

VOLUNTEERS



### BY LT. S.V. DOWNEY

TO ALL DIVERS AND DIVING OFFICERS: We here at the Diving School and the BUPERS Diving Desk ask you all to assume an important additional duty. There is an urgent requirement for more volunteers for diving training to fill the needs of an expanding diving program. We are now approximately 250 under complement for First Class Divers at the sease time as the DEALAB Operations and the Harbor Clearance Units are going to require more trained personnel. The Chief of Naval Personnal requested in BUPERS NOTICE 1510 of 23 December 1965 that this need for diving volunteers be made known to all ships and stations,

We Seel that you, the divers of our Navy, are the best ible advertisement for diving. You will stimulate interest of young sailors watching you and you will be asked the question how to become a diver. Commanding Officers are sometimes reluctant to send top men into a program where they will not be returned to him, but these are the men we need. Your individual pontact with these men can assist us in getting the numbers of top grade volunteers which we need.

Tentative plans to make some posters on diving to be sent to the Fleet are now being developed. The Diving School has a set of 35 NM slides with a briefing that can be borrowed for presentation to prospective diving candidates. Write to the Ase't Officer in Charge for the loan of these slides. If you are working in an area where shipmates can watch your diving, the posting of signs about the expansion of diving opportunities and the need for additional volunteers can create interest and questions. Be prepared to give them information about diving schools, diving pay, and diving billets and ships.

THE DIVING NAVY NEEDS MORE VOLUNTEERS. YOU ARE THE SALESMAN.

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## FACEPLATE

Published quarterly as an unofficial publication. This periodical is compiled and edited at the U.S. Naval Diving Center, Washington Navy Yard, Washington, D.C. The opinions expressed in this publication are those of the writers and do not necessarily reflect the official policy of the U.S. Navy. The purpose of the FACEPLATE will be an exchange of information between all men who work under the sea.

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#### EDITORS COMMENTS

Once again, many thanks to the excellent response in regard to articles from the Diving Navy. We are using them as they come in and as our space permits. Needless to say they are all interesting and full of good information.

Our big rush as of the first of the year is in recruiting diver volunteers for First Class training. The full blessing of the Bureau is behind this and with 100% co-operation in the Fleet we can come up to 30 (thirty) students per class to fill all the vacant billets in the fleet. So, if you know of someone who needs a push in the right direction towards a diving career, have him get his letter off to the Bureau and I'm sure it will get a favorable endorsement.





Captain George BOND, MC, USN, "Papa Topside", has been awarded a gold star in lieu of a second Legion of Merit for his visionary work in conceiving, organizing, and executing the project of SEALAB I. All four of the initial Aquanauts of SEALAB I, LCDR R. THOMPSON, MC, QMC R.A. BARTH, HMC S. MANNING, and GML L.E. ANDERSON, received the Legion of Merit also, as did Captain W.F. MAZZONE, MSC, for his physiological support work.

The team leaders for each team of Aquanauts in SEALAB II, CDR SCOTT CARPENTER of Team L and TMC R. C. SHEATS of Team 2, also received the Legion of Merit for their leadership in the 1965 project. In addition the Navy Unit Commendation was awarded to all personnel attached to the SEALAB organization as well as to participating divers from Naval Ordnance Test Station, Pasadena, and from West Coast UDT.

Two Prospective Commanding Officers for Pacific Fleet Salvage Ships are here at DSDS. LT W.C. STEGALL, scheduled to assume command of the USS SAFEGUARD (ARS25) and LT George ESTOCK who will assume command of the USS HITCHITI (ATF103) upon completion of the five week PCO course.

### INTRODUCING CDR CHARLES H. HEDGEPETH



The diving personality spotlighted in this issue of FACEPLATE is Commander Charles H. HEDGEPETH. A Helium-Oxygen Diving Officer for the last six years, CDR HEDGEPETH is Officer in Charge of the Deep Sea Diving School and the Experimental Diving Unit and is also head of the Diving Code of BUSHIPS.

A native of Fremont, Missouri, CDR HEDGEPETH first enlisted in the Navy at the end of 1940. He went from boot camp at Great Lakes to USS OMAHA (CL-4) and was advanced to BM2 in his two years aboard the cruiser. He was a member of the salvage crew of the German Motorship ODENWALD in November of 1941. He spent the years 1943 to 1946 as a V-12 and NROTC student at Southeast Missouri State College in Cape Girardeau, Missouri, and Marquette University in Milwaukee, Wisconsin. He graduated from Marquette in 1946 and reported to USS ATLANTA (CL-104) for two years duty.

CDR HEDGEPETH next graduated from Submarine School in 1949 as LTJG. Except for two years as an NROTC instructor at the University of Missouri in Columbia, Missouri, he spent.all of his next ten years in submarines: SS-391, POMFRET; SS-334, CABEZON; SS-415, STICKLEBACK; SS-484, ODAX; and SS-424, QUILLBACK.

