

THE FACEPLATE

DEEP SEA DIVING SCHOOL
EXPERIMENTAL DIVING UNIT

WASHINGTON D. C. 20390

FACEPLATE

August 1967

SENATOR MAKES DIVE



CDR W.R. LEIBOLD, OINC, DSDS/EDU explaining the EDU (back pack modified MK.VI) to Senator Pell.



Senator Pell "Saddles Up"

Senator Claiborne Pell, Senator of Rhode Island, toured both the U.S. Naval School, Deep Sea Divers and the U.S. Navy Experimental Diving Unit on 19 July 1967. Senator Pell is no stranger to the sea. Four months prior to the attack on Pearl Harbor he enlisted in the Coast Guard and at war's end had attained the rank of Lieutenant. He is presently a Captain in the Coast Guard Reserve. During his tour at DSDS he performed an indoctrination dive in the deep sea diving rig and examined new diving equipment being developed at EDU. Senator Pell, author of "Challenge of the Seven Seas", is one of the foremost authorities in congress in the field of Oceanography and Ocean Engineering. He now adds to this distinction by becoming an Honorary Navy Deep Sea Diver by virtue of his fine performance under actual diving conditions. His work to establish sea grant colleges is appreciated by all of us who go down to the sea in ships.

FACEPLATE

Published quarterly as an unofficial publication. This periodical is compiled and edited at the U.S. Naval School, Deep Sea Divers, with the assistance of the Experimental Diving Unit, 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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Issuance of this publication approved in accordance with Department of the Navy Publications and Printing Regulations, NAVEXOS P-35. The FACEPLATE is printed on government owned equipment with appropriated funds.

EDITORS COMMENT

That age old problem of diving candidates reporting for divers training who do not meet the eligibility requirements is still a major administrative problem, not to mention the wasted travel funds and loss of man hours. It is understandable, though not excusable that a non-diving type ship or activity could over look some of the preliminary screening requirements, but for an ASR, ARS, AS, ATF etc., it should be considered a cardinal sin. For example, an officer candidate was recently received from such a ship who could not pass the test for a class III swimmer much less a class I swimmer as required. Another candidate, also from such a ship who had not been properly screened devolunteered his second day in training by refusing to dive. If this man had been properly screened and been given an indoctrination dive as the requirements so state, his claustrophobia symptoms would have been noted immediately. The U.S. Naval Formal Schools Catalog (NavPers 10500) clearly defines the prerequisites for divers training. It also lists BuPers controlled diver training activities, course descriptions and class convening dates.

NONMAGNETIC SCUBA

The nonmagnetic SCUBA (Demand) is the only Demand SCUBA available through the Navy. Although the apparatus is basically the same as previous magnetic models, more maintenance is required, especially in the regulator. The Naval Ship Engineering Center (NAVSEC) (Code 6138) has promulgated information for the use of silicone lubricant in these regulators and corrected the condition causing "free flow". However, the required maintenance was still time-consuming. A new plating process was developed by the manufacturer which shows promise. Presently, the U.S. Naval School Underwater Swimmers, Key West, Florida is evaluating 12 regulators which have been treated with this plating. When enough data is collected to determine that the special plating will eliminate the corrosion problems, steps will be taken to supply the operating forces with parts to convert existing regulators. There is also a new coating on other parts, box, etc., to replace the black oxide presently used.

FOAM IN SALVAGE

Recent accidents causing injury and death among Navy personnel engaged in foam in salvage operations, indicates the need for up-to-date safety guidelines. Foam in salvage workers must be trained to be safety conscious, to become familiar with the foam process and hazards involved, to understand the proper procedures for handling the chemicals involved, to use the proper breathing equipment, to have adequate emergency standby self-contained breathing equipment, to wear proper protective clothing, to learn approved first aid procedures in case of accidental contact with toxic chemicals and to maintain an adequate fire watch.

The safety precautions and procedures to be followed during foam in salvage and foam removal operations have been promulgated in NavShips Instruction 9940.13.

Most foam in salvage operations are conducted on a contract service basis arranged for by the Supervisor of Salvage. In all such contracts, the contractor is required to comply with the provisions of this instruction.

