanding performance and dedication to duty. EM1 Jo C. Bookout III (11) and BM1 Thomas R. Bower (12) were awarded Navy Commendation Medal. BM1 Bower also received the Navy U Commendation Medal and the Purple Heart. MM1 Felix Bay[illegible]ne (13), C Roberto S. Silao (14), EM2 E. J. McLaughlin, Jr. (15), SK2 William Flores (16), and MR2 Michael Miller (17) received the Navy Achievem Medal. MR2 Miller was also awarded the Combat Action Ribb CINCPAC Letters of Commendation were awarded to YN1 Michael Walsh (18) and MM2 Jan Swartz (19); YN2 Michael W. Trelin received a COMSERVPAC Letter of Commenda[illegible] Good [illegible] Medals were awarded to EN2 Steven W. Evans, SFP[illegible]ne R. J[illegible]2 and ETN2 Silvino V. Tangunan. MR1 Ruperto S. Dominguez receive Letter of Commendation from Commanding Officer, HCU-2. Paul S. Paoli (21), received an advancement letter to EN3.

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Salvage Company. Pictured with Mr. Thomas is Louis Ets-Hokin, Chairman of the Board of Murphy Pacific, who presents the medal on behalf of the Secretary of the Navy. Surgeon CAPT John S. P. Rawlins, OBE, Royal Navy, (3) receives a Secretary of the Navy Commendation from RADM F. B. Gilkeson at the U.S. Embassy in London. CAPT Rawlins, as the first doctor to participate in the medical exchange program, investigated many areas of cold protection for divers, including protective garments and the dangers of breathing cold helium. The Navy Achievement Medal goes to LCDR Robert F. James, (4) for meritorious service while Commanding Officer of the USS KITTIWAKE (ASR ). CAPT Samuel H. Packer, Commander, SUBDEVGRU-One, (5) presents GMG1 (DV) bur H. Eaton the Navy Achievement Medal at retirement ceremonies honoring Eaton's 20 years of Naval service. SF1 O. L. Dunfee (6) is the recipient of the Navy Achievement Medal for "meritorious achievement while serving aboard the USS JASON (AR 8) as Diving Supervisor and Acting Diving Officer . . . during combat operations." Also receiving recognition for outstanding performance while attached to the JASON is MR2 W. A. Stovall, Jr. (7) who used his exceptional diving skills "in extremely dangerous conditions during his ship's deployment in Vietnam." For his outstanding performance as Production Officer at the Ship Repair Facility, Subic Bay, Republic of the Philippines, CDR Robert Moss (8) is the recipient of the Navy Commendation Medal. CDR Moss is currently serving as Deputy Supervisor of Salvage, NAVSHIPSYSCOM, Washington, D.C. RADM Nathan Sonenshein (9), Commander, NAVSHIPSYSCOM, presents CAPT E. B. Mitchell, Director of Diving, Salvage, and Ocean Engineering, with

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NASA on behalf of the
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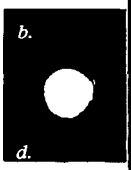
# DIVING NAVY USES TECHNICAL SKILLS OF BATTELLE, NSRDL

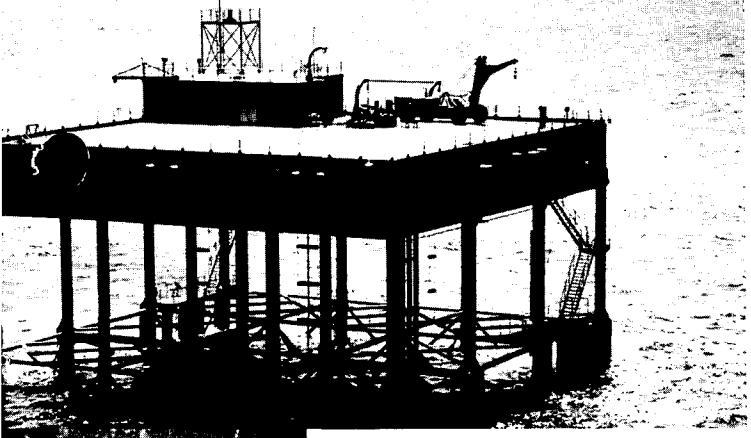
The development and testing of diving equipment for the Fleet requires the application of a variety of talents and facilities. The Supervisor of Diving uses numerous activities in the naval community and industry to assist in equipment and technique development. Among these are Battelle Memorial Institute in Columbus, Ohio, and the Naval Ship Research and Development Laboratory (NSRDL), Panama City, Florida. These activities are typical of those providing technical services to the Supervisor of Diving.

By calling upon the engineers and technicians at organizations such as Battelle and NSRDL, the Supervisor of Diving can bring exceptional talents in both the Navy and industry to bear on diving problems.

