

THE FACEPLATE



FEBRUARY 1964

DEEP SEA DIVING SCHOOL

and EXPERIMENTAL DIVING UNIT

WASHINGTON, D.C. 20390

NOTES AND COMMENTS: CDR C.H. HEDGEPEETH, CDR, USN OINC, DSOS

Some of you, from reading the last issue of Faceplate, may already be aware of my plans for this publication - an informal, yet authoritative publication for ALL HANDS either active in diving or interested. To accomplish this, Faceplate must receive and publish all types of items, from all geographical areas and from the various specialty groups engaged in under water work. Most of you are engaged in interesting work. Your work may be routine or commonplace to you. But could not someone else benefit from your experience? Or might not they have a solution to your problem? Is a factual report of a job "well done" to be avoided because it would appear that you are "tooting your horn"? No! An exaggerated, deceptive account - yes! An accident or near accident occurs and the rumors spread like wildfire. Wouldn't a factual narrative published with or without unit identification be better, so that others can avoid the same mistake. In short let's communicate.

ORGANIZATION CHANGE: The responsibilities and functions previously assigned in to Code 638/631 Bureau of Ships, for Swimming and Diving, have been transferred to the Experimental Diving Unit. For ease of administrating a new branch Code 636, Swimming and Diving has been established with Oinc DSOS/EDU assigned as Branch Head and LTJG T.E. KELLY, USN as EOD/UDT Officer. The civilian engineers, Mr. Murdoch and Mr. Foran, have been transferred from BUSHIPS to EDU. We hope by having everything under one roof here in Washington to provide you with better service in the future. Your mail, however addressed, will cross my desk and receive my full attention.

In the past I have both voiced and heard many complaints about the lack of support and failure to provide improved equipment or techniques etc. directed at both BUSHIPS and EDU. Some criticism in the past has been legitimate and deserved, but not all. Money, which is the basic ingredient for improvements, is made available to maintain present equipment or to satisfy a requirement established by the operating forces. BUSHIPS and EDU cannot generate a requirement regardless of how well our crystal ball is operating. But you can by writing via the chain of command to the Chief of Naval Operations spelling out as clearly as possible your needs and recommendations. Remember the next time you start to complain, that money is spent to satisfy a requirement and a requirement is established only by you - Gripe all you want but write that letter. This does not mean that all communications must be formal and addressed to OPNAV. I personally welcome and invite your ideas, and am not particular about format.

CURRENT PROBLEMS: The manufacture and supply of swimming and diving equipment is big business throughout the country. All of these suppliers like very much to sell their equipment to the Navy or barring that at least advertise that their equipment is being used by the U.S. Navy Divers, Famous Frogmen Or Has Been Tested By The U.S. Navy. A salesman approaches any one of you with his equipment and asks you to try it out. You put it on jump in the water come out and return it with or without comment. He now can legally advertise that this equipment has been used and tested by

the U.S. Navy. Perhaps no real harm is done if the equipment is good but what if it is a piece of junk. These same people also accumulate these testimonials as evidence qualifying their complaints to congressmen that the Navy is engaged in unfair practices by not buying their product, etc. Contrary to popular belief we do not have an approved manufacturer's list for the more critical items used in swimming and diving. Procurement is through competitive contract and each item must meet written published specifications. The regulator for instance must meet two critical requirements - low breathing resistance and be nonmagnetic. These regulators are stocked by SPCC and the stock level is based upon usage data. When the low level is reached SPCC invites bids from all known manufactures. The award of the contract is in accordance with existing laws established for government procurement, and provide for deliveries of pre-production models for testing. If the specifications are met then this regulator is stocked. The use of a regulator from any source except SPCC is dangerous and illegal. Even one of the same brand names from the open market may or may not meet the specifications. Since stock levels locally or at SPCC are based upon usage you can not expect to find a regulator in stock if you have been buying from the open market. The legal and moral responsibilities of the person in charge who uses, provides, or allows the use of regulators from any other source is also a serious item for consideration.

EDU is the only organization authorized to conduct human experiments in connection with swimming and diving. If you see or hear of a piece of equipment you believe to be superior let us know and we will check it out if we haven't already done so.

There is an "Ole Master Diver" here that claims that he can answer any questions pertaining to diving and is willing to conduct and answer feature in Faceplate if he is allowed to do so and remain anonymous. Address your questions to The Ole Master Diver % Faceplate, U.S. Naval School, Deep Sea Divers, Washington Navy Yard Annex, U.S. Naval Station, Washington, D.C. - 20390. Visit if in Washington - write if not - communicate.

GENERAL INFO: LT W.R. BERGMAN, USN, Assistant Officer in Charge, DSDS Faceplate goes to press this month with some good contributions from the fleet. We could do better with continued effect on your part. Rumor has it that two ASR vessels have had deep bell runs and accompanying moors to 850' and 942'; seems there would be good room here for a write up of the bell runs.

A real fine salvage report, from the USS CONSERVER, arrived this week and it has been incorporated into the curriculum to illustrate a fine all around salvage job. CONSERVER is not alone in the field of good salvage reports, there have been numerous reports that have provided fine instructional material for the DSDS staff. A new and compact method of assembling salvage reports for review by student salvage officers has been established and it is proving very profitable.