OLD MASTERS QUIZ

Submarine Rescue Chamber

1. What is the purpose of the flexible rubber hose in the air motor exhaust line of the S.R.C.?
2. How often should the air motor in the S.R.C. be completely disassembled and cleaned?
3. How much pressure are the copper nickel air lines in the S.R.C. tested to withstand?
4. What is the minimum length of the backhaul cable of the S.R.C.?
5. What is the secondary purpose of the spill and vent manifold?
6. How many pounds is the adjustment of the clutch set to slip at in the S.R.C.?
7. What would you do if your downhaul cable should become fouled while descending and all efforts to free the downhaul failed?
8. What type of gases are we most likely to encounter when opening a submarine hatch while operating the rescue chamber?
9. What is the working and free speed of the rescue chamber air motor?
10. How often and to what pressure should the supply and exhaust hose be tested internally?

DSDS PERSONNEL

TRANSFERS

	From	To
LCDR W.C. KURZ	DSDS	CO, USS HOIST (ARS-40)
LCDR J.L. PUTMAN	DSDS	Training Tank, N.L.
LT D.W. FINCHER	DSDS	Separated
DCCS H.S. LIDDLE	DSDS	USS TRINGA ASR-16
TM1 W.D. RIBBECK	DSDS	USS PENGUIN ASR-12
HMC P.K. ELDRED	DSDS	Fleet Reserve
HMC H.C. LANGWORTHY	DSDS	Fleet Reserve

RECEIPTS

	From	To
LT C.A. CHAPMAN	USS CHANTICLEER ASR-7	DSDS
LCDR B. HOKE	NROTC Unit UCLA	DSDS
EMI S.E. STOCKTON	USS PROTEUS AS-19	DSDS
TM1 W.A. GHOLSON	USS PENGUIN ASR-12	DSDS
SF1 D.J. SMITH	USS GRASP ARS-24	DSDS
HM2 H.W. KOESTER	Camp LeJuene, N.C.	DSDS

PROMOTION

	From	To
S.E. STOCKTON	EMI	EMC

MASTER ON DUTY



James L. Tolley, BMC (MDV) USN

Chief Tolley enlisted in the Navy in 1945. Upon completion of boot training at San Diego, Calif. he was assigned to the USS KENNETH WHITING (AV-14). Prior to attending salvage school in August 1952, Chief Tolley served on board USS LAYSON ISLAND (ARST-1), USS TOPEKA CL-67, USS BLUE DD 744, and the USS BRUSH DD 745. Upon completion of salvage school Chief Tolley was assigned to the diving gang in Pensacola, Fla. After Pensacola, Chief Tolley served as a salvage diver in the USS SHENANDOAH AD-26, USS SALVAGER and the diving locker at NAVPHIB Base, Little Creek, Va. In 1958 Chief Tolley attended DSDS and graduated a Diver First Class. As a Diver First Class, Chief Tolley served on board the USS SENECA ATF-91, USS AMPHION AR-13 and the USS OPPORTUNE ARS-14. In Aug 1966 Chief Tolley was designated Master Diver after satisfactorily completing the Master Divers Evaluation course at DSDS. Chief Tolley is presently fulfilling a Master Diver instructor billet at DSDS.

NEW INST

All hands are advised that the new NAVSHIPS INSTRUCTION 9940.12 entitled "GUIDELINE FOR DETERMINING SALVAGE BEACH GEAR GROUND LEG MAKE-UP AND LENGTH" was issued 28 April 1967 and has been mailed to all salvage and diving activities.

PLASTIC EXPLOSIVE

An inquiry was received at DSDS as to a rumor circulating in the Southeast Asia area that plastic explosive (C-4) would sustain life as a food and also could be used as a cleaning agent. The origin of this rumor cannot be ascertained, but, from a medical standpoint the nitrates contained in plastic explosives are detrimental to the human body and if ingested an electrolytic imbalance of the gastrointestinal system will likely occur with subsequent distress of the vascular and respiratory system, therefore, plastic explosives should not be orally consumed in any way shape or form.