Battelle, a non-profit institution located in land-locked Columbus, Ohio, has made numerous contributions to diving and ocean engineering in recent years. The variety of engineering talent available in Battelle allows them to undertake engineering work of almost any description. Representative work includes design and construction of an environmental control system for the chambers at the Experimental Diving Unit. * Development of a miniaturized communication system for surface tendered divers. This system is scheduled for Fleet introduction in 1972.* Rewriting the Navy Underwater Welding and Cutting Manual. In response to a fleet problem of corrosion in aluminum "90" SCUBA bottles. they analyzed the corrosion products, their effects on the bottles, and recommended a course of action to provide better maintenance and cleaning procedures. * Writing the Navy Diving Gas Manual. * Co-sponsoring the Underwater Welding, Cutting, and Hand Tools Symposium in 1967 and the Equipment for the Working Diver Symposium in 1970. * Development of special tools and techniques which have been used in numerous salvage, diving, and recovery operations. This has included development of the first underwater electric tool and explosive welding. * Writing publications associated with certification of hyperbaric chambers, diving equipment, and diver breathing gas equipment. * Extensive testing of diver heating systems and assisting in the determination of diver heating requirements. * Investigation of the stress levels in Mark VI SCUBA cylinders to determine if they are safe for continued operation. * Modification of the Mark IX UBA.

This list of Battelle projects indicates the variety of talents available for application to Navy diving problems. There have been numerous requests from the Fleet for a chamber for use in emergency recompression and transportation of diving casualties occurring in remote locations. This problem has led to one of the most interesting projects currently underway at Battelle, the design and construction of a one-man recompression chamber.



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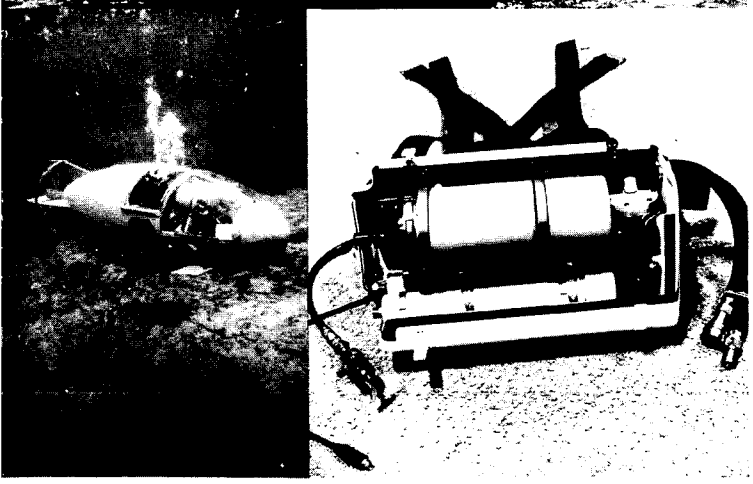


c.

*a. Stage I, in 100 feet of Gulf water, one of a pair of platforms used by NSRDL for environmental studies. b. SDV tests out in clear spring waters; holds two swimmers. c. GE diver heater tested at NSRDL.*

*d. Battelle diver tests re-breather and heated suit in ice-filled tank. e. Diver at Battelle prepares for testing electric shock resistance of the Mark V rig. [illegible] cussing new one-man chamber being built for the Navy are, from l[illegible] Jim Glasgow, Jerry Henkener, Battelle Engineers, Charles Darley, USN, Don Caudy, Battelle,and LCDR William Milwee, Jr., USN.*

e.

f.

Since calculations show that a tremendous volume of air is required to properly ventilate most one-man chambers, Battelle has undertaken the design of a one-man chamber which uses a venturi recirculating system and carbon dioxide scrubber much like a helium hat that reduces the amount of air that must be carried for chamber operation. The first of these chambers, both air transportable and capable of passing through a submarine hatch, will be available for testing in the summer of 1971.

On the northern shore of the Gulf of Mexico another valuable member of the diving technical team is located at NSRDL Panama City. This activity has a long history in diving development and has provided the Fleet with many items of specialized diving equipment.

Enjoying an ideal environment for diving with ocean clear waters and abundant marine life, the Panama City Laboratory is a particularly good geographic location for diving development work. Included in the unique facilities at Panama City are two offshore structures in 100 feet and 60 feet of water known as Stage I and Stage II which are used for environmental studies and equipment testing.

The Ocean Simulation Facility (Faceplate, Summer 1970) is nearing completion and will provide a unique source for equipment testing at depths under a variety of conditions. This facility will complement the experience in modern saturation diving techniques which dates back to SEALAB 1, through SEALAB II and the ill-fated SEALAB III. The depth of knowledge in the technical aspects of saturation diving has allowed many significant advances in this rapidly developing science.

One of the most significant projects currently underway at NSRDL is the development of an integrated diver communications system. This project, a unique joint sponsorship of several agencies in the Naval Ship Systems Command and the Office of Naval Research, is designed to provide equipment to the Fleet that represents the best available at this time.