For the "old divers" returning to DSDS for requals it has been a quick check at the door on arriving to ensure they are at the right place. Major face lifting and habitability improvements have greatly improved

our school to the credit of the entire staff.

It is with regret that I write of the accidental death of WOLFE, Thomas Joseph, TML(DV), USN a fine diver, a true shipmate a Navy man in the truest sense of the word. WOLFE was in charge of training aids while here at the school and many future divers will benefit from his efforts in building and creating outstanding visual displays.

I will close with a fast one for retiring master divers. Hyperbaric chamber operation is really coming into prominence and the demand for qualified chamber operators is increasing. Indications from this vantage point shows a reasonable salary and fine working conditions either located at a university or hospital.

LCDR R. PESCOTT, USN, Assistant Officer in Charge, EDU
On my first article for the "Faceplate" from EDU, I started right off by making a mistake. In paragraph three I mentioned the first diver being treated on table four for "a slight shell nastron burn". What I didn't say and now will correct was that this diver also began receiving pains in his arms and shoulders at about fourteen feet, this was quite severe and this was the reason for the table four. After being beat about the head and shoulders by everyone I now stand corrected.

In January, BuShips set up a Swimming and Diving Code. CDR HEDGEPEETH now has additional duty as Branch Head of BuShips Code 636 (Swimming and Diving). Dick Murdoch and Mike Foran, the civilian engineers from the old Code 631, have moved from BuShips to EDU. This is the first move of a planned expansion to five civilian-type jobs in EDU within the coming year. LTJG Tom Kelly, assigned to Code 636, who relieved LT Steve Bullock in Code 631 is also here at EDU on additional duty.

Because of the additional diving work load in the expansion process, we plan to increase the number of diving billets in EDU by six. So you divers who wish to get in on the deep diving program, put down EDU on your rotation card. Do not write to EDU requesting we get you assigned here. Requests for duty here have to be handled through regular channels just the same as any other shore duty.

DIVING CASUALTIES - OXYGEN AND CARBON DIOXIDE TOXICITY - CDR R.D. WORKMAN,
MC, USN

Recent reports of diving casualties related to oxygen and carbon dioxide toxicity, in which disabling symptoms, unconsciousness or generalized convulsions occurred, point up the hazard to life. Violation of safety practices were involved in several instances, regard for which may well have prevented the occurrence.

In two recent cases of oxygen convulsions which occurred during the oxygen tolerance test, the subjects were noted to have been fatigued due to insufficient sleep for several nights. This may have been a contributing factor which should be elicited before the test is administered.

Obvious symptoms of oxygen toxicity were ignored by one of these subjects. He noted "fluttery breathing" for several minutes before notifying the chamber tender. This was caused by spasm of muscles of the chest wall

and diaphragm, and should have provided sufficient warning to prevent the oxygen convulsion which followed.

Both subjects were brought to the surface in the chamber while still convulsing. Since there is often breathholding during the convulsive episode, it is quite possible to induce air embolism by reduction of chamber pressure. The depression period following the convulsion can then mask the manifestations of air embolism with grave consequences.

It is advisable to only remove the oxygen mask to permit air breathing, and not surface the chamber until the convulsion has stopped. Reestablishing air breathing will usually terminate the convulsion. In certain instances when agitation and struggling occurs in the period following the convulsion, it becomes almost impossible for tenders to restrain the patient. The use of a barbiturate by injection will usually serve to quiet these patients to make possible their handling and avoid injury to themselves.

Another subject swimming with closed circuit scuba had symptoms of pressure on his eyes, headache, and urge to breathe forcefully, yet persisted in strenuous exertion on his swim. Dizziness, blurred vision and nausea followed to the point that he could not hold the mouthpiece. He was able to surface, called for assistance and was rescued.

Baralyme pellets which were extremely dusty, and used knowingly, had clogged the pores of the cannister screen to limit its performance in removing carbon dioxide. This, at a depth of 25 feet, could effectively shorten the time before onset of oxygen toxicity. The subject should have recognized the early symptoms and aborted the dive to avoid risk of convulsion and drowning.

Another subject with similar symptoms surfaced safely and was found to have wet, blue, caked Baralyme in his cannister.

Several cases have been reported in which generalized convulsion occurred in helium divers who were moderately active during the oxygen decompression phase at 40 feet on the stage. Communications were then lost when the diver became unconscious. In both instances the divers were surfaced unconscious, recompressed on a treatment table and recovered, one diver had warning of toxicity with muscle spasm and feeling of faintness.

Voluntary hyperventilation instituted promptly by a diver with such symptoms, may be helpful to eliminate carbon dioxide from brain tissues, decrease delivery of oxygen to the brain by decreasing its circulation, and thus limiting the effects of high oxygen pressure on brain function. This can be done more quickly thru ventilation of the helmet and is more promptly effective.

In another diver with onset of symptoms at the 40 foot oxygen stop, prompt shift back to helium-oxygen mixture caused symptoms to clear. Decompression was then carried out in the water on the emergency table for this mixture.

During deep diving on air at sea, a diver lost consciousness within two minutes after reaching bottom at 231 feet. The diver proceeded immediately to the work area without taking time to ventilate both his helmet and his lungs of carbon dioxide built up during the descent. The effect of retained carbon dioxide in brain tissues added to the nitrogen effect at this depth served to cause unconsciousness without warning. He regained consciousness again during ascent at about 90 feet and was able to complete decompression in the water.

