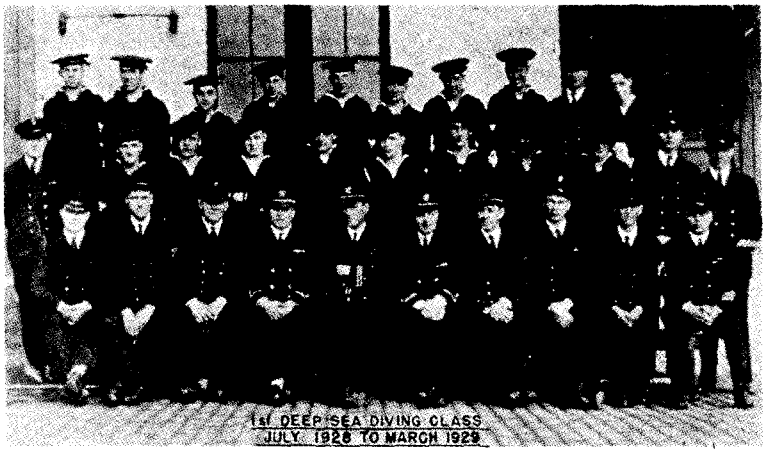
THE FACEPLATE

NAVAL SCHOOL DIVING AND SALVAGE

EXPERIMENTAL DIVING UNIT

WASHINGTON D. C. 20390

"LIFE BEGINS AT 40"



1st DEEP SEA DIVING CLASS
JULY 1928 TO MARCH 1929

The Naval School, Diving and Salvage, has been in existence for forty years as an activity of the Naval establishment. Correspondence was initiated on 4 June 1928 by the Bureau of Navigation ordering three officers and ten enlisted men to report to the Washington Navy Yard for the purpose of establishing a diving school to train navy divers to alleviate the shortage of deep sea divers in the fleet at that time. It was estimated that 52 deep sea divers would fill the allowance for all ships. These officers and men assigned to install the necessary equipment and develop a curriculum were to report in June of 1928 and be prepared to commence instruction of the first class of 25 men on 1 July 1928. Under the able leadership of the first officer in charge, LT. H. HARTLEY, the first class commenced in July of 1928 and graduated in March of 1929. At the time the school was first established it was felt that the number of people in the classes could be reduced after the first couple of classes of 25 students had filled the fleet allowance. This has never come to pass yet and the requirements for divers in the fleet and shore activities continues to grow. From the rather small and simple beginning with only three officers and ten enlisted men the Naval School of Diving and Salvage has grown to a large and very complex instructional school for all phases of diving and associated activities. It has grown to such an extent that forty years later it has been designated a command vice an activity. It is under the command of CDR W.R. LEIBOLD, USN, with nine officers, twenty-three enlisted instructors and thirty enlisted staff members necessary to man and maintain the service craft and ships designed to aid in the training of divers and salvors.

From the small class pictured above the school has progressed to the degree that now each year over 440 officer and enlisted students of the armed forces are instructed in diving. Among these students are civilians within the governmental structure whose vocation requires a knowledge of diving and foreign students from many of the Allied countries.

In this fortieth year of operation, an entirely new concept of diving is being incorporated which necessitates all courses being updated and a revised philosophy on training being implemented. The pressure complexes are in the process of being overhauled and modernized to give us greater capability to teach deep sea diving techniques. Our next step forward will be to commence teaching the operation of the MK 1 deep dive system which is being developed now.

All of our progress and setbacks in the last forty years have left us still with only one prime mission. "To train selected officer and enlisted personnel in all phases of diving, ship salvage, and submarine rescue and to perform additional tasks as directed by the Chief of Naval Personnel," which we shall continue to do for as many more years as there is the need for man to go beneath the sea to do his assigned task, whatever it may be.