Small hardware items, too numerous to name, but ranging from hand-held sonars and acoustic switches to swimmer delivery vehicles, have been designed and constructed at Panama City. These small hardware items either are introduced into the Fleet as such or contribute to other products that are. The development of a diver heating test mannequin and a human simulator (advanced breathing machine) will allow better evaluation of diving equipment and more advanced hardware development at NSRDL, Panama City.

Activities such as Battelle, NSRDL, Panama City and many others providing technical services to the Supervisor of Diving allow a maximum amount of talent to be directed on solving the complex problems of modern diving.

# HCU 2, Salvors of the Eastern Coast

Norfolk, Virginia, is probably one of the busiest port cities in the world. The U.S. Navy established residence there before World War II, and has grown to be an integral part of life in the city.

Part of the Naval operations based there is a group of salvors who keep a watchful eye on the entire Atlantic theatre. They are the men of Harbor Clearance Unit Two. Under the command of SERVRON–8, its Commodore, CAPT. C. H. Blair, HCU–2 is largely responsible for providing salvage, repair, diving and rescue operations. HCU–2 also operates in rivers and restricted waterways on the Atlantic side.

Its duties are widely diversified. From maintaining the Emergency Ships Salvage Material base in Norfolk, to operation of the COMSERVLANT Diving School, Second Class, the HCU-2 performs its duties diligently.

The equipment at its disposal is extremely varied. First is the YRST 2, on which the headquarters staff is embarked. The rest range from one Sea Plane Wrecking Derrick, one YLLC, one diving boat, to a large variety of other, smaller craft.

Each vessel is manned by an accomplished team of experts who have performed salvage operations in such places as Texas, Mississippi, Iceland and Bermuda.

The "flagship" of Harbor Clearance Unit-Two Operation is the YRST 2 with an Officer-in-Charge, Assistant Officer-in-Charge and enlisted crew. It provides offices and living space for the headquarters staff as well as the regular assigned crew. It is extensively outfitted with shops, diving and salvage equipment and crane facilities.

The YRST 2 is designed to support and assist assigned craft and equipment not in the field. Also, the craft has a self-sustaining capability in the event of deployment. This feature ensures close support to various elements engaged in salvage operations.

The newest piece of hardware, and probably one of the most exciting in the Navy diving community, is the Mark I Deep Dive System which was recently assigned to the HCU–2 command. In addition to its immense depth capability (it has tested to 850 feet), the system will be used for training of the newly assigned NEC's Saturation Diver 5311.

Since its inception in the fall of 1968, HCU–2 has been involved in numerous large-scale diving and salvage operations. A major one was the practice salvage of the EX-HAKE from a depth of 104 feet from the bottom of the Chesapeake Bay. This was the first time since 1939 that a submarine had been raised using the pontoon method.

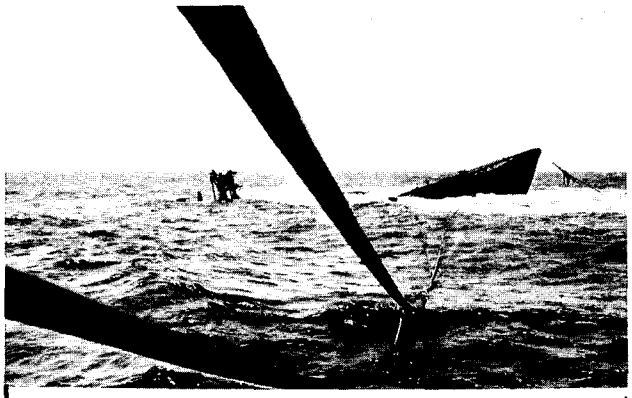
In 1970, the HCU–2 continued with its busy schedule and accomplished one of its largest operations, the righting of the EX-REUBEN JAMES in Dahlgren, Virginia. HCU–2 planned and executed the entire salvage operation in less than 30 days.

Also in 1970, a component of HCT–1 raised the YTM 538, which blocked the Mayport channel. This operation was completed in only three weeks. This was only one of many similar jobs of aircraft and small boats, which took HCU–2 to Bermuda and Iceland.

While the list of major salvage accomplishments goes on, HCU–2 must also perform the normal routine, daily workload which consists of pier inspections, screw changes and hull inspections. The scope of these projects range from a YTM to the four underwater acres of the USS ENTERPRISE.

Manpower is probably the most valuable tool in the Navy, and HCU–2 has its share of highly qualified manpower. To assist them, new electronic concepts are constantly being tested and utilized. The UDATS (Underwater Damage Assessment Television System) enables a diver to film and read first hand underwater damage information via an on-line television presentation. The diver's microphone and earphones are an integral part of this system, when used with the Kirby Morgan Band Mask.

From its beginning, the personnel of HCU–2 have received numerous commendations for the skills they have displayed, their devotion to duty, and their superb professional performance. Perhaps this extraordinary demonstration comes from being "number two": they try harder!