MASTER DIVERS - LCDR L.R. CLARK, USN, BUPERS FUNCTIONAL TRAINING

The shortage of Master Divers throughout the Navy continues to be a problem. On 1 December 1960, the authorized allowance for Master Divers was 63. At that time there were 52 Master Divers on active duty, however 19 of these were serving in non-diving type billets, leaving a total of 30 vacant Master Diver Billets. To alleviate this shortage, the Master Diver Qualification Course was established at the Deep Sea Divers School, Washington, D.C.. This course was initially designed to provide training for those divers who had not had an opportunity to serve on both ASR and ARS type vessels and instruction was partially tailored to the individual's weak areas. The course revealed that many students were in need of refresher training in various phases of diving, particularly those cases in which the student had fulfilled the requirements as to type-vessel service, but had not served on one type of vessel for several years. Upon completion of the course, students stated that they felt better fitted to perform their assigned duties having had an opportunity to review where necessary and having received instruction in the latest techniques. Based upon this information, the course was established as a permanent requirement.

To date, 41 candidates have completed the Qualification Course. Even with this output, the number of Master Divers on active duty has steadily declined since 1 December 1960 due to achievement of commissioned status and transfer to the Fleet Reserve. As of 1 December 1963, there were 64 authorized billets and 41 Master Divers on active duty. Assuming that we require an excess of 33% of authorized allowance to cover Masters serving in non-diving type billets, we currently have a shortage of 44 Master Divers. Projecting the picture to 1 July 1964 based on available figures, there will be a shortage of 50 Master Divers. Due to the necessity of maintaining the high qualification standards required of Master Divers, no major reduction of requirements is contemplated. It has been noted however, that although many candidates attending the Master Diver Qualification Course performed in an excellent manner while under instruction, they would have been denied the opportunity of becoming Master Divers, through no fault of their own, for lack of type-vessel service requirements had it not been for attendance at the course.

In view of the continued critical shortage of Master Divers, BUPERS will consider waiver of one of the type-vessel service requirements, in the case of individuals whose performance is of such excellence as to warrant special consideration. In order to further alleviate the shortage problem, it is requested that Commanding Officers of diving-type ships and activities take a close look at their diving personnel to determine if any are potential Master Diver candidates.

NAVMED 816: LCDR BARSOUM, MC, USN, MEDICAL OFFICER DSOS

It has been noted that frequently the Experimental Diving Unit, U.S. Naval Station (Navy Yard Annex), Washington, D.C. receives copies of NAVMED 816 (Report of Decompression Sickness and all Diving Accidents) which have been duplicated on a duplicating machine instead of being typed carbon copies. Since EDU is the only activity that keeps these records on permanent file and uses them for reference, research, and teaching, it is very distressing to discover that many of those duplicated 816's become illegible with the passage of time.

It is therefore mandatory that all copies of NAVMED 816 submitted to EDU as per the U.S. Navy Diving Manual 1.9.8(7) be legible carbon copies.

These reports should also be submitted via the chain of command with covering letters appended to them. This would obviate the embarrassment of a command having no record of a specific diving accident when an inquiry is addressed to it by a recipient of an 816.

DIVERS COMPRESSED AIR: Because of the lack of consolidated information regarding purity standards for divers compressed air, the Deep Sea Diving School feels it is necessary to summarize some of the information available to it and disseminate it throughout the diving navy.

Atmospheric air may be compressed by means of suitable compressors to attain the pressure desired.

Compressor chambers may be either water-lubricated, oil (synthetic or natural) - lubricated, or unlubricated.

Proper precaution shall be taken to assure that only respirable (uncontaminated) air is admitted into compressor intake. This requires attention to the location of the compressor intake and to the provision of suitable intake screening or filtration.

Strict attention is necessary to the maintenance and operation of compressors, in accordance with operating instructions, with specific attention to cooling of compression chambers, and to condition of piston rings, oil consumption, driers, filters, and other accessories.

The air discharged from the compressor shall be subjected to whatever processes are necessary to remove any contaminants in order to attain conformance to recommended minimum standards.

Specifications and purity standards for high pressure compressed air for breathing purposes have not yet been formally established. The following are considered as tentative minimum standards for compressed air from oil lubricated compressors to be used in charging open - circuit scuba cylinders or directly supplying divers:

- a. Oxygen concentration: 20 - 21%
- b. Carbon dioxide: Not more than 0.1%

- c. Carbon monoxide: Not more than 0.001% (10PPM)
- d. Oil vapor: Not more than 130 micrograms per liter
- e. Be free of gross moisture, dust, odors, or other foreign material.
- f. Compressed air for use in cold environment situations should contain less than 0.02 milligram of water vapor/liter of gas at 70° F at 760 mmHg pressure. This is to avoid the possibility of moisture freezing in valves or lines with consequent stoppage of flow at low temperatures.

Test procedures for contaminants are simple provided a modest investment in the required equipment is made if not already on hand.

Determination of carbon dioxide may be made by using the Kitagawa Precision Gas Detector or equivalent.

Determination of carbon monoxide may be made by using the Bachrach Monoxor Tester, the Kitagawa Precision Gas Detector or equivalent.