FACEPLATE

Published quarterly as an unofficial publication. This periodical is compiled and edited at the Naval School, Diving and Salvage, 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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OLD MASTERS QUIZ

1. During an HeO2 dive to 372' using 16% O2, the diver lost gas after 22 min. on the bottom. What is the rate of ascent to the first stop?
2. What procedure should be followed if a diver passed out during ascent to the first stop from a dive?
3. How should a standby HeO2 diver be dressed?
4. What procedure should be used when shifting an HeO2 diver to air at depths in excess of 165 feet?
5. During descent to 150' using 20% O2 the diver was aborted at 58' due to ear trouble. Where is the first stop and how long should it take to get there?
6. What is maximum O2 for an HeO2 dive to 350' with a 39 min. bottom time?
7. A diver ascending from an HeO2 dive, arrives at the stage at 50' on time and discovering he is fouled takes 21 min. to get squared away on the stage. What allowance would be made for the 21 min?
8. When shifting to O2, both divers should be ventilated and on O2 within 3 min. from the time of leaving the previous stop. What would you do with the time if it took 3 min. and 30 seconds?
9. What is the first thing that must be done if a diver is at 300' using 18% O2 and you had to shift to 16% O2?
10. How many people should be involved in computing partial pressure tables for an HeO2 dive?

NSDS EDU PERSONNEL

NSDS Receipts

	From
LT. W.E. O'SHELL	USS ORION (AS-18)
W-1 D.L. GAY	FLEET SUB TR CTR
SF1(DV) G.C. GILSON, JR.	USS DELTA (AR-9)
SFC(DV) K.L. CHAFFIN	USS SUNBIRD (ASR-15)
TM2(DV) T.A. CONNER	NAVSTA, WASH, D.C.
HM1(DV) E.G. FREEMAN	HOSP. PORTSMOUTH, N.H.
HM1(DV) N. HOWARD	UDT, CORONADO, CALIF.

NSDS Transfers

	To
LT S. (N) McNEASE	XO - USS KITTIWAKE (ASR-13)

EDU Receipts

	From
LT J.G. DEFLORIA	SEAL TEAM ONE
LCDR W.I. MILWEE	HCU-ONE
BM1 A.J. PETRASEK	USS PRESERVER (ARS-8)
EN1 R.A. LYONS	USS ORION (AS-18)
HM1 G.F. ZINGSHEIM	USS DELIVER (ARS-23)

EDU Transfers

	To
LT D. FOSTER	EOD SCHOOL
LT T. BERGHAGE	NROTC UNIV. LOUISVILLE, KY.
LT H. CHILDERS	FLEET RESERVE
BMC F.M. WYATT	HCU-ONE

IN MEMORIUM

It is with sadness and regret we report to you the recent death of an old shipmate and diving partner CHBOS'N. George L. BURNETT, USN (Ret). He is reported to have passed away on June 28, 1968, of a heart attack at his home in Dickson, Tennessee.

For those of us who were privileged to have served with him, the Bos'n shall always be remembered as an exemplary seaman, leader, salvage master, and friend. His over 20 years of long and arduous service in diving and salvage ships, and as a staff member at the Diving School, saw his direct participation in many involved salvage operations that spanned WW II and Korea. He received numerous commendations for superior performance and established a reputation for sincerity of manner and professional excellence that shall long survive the Bos'n through those shipmates he left behind.

Bos'n Burnett's wife, Muriel, may be reached by mail at Route 2, Dickson, Tennessee for those desiring to extend messages of sympathy.

KUDOS

The Experimental Diving Unit wishes to extend its appreciation to the following men, who from 2 June 1968 to 26 July 1968 were assigned here and volunteered their services as experienced Navy Deep Sea Divers.

TM1(DV)	F.J. MANTELL	NAS, PENSECOLA, FLA.
BT1(DV)	K.W. MILNE	USS SIERRA (AD-18)
BM1(DV)	J.W. LEWIS	NAS, JACKSONVILLE, FLA.
SF1(DV)	W.S. STAPLES	USS GRAND CANYON (AD-28)
GMCG(DV)	F.A. STUCKEY	USS GRAND CANYON (AD-28)
SFC(DV)	R.E. BAKER	EODS, INDIAN HEAD, MD.
BM1(DV)	E.F. FAIRBANKS	EODS, INDIAN HEAD, MD.
SF1(DV)	M.L. HARRISON	SUBMARINE SCHOOL, N.L.
BMC(DV)	E.E. CALTENBACK	SUBMARINE SCHOOL, N.L.
SF1(DV)	W.T. CURRY	SUBMARINE SCHOOL, N.L.
SFC(DV)	H.L. HICKS	SUBMARINE SCHOOL, N.L.
HMC(DV)	J.C. EDGERTON	USS CANAPOUS (AS-34)
BM2(DV)	R.H. BYERLY	USS TIDEWATER (AD-31)