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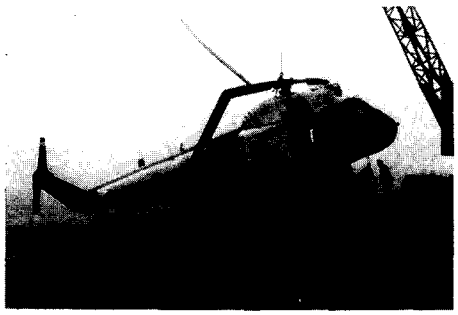

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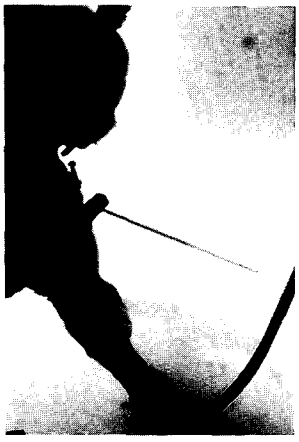

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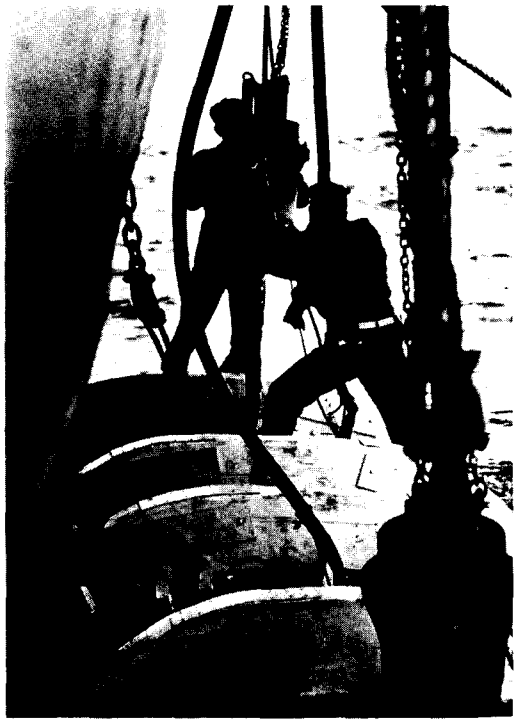

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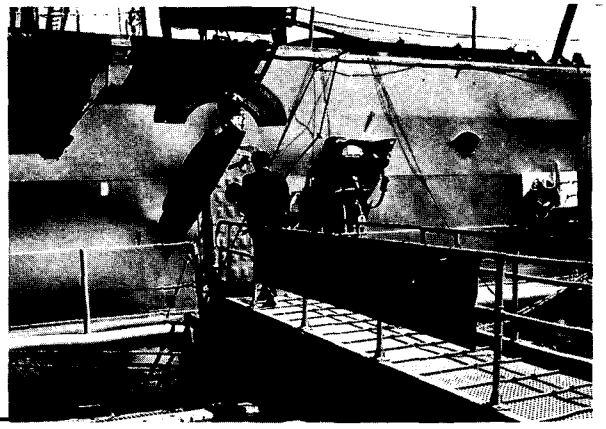


**And the work goes on . . . a. Coast Guard helicopter comes up from Chesapeake Bay. b. Salvage of the ex--HAKE was a major job in 1969. c. Salvors prepare to rig a submarine salvage pontoon. d. Hard hat diver training program is part of HCU-2's Second Class Diving School. e. Watchful eyes keep close surveillance over salvage operation. f. Welcome to HCU-2...YRST 2 is home of Commanding Officer CDR Walter Nickerson and staff.**

*FACEPLATE was on hand for SERVRON-8 exercises held off the coast of Norfolk, Virginia involving two ships which demonstrated their abilities in two routine situations. The USS SALINAN (ATF 161) commanded by LT Monroe M. Bailey, began by dousing a raging fire on an abandoned hulk about two miles from shore. The blazing tires and scrap topside were extinguished in less than an hour when the crew donned hard hats and boarded the hulk to snuff out the remaining interior fires.*

*The SALINAN then joined the USS PRESERVER (ARS 8), LCDR T.E. Cowen commanding, which had been standing by. Their joint exercise was to remove the grounded hulk from the Virginia beach. Divers submerged in ten-foot water to survey the hull and then radioed back for instructions in laying the beach gear.*

*With preliminary work complete, the SALINAN positioned herself with beach gear intact. Then the PRESERVER did the same. When all was ready, both ships applied the necessary pull and the hulk gently slipped off the beach. The exercise was a success.*

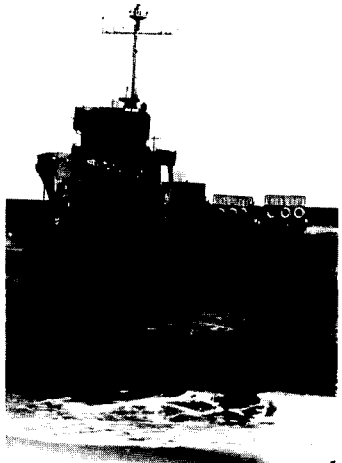
a.

b.

c.

d.

a. The crew of the PRESERVER adjusts pumps in preparation for dewatering exercises. b. Smoke can be seen for miles as SALINAN approaches the flaming ship. c. Crew members of SALINAN handle monitor with skill as ship moves in close during fire fighting exercise.