After qualifying as Diving Officer at the Deep Sea Diving School in 1960 CDR HEDGEPETH took command of USS FLORIKAN (ASR-9) in San Diego. However he was rarely in San Diego since in addition to a successful WESTPAC cruise, FLORIKAN seemed to be continually occupied in an ordnance recovery program diving off San Clemente Island. At the end of 1961 he left FLORIKAN for the USS PERCH (APSS- 313). During his two years in command of PERCH she operated extensively with UDT and Marine Recon personnel. CDR HEDGEPETH assumed his present command in Washington, D.C. in June of 1963.

# MEMORANDUM TO ALL DIVERS

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#### BY CDR KENNETH PLOOF

It's always easy to see the need for a lock on the barn door after the horses have been stolen - good perception of the obvious, I believe they call it. Anyhow it seems to me that this might be a good time to talk a little bit about diving equipment - more specifically, about nonstandard diving equipment.

A few years ago we didn't have many worries about people using non-standard (non-Navy approved) diving equipment because there wasn't much around other than Navy gear. This was particularly true in the case of SCUBA. The old WWII LARU and Aqualung were about all you could get your hands on. Since around the early fifties, a number of companies got into the SCUBA market. All sorts of weird equipment came out. Of course this provided a lot of good competition, but the only thing attractive about some of the units was the price. I had the pleasure of serving at Experimental Diving Unit for a good long tour during the big SCUBA boom period and we evaluated many types of equipment. The tests were made under carefully controlled conditions and included dive to various depths and at various swim/work rates. Accurate information was recorded on inhalation/exhalation resistance - among other things. In the case of open-circuit gear, the above information together with reliability and durability are the main considerations. The results of the evaluations were very interesting. In some cases, a regulator performed extremely well at shallow depths and was found to be altogether unsatisfactory at moderate depths. such things as size of orifice vs. operating pressure are

course affected as the density of the air (gas) is ineased. One company, in particular, took strong exception to the adverse report on their equipment. They insisted that it was the easiest breathing rig on the market. Turned out that they had conducted their tests in a swimming pool. This was one of the units with which the breathing resistance went to pot when you got down around a hundred feet. Of course, the design characteristics of a closed or semi-closed rig are much more complicated. In addition to breathing characteristics and reliability, we have to consider stabilization of 02 level, control of CO2 and canister duration. Naturally, the operator qualifications for recirculating types of SCUBA are more stringent than for open circuit.

Well, my point is; we have a completely competent organization (Experimental Diving Unit) to conduct evaluations and perform developmental work on diving equip ment. The Bureau of Ships, in the U.S. Navy Diving Manual, Art. 3.3.4 and 3.4.1 tells us NOT to use non-standard equipment. BUSHIPS INST. 9940.11 tells us where to get our diving equipment - so let's not get anybody else hurt using non-approved equipment.

#### COMMENDATION

Some other names very familiar to divers appeared on recent awards list. CDR N.E. NICKERSON, former CO of the FLORIKAN and former OINC of the Diving School and Diving Unit, was awarded the Navy Commendation Medal for his work as CO of the icebreaker USS EDISTO (AGB-2) which involved achievements in Arctic and Antarctic waters. CDR NICKERSON is now on the staff of Commander, Service Force, Atlantic Fleet.

### FACIAL EMPHYSEMA

### BY LT R. R. UHL, MC, USN

Two days after receiving a sharp blow under his left eye, a DSDS student saw the Medical Officer, complaining that when he blew his nose he felt a swelling in the tissues below the eye. Other than a black eye examination was negative. The Medical Officer felt the man's complaint was due to his forcing air through his tear duct, and no therapy was felt indicated. The following day he made a 60' HeO2 orientation dive. While forcibly blowing to clear his ears on the decent he noted progressive swelling of the tissues around the eye, but failed to notify the Master. During ascent the gas in these tissues expanded massively, to cause almost complete closing of the eye. Examination revealed a swollen cheek and eyelids, but no damage to the eye itself. The man was observed, and without specific therapy the swelling and black eye resolved after 10 days. It was postulated that a tiny hole in the roof of the left sinus, from the blow to the cheek, permitted gas to be forced into the orbit of the eye. He was kept from diving for 25 days. It is fortunate that the dive was only 60', for the expansion of this volume of gas during ascent from a deeper dive would have damaged tissue extensively. His failure to report symptoms occurring during descent was not good diving practice.

Review of 816's shows a similar occurrence at EDU in April, 1961, when a man with no history of a facial blow, but who also had considerable difficulty equalizing, causing him to blow forcibly to clear, developed modest swelling under the eye following a 200/17 dive, presumably from. a similar cause.

Overly forceful pressure should not be used to clear the ears, and if any swelling of the face occurs from this maneuver, the dive should be terminated immediately, to avoid forcing more compressed gas into tissues.

#### NAVSHIPS 1000

### BY CDR W.R. LEIBOLD

The NAVXDIVINGU is receiving an increasing number of requests for unusually large quantities of Diving Log Books. This is an indication that some user activities are not entirely familiar with the factors governing issue and use of the log. Section 1.9.4. of the U.S. Navy Diving Manual (NAVSHIPS 250-538) delineates issuance, use and disposition of the Diving log book.