The presence of oil may be determined by passing 100 liters of air through a No 41 Whatman filter and determining the increase in weight from the original weight of the filter. Air contaminated with 0.02 mg/liter of oil will add 2 mg to the weight of the filter.

REFERENCES:

- a. Standards for Compressed Gases. EDU 1958
- b. Tentative Standard for Compressed Air for Human Respiration. Compressed Gas Association New York
- c. U.S. Navy Diving Manual (NAVSHIPS 250-538)
- d. U.S. Navy Bureau of Ships Technical Manual (NAVSHIPS 250-000)
- e. BUDOCK INST 11012.67 "High Pressure Air Systems. Design Criteria No. 35"
- f. BUORD PUB OP 1806. "High Pressure Air Systems Ashore. Design and Operation".

LCDR R.F. BARRETT, USN, EDU PROJECT OFFICER

Due to a recent failure of a new design diver's non-return valve (FSN H-4220-604-6806), EDU was requested to investigate and correct the cause of failure. It has been learned that changes were made in the production valve which were not readily apparent during inspection procedures. A revised plan is being submitted to SPCC which will correct discrepancy. As soon as these valves are produced and ready for issue we will include the information necessary to procure them. In the meantime, the old style valve is safe for continued use.

CHANGE NINE TO BUPERS MANUAL: LTJG H.H. BAIMBRIDGE, USN, DSDS Change nine to BUPERS Manual, more than two years in the making, has effected a number of changes in diver training, classification, qualification standards, and administrative procedures for both officer and enlisted divers. I have spotlighted a couple of key changes below!

CLASSIFICATION OFFICER: All classes of Diving Officers have been included under this heading. Only three are listed as Diving Officers. They are: Diving Officer, General (NOBC 9312); Deep Sea (HEO2) Diving Officer (NOBC 9313); and Ship Salvage Diving Officer (NOBC 9314).

Three other Naval Officer Billet Classifications (NOBC), which include a degree of diving qualification, are included under this heading. They are: Explosive Ordnance Disposal Officer (NOBC's 9230, 9231, and 9234); Underwater Demolition Team Officer (NOBC 9294); and Submarine Medical Officer (NOBC 0090). It is noted that the qualification factors and requirements for the latter three classifications, are contained in Article C-7305, 7306, and 7309.

TENURE OF QUALIFICATION: This paragraph has been changed to clarify the terms "qualification" and "designation". Once an officer is designated in one of the categories, he retains such designation indefinitely unless it is revoked by the Chief of Naval Personnel, either upon his own request or on the recommendation of his commanding officer that his performance in diving duties is such as to demonstrate unfitness. He must be currently qualified (perform the same minimum dives in the same manner as enlisted divers.) when serving in a diving billet, in order to be entitled to diving pay.

CLASSIFICATION ENLISTED: Only six classes of enlisted divers are now authorized, these being: Master Diver (NEC 5341), Diver First Class (NEC 5342), Medical Deep Sea Diving Technician (NEC 8493), Salvage Diver (NEC 5344) (Mobilization only), Diver Second Class (NEC 5343), and SCUBA Diver (NEC 5345) (NOTE: BUPERS NOTICE 1500 of 5 October 1962, did not eliminate this classification. There are SCUBA Diver billets and qualified SCUBA Divers. This was discussed in a previous issue of Faceplate).

There are four NEC's which include a degree of diving qualification, collateral to their basic classification. They are: EOD Technician, UDT Swimmer, Underwater Photographer, and Hospital Corpsman Special Operations Technician. (NOTE: According to a recent BuMed Instruction, future HM Special Operations Technicians (NEC 8492) will be required to be graduates of the Medical Deep Sea Diving Technician course, as well as UDT school and parachute jump school. In case a candidate fails to complete either the UDT School, or Jump School, and provided he is otherwise qualified, he will be classified 8493). The term "diver" is no longer included or considered appropriate in referring to these classifications (although the new definition of the HM Special Operations Technician would certainly qualify him for this distinction). Sample page 13 entries for initial qualification and designation, of both categories, are also provided.

DESIGNATION: A provision is made that once an appropriate diver NEC has been assigned (By BUPERS on NAVPERS 1080-14) and an entry made on page 4 of the enlisted service record, it will not be removed because the divers qualification has lapsed, but will be retained as long as he is capable of being requalified. If he is no longer a volunteer, or is no longer capable of requalifying, the facts shall be reported to the Chief of Naval Personnel in order that the NEC can be revoked.

The enlisted (DV) designator, which is required to be placed, in parenthesis, after a divers rating abbreviation, will be removed when a man's qualification lapses, and will be restored when he requalifies (within one year of lapse date) in either case by the commanding officer, but must be reported immediately to the cognizant Personnel Accounting Machine Installation (PAMI) (NOTE: Although the assignment of the (DV) designator initially supports the assignment of the NEC, its primary function is to indicate the divers current qualification status, and it is distinct and separate from the assignment or removal of the NEC.