During this period, they were subjects in numerous dives up to 300' at durations approaching 15 hours in length. They contributed significantly to the development of advanced diving schedules and decompression tables, the test and evaluation of modern diving equipment and the related physiological evolutions.

Their contribution to the U.S. Navy's role in furthering the advance of underwater technology during their tour at the Experimental Diving Unit is greatly appreciated. Their efficiency and high degree of professional ability reflects credit upon themselves and their Command.

"PRESSURE POTS OUT"

Both deep diving pressure complexes at the school have been secured from use following receipt of information obtained through an engineering survey that has revealed many of the welded seams piping and pressure hull penetrations to be deficient and unsafe. This survey has indicated that many of the joints are not within approved specification criteria due to weld failure, hidden deterioration, and fabrication technique changes.

This shut down has resulted in major training schedule changes requiring the school to additionally dive at night while utilizing EDU's pressure complexes. It is anticipated that repairs will be accomplished with high priority by a selected shipyard.

NEW TRAINING SKED

Beginning in July 1968, the revised curriculum for Divers First Class, Deep Sea Diving Officers and Diving Medical Technicians has been placed into effect at NSDS. The previous courses of instruction have been reduced in length and updated broadly in scope and content in the interest of producing better dives in quantity and quality for the fleet.

The primary source for the Diver First Class course will be qualified Divers Second Class from sea and shore diving activities and billets. The prerequisites for a diver second class (NEC 5343) to cross train for diver first class (NEC 5342) is to be recommended by Commanding Officer, be in pay grade E-4 or above, be a designated diver second class (NEC 5343) and have served a minimum of six months with the designation and qualifications of diver second class in an active diving billet.

Those personnel interested should submit a request to the Chief of Naval Personnel (Pers C145) via their Commanding Officer and type commander for a returnable quota to attend training for a period of about 14 weeks.

Reporting dates are:

REPORTING DATE	COMPLETION DATE
12 Jul 1968	18 Oct 1968
23 Aug 1968	29 Nov 1968
4 Oct 1968	24 Jan 1969
29 Nov 1968	21 Mar 1969
10 Jan 1969	18 Apr 1969
21 Feb 1969	30 May 1969
21 Mar 1969	27 Jun 1969
25 Apr 1969	1 Aug 1969
13 Jun 1969	19 Sep 1969

The Salvage Officers Course has been shortened to fourteen weeks and the total time to train a HeO2 qualified diving officer has been decreased to 21 weeks. Any officer who is qualified as a Salvage Diving Officer and is contemplating a billet which requires a designation of HeO2 diving officer can apply for the seven week HeO2 cross-over training course and upon completion of this course would be designated as an HeO2 diving officer.

N S D S

The official title of the diving school was changed by OPNAV NOTICE 5450 dated 10 June 1968. It is now Naval School, Diving and Salvage with the mission "to train selected officer and enlisted personnel in all phases of diving, ship salvage, submarine rescue, and to perform additional tasks as directed by the Chief of Naval Personnel." The official mailing address is:

Commanding Officer
Naval School, Diving and Salvage
Washington Navy Yard
Washington, D.C. 20390

NEW EQUIPMENT AVAILABLE

The Vietnamese conflict has created a whole new era for the Diving and Salvage Navy. The requirement for better tools of the trade has brought forth a host of equipments designed for multiple usage. Some of these are described in the following paragraphs and as other equipments are designed or adapted to salvage and diving usage needs they will be promulgated to the divers and salvors in this publication.