All "Diving Activities" are initially issued two log books; "Non-Diving" activities are issued one. The logs are replenished on the same basis, upon request. It must be recognized that these logs are command/activity records not individual records.

It should be noted that submission of the log to NAVXDIVINGU is now to be accomplished within one month following completion. The address of the forwarding command/activity should be indicated on the inside front cover.

Activities may submit their request for Diving Log Books on DD 1348 direct to NAVXDIVINGU and not to local supply points as this causes excessive delay. There is no stock number assigned to NAVSHIPS 1000.

### COMMENDATION



Frank E. EISSING, III, received the Navy Commendation Medal for heroism in extinguishing a shipboard fire last year. EISSING is a 1963 Naval Academy graduate and is now in a Navy program at M.I.T. His father, DCCM Frank EISSING, Master ar ofithe USS ORION, is as proud as if he did it himself. Page 4

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## **A DIVING ACCIDENT**

#### BY LCDR R. BORNMANN MC, USN

Although the following diving accident report is an unusual one, it is felt to be an instructive and interesting one. It is taken from the medical files of the Experimental Diving Unit.

Because helium-oxygen equipment was not available, the divers were descending on air to a submarine disabled at 300 feet. The fourth diver was a Chief Petty Officer and a former instructor at the Diving School. He was tall and slender in physique and was reported to be in good condition following a careful examination of all divers by the Medical Officer just before the start of diving operations.

The diver paused for 15 minutes at 90 feet on descent to adjust his dress and apparatus, and he did not reach bottom until 30 minutes. He spent 12 minutes actually at 300 feet and then began his ascent. However, at 250 feet he found himself fouled and returned to the bottom to attempt to clear himself. Unsuccessful in this attempt after 10 minutes he again ascended to 250 feet and a relief diver was sent down to clear him. Unfouling required two hours of work at depths from 120 to 265 feet, but finally the relief diver was brought up for surface decompression, and the fouled diver was clear and was brought up to 100 feet to begin his decompression.

Time was 1425 and the diver had been in the water for 3 hours and 45 minutes. He had been severely affected by his exposure and now despite all orders from the surface he began slowly to climb the decompression ladder. At 1450 the diver reached 40 feet and stopped, but at 1505 he collapsed. Brought immediately to the surface he was still conscious and able to talk, but he passed out a moment later and was rushed into the recompression chamber. The patient, the relief diver, and two doctors were immediately pressurized to 165 feet in a single lock chamber.

The patient had been unconscious, cyanotic, not breathing, and pulseless. Artificial respiration had been started at once, but almost immediately after reaching 165 feet the patient sat up and looked completely normal. The doctors were apprehensive that a pneumonia would develop as the result of his prolonged exposure to high air pressure, so his decompression was accelerated. The chamber was brought back to 45 feet in 60 minutes less than would be called for by the schedule of Table 3, but he was here seized with an attack of severe pain in both knee joints. The chamber was taken back down to 55 feet and the pains disappeared, but they recurred on return to 45 feet an hour later. The patient was again returned to 55 feet for relief, but this time he had pains in his abdomen and began to vomit. The vomiting persisted as the chamber was taken down past 65 feet and it was therefore taken all the way to 85 feet. The time was now 1800.

The pressure was again reduced to 45 feet at 1830 and the joint pains again forced a return to 85 feet. The doctors were still considerably concerned about the development of serious lung complications. The patient's condition was not good. The vomiting had stopped by then, but the joint pains recurred on ascent and they were severe enough to make the patient kick and scream. Nevertheless, it was decided that his best chance lay in early completion of decompression and transfer to a hospital. A gradual reduction of pressure continued until the chamber surfaced at 0030 the next morning.

On removal to the hospital there was no paralysis but the severe joint pains persisted. The patient did develop pneumonia as well as extreme shock with kidney shutdown. Large areas of subcutaneous hemorrhages appeared over his chest and abdomen. He was given morphine for his pain together with oxygen inhalations. The diver was hospitalized for  $2\frac{1}{2}$  months but with careful medical and nursing attention he eventually recovered completely.

Of the three other persons in the chamber it may be noted that one doctor ruptured both his eardrums in the rapid descent, but these healed completely in a week. The other doctor and the relief diver both developed decompression sickness.

COMMENT: Some of the decisions made in the above account may seem wrong in the light of modern diving practice. However, this was a dive made in 1915. It must be remembered that the diving tables devised by Dr. Haldane had been published only in 1907. These tables went only to 206 feet, although two dives had been made by Royal Navy Divers to 210 feet (both bottom times less than 10 minutes). This depth record stood for eight years. Gunner G.D. STILLSON, USN was aware of the developments in diving in the Royal Navy and asked to be allowed to investigate the status of diving in the United States Navy. In the course of his diving experiments in 1914 Chief Gunner's Mate S.J. DRELLISHAK, USN, dove to 274 feet in Long island Sound (bottom time 12 minutes) for a new record. The diving tests were successful and Gunner STILLSON was put in charge of an experimental diving team and diving school in Brooklyn Navy Yard. On 25 March 1915 the submarine F-4 made a dive outside Pearl Harbor and failed to surface. A six man diving team under STILLSON with a medical officer, Dr. G.R.W. FRENCH, and Chief Gunner's Mates Frank CRILLY, F.C. NIELSON, DRELLISHAK, and W.F. LOUGHMAN was sent to Honolulu to help salvage the F-4.