SPECIAL PROFICIENCY REQUIREMENT: A new sub-paragraph is added to point out that commands are expected to ensure that Divers maintain proficiency in all types of diving equipment, in which they are qualified, insofar as the individual activities authorized equipment allowance will permit. It is also stated that training and requalification diving should be planned to include salvage, search, and repair exercises using all the various types of diving equipment with which the activity is outfitted. Also a new sub-paragraph is devoted to free ascent training for divers. It states that this training should be given at Submarine Escape Training Tanks whenever possible and that under no circumstances will it be conducted at other activities unless a recompression chamber is readily available and the training is under the direct supervision of a Diving Officer and Submarine Medical Officer, assisted by well qualified instructors in free ascent techniques.

RECORDS: The only record required by this change is the Activity Diving Log (NAVSHIPS 1000). The Record of Dive Form has been deleted.

SUBSTANTIATION OF ENTITLEMENT TO SPECIAL PAY FOR DIVING DUTY: This paragraph requires that a personnel diary entry or Military Pay Order (DD Form 114) will be submitted in accordance with NAVCOMPT MANUAL. It also requires that a concurrent page 13 entry be made, in the service record of the individual concerned, in all instances where Special Pay for Diving is affected (initial qualification, requalification, change in diving status, etc. are some instances that would require such an entry).

THE "OLE MASTER DIVER":

Q. Will you delegate a policy for the tender in the chamber when O2 is given at 60 feet for the tolerance test after making the 112 foot pressure test. The tables make no allowance for multiple depth dive exposure. Some masters dive the tender 5 minutes O2 and some don't.

Robert C. Sheats, TMCM(DV)
NAVTORPSTA KYPTWASH

A. Glad to. The Deep Sea Diving School has been running an average of 150 pressure and O2 tolerance tests per year for the past twenty years. The tenders who run the tests do not breath oxygen and none of them within memory has ever been bent. So that should settle that argument. However, for those of our sophisticated colleagues who like to turn the diving locker into a forum of intellectual discussion, we can defend our position by saying that assuming that you do not exceed 12 minutes from the time you leave the surface until you are back up at 60 feet (usual time is about 5 minutes), then the equivalent nitrogen time at 60 feet would be less than 24 minutes (Diving Manual, Table 1-8). This means that the total bottom time at 60 feet would not exceed $30 + 24 = 54$ minutes, which is still well within the "no decompression limits". The reason that this procedure is not used for ordinary multiple depth dives is that Table 1-8 in the Diving Manual was not formulated or tested for this purpose and can only be used for repetitive dives until a thoroughly tested and tried multiple depth dive table is available. So at present except for the pressure and O2 tolerance tests it is mandatory to decompress for ~~minimum~~ depth attained on multi-level dives.

MAXIMUM

USS NEREUS DIVERS: BOB SHEATS, TMCM

Divers on board: LT G.W. MC MILLIN, Diving Officer, SHEATS, TMCM, SCHNEPE, GMC, STEVENS, BML, GRAY, BML, SWANSON, SFL; Second Class Divers, REESE, EN1, DENBOW, MLL, BRISTOL, BM2, GAGNON, SF2, ALLEN, MRFN, HOLLAND, BMSN, and KOESTERMAN, BM3. IRELAND, HM2 is our Diving Corpsman.

NEREUS divers have been performing the regular sub repair jobs in routine fashion, with the exception of frequency involved. We have had 17 underwater screw changes since 15 January, and with the fast tide conditions at Ballast Pt. during which landings must be made, it looks like we will stay in practice. The yard expense of changing a screw, even while the sub is in drydock, exceeds \$800 so it is becoming general practice to do the screw change in the water after refloating. We are using SCUBA almost exclusively on changes and the results are highly satisfactory. We anticipate doing a nuclear screw change before long using the techniques and equipment outlined in the NAVSHIPS TECH MANUAL on the subject.

Now for some suggestions, ideas, or what have you—we agree whole heartedly with the last Faceplate statement that a lack of interest in the information exchange exists. This will not be changed by talking about it. Why not coordinate a symposium of Master Divers and Diving Officers to be held on the respective coasts once a year to exchange ideas, diving techniques, equipment and technological improvements gleaned from the past year's experience? Every time I talk with an experienced diver for any length of time, I find myself using the knowledge that he has obtained thru his experiences. Operational schedules would, of course, prevent 100% attendance, but would still be a wonderful improvement over the present personal correspondence exchange upon which most of us depend.

We feel that the divers we are receiving in the fleet diving activities are insufficiently trained in SCUBA and shallow water techniques. This

is a natural reaction on our part, because 99% of our diving involves these two techniques; however, be that as it may, some of the inefficiencies are so glaring as to involve extended retraining periods to assure safety in the deeper water and open sea work. To sum it up, no matter how skilled and sincere the instructor, a two week period at First Class School cannot encompass necessary instruction to meet fleet needs. . Is it beyond reason to have students complete the five week curriculum for SCUBA diver at Key West?

In eight years of instructor work in SCUBA one tends to adopt certain fixed attitudes toward respective importance of SCUBA phases, but, above all, the one thing that stands out in individual confidence, and class evaluation reports is free (controlled free) ascent. BUPERS NOTICE 150Q calls for "knowledge" of free ascent techniques. A bus leaving DC on thursday night for New London would involve only one day loss in the present training schedule. We here on the west coast are interested in the reaction of senior divers to such an addition in training. At the present time only two men on board the NEREUS have had any free ascent training. In our experience in the past eight years where emergency ascents has to be made from relatively deep water, on no less than five occasions did the previous free ascent training prove it's value in divers reaching the surface safely! The buoyant assisted ascent would prove useful in covering open sea requalification training for submariners and reconnaissance lockouts.

