

# THE MINE AND DEPTH CHARGE TROUBLESHOOTER

▶ UNDERWATER LOOK  
AT DRILL MINES  
PAGE 7

▶ JOB RIGHT TOOLS  
PAGE 9

▶ EYES ON MINES  
AND MINEFIELDS  
PAGE 6

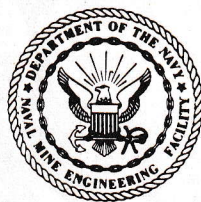


AN OFFICIAL NAVORD PUBLICATION

RADM MARK H. WOODS, USN  
Commander, Naval Ordnance Systems Command

The Troubleshooter is an official NAVORD publication which disseminates informative articles pertaining to assembly, testing, safety, configuration, maintenance, and delivery of U.S. Naval mines and depth charges. When the word DIRECTIVE appears as a part of the mine heading of the article, the content that follows contains information requiring action that is mandatory and shall be acted upon promptly. The Troubleshooter issue is your authority for such action.

Troubleshooter is also the journal for the Rudminde Program, a world-wide defect-reporting system, which promotes a high level of readiness in U.S. Naval mines and depth charges. Problems with these weapons are to be reported via NAVORD Form 8500/1 (2-68) to the Naval Mine Engineering Facility as directed by NAVORDINST 8500.3.



CDR ROLAND H. ALMONRODE, USN  
OIC Naval Mine Engineering Facility

HAINES A. MILLER  
Technical Director

STAFF

THOMAS R. NEVITT  
Editor

LCDR LYAL M. STRYKER  
Associate Editor

CWO P.E. DECHENE  
Assistant Editor

# TROUBLESHOOTER

ISSUE 4-70

1 JANUARY 1971

## CONTENTS

### REGULAR FEATURES

<i>FL Shoptalk</i> . . . . .	1
<i>Publications Report</i> . . . . .	2
<i>Hot Stuff</i> . . . . .	4
<i>Job Right</i> . . . . .	9

### ARTICLES

#### General Interest:

<i>MSA Wants You</i> . . . . .	1
<i>Mineman Detailer</i> . . . . .	1
<i>Mercury Cell Stowage</i> . . . . .	2
<i>Arming Wire Package</i> . . . . .	2
<i>Back From The Wars 28 Years Later</i> . . . . .	3
<i>Kilo Stands For Keflavik</i> . . . . .	5
<i>26th Mine Conference</i> . . . . .	6
<i>Minefields With Ice Cover</i> . . . . .	6

#### All Mines:

<i>Anything You Need To Know</i> . . . . .	8
<i>Batteries vs Test-Set Repairs</i> . . . . .	8
<i>Hazard Warning</i> . . . . .	8
<i>Keep Air Sources Safe</i> . . . . .	8

#### Drill And Test Mines:

<i>Switch Delay Test</i> . . . . .	4
<i>Keeping Pinger Serials Straight</i> . . . . .	4
<i>Fisheye's View of a Drill Plant</i> . . . . .	7

#### Air-Laid Mines: Control Unit Nonexplosive

<i>Mk 52/55: Battery Mix-up</i> . . . . .	4
<i>Testing Control Box</i> . . . . .	5
<i>Hubble Extractor Tool</i> . . . . .	9

#### Mk 56: New Wrench Socket

<i>For A Better Grip</i> . . . . .	9
------------------------------------	---

#### Mk 57: Close Up And Fly Right

	8
--	---

### COVER

As if in amazement at finding this Mk 25 Drill Mine standing on its nose this scuba diver leaves the bottom for the surface as he observes its recovery. But not really although it is unusual for a drill mine to take this stance when it is dropped. Evidently it did not have any adverse effect on its performance. This is one of a number of Mk 25s and 36s dropped during an exercise in waters off NAVMAG Subic. For more see page 7.

PUBLISHED BY THE NAVAL MINE ENGINEERING FACILITY, YORKTOWN, VIRGINIA, 23491

Troubleshooter is published quarterly and printed by NPPSO-5ND, in accordance with NAVEXOS P-35. Contributions, address changes, and matters concerning distribution should be addressed to: Editor, The Troubleshooter, Naval Mine Engineering Facility, Yorktown, Virginia 23491, USA. Requisition additional copies from the Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, Pennsylvania 19120, in accordance with NAVSUP 2002. Distribution outside the Department of Defense must have prior approval of the Naval Mine Engineering Facility.

**MSA WANTS YOU**

If you are an Officer or Chief Petty Officer, E-7 thru E-9, that hasn't been to B school in the last six years or so, the 5-week Mine Shop Administration (MSA) course offered by the Mine Warfare School can bring you up-to-date. Now don't stop here and make the snap judgment the course can't be beneficial to you. Pause for a moment and just think about all the changes to hardware and philosophies that have taken place in the last decade.

You don't have to be someone that has been outside the mainstream of mine warfare for the course



to be useful. People who are involved in mines day in and day out just do not have the time to be trained in the full spectrum of all the changes that have taken place. The MSA course gives you a chance to step back, collect your wits and get an understanding of what's been happening in the mine world.

Along with the introduction of new mines, the course includes a general

class on the Navy Directives System, Correspondence, Records and Reports. A detailed class is held on the above items that are specific to Ordnance. As an administrator, you will be involved in paperwork no matter how much you dislike it and a better understanding will make it easier to put up with along with making you more efficient.

The General Supply System and that which is specific to Ordnance is also taught. This is another area that is not nearly well-enough understood by the people who use it.

Other areas that are covered include the mine test and maintenance program, mine readiness, ammo handling, test-set repair program mine countermeasures, and minefield planning.