The Bear Paw Magnetic Handles and Angles are tools used for lifting, holding and forming applications. Action has recently been initiated to introduce magnetic holding and lifting tools into the Navy Supply System for use as a diver's assist tool. These magnetic tools are permanent type magnets and need no recharging. Their size and weight enhances the ease and safety in holding and lifting work performed in confined spaces and under adverse working conditions. Depending upon the size handle used, lifts of up to 600 pounds can be attained. A simple push forward of the unit's handle will release its hold.

To complement the magnetic handle, magnetic angles are available which afford a quick method for forming angles. They are adjustable and capable of forming 45° to 90° angles with plate or sheet steel. Also available, are magnetic pipe handles in 6 inch and 10 inch diameter sizes with lifting capabilities up to 400 pounds.

Models available are as follows:

MODEL	FSN
Angle-Magnetic Model B-40	9G5120-073-9213
Angle-Magnetic Model B-80	9G5120-073-9205
Handle-Magnetic, Pipe 10 in.	9G5120-073-9360
Handle-Magnetic, Pipe 6 in.	9G5120-781-8168
Handle-Magnetic 100 lb. LFT	9G5120-073-9225
Handle-Magnetic 250 lb. LFT	9G5120-073-9259
Handle-Magnetic 400 lb. LFT	9G5120-073-9276
Handle-Magnetic 600 lb. LFT	9G5120-073-9279

The APL for the above models is 2-940064003.

GRIPHOIST is a manually operated portable wire rope hoist that has the capability of lifting, lowering and pulling loads without the need for power equipment. The machine is designed on a draw vise principle and normally comes equipped with a telescopic lever and a standard length of wire cable. Three models of GRIPHOIST are available. These are as follows:

MODEL	FSN	AEL	CAPACITY IN TONS	WT. OF BASIC UNIT IN LBS.
T-15M	9C3950-932-9751	2-920014870	3/4	16
T-20	9C3950-729-6165	2-920014871	1-1/2	43
T-35	9C3950-729-6164	2-920014872	3	66

GRIPHOIST is operated by means of a manual hand lever which when pulled back and forth operates a cam which in turn operates two pairs of forged steel jaws which are grooved to the radius of the cable size for which the machine was designed. The working principle of the jaws is similar to a man pulling rope hand over hand in that the two pairs of jaws alternately grip and pull the cable.

When setting the machine up for operation, GRIPHOIST is first anchored to a sturdy fixed object with a wire or manila rope, chain or a fixed eye. Next, a safety load hook, furnished with the cable, is fastened to the load to be moved. Due to the mode of operation of the machine there is no limitation on the length of cable that can be used. The machine works in any position -- vertical, horizontal or diagonal -- and can be rigged for operation in a matter of minutes.

GRIPHOIST has proved to be a valuable device for handling salvage gear aboard salvage ships, in placing salvage machinery aboard ships without power, and for use by divers in underwater work. The Model T-35 GRIPHOIST has been used as a major component in SADKAS, the Steinke Air Drop Kedge Anchor System, for salvaging stranded vessels. The Model T-20 GRIPHOIST has been used extensively on floating drydocks and is now included in the allowance list for floating drydocks. Other applications of GRIPHOIST have been as an auxiliary winch on cargo planes such as the C-130, and as a multi-purpose wire rope hoist in the Marine Corps and Army.

TO NAVY SALVORS

NAVSHIPS NOTICE 9920 of 23 July 1968 promulgated the following information concerning new tools available to diving ships and units for requisition through the Federal Supply System.

The Federal Supply System has recently acquired a family of palm-grip tools. These tools have been evaluated by the Naval Air Systems Command, the Naval Ship Research and Development Center, and various other Navy and Army Commands.

Palm-Grip tools consist of flat tip screwdrivers, Phillips screwdrivers and nut drivers.

These tools are unique in that each tool is provided with a square female drive slot (3/8") in the handle top. Into the drive slot fits a 3-way ratchet palm tool. The ratchet is adjustable to forward, reverse or straight drive. Amoung the advantages to this tool is the added leverage obtained from the ratchet handle which is usually sufficient to release frozen nuts, bolts, studs and screws or tighten them to the point of nearly stripping the threads; faster and more sustained work is permitted; eliminates tired and bruised hands; fingertip control permits the operator to work in areas of "hard to reach screws and nuts"; the ratchet is framed to fit any size hand. In addition, the ratchet fits other standard tools.