NEW TREATMENT TABLES

Since 1963 Submarine Medical Officers at the Experimental Diving Unit, the Submarine Medical Center, and the Escape Training Tank at Pearl Harbor have been evaluating the use of a new treatment method for decompression sickness and air embolism. The patient breathes 100% oxygen and is taken to a depth of 60 feet only. It is felt that recompression to almost 3 atmospheres absolute is sufficient for resolution of the bubble of injury if the patient is breathing pure oxygen. The hyperbaric oxygenation given in the therapy is also beneficial in combating nervous tissue edema and in returning vital oxygen to injured cells whose blood supply had been cut off by a blocking bubble.

NAVXDIVINGU Research Report 5-65 of 15 November 1965 discussed the background for this therapy and tabulated results of treatment with it up to autumn of 1965. Over 150 cases have now been reported to the Experimental Diving Unit from the three activities mentioned and from other non-naval sources.

NAVXDIVINGU Memorandum Report of 10 February 1967 reported the results of the use of this new therapy with 123 cases of decompression sickness, 18 cases of air embolism, and 5 cases of decompression sickness in aviators. Results have been so promising that the Bureau of Medicine and Surgery has been asked to make this treatment method more generally available in situations where a naval medical officer is in attendance during the treatment. A BUMED INSTRUCTION will be promulgated soon with regulations for the use of this new treatment, which has been called Table 5 and Table 6.

Figure 1 and Figure 2 (page 4 & 5) give the schedules of depth and breathing medium for these two new tables together with a summarization of the instructions for their application. Table 5 and Table 6 are not intended to replace Treatment Tables 1 through 4, but to give the attending medical officer an additional and alternate regimen of treatment when he believes that such treatment would be of benefit to the injured patient. If treatment with Table 5 or Table 6 is not successful within a reasonable period of time, the patient can be recompressed deeper on compressed air, if desired, and treatment completed on the appropriate schedule of Tables 1 through 4.

For the treatment of air embolism in trainees at the submarine escape tanks at New London and Pearl Harbor a modification has been made in which the patient is taken initially to 165 feet on air to achieve the maximum effect of re-pressurization on the bubble of injury. After a set length of time he is brought back to 60 feet and treated thereafter on the schedule of either Table 5 or Table 6.

Selection of schedule is dependent upon the rapidity of recovery of the patient. Table 4 would, of course, be used if the patient was not recovering at the end of 30 minutes at 165 feet, but this has not happened to date. These excellent results probably stem from the close line and medical supervision of escape training and the rapid initiation of treatment when symptoms appear.

Con't on page 4 & 5

NEW TREATMENT TABLES

FIGURE 1

METHOD USED WHEN RELIEF OF PAIN IS COMPLETE WITHIN 10 MINUTES AT 60 FEET

TABLE 5

DEPTH (FEET)	TIME (MINUTES)	BREATHING MEDIA	TOTAL ELAPSED TIME (MINUTES)
60	20	O ₂	20
60	5	AIR	25
60	20	O ₂	45
60-30	30	O ₂	75
30	5	AIR	80
30	20	O ₂	100
30	5	AIR	105
30-0	30	O ₂	135

OXYGEN TIME Commence O₂ breathing prior to descent. Descent time is not counted as time at 60 feet.

COMPRESSION Normal rate of descent is 25 feet per minute. If serious symptoms are present descend as rapidly as possible. If symptoms are of pain only do not exceed a rate tolerable to the patient.

DECOMPRESSION Ascent is continuous at 1 foot per minute. Do not compensate for slowing of the rate by subsequent acceleration. Do compensate if the rate is exceeded. If necessary, halt ascent and hold depth while ventilating the chamber.

INSIDE TENDER Tender routinely breathes chamber air. If the treatment schedule is lengthened or if the treatment constitutes a repetitive dive for the tender, he must breathe oxygen for the final 30 minutes of ascent from 30 feet to the surface.

SERIOUS SYMPTOMS Unconsciousness, convulsions, weakness or inability to use arms or legs, air embolism, any visual disturbances, dizziness, loss of speech or hearing, chokes, bends under pressure.