Many new diving records were set during the dives on the F-4. A depth record of 306 feet for a working dive on compressed air has persisted to the present and is not likely to be broken. The rescue diver in the account above was Chief Gunner's Mate Frank W. CRILLEY and he was given the Medal of Honor for his heroic achievement. The citation for this decoration was published in the last issue of FACEPLATE.

The F-4 diving was done from a diving float (a former coal barge.) Air supply was taken from 12 torpedo flasks. each 11 cubic feet in volume, and charged to 2500 psi. There was no compressor on the float and flasks had to be taken to the submarine tender USS ALERT or the cruiser USS MARYLAND to be charged. When LOUGHMAN attempted to clear himself in this dive he only became more entangled. He finally ended up at 250 feet unable to move up or down. He had been in the water almost an hour and most of this time he had been between 250 and 300 feet. This was a record for the time, although not an enviable one. Something had to be done immediately and CRILLEY went down to free him. It is likely that there were connections for only two divers on the air manifold, or perhaps there was not enough hose available. In any case the decision was made to free the diver rather than to try to switch hoses. Not only were there two divers in the water at this time. but LOUGHMAN's air control valve was jammed open for some reason, air was escaping from leaks in the hose, and the reducer on the air system was not working satisfactorily and there was no bypass installed. Air was being used up at a dangerous rate. Flasks were emptied in five minutes and there was an urgent problem in getting them refilled and back on the line. Fortunately with the cooperation of ALERT this problem was handled successfully, and air was kept pouring down to the divers struggling below.

Both divers were thoroughly exhausted when they were taken from the water and both were given recompression treatment. The treatment given to LOUGHMAN may seem inadequate on review today (CRILLEY also had bends after the treatment), but that is on the basis of comparison with the Navy Treatment Tables which weren't established until 30 years later.

LOUGHMAN was in the hospital for 2½ months but he did recover completely. He eventually was promoted to Lieutenant Commander although he was out of active diving. Chief CRILLEY was back diving on the F-4 three weeks later. Viewed in that light both treatments were successful. Gunne STILLSON with Doctor FRENCH and this outstanding small crew of divers firmly established modern diving in the U.S. Navy.





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# REVISION OF THE DIVING MANUAL

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### BY LCDR J.V. HARTER

### PROJECT OFFICER

### NAVXDIVINGU

The response from the fleet with suggested changes and revisions to the Diving Manual has been excellent. We have received letters from 38 individual diving activities to date. Some of the recommendations will be adopted and utilized in the new manual, however, there are also many recommendations that are not considered applicable for various reasons. One of the recommendations requested by many activities is to include a section on underwater job procedures, such as removing a ships screw, instructions on cutting and welding and various salvage procedures.

I would like to point out that the diving manual is a manual to describe the physical problem of diving, the effect of pressure and gases on the human body as related to diving, and the diving procedures and equipment used. It is not a mechanics handbook to describe how to do work on the bottom, it is designed to provide the knowledge to safely put a man on the bottom long enough to accomplish work and to bring him back to the surface. The Deep Sea Diving School is presently revising the Salvage Notes used in their training curriculum. This publication will contain much of the information on job procedures requested.

The Diving Manual will have an appendix listing reference material that should be included in a diving locker. This listing will include the title and abstract of contents of such publications as the Underwater cuting and welding manual. If each diving locker maintains copies of the listed publications, diving personnel should be able to locate the answers to many questions not applicable to the Diving Manual but necessary to some phases of underwater work.

We have completed the technical review of the manual and are in the process of rewriting some of the information to bring it up to date. A commercial technical writer staff will be contracted to do the actual final write up and rearrangement of the manual. The revised edition should be completed by this fall.

### **SPERRY REPORTS**

### BY L. HURLEY, DCCS(DV)

Well we just finished a good job on a nuclear boat and thought we would pass the experience on. (Attention Subic Divers).

The SNOOK SSN-592 arrived along side SPERRY and requested an inspection and repair of their outer GDU door assembly. It was believed the door shaft was twisted from previous inspection made by divers in Pearl Harbor and also our own.

To accomplish this as some of you all know, the entire outer unit must be removed from the sea chest it is installed in; also it must be reinstalled.