We are using an underwater communications device that you may be interested in. It is manufactured in DC at 7800 MacArthur Blvd., by the General Aqua Tics Corp. It consists of a 4 inch flat transducer with 60 feet of low resistance cable and costs \$29.23. We utilize this in ballast tanks with either shallow water gear or scuba. If the flat side of the transducer is placed where it touches the throat and lower edge of the jaw bone it will receive and send very clearly in water. We add about 200 feet of low resistance cable and use the standard diving amplifier as the power source by connecting on to a jackplug.

Delbert Thomason was one of the divers who worked on the sewer project, and as I personally know his qualifications I was particularly interested in his attitude toward the civilian equipment. Two of the most impressive modifications that could be made are the shifting of the control valve to the helmet where it can be easily reached and not in the road for accidental bumping during work, and the breast plate modification where the hands can be easily used over the head.

USN SCHOOL DIVER SECOND CLASS - NAVSTA SAN DIEGO: LTJG L. DAVIS, USN
The Diver Second Class school was formed by BUPERS in April 1962 as a component of Service Schools, U.S. Naval Station, San Diego. The Diving Officer Billet, Diver Billets and equipment including the old wooden hulled YFN-563 and one ex-harbor defense, 50' utility boat rigged for diving were transferred from the Naval Repair Facility industrial diving unit to the status of a BUPERS controlled Diving School under the administration of Officer in Charge, Service Schools, with Commanding Officer, U.S. Naval Station having military jurisdiction.

The primary mission of the school was to train personnel to the level of Diver Second Class. After several months lapsed the first class of Diver Second Class plus a class of divers to be "Cross-trained" in the use of SCUBA was convened in early September 1962.

From April 1962 until July 1962 the school did not have a regularly assigned Diving Officer or Master Diver. The Officer in Charge, U.S. Naval School, Patternmakers and Molders, LT COLTRIN, was assigned the collateral duty as Diving Officer. The Master Diver, C.T. MARCELL, BMC(DV), USN reported in July 1962 and commenced making preparations for full time diver training. In late August 1962, CHBOSN L. DAVIS, USN Deep Sea HEO2 Diving Officer, reported from the Service Force Tug, TAKELMA, and took charge of the school as the first regularly assigned Diving Officer in Charge.

Personnel assigned on the date of convening the first class of trainees in September 1962 were as follows:

CHBOSN L. DAVIS, USN	Officer in Charge
C.T. MARCELL, BMC(DV), USN	Master Diver
W.B. FREEZE, HML(DV), USN	Medical Diving Technician
J.A. CIRELLI, BMC(DV), USN	Diver First Class
A.J. POISSON, SFC(DV), USN	Diver First Class
J.C. MORGAN, SFC(DV), USN	Diver First Class
U.D. BIGNARDI, SFC(DV), USN	Diver First Class
K.W. FERGUSON, BML(DV), USN	Salvage Diver
H. DANTINE, BML(DV), USN	Diver Second Class
C.T. PEAT, III, SFL(DV), USN	Diver First Class
R.M. THOMAS, EN1(SS)DV, USN	Diver First Class
A.E. SPEER, MRL(DV), USN	Diver Second Class
L.E. MURRAY, IC1(DV), USN	Diver First Class
P.K. VAUGHN, TM2(SS)(DV), USN	Diver Second Class

Since September 1962 - CIRELLI, MORGAN, ~~and~~ DANTINE have been transferred to the Fleet Reserve, and POISSON, FERGUSON, SPEER and VAUGHN have moved on to other Naval Activities. Shipfitter PEAT has advanced to LDO status and has been transferred to USS MOLALA ATF 106 as Chief Engineer.

The original school staff allowance was one Diving Officer and ten enlisted billets. Since that time, due to increased training requirements, the enlisted billets have been increased to fourteen. We still lack administrative staff billets such as yeoman and storekeeper.

Our training requirements now include, Diver Second Class (NEC 5343) 8 weeks, SCUBA Diver (NEC 5345) 4 weeks, Lightweight Equipment Indoctrination 2 weeks, Helicopter Rescue Air Crewman Limited Underwater Breathing Apparatus Indoctrination 2 weeks and the usual requals and wet dives. Training has been conducted on board YFN 563 moored at pier 6 Naval Station, the cff shore area near Point Loma, San Diego, and at the Naval Station swimming pool. As of January 1964 we have trained about 140 men as divers.

Due to limited facilities and equipment we are figuratively stretching the bulkheads with the present training requirements. Our future plans

include (1) conversion of a 263' X 50' - 1800 ton YFNB to the status of a YDT containing the entire school facility (plus a training tank) the request is now in the hands of the CNO. (I hope the reaction is favorable). (2) The employment of an LCM8 (A 73 foot craft with 4 main engines and a L.P. air system already installed) for diver training employing two bouyant and free ascent training bells. It is planned to install a H.P. air system and a recompression chamber in the craft for use in conjunction with the ascent training.