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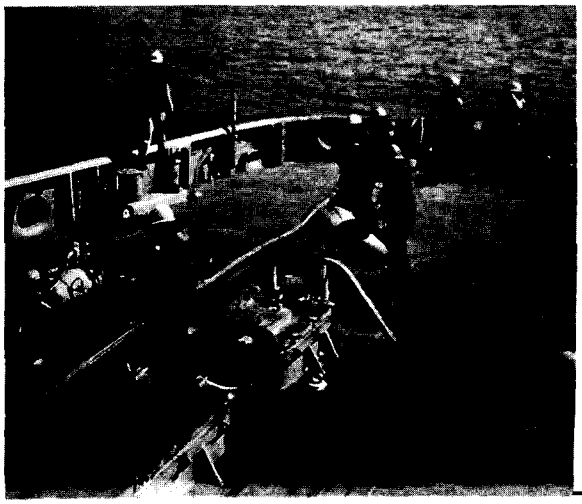


d. PRESERVER Commanding Officer and Executive Officer, LCDR T. E. Cowen and LT J. W. DeCoste, discuss the salvage exercise with CWO Leon Rider from HCU-2 in wardroom prior to operation. e. Hard hats and life jackets indicate a safe operation as PRESERVER prepares to lay her beach gear. f. MIKE boats deposit hulk on beach for salvage exercise.

Diver suits up for underwater welding exercise at HCU-2 Second Class Diving School.

# increases quantity and quality of shipboard divers

Today as in past years, the Navy is short of trained divers. COMSERVRON Eight, the Atlantic salvage representative, is trying to ease the problem by giving special attention to this area within the squadron.

The first step was to provide special attention to diver recruiting. COMSERVRON Eight formed a permanent intra-squadron recruiting team which visits ships and talks to crew members. The team has a slide presentation which, along with a question and answer period, is designed to inform the men about and motivate them toward becoming Navy divers. Individuals who show interest in becoming divers are given individual counselling.

Unfortunately, it takes more than individual desire and counselling to become a Navy diver. If a Commanding Officer cannot afford to lose a man for the 10-week training period or if, as formerly was the case on an ATF, the ship risks losing him permanently, the Commanding Officer will naturally hesitate to let him go.

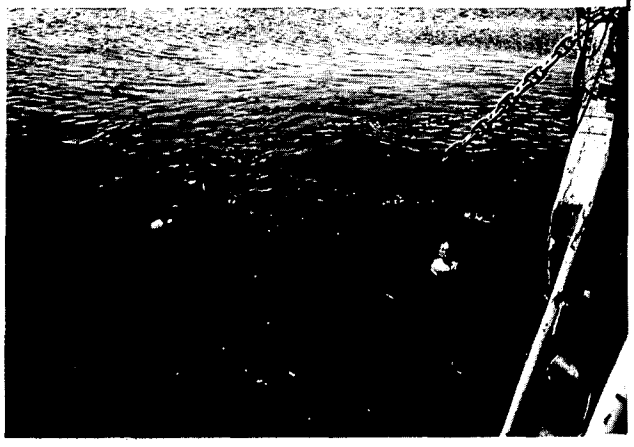
To alleviate this problem, the squadron is trying to supply temporary replacements for those men who attend the diving school. Also, personnel from ATF's who attend the school are being returned to their commands for at least a one-year tour. Thus, not only are the ships increasing their individual diving capabilities, but they are being encouraged to send more men to school.

Some changes have also been made to the second class diving school operated by HCU–2, a unit of COMSERVRON Eight. The number of students per class has been increased from 30 to 35, and the number of classes has been increased from four to five per year. This change alone can provide the Atlantic Fleet with a 45% increase of second class divers. Beside providing more divers, these changes also give ships greater flexibility in deciding when to send a man to school.