METHOD USED WHEN RELIEF OF PAIN IS NOT COMPLETE WITHIN 10 MINUTES AT 60 FEET OR SERIOUS SYMPTOMS ARE PRESENT

TABLE 6

DEPTH (FEET)	TIME (MINUTES)	BREATHING MEDIA	TOTAL ELAPSED TIME (MINUTES)
60	20	O ₂	20
60	5	AIR	25
60	20	O ₂	45
60	5	AIR	50
60	20	O ₂	70
60	5	AIR	75
60-30	30	O ₂	105
30	15	AIR	120
30	60	O ₂	180
30	15	AIR	195
30	60	O ₂	255
30-0	30	O ₂	285

CHOICE OF TABLE If completeness of relief is doubtful after 10 minutes of oxygen breathing at 60 feet use Table 6.

RECURRENCE If symptoms recur or if new symptoms appear, return to 60 feet and re-treat the patient on Table 6.

LENGTHENED TREATMENT Table 6 can be lengthened by an additional 25 minutes at 60 feet (20 minutes O₂ - 5 minutes air) or an additional 75 minutes at 30 feet (15 minutes air - 60 minutes O₂) or both.

RELIEF NOT COMPLETE If relief is not complete at 60 feet, proceed with Table 6 and observe patient's condition closely for any change, lengthen the schedule if thought necessary, or compress to 165 feet and treat patient on Table 2, 2A, 3 or 4 as appropriate.

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NEW TREATMENT TABLES

FIGURE 2.

OXYGEN ADMINISTRATION: RULES, ROUTINES, REACTIONS AND PRECAUTIONS

<p><u>IF OXYGEN INTOLERANCE OCCURS OR IS ANTICIPATED</u></p> <p>(A) HALT ASCENT; REMOVE MASK AT ONCE; MAINTAIN DEPTH CONSTANT;</p> <p>(B) PROTECT A CONVULSING PATIENT FROM INJURY DUE TO VIOLENT CONTACT WITH FIXTURES, DECKPLATES OR HULL, BUT DO NOT FORCEFULLY OPPOSE CONVULSIVE MOVEMENTS;</p> <p>(C) WITH A PADDED MOUTHBIT PROTECT THE TONGUE OF A CONVULSING PATIENT;</p> <p>(D) FOR NON-CONVULSIVE REACTIONS, HAVE PATIENT HYPERVENTILATE - WITH CHAMBER AIR - FOR SEVERAL BREATHS;</p> <p>(E) ADMINISTER SEDATIVE DRUGS UPON DIRECTION OF A MEDICAL OFFICER;</p> <p>(F) 15 MINUTES AFTER THE REACTION HAS ENTIRELY SUBSIDED RESUME THE SCHEDULE AT THE POINT OF ITS INTERRUPTION;</p> <p>(G) IF THE REACTION OCCURRED AT 60 FEET, ON THE 135 MINUTE SCHEDULE: UPON ARRIVAL AT 30 FEET SWITCH TO 285 MINUTE - SCHEDULE (15 MINUTES AIR - 60 MINUTES OXYGEN, 15 MINUTES AIR - 60 MINUTES OXYGEN);</p>		
<p><u>OXYGEN REACTIONS - SYMPTOMS</u></p> <p>TWITCHING (FASCICULATIONS OR TREMORS) OF FACIAL MUSCLES AND LIPS; NAUSEA; DIZZINESS AND VERTIGO; VOMITING; CONVULSIONS; ANXIETY, CONFUSION, RESTLESSNESS AND IRRITABILITY; MALAISE; DISTURBANCES OF VISION AND NARROWING OF VISUAL FIELDS; INCOORDINATION; TREMORS OF ARMS OR LEGS; NUMBNESS OR "TINGLING" OF FINGERS OR TOES; FAINTING; SPASMOTIC BREATHING;</p>		
<p><u>OXYGEN ADMINISTRATION - PREPAREDNESS</u></p> <p>(A) SUFFICIENT CYLINDER SUPPLY</p> <p>(B) DEMAND VALVES OPERATIVE</p> <p>(C) EMERGENCY KIT STOCKED</p> <p>(D) TENDERS TRAINED TO MANAGE REACTIONS</p> <p>(E) O₂ HUMIDIFIED IF POSSIBLE</p> <p>(F) DEPTH GAUGES CURRENTLY IN CALIBRATION</p>	<p><u>OXYGEN ADMINISTRATION - ROUTINE PRACTICES</u></p> <p>(A) INSURE PATIENT IS AS COMFORTABLE AS POSSIBLE</p> <p>(B) PATIENT AT COMPLETE REST</p> <p>(C) INSURE SNUG FACE-MASK FIT</p> <p>(D) FOLLOW AIR - O₂ SCHEDULE CLOSELY</p> <p>(E) BE ALERT FOR SIGNS OR SYMPTOMS OF REACTIONS</p> <p>(F) PATIENT TO TAKE A FEW DEEP BREATHS EVERY FIVE MINUTES DURING TREATMENT</p>	<p><u>FIRE WARNING</u></p> <p>DANGER OF IGNITION AND PROPAGATION OF FIRE INCREASED UNDER PRESSURE AS O₂ IS EXHALED INTO THE CHAMBER ATMOSPHERE THE HAZARD IS MAGNIFIED. AM- PLE VENTILATION MUST BE PROVIDED. DO NOT USE ELECTRICAL APPLIANCES. KEEP COMBUSTIBLES CLEAR OF THE CHAMBER.</p>