The removal part is a snap, but installation is a different story. First it must be mentioned that a ase of beer was bet by the wardroom on SNOOK that the aterborne repair of their GDU would not be accomplished by SPERRY divers and eventually became a keg of beer. This of course gave us added incentive. To start with, a stage must be rigged and hogged in. Remove fairing door, assembly and arm. Remove outer GDU door, top mounting, shaft and gear box. Be careful not to lose the double keyed coupling. On reinstalling glue this coupling into upper socket first. Install assembly in reverse procedure using a extra long 5" stud in the bottom inboard hole, (gearbox side); which will hold the unit partly in place. To push the unit up in place a car bumper jack works like a charm, also a couple of magnetic holding devices (picture and place of procuring inclosed) they are also handy on numerous other jobs on SSN type hulls.

The job was accomplished and complete in approximately 40 man hours for the divers to liquidate the keg of beer.

The diving gang of USS SPERRY (AS12) now consist of HURLEY, DCCS(DVM); MANLOVE, MLC(DV1); WHITE, HM1; Mc ALLISTER, SFC(DV1); SNYDER, BM1(EOD), FINDLEY,MM1(DV2); IRVIN, BM3(DV2); CARMICHAEL, SFP3(DV2).

Oh yes by the way we think we have a record on house apes for diving gangs. There are eight divers and 34 dependent children.



### OLD MASTER'S QUIZ

- 1. When should the non-return valve be checked in LWT diving?
- 2. How long may LWT diving hose be used?
- 3. What is the test to be placed on LWT diving hose when it becomes two years old?
- 4. The maximum depth for LWT diving is?
- 5. What is the normal work depth of LWT diving gear?
- 6. How many pounds over bottom pressure must be maintainwhen using LWT diving gear?
- 7. In LWT diving you should always stay within the limits of what table?
- What gage pressure on a divers air supply is reguired for diving to a depth of 50 feet?
- 9. What is the rate of ascent in LWT diving?
- 10. If a diver has come up too fast, what corrective action should be taken?
- 11. The ID of LWT diving hose is?
- 12. What two liquids are recommended for removal of old glue when repairing dresses?
- 13. What must be added to a standard cartridge belt before it can be used in LWT diving?
- 14. What is maximum depth and time 02 may be breathed?
- 15. What is minimum sized manila line that can be used for LWT diving life line?

A beautiful mermaid suddenly popped up alongside a destroyer engaged in convoy duty in the Caribbean. More surprising still, she had a small baby in her arms. "I just wanted to know" she said to the stupefied sailor at the rail. "Do you have a diver on this ship named SMITH?" Page 6

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### **PROGRAM SUMMARY**

### BY R. A. MURDOCK

Since the last issue, we have completed the semiannual revision of the U.S. Navy Experimental Diving Unit (NAVXDIVINGU) Program Summary. For the benefit of those who have had duty at NAVXDIVINGU in the past, this summary takes the place of project assignments previously issued from the Bureau of Ships (BUSHIPS), and became essential with the transfer of technical personnel from BUSHIPS to NAVXDIVINGU.

The Summary delineates the functional areas in which research and development effort will be expended during a five year period. It provides Program Managers within BUSHIPS with estimated manpower required and costs of accomplishing the projects listed. As such, it is highly useful as a management tool for the Bureau Program Managers and also provides them with data which can be used to request funding for ensuing years work. After review by cognizant Program and Project Managers in the Bureau, the Program is reviewed with personnel at the Unit and adjustments made where necessary. It is not distributed outside of BUSHIPS except to Laboratories performing similar work.

Our November 1965 Summary consists of 37 active projects which are broken down into four functional areas. The exploratory development portion is comprised of 14 projects; the results of which will provide input into all areas of diving research. The Swimmer Support System (SSS) is comprised of 13 projects in which NAVXDIVINGU will activly support the development of equipment for UDT and SEAL Teams in response to the recently issued Specific Operational Requirement 38-02. The third area is deep diving, which is comprised of 8 projects. These are projects intended to support the Man-in-the-Sea effort and which we feel NAVXDIV-INGU is well qualified to handle. The fourth and final area is Fleet Support, which is comprised of 2 projects. Actually, these formally recognize and put a handle on work we have performed over the years. It is this area which will cover investigations of equipment malfunctions reported by the Fleet.

Only the exploratory development effort is funded this Fiscal Year. Funding is currently in the Fiscal Year 1967 budget to support the Swimmer Support System. We hope that the Summary will provide a basis for obtaining funding for the research and development projects in support of deep diving and Fleet Support when the Fiscal Year 1967 Budget is reapportioned next spring.



### BY Kenneth W. WALLACE BMCS(DV), USN

To all the diving Navy, a Happy New Year. Looking back through 1965 and seeing the work completed, we at EDU hope as much is accomplished in this new bright year.

We have been going through a period of remodeling and modernizing of our facility that includes repiping the air and gas supply to the chambers, igloos and wet pots, replacing the glass ports in all the pressure vessels following machining of the glass seating surfaces, installation of a closed-circuit TV system in the wet pot and decompression chamber, and air conditioning in the chambers. When all this work is completed we will end up with a 3000 psi air supply directly to the chambers.

The chamber operator will control the chamber from remote controls fixed in a console, Air Conditioning in the chambers and the carbon dioxide scrubber system will utilize water turbine power for circulating fans inside the chamber.