To complement the above, there is also available a multi-size wrench. The socket end of the wrench contains four spring loaded sockets (1/4", 5/16", 3/8" & 7/16"). Additional sizes will soon become available.

It is necessary only to place the wrench over the hex nut or bolt, turn slightly and the tool will seek and automatically seat itself into position on any one of the above sizes. Additionally, this wrench may employ the 3-way ratchet palm tool for increased leverage.

The tools will be handy for use by divers since as a rule, they can be used "one handed".

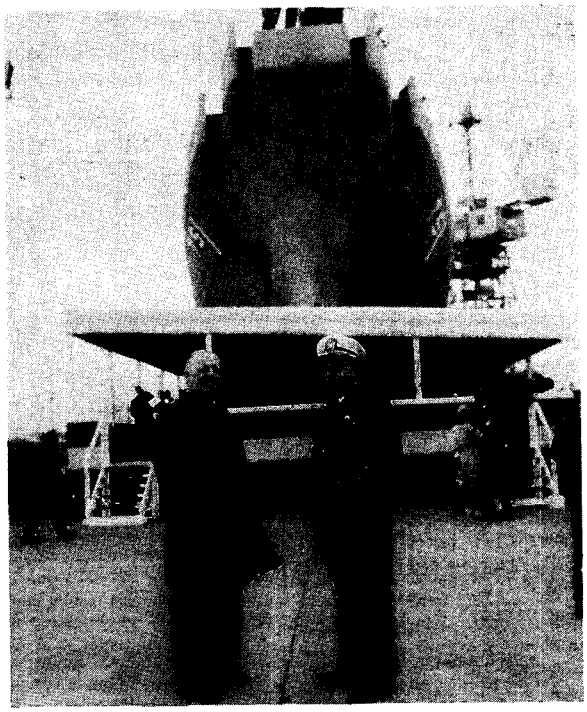
The new diesel driven LP air compressor recently procured for ARS/ATF/ATS type ships, Harbor Clearance Units, ESSM Pools and Bases have all been delivered. Manufactured by Ingersoll-Rand, they are rated 125 CFM @ 100 PSI and are driven by a 33 HP Detroit Diesel Engine.
A set of onboard repair parts has also been delivered with each unit. Further repair parts support and/or repair parts allowances are contained in Allowance Parts List (APL) # 061430184. Activities not holding this APL can obtain a copy by letter request to SPCC Mechanicsburg.

All activities using SCUBA equipment will be interested in knowing that there are now two different CFM, 3000 PSI portable compressors in the supply system. These are as follows:

A. Walter Kiddie Company Compressor
   Wisconsin Model WBKND gasoline engine
   FSN: 1H4220-892-2234
   Compressor APL: 061160002
   Engine APL: 668900027
   Manual: NAVSHIPS 0949-014-3010
B. Stewart Warner Compressor
   Kohler gasoline engine
   FSN: 1H4220-892-2234
   Compressor APL: 061930001
   Engine APL: 668570008
   Manual: NAVSHIPS 394-0070

All activities which use these compressors should ensure they have a copy of each applicable APL. Copies can usually be obtained from the nearest NSD or NSC or a shipyard. If not otherwise obtainable, write direct to SPCC, Mechanicsburg, Pennsylvania.

USS EDENTON LAUNCHED



Launch of the USS EDENTON, 15 May 1968, at Lowestoft, U.K. On the left of the picture, Mr. P.F.Flett, Chief Salvage Officer, Royal Navy; on the right, Captain W.F. Searle, Jr., Supervisor of Salvage, USN.

The USS EDENTON was launched on 15 May 1968, at Brooke Marine Limited, Lowestoft, United Kingdom. The contract design for the ship was initiated in 1965. The ship is designed with twin reversible pitch propellers and a machinery plant developing 6000 shaft horsepower in a hull having an overall length of 232' 8", a maximum breadth of 50', a full load displacement of 2929 tons and a full load draft of 14' 6". The EDENTON will serve in the Service Force to provide the latest in improved salvage, towing, diving, and rescue facilities to the fleet.