Several new staff members have completed instructor school and have reported in recent months. The status of staff personnel as of January 1964 is as follows:

LTJG L. DAVIS, Diving Officer	Officer in Charge
C.T. MARCELL, BMC(DV), USN	Master Diver
F.G. JENSEN, BMC(DV), USN	Master Diver
E. WISE, BTCS(DV), USN	Diver First Class
D.L. POTTER, BMC(DV), USN	Diver First Class
U.D. BIGNARDI, SFC(DV), USN	Diver First Class
F. DELANEY, SFC(DV), USN	Diver First Class
R.R. FALCON, BML(DV), USN	Diver First Class
H.A. CRIGER, BML(DV), USN	Diver First Class
V.T. BELL, DCL(DV), USN	Diver First Class
R.M. THOMAS, EN1(DV), USN	Diver First Class
B.M. YODER, MML(DV), USN	Diver First Class
L.E. MURRAY, ICL(DV), USN	Diver First Class
M.W. LUHMAN, MLL(DV), USN	Diver First Class
W.B. FREEZE, HML(DV), USN	Medical Diving Technician
F. COFFEY, MM2(DV), USN	Diver First Class

Due to report:

R.C. LEIBOL, SFC(DV), USN	Diver First Class
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DIVING NEWS - USS CHANTICLEER: R.H. THOMPSON, SFC(A)(DV), USN

In glancing through the past issues of "Faceplate", it is noted the "CHANTY BOAT" has had very little contributed. This has not been because of lack of interest, but because of our heavy operational commitments. Nothing as exotic as our hero "MIKE", but plain dreary ASR duty. At present time we are trying to decide as to where we want our home port, San Clemente or San Francisco. We spend more of our time there than San Diego. We haven't set any records that we know of but for information, we did make 27 HE02 dives of over 260 feet within a week.

We do have a good diving gang, consisting of: MORRIS, R.K., GMCS, CROOKS, G.K., BM2, DURAN, J.J., BML, FREEMAN, B.W., EN2, HURLEY, L., SFC, SPICKERMAN, G.L., SFP2, JACKSON, F.W., BM2, MC KEONE, R.M., SFM2, MINTE, A.H., SFP2, THOMPSON, R.H., SFC, TOOLE, A.C., GMGL, VINCENT, J.F., EN2, WILEY, L.L., BM2, WOLLENBURG, A.E., DCL, WARMOUTH, R., HML, JONES, G.W., ICFN, KNEPP, R.M., MR2, MURDOCK, J.W., SFL, MUSICK, L.W., BM3, STROM, D.A., EN3 and VON GUENTHNER, C., BM3. Our diving officers are LCDR J.M. TOMSKY, Commanding Officer, LT D.G. DISNEY, Executive Officer, LTJG F.D. WAGNER,

Operations Officer and CHBOSN R.R. RESCH, Diving Officer. Recent transfers were BAILEY, R.S., BMC, to USS PIEDMONT, COFFEY, F.M., MM2 to NRF San Diego and CARSON, J.R., SFC to USS SPERRY. Due to report are ROMAINE, W., EN1 from NCTS and BLEWETT, W.R., SFL from USS NEREUS.

Our Master MORRIS has his papers in requesting a March date, so it looks like another (short) trip to WESTPAC for him.

BRIEF HISTORY AND PRESENT OPERATIONS OF THE USS BUTTERNUT (AN-9):

LTJG W.E. KEEGAN, III, USNR, PIO OFFICER

The USS BUTTERNUT (AN-9) is the only net layer of her class, ALOE class, still on active duty. The only other net layer the USS NAHANT (AN-83), which was written up in the October Faceplate, is the last of the COHOES class.

The BUTTERNUT is named for a tree of the Walnut family which produces a sweet-flavored edible nut. She was built by the Lake Washington Shipyards, Houghton, Washington and placed in service 3 September 1941. By our calculations she is the third oldest commissioned Navy ship still on active duty. She has deployed all over the Pacific conducting various net laying and underwater operations and returned to the West coast 15 August 1952, 10½ years later. From 1952 to 1957 the BUTTERNUT was assigned to the control of Commandant 11th Naval District and served as training ship and in various net, buoy and underwater operations.

The BUTTERNUT is 163 feet long with a 30 foot beam. Her most distinctive feature are 2, 18 foot horns protruding upwards from the bow which were used to stream anti-submarine nets across strategic harbors during WWII. Her crew consists of 4 officers and 48 men. She displaces 760 tons and her two 1200 shaft horsepower diesel engines can attain a maximum speed of 13 knots.

In 1957 she was assigned to the operational control of the Naval Ordnance test station, China Lake and Pasadena, California as support ship for their "Pop-Up" program, i.e., the test and development of Polaris missiles at San Clemente Island.

She continues to serve in that capacity at the present time, although her operations are no longer restricted to "Pop-Up". Her other activities include towing, Hydrographic Surveys and test platform for the testing and recovery of new torpedoes and other underwater operations.

Approximately five years ago she was fitted out with a recompression chamber. However, because the majority of diving and divers were working at San Clemente on the "Pop-Up" project it was transferred to the Island permanently.

The BUTTERNUT has billets for 10 enlisted divers and one diving officer. The divers assigned to the big "B" spend most of their time TEMADD on San Clemente and the Diving Officer fills the billet of Executive Officer aboard ship.