The work is designed to give the chambers a 1000 foot dive capability. A new electrical system for the chambers

is being designed by the Portsmouth Naval Shipyard and will be installed later in the year. All this work had to be undertaken before we could continue our experiments to depths deeper than 600 feet.

The 600 feet working dive for 20 minutes put us at nearly our maximum depth at the present time, but we expect to be back at deep diving again very shortly begining with a 350 feet for one hour bottom exposure.

We have installed a Vortex Tube air conditioning system on one of the chambers. This unit has no moving parts and will inject air into the chamber at temperatures down to -20°F if desired. This unit is very compact and weighs only 45 pounds. It is mounted in the air supply line on the outside of the chamber. There is one drawback, the Vortex Tube requires a large volume of air to operate. It looks promising for use on chambers in tropical areas and possibly on the upper level of the escape training tanks at New London and Pearl Harbor. Any further information on this subject may be obtained from LCDR HARTER, Project Officer here at EDU.

If anyone has tried to cross reference the stock number for the fire retardent paint listed in the diving manual to be used inside chambers, you probably didn't have too much success. So here is the latest:

Exterior: 1 prime coat of red lead, 8010-244-5791, 2 Coats Grey MIL-E-17972, 8010-577-4737,: Interior: 1 prime coat zinc oxide, 8010-165-8557 or 1 coat heat resistant aluminum, 8010-85-2692. 1 coat white MIL-P-17970, 8010-577-4738.

Hope this info can help some one. That's the easy part, the hard part comes with scaling guns and scrapers.

Received a phone call today from "ole bald Headed Webb". He wanted to set up a date for an "over 40" divers physical. Really suprised me. I had thought he had done this about 10 or 12 years ago. Seems like only yesterday that he was the dashing, young, suave sailor breaking young ladies hearts in Newport.



### ARRIVALS AND DEPARTURES AT DSDS

#### BY H. S. LIDDLE, JR., DCC(DV), CMAA

We would like to welcome aboard LUCREE, MLC, RIZER, SF1, and IRELAND, HM2 who are getting in the swing as new instructors at DSDS.

Smooth sailing to ENS Ray CURRAN who departed for Newport for indoctrination, 3 January 1966 and then to U.S. Naval Hospital, Quantico for duty. Best of luck to a fine shipmate.

The glare from all the new gold has everyone wearing shades around the building with Commander TOMSKY and Lieutenant Commander FESTAG all wearing their new stripes. Commander TOMSKY is soon to leave for Sea Lab and Lieutenant Commander FESTAG expecting orders any day.

Due to arrive in the near future is an "Old Timer" rumored to be coming home to DSDS is Lieutenant KOBYLOASKI from USS DELIVER.

We have had some very interesting visitors at DSDS, William BADDERS, CMM, (RET), and Lieutenant MCDONALD, (RET), both who received the Congressional Medal of Honor for their feats on the rescue and later salvage of the USS SQUALUS in 1939.

We would like to see more of the retired divers drop by and have a cup of coffee with us, the Welcome Mat is always out.

### **ARSD'S END CAREERS**

### BY LTJG DONN E. THOMAS

This is probably the last story from the ARSD's and it will come as a surprise to most of the diving navy just as it did the men aboard SALVAGER and WINDLASS. In the start of salvaging USNS KELLAR (AGS-25) in New Orleans, Lousiana word was received that both ships would be decommissioned -upon completion of "KELLAR SALVOPS". Well, to receive word like this is enough to shock anyone and shock it did. The crews worked ten days stripping the ships of most of the gear and equipments, putting in long hours to meet the deadline of 23 November set by themselves to enable the crews to be home for Thanksgiving. At 0700 on the 23rd of November, the commissioning pennants of both ships were hauled down and the crews filed off, a sad day believe me, as we walked off the crews of Merritt Chapman and Scott came aboard. The loss of the ARSD's will be long felt in the salvage navy.

To add a brighter note, the salvage job that we just completed in New Orleans was a real challenge. We found the KELLAR rolled over to 135° to starboard with the hull awash. By rigging WINDLASS over the bow and the SALVAGER over the stern and eight sets of beach gear ashore, we were able to roll KELLAR upright in this parbuckle rig. She was then made watertight by divers. We then placed a 20 foot high cofferdam over a hatch on the focsle, and in this placed 3 6" electric submersibles. Another 8' Barrell cofferdam over an escape trunk to the motor room using a 10' pump in this one. On the fantail a unique method was devised by SALVAGER personnel whereby they placed a 6" electric submersible on the scuttle of a hatch with the suction hose run into the compartments below.

The KELLAR was only 60% completed when she sank and had a displacement of 850 tons. Watertight boundaries were and to establish as stuffing tubes were open, holes in bulkheads where pipes were to be installed, and being of a civilian design, there were no bulkhead flappers in the ventilation system. But by starting all pumps and by slow methodical searching the divers were able to locate the major openings in the hull.