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ADVANCED DIVING SYSTEM

8 - 19 July 1967, three EDU divers, BMI Mullens (DVI), GMI Mandible (DVI) and ENC May (MDV) along with ten Harbor Clearance Unit personnel which included LT O. A. Kohl and CDR Linaweaver (MC) were assigned to Oceans Systems Inc. in Santa Barbara, Calif. for the purposes of learning and operating the ADS IV (Advanced Diving System). During this period they were under the instructional supervision of D.E. Thomason, retired Master Diver, who is employed by OSI.

The ADS IV diving system is leased from OSI as an interim system until the new MKI and MKII Deep Diving Systems, which will be installed on the new ATS and ASR are operational.

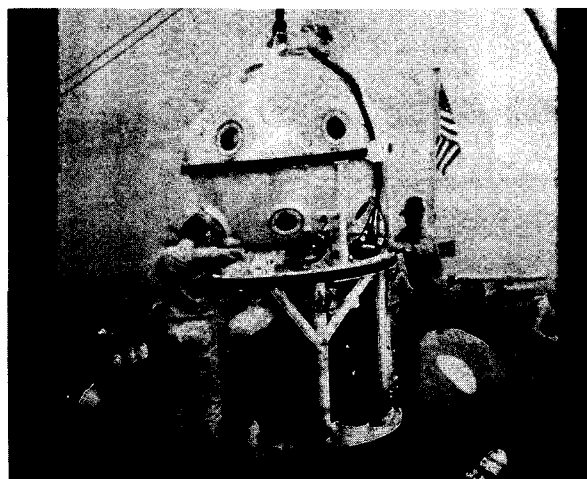
The ADS IV is designed for high performance (short) duration diving to depths of 600 ft. The system is composed of a:

- Control Console Van (CCV)
- Submersible Decompression Chamber (SDC)
- (2) Deck Decompression Chambers (DCC)
- (1) Entrance Lock (EL)

plus air compressors, high pressure gas supply, vertical and horizontal mating system and all the necessary wiring and piping for communication, power and other support equipment. The relative small size and simplicity of the system provides "Fly Away" portability and a greater margin of safety during diving operations.

The ADS IV is a system in that two divers can go to depth in the (SDC) at atmospheric pressure, survey the job through the (IS) viewing ports, then pressurize the (SDC) and commence diving out of the (SDC). Upon completion of the dives the divers re-enter the (SDC) and the required decompression and ascent is started. The (SDC) is then mated to the (EL) whereby the divers can transfer from the (SDC) into (EL) and one or the other (DCC). The (SDC) is then brought back to surface unmated and prepared for the next descent. This system minimizes the divers exposure time to the hazards (cold, currents, marine life, toxic/insufficient gases) plus be under constant observation during most of his decompression.

86 dives were conducted using the ADS IV during this period, 22 of which were 200/10 using 16% HE0₂.