USS FULTON (AS-11): W.M. LU CREE, MLC(DV)

During the month of October the USS FULTON made one of her quarterly cruises which took us to the Navy-Pitt football game in Annapolis, Maryland. Wish all you ASR, ARS, AD and AR type sailors could have been there to enjoy this fine AS-11 type duty. After a week end stay in Annapolis we sailed down the Chesapeake Bay to that fine city of Norfolk, Va. for two wonderful weeks of light diving for the "Orion" while she was in the yard. Around the 10th of November we departed Norfolk and sailed to the land of BEAUTIFUL WOMEN and much to DRINK (Bermuda). After three days in Bermuda we sailed back to that hard to take SEA DUTY along side of the STATE PIER, New London, Conn., All this and getting diving pay \$80.00 and sea pay \$20.00. Makes a nice round pay check of \$100.00. Where's the pay raise?

Here are the men that have left and the ones that are still here.

Departed

MOORE, Massey L. SFl(DV) to Fleet Reserve 15 August 1963. Now living in Hyattsville, Maryland.
LEONCYK, BMC(DV) to Kodiak, Alaska
PAYNE, BMC to Shore Patrol, New London, Conn., dropped his designator DV

Divers on Board

1ST CLASS

CWO R.R. JAILLET, USN, DV Officer
LU CREE, W.M., MLC
FRATZ, E.C., SFl (elFratzo the great)
GARDNER, A.E., BML
NESBITT, A.B., BMC
BONO, J.A., HMCS (MDT)
FREEMAN, E.G., HM2 (MDT)

2ND CLASS

NOBLE, J.A., MRC
BASS, R.D., TM3
NELSON, W.H., BM2
MURPHY, R.J., EN3
DEMAIO, G., BM2
BATHURST, J.L., BM3
SHOPPEL, S.J., PMC
TRUMBULL, R.F., BM3

No Master's aboard this fine duty ? ? ?

The following MEMORANDUM dated 7 Oct 1963 might help some divers from being sent to that long green table.

7 October 1963

MEMORANDUM

From: Repair Officer, U.S.S. FULTON (AS-11)
To: Commanding Officer, U.S.S. FULTON (AS-11)

Subj: USS TUSK (SS 426), STBD Propeller; loss of

Ref: (a) CO, USS TUSK (SS 426) ltr Ser 429 of 21 September 1963

1. Background: As reported by reference (a) subject propeller was lost

at 171915Q September 1963 during mooring operations at pier 2, U.S. Naval Submarine Base, New London. The propeller was subsequently found by FULTON divers on 1 October 1963 and recovered on 2 October 1963. The location when found was on a bearing 204° T distance 200 yards from the head of the pier 2, U.S. Naval Submarine Base, New London.

2. Findings: When found the propeller was in good condition with small nicks and nut keeper loose inside. The locking lug of the nut keeper was bent and peened and the threads of the nut keeper hold down bolt were stripped and disengaged from the propeller nut. The propeller key was missing from inside the propeller, however, a propeller key stamped "USS TUSK" was found a short distance away from the propeller. This key was in good condition. The forward face of the propeller hub was worn and shiny around the outer perimeters.

3. Opinion: The loss of the propeller occurred as a result of the following events.

a. When installed the propeller taper was larger than the taper of the propeller that had been removed. This allowed the propeller to go onto the shaft farther and to come up hard against the after edge of the installed rope guards. This fact was not noticed by the installing divers.

b. The propeller nut and nut keeper were installed properly but, as stated, the propeller was not up on the taper for the reason given in paragraph 3a.

c. During at sea operations from 3 September to 17 September the continual rubbing of the propeller hub on the rope guard during ahead operations resulted in the loss of the rope guard. The propeller then was free to move up onto the taper. This movement is estimated as 3/4" and resulted in the propeller disengaging from the propeller nut keeper locking lug. Then during any subsequently backing rotation, the propeller was free to shift aft violently, striking the locking lug, and driving it from the nut. It was then only a matter of time until the propeller was lost. It is suprising that some shaft squeal was not noticed on Sept 3rd as a result of the hub rubbing on the rope guard.

d. As reported by reference (a), bells to the Starboard Shaft just prior to the loss of the propeller were, back one third, stop, ahead one third, stop, back full. It is my opinion that the propeller was lost during the back one third bell.

4. Corrective Action: During all future waterborne propeller changes, rope guards shall be removed prior to the installation of the propeller. In this case if the rope guards had not been installed the propeller would have gone home on the taper, the nut and keeper would have been properly installed and the propeller would not have been lost. I do not recommend any other changes in our procedure.

W. E. TRUEBLOOD

RECENT HAPPENINGS HERE AT THE SCHOOL:

Welcome aboard to LTJG W.E. O'SHELL, SPEER, H.L., SFCM, and CURRAN, R.M., HMC. Chief SPEER picked up star #2 shortly after reporting aboard. He will replace Al SHIRCLIFFE, BMC as senior instructor on 19 June, when the Fleet Reserve will have another member. SHIRCLIFFE has a job with the Hyperbaric Dept. at the Bowman Gray Medical School of Wake Forrest University, Winston - Salem, N.C.

Wally BENT, QMC relinquished his badge and gun recently. Our new high sheriff is Fred COLLINS, SFC.

The instructors lounge has taken on a brand new look after the face lifting it received over the holidays. Congratulations to Chief LIDDLE and all those who worked so hard to accomplish this well needed change.