On raising KELLAR mud was found to be a major problem (mud in the Mississippi?) in stability. By utilizing an ingenious plan thought up by WINDLASS divers a perri jet was rigged topside, on the suction end of the jet a 3" rubber hose was attached and was used as a vacuum cleaner. It worked like it was built for that purpose. It passed catfish, mud, wedge water, just about everything.

When the ship was finally on the surface and accepted by INDMAN EIGHT, New Orleans, the ships proceeded to the piers to porceed with an <u>orderly</u> decommissioning, but the next day the drydock sank in Charleston, North Carolina and we were ordered to get underway as soon as possible to assist. By working frantically to secure for sea and to clean up after a 2 month salvage job we were able to get underway as scheduled. After steaming  $7\frac{1}{2}$  hours down the Mississippi and one hour away from the Gulf another message was received to turn around and go back to New Orleans and continue with our decommissioning. Well, we almost got away.

The crews of both ships were spread throughout SERVLANT. I originally received orders to new construction in LPD-7 being built in Pascagoula, Mississippi but now I've received orders to Pasadena Annex, China Lake, California, which I'm looking forward to. But LT MC NEFF wasn't so lucky, he's going to the USS TRUCKEE.

One bright spot in the "Betsy" cleanup was that we got to see a lot of our old shipmates and retired divers in that area. And the stories are true about the divers having a lot of work. Also, we made a lot of new friends in New Drleans, a great town. In closing, I'd like to say that the new FACEPLATE is real great and its come a long ways from the original ones. Keep up the good work, we look forward to this great publication.

### oNIY To'DOC' joe O'LeAry

#### BY LTJG D. A. DUNNE

1. On or about 1530, 2 October 1965, O'LEARY, Joseph M., 201 90 84, HMCS(DV), USN, Recently attached to Naval Underwater Ordnance Station, Newport was found soaking wet at 90 Fayal Lane, Middletown, Rhode Island, approximately three miles from any known body of saltwater. The patient's breath smelled remarkedly of crushed grapes; he was thought to be delirious as he was constantly mumbling about hearing sounds of a cat crying. Otherwise, the patient appeared normal. That is, he staggered slightly, slurred many words and appeared to have a severe sunburn. According to the only witness at the scene, the patient had just emerged from an unsupervised and uncontrolled dive into the murky depths of his own well, ostensibly to rescue his daughter's cat. Upon interrogation, it was found that O'LEARY had all the classic symptoms of a serious but doubtful case of decompression sickness. Some experts consulted, indicate this could be the dreaded divers malady known as "Rapture of the Deep". It should be noted that subjects well is rather deep. One of the symptoms he complained of occurred at the maximum depth of his dive, that is, 30 feet. While looking up, he suffered from pipe line vision and to people topside, his voice sounded hollow and far away. A strange phenomenon occured at this point. His wife, in the kitchen doing the dishes, opened the cold water tap and heard a small volce crying "A\*L\*I\*C\*E". A line was immediately lowered to the stricken diver and the hapless cat. A battle ensued which the cat won and was soon on his way to the surface. The line was lowered a second time and after some fancy rigging, O'LEARY cried, "heave around" and was heard no more. A quick glance in the well showed the diver was now suffering from choking and shortness of breath. This was alleviated by lowering the diver back to depth and shifting the rope from his neck to his chest. The rescue was then carried out. The Diver suffered only from severe chills, shakes and facial scratches. the last believed to be administered by the cat. He was treated on Table VII, recently developed by the noted psychologist, Dr. Seagram. The patient is doing nicely now, and we believe he should be publicly commended for being the organizer, leader and sole member of one of the great rescue missions of all time.

The divers who helped treat Chief O'LEARY are listed below:

LTJG DUNNE (Diving Officer); HASLIP, G., GMGC (Master); ROPER, B.N., HMC(DV); GUILLEMETTE, E.G., GMGC(DV),; PULLIAM, L.L., SF1(DV); STALLINGS, J., TM1(DV); MICHALSKI, E.G., BM2(DV); DALY, F.T., YN2 (Sole witness).

#### ANSWERS TO

#### THE "OLD MASTERS" QUIZ

1. Prior to each diving day.

- 2. 5 years
- 3. Air pressure to 125 psi and hold for 1 minute.
- 4. 130 feet
- 5. 60 feet
- 6. 50 pounds
- 7. Table 1-6
- 8. 72.25 pounds
- 9. 60 feet per minute
- 10. Stop at 10 feet for time gained
- 11. 5/16 inch
- 12. Benzine and Trichloroethylene.
- 13. A means of quick release.

14. 25 feet for 75 minutes

15. 15 thread

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### FILTERS FOR AIR COMPRESSORS

### BY M.J. FORAN - EDU

### ASSISTANT HEAD

### ENGINEER

Air compressors used for diving purposes have been standard commercial industrial variety. In order to make the air suitable for breathing, a relatively large filter (when compared to the old luffa spong type) has been provided with the compressors. The filters provided were also of the industrial variety. The compressor-filter arrangement evolved from a subjective and general use without a problem approach.