ADS IV

General Specification of ADS IV (Approx)

<u>SDC</u>	
Height	10' 6"
Dia (overall)	5' 10"
Dia (Sphere)	5' 4"
Dia (Trunk)	24 1/2"
Length (Trunk)	28 1/4"
Volume	85 cu. ft.
Pressure Rating	500 psig
Weight	6000#
Capacity	2 divers

<u>DCC (each)</u>	
Dia (outside)	5' 6"
Dia (inside)	4' 6"
Length	9' 3"
Hatch opening	24 1/2"
Volume	100 cu. ft.
Weight	5000#
Pressure Rating	250 psig
Capacity	2 divers

<u>EL</u>	
Dia (inside)	4' 6"
Dia (outside)	5' 6"
Length	6' 3"
Volume	55 cu. ft.
Pressure Rating	250 psig
Weight	4000#
Capacity	2 divers

EXPERIMENTAL DIVING UNIT

Fire Safety: EDU, along with Research and Development personnel from Union Carbide's "Linde Laboratory" are completing evaluations on flame resistant materials for use in recompression chambers; namely pillows, blankets, clothing etc. New materials being evaluated are Beta Glass, Nomex, and Dynel. An instruction covering the updating of flame proof clothing and materials for use in this area will be forthcoming. Meanwhile, keep burnable materials at a minimum in the chambers.

New breathing mask: New type masks for breathing O₂/HEO₂ in the recompression chambers are presently being evaluated. These masks are easy breathing, can be adjusted for free flow and are equipped with communication in the mask. These new masks may be a while getting to the fleet so in the meantime keep up the maintenance on the present M.S.A. masks.

Single hose regulator: Military specifications are being written for a single hose regulator and a single bottle (90 cu. ft.) in a vest harness for Navy use.

MK. VIII: The Mark III, semiclosed circuit SCUBA, designed at EDU for Sea Lab III is in its final completion stage.

MK.IX: The new Mark IX, semi-closed SCUBA, presently undergoing evaluation at EDU is a modified MKVI with out cylinders. It employs a flat canister and the garrahan block. Gas is supplied through an umbil cord but also has a come home bottle. This equipment is ideally suited for transfer under pressure diving.

MANUALS

There are several basic diving/salvage manuals, all of which deal with safety practices in their special areas. These manuals, and their current status, are as follows:

- a. U.S. Navy Diving Manual (NavShips 250-538): Current date of issue is July 1963. The manual is currently under review for major change. This change will include new hardware and improved recompression techniques, including safety aspects of each etc., next change, Dec. 1967.
- b. Ship Salvage Safety Manual: This is an old BuShips publication, issued in 1944 and never updated. A contract for rewrite is expected the second quarter FY68. This rewrite will include safety rules for the several new salvage techniques (such as polyurethane foam) and a general catching up with state of the art in safety engineering.
- c. Ship Salvage Manual: A new NavShips Manual is currently in preparation and nearing draft form. This manual replaces numerous unofficial handouts used at DSDS as well as the old salvage notes publication and the related chapters in BuShips Technical Manual. This new manual will be used both for instruction at DSDS and as a hand book afloat and will be a major repository of particular safety instructions supplementing the general Ship Salvage Safety Manual. Scheduled issue date: Fall 1968. A companion new Submarine Salvage Manual is complete and scheduled for publication in the fall 1967.
- d. Underwater Welding/Cutting Manual: Current manual is dated 1945 and requires updating. Negotiations for a rewrite is in process. New manual expected to be issued late 1968.
- e. Ocean Towing Manual: This is an entirely new manual. It covers operational and technical/engineering matters and the safety aspect of each. Final draft has been submitted, reviews are underway. Anticipated publication late 1967.

HAIL AND FAREWELL

On 15 June 1967 LT Sanchez GOODE relieved LCDR Allan H. CARRY at the diver training desk in BuPers (C-145). LCDR CARRY who commanded USS PENQUIN (ASR-12) before coming to BuPers in June 1965, leaves for Pearl Harbor, Hawaii where he will relieve CDR Lynn CLARK as Commanding Officer of the USS GREENLET (ASR-10). LT GOODE comes to BuPers from Officer in Charge, USS SEADOG (SS401) at Salem, Mass. His prior diving experience was as XO, USS PETREL (ASR-14).