The design of the EDENTON combines the capabilities of a major salvage ship (ARS) and an ocean going tug (ATF) into one hull. The functions of the ship are listed as follows:

.To provide ships, submarines and aircraft which are battle damaged, stranded, beached, sunk or abandoned at sea with salvage, lifting, repair and tow to safe waters or repair yards.

. To provide a bow lift capability of up to a 300,000 pound dynamic lift and a 600,000 pound static tidal lift in depths of water of up to 120 feet.

. To provide a deep diving capability for salvage work.

. To provide a major air plant for salving a submarine by blowing.

. To perform salvage and rescue at sea operations.

. To perform towing-at-sea operations.

. To provide a large pumping capacity to supply fire-fighting monitors to extinguish fires on ships in distress at sea or to service dewatering hose stations.

The salvage capabilities of the ship include laying and retrieving salvage beach gear, and laying and retrieving anchors for deep moors. The EDENTON is also capable of providing a hauling force to a stranded ship both by rigging the stranded ship with beach gear and by using its specially designed bow anchoring systems and towing hawsers to accomplish a combined pull. The ship is equipped with cranes forward and aft in lieu of conventional booms. These cranes are designed for over-the-side salvage lifts to depths of 150 feet and should improve safety and simplify handling operations in open sea salvage work

Hard-hat deep sea diving outfits and open circuit SCUBA are used to perform the normal diving missions of the ship. Dives of up to 250 feet can be supported by a two lock deck-mounted recompression chamber and facilities permanently available on the ship. The ship also provides helium-oxygen storage and space in the No. 4 hold for accepting the semi-portable Mark I Deep Diving System suitable for accomplishing dives up to 850 feet.

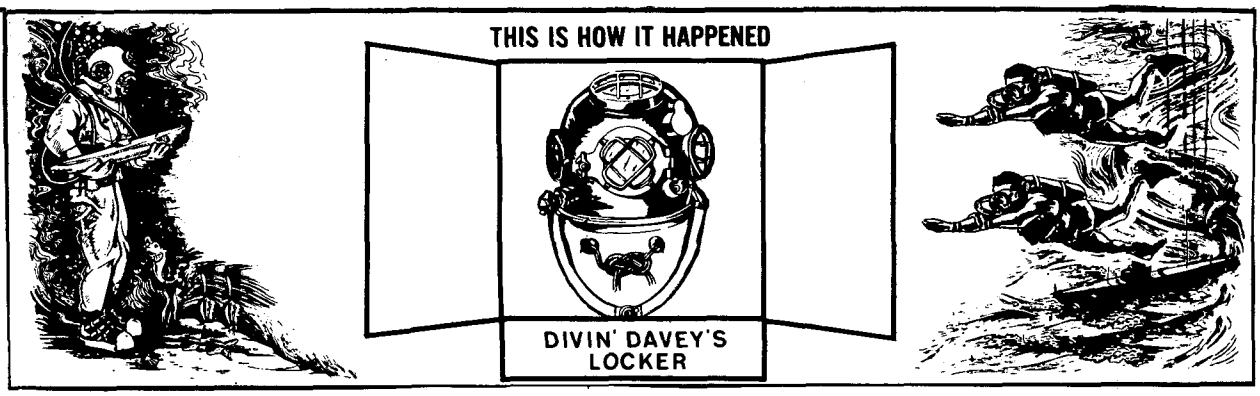
In addition, the EDENTON is equipped with a propeller tunnel type, controllable and reversible pitch, bow thruster unit which is capable of developing 7900 pounds of thrust to either the port or starboard side of the ship. The bow thruster provides added ship control while in certain critical ship evolutions such as: laying and retrieving beach gear, scouring and firefighting operations and for close quarter maneuvering situations with a tow.

The EDENTON also has a clear deck area aft and is capable of being off-loaded or replenished at sea by helicopters.

A revised U.S. Navy Diving Manual has just been completed. It represents a tremendous change over the older editions both in format and new safety limits. The format will be such that additions or corrections to the manual may be made easily without any revision of the manual.