In order to obtain a better handle on what impurities and degree of impurities, air samples from a group of approximately 25 compressors of different manufacturers and in various ages and state of repair were analyzed by gas chromotography and infrared spectroscope methods. The test indicated that air produced by all the compressors sampled could be purified satisfactorily by mechanical filtration.

Based upon the data taken, standards have been established, that manufacturers can use to test their filters. Test methods to be used are covered by Military Specification MIL-F-24152. It is intended that filters manufactured to the specification will be stocked at SPCC for the 22, 55 CFM 100 psi compressors. Compressors purchased locally for use as divers air compressors should be outfitted with a filter to the above specification with a call out to meet the specific characteristic of the compressor. It is not considered necessary to replace presently used filters with new units except in cases where the present filter is known to give unsatisfactory results.

Regardless of the filter used, it is considered necessary to maintain the compressors in a proper state of repair; the filter should be periodically cleaned or filter elements replaced. Insure that the exhaust from the engine is not carried over to the compressor intake.

### SCHOOL REVISITED

The Diving School was recently the site for a re-visit and reunion of two men who received the Medal of Honor for their work in the SQUALUS rescue and two more who received the Navy Cross for their participation in the same diving and salvage operation. James H. MCDONALD, at the time a Chief Metalsmith and Master Diver at the Experimental Diving Unit, had made the last rescue chamber run with Torpedoman's Mate First Class John MIHALOWSKI. On the way up, the downhaul wire jammed in the reel of the air motor. The backhaul wire had parted two strands in trying to lift the chamber against the taut down-haul. The chamber was dropped to the bottom and a diver was successful in cutting the down-haul, but no one was able to shackle another lifting wire to the chamber. MCDONALD and MIHALOWSKI were able by their unfailing good humor to keep up the spirits of their twice threatened chamber mates and by skillfully adjusting ballast in the chamber to make a controlled buoyant ascent to the surface and safety. As a result of their experience a wire cutter is now part of the down-haul system. BADDERS, also at that time a Master Diver from the Experimental Diving Unit, with MIHALOWSKI, had mad a fifth chamber run to the after hatch, had equalized inside chamber pressure to the water depth (250 feet), and determined that inside the torpedo room hatch was only black water. BADDERS, MCDONALD, MIHALOWSKI and Chief Boatswain's Mate Orson CRANDALL each received the Medal of Honor. (See the previous issue of FACEPLATE) BADDERS and MCDONALD had also previously made a record 500 foot helium dive together at the Experimental Diving Unit. N. G. SHAHAN and R. J. AGNESS both received the Navy Cross and an advancement

in rate for their work in the rescue and salvage of the SQUALUS. CDR AGNESS also found time during that operation to rescue from drowning a woman spectator who had fallen overboard from a sloop in the area.



Pictured above from left to right are CDR HEDGEPETH, LT J.H. MCDONALD, USN(RET), Chief Machinist's Mate W. BADDERS, USN,(RET), LCDR N.G. SHAHAN, USN,(RET), CDR R.J. AGNESS, USN, and CAPT WORKMAN. In the background is a McCann Submarine Rescue Chamber similar to the one in which 33 men wererespued from entrapment in the sunken SQUALUS.

LT MCDONALD is now living in retirement in Roulette, Pennsylvania, Chief BADDERS makes his home in Annapolis, Maryland, LCDR SHAHAN is retired in Washington, and CDR AGNESS is now finishing his active duty at the Naval Ordnance Laboratory in White Oak, Maryland.



MASTER ON DUTY John (Stinky) STOUT, DCC

Enlisted in the Navy in December 1941 shortly after Pearl Harbor. Assigned to Section Base, San Francisco where I was initiated in shallow water diving using the Miller Dunn Helmets. This put the "Monkey" on my back so I applied for and entered DSDS in November 1942, graduating in May 1943. I was assigned to the precommissioning crew of the USS MACAW. After MACAW ran aground and sank at Midway in February 1944, I was

transferred to the Escape Training Tank, Pearl Harbor. After 4 months I was TAD to the USS GRAPPLE (ARS-9) to attempt the salvage of the MACAW (ARS-11). In August 1944 was put aboard the USS WIDGEON (ASR-1) where I remained till March 1947. While aboard I got in some real good diving, participating in Operation Crossroads at Bikini. Put the WIDGEON out of commission and went to the USS BLUEBIRD (ASR-19) in March 1947 and shipped over onboard the USS GREENLET in December of the same year. I stayed on the GREENLET till January 1952, when I went to the Training Tanks, Pearl Harbor. While at the "Tank" I made Master in November 1952. Leaving the tank in October 1953, I went aboard the USS FLORIKAN (ASR-9). Leaving the "Flo" in November 1954, I went to shore duty in NAS, North Island. This tour ended in November 1956 and back to the land of pineapples and aboard the salvage ship USS BOISTER. I was transferred to the USS RECLAIMER in July 1959 and remained on her till January 1964. As for my future plans I hope to stay at Keyport and complete "26". I am focusing my sights on a Hyperbaric Career or some related field of diving upon retiring.