CONGRATULATIONS

Congratulations are in order to Warrant Boatswain Ocie WHITE. Boatswain WHITE was appointed W1, 30 June 1967 on board the USS GRASP (ARS-24) while at sea. Boatswain WHITE's appointment to Warrant also carried a set of orders, ordering him to Harbor Clearance Unit 1 in Subic Bay. Again, congratulations, Boats.

33 FATHOMS PLUS

On 8 Feb 1967 ENI Robert A. Croft (DV), stationed at the escape training tank, New London, Conn. while on leave dove below the surface of the Gulf Stream, two miles off the coast of Fort Lauderdale, Florida, breaking the world "free dive" record of 200 feet established by Stotti Georghios, a Greek sailor, in the Adriatic Sea in 1913--nearly 54 years ago.

Endowed with a phenomenal lung capacity, and diving with no artificial breathing device, tanks or other apparatus, Petty Officer Croft plunged to depths exerting pressure of approximately 100 pounds per square inch of his body, to set the new world's record of 212 feet, 7 inches.

Operation "33 Fathoms Plus" was not a sensational stunt, but rather a scientific, precisely planned project.

A noteworthy team of crack Navy divers, also on leave, were stationed at various depths along the vertical line of Croft's descent to "cover" his dive, and another diver, with equipment, "escorted" him down to the depths and back to the surface. Like Croft, each member of the team was a veteran diver. An underwater physiologist completed the team.

Though rescue and escort divers were equipped with underwater breathing apparatus, their participation involved risks attending any extended underwater operation.

Timing was and always will be critical. Because of the tremendous pressures encountered by Croft and the cover-escort team, Croft's dive had to be completed within three minutes to avoid serious complications and even disastrous consequences; but the slower return to the surface of the cover divers was completed in a series of phased-out stages required for gradual decompression, as in the manner familiar to SCUBA divers. As Croft points out, the dreaded "bends" are not caused by underwater depths as such, but rather by the amount of time expended at these depths. Therefore, the danger to his team of cover divers was constant.

To accelerate his descent, Croft used a 59-pound weight, attached to the two-inch colored nylon line which he followed to assure an absolutely vertical descent.

Upon reaching the record depth of 212' 7", Croft released the weight, attached a seal to the line, and climbed hand over hand, as rapidly as possible to the surface. The time elapsed was two minutes, six seconds.

Petty Officer Croft's assault upon the 200-foot record took him deeper into the ocean than any man in recorded history without artificial breathing apparatus. Japanese pearl divers, Polynesian divers and Greek sponge divers rarely descend to any depth approaching 100 feet...much less 200 feet.

USS FLORIKAN ASR-9

Two officers and four crewmen from USS FLORIKAN (ASR-9) have received Letters of Commendation from CAPT R. H. Gulmon, the Commander of Submarine Squadron FIVE.

They are LCDR William J. Leonard, FLORIKAN's skipper, LT Martin A. Paul, the Operations Officer, Senior Chief Boatswain's Mate Donald L. Potter, Chief Shipfitter Robert L. Batye, Shipfitter First Class Kenneth E. Jackson, and Mineman Second Class James G. Koskimaki.

All were commended for the parts they played in a salvage mission earlier this year during a Western Pacific deployment.

The 22,500-ton Liberian merchant ship TEH HU had experienced a main turbine explosion about 1,900 miles northwest of Hawaii. Her engineering spaces flooded with 4,700 tons of water.

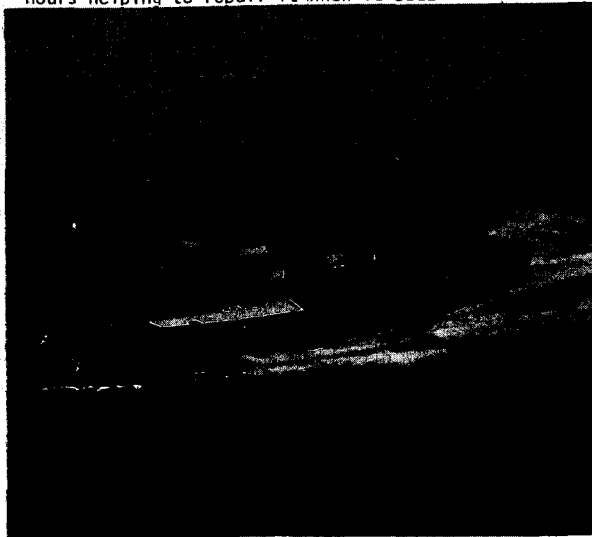
FLORIKAN responded to TEH HU's call for aid and LCDR Leonard became the On-Scene-Commander. He maneuvered FLORIKAN to land a salvage party on board TEH HU and supervised round-the-clock pumping and patching operations that restored water tight integrity to the stricken ship.