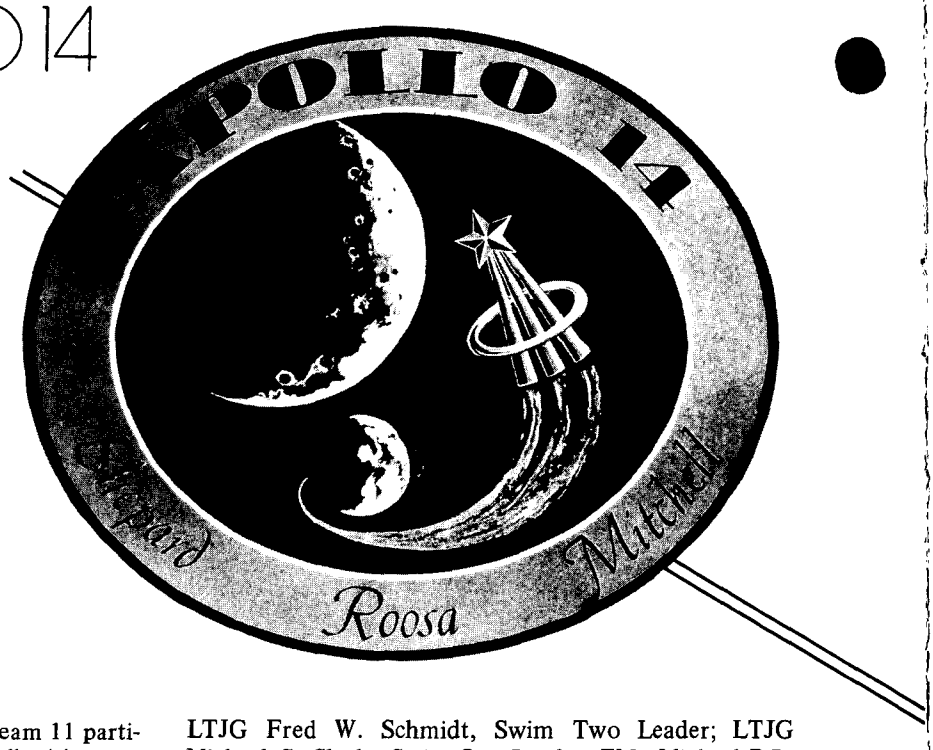
Once a man has been to diving school, he must have continuous training to remain effective. An important change made by COMSERVRON Eight in this area is the inclusion of diving exercises in the squadron's Battle E competition. All squadron ships with diving capabilities must now complete at least two competitive diving exercises per year to be eligible to win the Battle E.

Even though these changes are relatively new, there has been a marked increase in applicants for the diving school and an especially large increase in the number of recruits from squadron ships. Only time will measure the success of these changes, but early results are very encouraging.

SCUBA training at HCU-2.



# UDT-11/APOLLO 14 RECOVERY




Navy divers from Underwater Demolition Team 11 participated in the primary recovery of the Apollo 14 astronauts following the Pacific splashdown in February. Under the direction of LTJG Robert Rohrbach as Officer-in-Charge, the volunteers who composed UDT-11 began training in late October.

LT Rohrbach spent two weeks in Houston at the Manned Spacecraft Center working on decontamination and emergency recovery procedures with NASA officials and Apollo 14 astronauts.

Upon his return to the U.S. Naval Amphibious Base, Coronado, California, LT Rohrback conducted training in command module collaring and recovery techniques with the UDT detachment. Nine men were divided into two swim teams, consisting of the following personnel:

LTJG Fred W. Schmidt, Swim Two Leader; LTJG Michael S. Slagle, Swim One Leader; EM1 Michael P.L. Bennett, LOP and Swim Two; HM1 Thomas "G" Holmes, Swim Two; GMG3 Rudy R. Davis, Swim One; GMG3 Larry F. Faller, Swim One; EN3 Gerald E. Riddle, Backup Decontamination Swimmer; and RM3 Joseph P. McFarland, Alternate Swimmer.

Following the initial training phase, joint training with Helo Squadron Six of NAS Imperial Beach, California was conducted in San Diego Bay. During this training, the UDT detachment practiced jumping from the moving helicopter with full SCUBA gear and, once in the water, practiced collar installation.

Throughout the pre-recovery period while enroute to the splashdown area, the team conducted seven simulated recoveries in preparation for the landing of Apollo 14.

UDT recovery operations began prior to splashdown with the positioning of the two swim team helicopters and the recovery helicopter in a pre-arranged pattern near the target point. As the Command Module (CM) set down in the water with its parachutes floating nearby, EM1 Mike Bennett jumped from the Swim II helicopter and attached a sea anchor (a parachute 8 feet in diameter with a 50-foot nylon line) to the CM in order to retard its drift rate. With this action completed the remaining two men, LTJG Fred Schmidt and HM1 Holmes, in Swim II jumped into the water carrying the 250-pound flotation collar.

After attaching and inflating the collar which provides the CM with more stability and serves as a working plat-

form for the frogmen, they attached one raft, called the "Lily Pad," to the CM and tethered the second raft, the "Toad Stool," to a 50 foot nylon line upwind of the CM. The decontamination swimmer, LTJG Rohrbach, then jumped into the water and climbed aboard the "Toad Stool." Then the recovery helicopter, Recovery One, lowered decontamination gear for him and the astronauts, and extra SCUBA gear for the men in the water.