The tables for decompression in the manual have been changed to follow a standard format and will be expanded to one full page in width to enlarge the numbers and make the tables more readable. The helium-oxygen mixed gas SCUBA decompression tables have been added as well as the minimal recompression oxygen treatment tables.

It is hoped that this manual will present the best, safest and most current information to the diving Navy. The printing process should begin in July and be available to the Fleet in 3 to 6 months.



PURPOSE

This section of the FACEPLATE will be dovoted to the analysis and presentation of various diving and salvage accidents that have been reported over previous years. The printing of the basic details of these accidents are for general knowledge in hopes that they will not occur again and to assist divers in practicing safe diving through increased knowledge.

Case One Summary.

HeO2 diver fouled in decending line and stage to extent that emergency surfacing from 190 feet is performed in effort to free the diver. The diver died in the chamber.

NARRATIVE

This accident occurred onboard an ASR conducting diving training. During the course of training, the false seat used in SRC-ops, had been lost when the attached line parted. At about 1200 the diver was dressed in a HeO2 diving rig and checked for leaks and voice change after commencing to breathe a 18.36% HeO2 mix. He then made a normal descent to the bottom, about 260 feet. He then commenced a search routine, using a 100 foot circling line, attached to the descending line. He made two complete circuits of the descending line and then returned to the decending line for ascent. He commenced a normal ascent in accordance with the Navy Diving Manual, after having been at a maximum depth of 262 feet. The stage had been lowered to about 200 feet prior to the diver commencing ascent. The diver reported stage in sight but was unable to get on it. He requested that slack be taken out of the descending line to facilitate his getting on the stage. Diver did not state he was having any other difficulty at this time. At about 190 feet, communication was lost with the diver. The diver was held at this depth for about two minutes while attempts were made to re-establish communication were futile. The Diving Officer then decided, with concurrence of the Commanding Officer, to bring the diver all the way up and treat him as a "Blow-Up". It was soon evident that conditions were far from normal as it required eight (8) tenders to pull him to the surface. As the stage broke the surface, it could be seen that the diver was on the stage with four turns of the descending line wrapped around his helmet and shoulders. Upon hoisting the stage with the diver onboard, it could be seen through the faceplate that the diver was apparently conscious and this was confirmed when the faceplate was opened and diver stated he was all right. While the helmet was being removed, the diver lost consciousness and was immediately rushed into the chamber where the two tenders completed undressing him. The total time to reach 165 feet in the chamber was 13 minutes due to two delays including locking out the two tenders. The rate of descent was limited to 25 FPM and descent time would have been seven minutes if no delays had occurred. The physical condition of the diver was still unconscious and in profound shock. Breathing and pulse rate were irregular. After the patient had remained unconscious for about twenty minutes, the Medical Officer locked into the chamber to physically examine the patient who was still in shock. After 30 minutes at 165 feet, treatment was carried out in accordance with table IV of the Navy Diving Manual. The patient was kept at 165 feet for a total of 120 minutes, with no sign of improvement, before commencing the ascent on Table IV. Ascent to 80 feet was completed and patient never regained consciousness. On schedule the chamber was started up to the 60 foot stop. At 78 feet ascent was stopped as the patient was failing rapidly. After about 6 minutes at 78 feet the patient expired.

This was the first death of a diver at sea breathing HeO2 in the U.S. Navy. The Board of Inquiry had many areas to explore as to the cause of the accident. A thorough investigation of the facts, questioning witnesses and reviewing instructions and procedures relative to diving, was commenced.

DIVIN' DAVEY'S COMMENTS

The personnel associated with diving operations at the time of this accident were in all respects qualified and competent. Additionally, the record shows that they reacted to the casualty without excitement or confusion and all equipment involved was in satisfactory condition as required by applicable specifications. The diver was in all respects qualified as a Diver First Class and was considered to be an extremely competent diver and in excellent physical condition. Why was he lost? Collective errors.

We would like to believe that the state of the art has progressed significantly since the loss of this diver and to further believe that the lessons learned through his loss will preclude a similar recurrence. Several recommendations of remedial action were made following the fatality and these are to be studied:

1. Revise the Diving Manual to include information concerning the high degree of tissue saturation on

deep helium-oxygen dives.