LT Paul was Officer-in-Charge of the Salvage team. Under his direction, the team patched and closed all hull openings in less than two hours.

He also supervised the pumping. The team pumped out 30 tons of water before waves from the engine room flooded the pump. He then worked for 40 hours to repair the pump. The team pumped out 10 more tons before the pump failed completely.

Chief Potter, FLORIKAN's Master Diver, supervised all the diving operations and helped make the patch for the main cooling water discharge valve. After the diving operation, he remained on board TEH HU to help with the pumping.

Chief Batye was the senior enlisted member of the salvage party. He supervised the loading and transfer of pumps and salvage equipment. He also directed the operation of the pump, and worked 40 hours helping to repair it when it became inoperable.



USS FLORIKAN ASR-9

Shipfitter Jackson and Mineman Koskimaki each made two dives. The first, which lasted 37 minutes, was to inspect the entire underwater body of TEH HU to see if all openings to the sea were closed. They found an open 18-inch main cooling water discharge valve.

After surfacing, they helped make a patch for the open valve and then made another, 53-minute dive to install it.

LCDR J. W. LEONARD
LT M. A. PAUL
LT E. J. DOWNEY
WO-1 J. J. DURAN
BMCS POTTER
MMC PARFINSKY
ENC CORDINGLY
SFI BATEY
BM1 BOAKANOSKI
BM1 CEPOWSKI
GM1 CLITES
EN1 RUBEN
HMC FILECCIA
MR1 FOWLER
MM2 KOSKIMAKI
MM2 DINGLER

CO
XO
DIVING OFFICER
DIV/SAL OFFICER
MASTER DIVER
DIVER FIRST CLASS
DIVER FIRST CLASS
DIVER FIRST CLASS
DIVER FIRST CLASS
DIVER FIRST CLASS
DIVER FIRST CLASS
MED-DIVING TECH
DIVER FIRST CLASS
DIVER FIRST CLASS
DIVER FIRST CLASS

MASTER DIVER

ELIGIBILITY REQUIREMENTS

BuPers Manual, Article C-7408(7)(b), clearly defines the eligibility requirements for Master Diver. In addition to this, on 28 Dec 1959, the Chief of Naval Personnel directed the OINC/DSDS to appoint a permanent selection board for the selection of Master Divers [Authority BuPers Ltr C2331, ser. C23/881-9A (notal)]. This authority so states that ALL recommendations for the designation as master be forwarded to the Chief of Naval Personnel via OINC/DSDS for comments and recommendations of the selection board.

DIVING SAFETY

The importance of diving safety cannot be overemphasized. Careful observation of applicable safety precautions as set down in the diving manual and other directives will prevent the greater majority of diving accidents. However some diving operations (particularly) tactical operation do not allow diving personnel to observe all safety precautions without exception. The diving supervisor must decide which safety precaution to disregard in a given situation and he must be able to justify his decision on a basis of absolute necessity. He must then make sure that all personnel affected by his decision realize the situation and remain constantly alert to the hazards. All diving accidents of consequence will be investigated and disregard for safety precautions and sound diving procedures are certain to come to light.

OLD MASTERS QUIZ

Answers

1. For realignment of air motor after overhaul and maintenance.
2. At least every 60 days.
3. 565 lbs.
4. 1200 feet.
5. Act as a secondary flood and drain for main ballast?
6. 5500 pounds with full reel of wire.
7. Notify topside to have slack taken out of backha make the bell negative and cut downhaul.
8. Chlorine gas and carbon dioxide.
9. 90 and 120 rpm.
10. Every 6 months and to 450 PS: for 15 minutes.