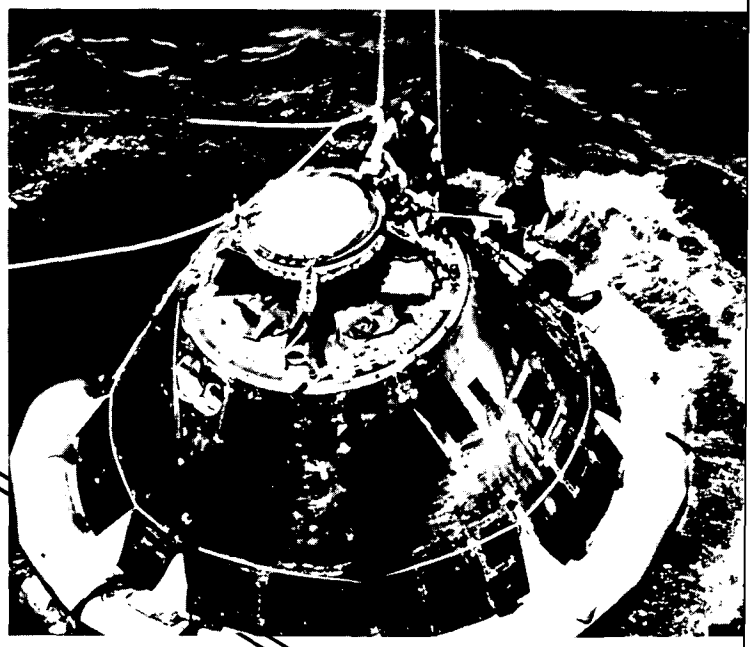
The divers wore full wet suits and used SCUBA equipment throughout the entire recovery operation to protect themselves against the danger of possible contamination, exposure to caustic hypergolic fuels, and unfired pyrotecnic devices located on the CM.

The "Toad Stool" was then attached to the CM and all decontamination gear was transferred to the "Lily Pad." At this time LTJG Rohrbach handed the astronauts' decontamination gear through the CM hatch. When the astronauts had donned their respirators and protective garments, they exited the CM onto the "Lily Pad." Recovery One then lowered a rescue net and individually recovered the astronauts who were flown directly to the primary recovery ship, USS New Orleans (LPH 11).

The divers, however, remained with the CM for an additional 45 minutes. During this time the decontamination swimmer sprayed and washed down the CM and raft areas touched by the astronauts. After a 30-minute decontaminate contact period the "Lily Pad" was sunk and the frogmen stood by to attach a lifting hook to the CM to help bring it aboard the recovery ship.

The warm water (85°F.), full SCUBA gear, and complete wet suits made fatigue a constant threat, but no one succumbed to the heat. Each team member was in top physical shape due to the conditioning carried out daily while in California and aboard ship. According to LT Rohrbach, the men had contests among themselves to increase speed and precision since each man was capable of replacing another should an injury occur.

Three members of the team, LT Rohrbach, EM1 Bennett and HM1 Holmes, also participated as part of the backup team in the recovery of Apollo 11.



# LETTERS
## to the editor

Gentlemen,

I read with interest a letter to the editor in your Spring 1971 issue from the Diving Officer of the U.S. Coast Guard Cutter, SOUTHWIND. He mentioned diving in the Arctic Ocean at 82°10' N 37° E on 14 August 1970.

Your readers might be interested in some dives our outfit made in the Arctic. In November 1970 in 24-hour darkness, three divers from our office and one diver from NAVSHIPRANDLAB, Panama City, Florida, (Navy trained civilians) dove through 15 inches of Arctic pack ice at the edge of Fletcher's Ice Island T-3. The island, on 10 November 1970 (during the period of diving operation), was located at 85°07.13' N and 99°02.6' W which is less than 300 miles from the North Pole. At Point Barrow, Alaska, in 15 inches of ice, we logged a one hour and fifty-five minute dive in a Parkway 3/8 inch custom-made wet suit. Then again in 15 feet of ice, we logged a one hour and eighteen minute dive with the same wet suit. In 40 dives under the ice, we accumulated over 39 hours bottom time, all in 10 days of diving.

Our Diving Officer, Chester Bright, is a retired Navy man with UDT and EOD experience.

Yours truly,

James Turcotte
Oceanographer — Diving Supervisor
U.S. Naval Oceanographic Office
Suitland, Maryland

Gentlemen:

I thought your readers might be interested in what is happening in the "Med."

I was the first salvage and diving officer in the Mediterranean billet. My boss, CAPT DeJarnette the Commodore, and COMSIXTHFLT have given me the support which has allowed the billet to develop rapidly.

Regarding salvage. The ESSM pool at Livorno, Italy was established about a year ago with SUPSALV's excellent equipment. The ARS assigned to the Sixth Fleet comes under the salvage officer for scheduling. As long as a day or two a month of target towing is provided, the rest of the time is free to pursue salvage training and ports of interest.

With the ARS, come their "hard chargers," providing many opportunities to explore new areas. The ARS's have established a training site at Livorno, with a submerged weight for bow lift and a battleship mooring buoy for beach gear training. They have, in general, enjoyed a good relationship with the instructors and students at the Italian Naval Academy.

During the off-shore salvage exercise, the PHIBRON Commander agreed to beach an LST for the ARS. This will take place off Athens during PHIBLEX 8-71 with the ARS (OPPORTUNE) using beach gear to refloat the "T." Greek Navy salvors will be aboard the OPPORTUNE for instructions. Since we have lost SEA SALVOR to Malta, our back-up ARS will be the SORTIR, a Greek salvage ship. She will require considerable training which the ARS's are eager to provide.