2. Revise the Diving Manual to include safety guidance in the following tenor:

a. No HeO2 diver should be brought to the surface directly unless:

(1) Line tending, or other sources, gives evidence of an imminent blow-up.

(2) The diver is without question unconscious or in extreme distress.

(3) The depth of dive is less than 150 feet and short in duration.

3. In the absence of any of the above considerations, the diver should be brought to his first stop where he should be assisted by the stand-by diver. (The stand-by diver should be able to communicate to the surface the nature of the difficulty.)

4. Revise the Diving Manual to include more specific instructions for the emergency use of the stand-by diver.

5. Revise the Manual to specify the use of a gunwale roller for the fairleading of lifeline and telephone cable in all deep sea diving operations.

6. Only the life-line/breastplate attachment clamp should be used in all HeO2 diving.

7. An additional pilot light and circuit be installed in the telephone ampliphier set to indicate continuity of the divers telephone set.

8. The assignment of the diver phone talker be made to a diver qualified for the type of dive in progress.

9. That BuMed direct the institution of a study of the adequacy of treatment table four, (for treatment of air embolism and bends), when a patient fails to respond to recompression therapy at 165 feet.

LESSONS LEARNED

The recommendations provided by a Board of Inquiry are amassed upon lessons learned through the particular disaster and should be carried out as preventative measures to possibly avoid, or reduce the magnitude of, such a diving accident in the future. Some of the recommendations by the board still have not been implemented at this time.

OLD MASTERS QUIZ

(ANSWERS)

1. 36 FPM
2. Proceed to first stop and have standby diver meet him there. Only after exhausting all means of bringing him to consciousness will you surface diver.
3. All the way, checked for leaks, and faceplate opened.
4. Leave diver on closed circuit for 20 min. whenever possible.
5. 40' in 3 min. (PPT 80).
6. 16% 02.
7. None. It would be considered dead time as long as he has not been shifted to 02.
8. Simply add 30 seconds to the stop.
9. Compute a new partial pressure table.
10. At least two.

GPO 862-492

OLD MASTER RETIRES

Master Chief CHILDERS enlisted in the Navy at New Orleans, La., in May 1943. After shots, seabag and hammock issued at Bainbridge, Md., shipped out to the Med as a gunner in the Armed Guard. Various assignments brought him to Guam where in June 1945 received his first on-the-job diving training in Agana Harbor using the modified MK III gas mask, Miller-Dunn helmet and the old reliable hand-pump. He completed Salvage Diver training at Bayonne in May 1949 and was assigned to NAS, Corpus Christi, Texas. In February 1951 he completed Deep Sea Diving School and returned to Corpus as diver in charge. The Korean war took him to Wonsan Harbor where he was operating with the GRASP when she was hit with shell fire and the SARSI when she hit a mine and sank. In 1953-54 he served aboard the COUCAL, and the GREENLET in 1954-55. Back aboard the COUCAL in 1955 he and Herb Casart as bell operators, with Chief Livingston as chamber safety observer, made a personnel transfer with the McCann chamber at 548'. This was then considered the record dive made with the chamber. Childers trained the deck divisions of a squadron of destroyers in the recovery methods of the Mercury Capsule and participated in the recovery operation of Astronaut/Aquanaut CDR S. Carpenter, and returned to the GREENLET for a second tour, where he participated in the operation of putting the McCann chamber to the deepest depth that it has ever been while manned. In May 1964 he completed the Master Diver Course in Washington receiving his certificate 1 June 1964. He served in SAFEGUARD as 1st Lt., Gunnery and Diving and Salvage Officer where he received the Secretary of the Navy Achievement Award for his part in mooring target ships and diving and salvage operations in all three phases of "Operation Sailorhat". In 1966 he reported to SRF, Subic as Diving and Salvage Officer, OinC of Second Class Diving School and Salvage Officer to Commander, Naval Forces, Philippines. In August 1967 he reported as Assistant Officer in Charge, Navy Experimental Diving Unit, Washington, D.C. and retired 31 July 1968.