The most interesting project right now is the removal of an Australian DE sunk during WW II in Selima harbor, Malta. OPPORTUNE took a survey of the DE with the RN EOD divers and outlined several initial projects. I expect approval from the Maltese government in time for ESCAPE to work on the project. Joe Evans, the RN salvage officer for the Mediterranean, has been a great help in Malta.

The diving exchange program has also been expanding. I started a year ago by visiting various places where other Navy diving outfits are located. By far the most interesting was Gers in Toulon. Since then, both PRESERVER and OPPORTUNE have been there to dive with the French.

While in Rota, Spain, the inchopping ARS is offered the services of the Submarine Medical Officer if she has any deep requals to get out of the way. While in Athens, the Royal Hellenic Navy divers were interested in a tour of the ARS and possibilities look good for expansion.

Sincerely yours,

LCDR J. V. Burchett
SERVRON-6 Salvage Officer

Gentlemen:

The patching of a hole in the hull of the Corps of Engineers' Dredge DAVISION signaled the beginning of our salvage operations in December. Aside from the regular screw and shaft changes and hull inspections by the Repair Department Divers, we had three noteworthy salvage jobs.

The first, on December 6, 1970, was a "pack-up and go" job — a Huey helicopter went down in 60 feet of water at the mouth of DaNang harbor, after leaving the hospital ship U.S.S. SANCTUARY (AH 17). Since two door gunners were presumed inside, our salvage team rushed to the site.

## MORE LETTERS

Unfortunately, the helo exploded upon impact. This fact, combined with a prohibitive current, undermined hopes for a hasty recovery. The aft one-third section and a part of the rotor was all that was recovered.

The next operation took the CLMS–912 diving boat to Chu Lai where Air Force OV–10 had gone down in 55 feet of water. On the morning of December 21, 1970, dragging operations commenced. After approximately two hours and three drags over the area, the helo that recovered the pilot arrived over the scene and did an excellent job of pinpointing the site. On our first drag, the grapple snagged the plane. Because of crash damage, the conventional bridle used for lifting the craft would not work. The divers surface-rigged lifting straps of three-fourths inch wire. A flying crane, provided by the Army, lifted the craft and successfully completed the salvage operation.

Our last salvage operation of 1970 came on December 28, 1970. An Army YFU NR–82 ran aground up river from Qua Viet, while carrying supplies to Dong Ha. A diver was dispatched by helo with a P-250 to inspect damage and to begin washing sand away from the stern if possible. The morning of the 29th brought small craft warnings and a delay in departure for the LCM8–912. In spite of bad weather on the 30th, we arrived on scene at approximately 1000 on New Year's Eve. Under the guidance of the Da-Nang Salvage Repair Officer, some progress toward ungrounding was made. With the assistance of two Vietnamese LCM - 8's that had been attempting to free the 82, the LCM8–912 succeeded in pulling the YFU free.

Very respectfully,

T. B. Salmon
NCF Diving Officer
DaNang, Vietnam

Gentlemen:

If you have ever been to Sasebo, Japan, or especially, to the Ship Repair Department Diving Locker, as most divers of the 7th Fleet have, you may be acquainted with one Japanese individual named Mataichiro Rikihisa, better known to the fleet as Rick-San.

Rick has been working for the U.S. Navy for some 26 years, after having been introduced to the diving world at age 15 as a diver's apprentice to a freelance diver working in sea wall construction. He has served with Navy Port Operations, the Navy Boat Pool, and the Ship Repair Department where he is still working today.

When asked about his most memorable experience since he has been diving, he related the following:

He was working at the Naval Ordnance Facility retrieving five-inch 38 shells and loading them in a metal box to be taken topside by a crane. He had just finished loading a box and had sent it topside. As he turned to start gathering more shells for the next trip, the box suddenly came back unexpectedly and hit him in the back of the helmet, completely severing his life line, air hose, and dumbbell, knocking his helmet forward from the breastplate. As water poured into his dress he signaled the topside tender to haul him up, but with no results. By this time his dress was partially filled with water and his air supply was low. He tried to ascend the cable attached to the steel box, but with the weight of the suit (190 lbs.) and the water already inside the suit, this was impossible. As a last resort he ditched his weight belt and started pulling himself hand over hand toward the surface 30 feet away. Just as he was about to lose consciousness from lack of air, he reached the surface, safety and air. This was Rick at 21.

Although Rick intends to continue diving, he will probably slow down as retirement approaches. How many others can match his record?

Sincerely yours,

MM1 (DV) Tass
Ship Repair Dept. Diving Locker
Sasebo, Japan

Our objective is to thoroughly analyze all situations: anticipate all problems prior to their occurrence, have answers for these problems and move swiftly to solve these problems when we are called upon. . . However, when you are up to your — in alligators, it is difficult to remind yourself that your initial objective was to drain the swamp . . .