The course includes a two-day visit to the Naval Mine Engineering Facility for a better understanding of the part the Facility plays in your job.

The course appears in the formal school catalog and can be requested from BUPERS at time of transfer. If your present command will allow you the time and funds for TAD it can request a quota for the next or subsequent class directly from the school. It is suggested that commands consider the small investment of TAD funds for the large dividends of having a more updated supervisor or manager.

Past students have been very pleased with the course and have expressed the opinion that most personnel in an administrative position would benefit from it. The school schedules a class each quarter although some classes have not convened due to the lack of enrollees. So be thinking about this course when transfer time comes or see if your command won't make a TAD investment in you for a better administered shop.

**CONTROL UNIT NONEXPLOSIVE!**

Some confusion still exists as to what explosive classification should be imposed on Mk 66 control units in shipment. The confusion lies between the current OP 2165 which classifies the Control Unit Mk 66 as a Class-B-explosive while NAVORDINST 8020.19A, 23 April 1970, advises that the control unit is Ammunition Nonexplosive. The NAVORDINST is the authoritative word. The contrary OP 2165 is under revision by NAVORDSYSOMHQ and concurrent with its release will be a Change 1 listing ammunition that has been reclassified as Ammunition Non-explosive. The Mk 66 will be included on this list, which should erase doubts from the minds of everybody.

**MINEMAN DETAILER**

BUPERS now has a mineman in its organization as the detailer for all Mineman Master, Senior, and Chief Petty Officers. This detailer is Mineman First Class B. W. Luker of whom a lot of you know. Luker's responsibilities are:

- ▶ Control the assignment of MN personnel (by NEC's where appropriate) to the Enlisted Personnel Distribution Office (EPDO).
- ▶ Assist in the assignment and rotation of Chief Petty Officers, issue transfer directives as necessary to fulfill requirements.
- ▶ Be conversant with the enlisted personnel factors of related equipment, requirements, planning, training, operations, etc. which affect the MN rating in meeting present and future Navy requirements, and bring to them benefits of close association with all stations having billets for minemen.
- ▶ Fill quotas of B school insuring optimum utilization of both quality and quantity.
- ▶ Identify problems which affect the MN rating.

At present all E-6 and below are made available to an EPDO (LANT or PAC) for further assignment. It is expected that all minemen will be assigned directly by BUPERS in the near future, but the effective date is not known at this time.

Here is the way that Luker explains to E-7s through E-9s how their next duty assignments are made by BUPERS. Approximately four months prior to your Tour Completion Date, your Duty History and Preference Card (NAVPERS 1306/34) is reviewed and

*Continued on page 2*

**The FLEET LIAISON STAFF**

Naval Mine Engineering Facility, Yorktown, Virginia 23491

The FL Desk responsible for this Shoptalk column stands ready to assist minemen everywhere with their problems, large and small.

Lt. Paul W. Hanks, Department Head  
 CWO B. E. Wharton      CWO P. E. Dechene  
 CWO O. G. Smith      CWO R. W. Padgett

**COMMERCIAL**  
 (703) 887-7336 / 887-7337

**AUTOVON**  
 953-7336 / 953-7337

# SHOPTALK

Continued from page 1

attempts are made to assign you to one of the choices you have listed on your card. However, assignments must be made as needs of the service dictate. MN1 Luker has also noted that many chiefs have not submitted a Duty History and Preference Card. Lack of this card makes you eligible for assignment "Anywhere World" as outlined in Chapter 28 of the Enlisted Transfer Manual. Cards should be submitted:

- ▶ Now, if you have not already done so.
- ▶ Upon reporting to a new duty station, and no later than six months prior to your tour completion date.
- ▶ Anytime you desire to change your choices.

Sea tour lengths are: E-9, 30 months; E-8, 36 months; E-7, 36 months.

Shore tours are: E-9, 48 months; E-8, 42 months; E-7, 36 months.

If you have any questions be sure you write or call TCMC A. Friedrich or MN1 B. W. Luker at this address:

Chief of Naval Personnel (Pers-B2162)  
Navy Department  
Washington, D. C. 20370  
AUTOVON: 22 48325/44805

## MERCURY CELL STOWAGE

What is the stowage temperature of your mercury cell batteries? Are you aware of the fact that if you store mercury cell batteries between +10 and +20° F you will be saving yourself work, the Government money and still be within the present temperature stowage requirements?

The reason we are bringing this situation to light is because a review of battery reports shows that some activities are stowing their mercury-cell batteries in cold stowage (+20 to +50° F).

By reviewing OP 1452 (battery section), you can see that everyone will be better off if all our mercury cells can be stored on the high side of the frigid temperature zone (+10 to +20° F). Some monitoring will be necessary to insure that the storage temperatures for these batteries are kept within the 10 to 20 degree range.

## ARMING-WIRE PACKAGE

Arming Wires Mk 4 that once were packaged 100 to a tube are now coiled up and individually wrapped in bags. This was done to allow per-unit issue and make it more convenient as far as logistics is concerned. However, it did make the un-packaging operation more time consuming and if you are not aware of this, you may find your readiness posture somewhat hindered at the last moment.

What takes all the time is the removal of three strips of tape that are used to keep the wires coiled. The tape is very difficult to remove by hand. One method is to use diagonal cutters. Use precaution and release the wire slowly because if it is allowed to uncoil unhindered a flying end may inflict injuries.

At present, in response to requests from fleet mine assembly activities, a study is being made to determine the feasibility of repackaging wires in tubes, as before. If it can be done economically, it should ease the job of having odd quantities of wires ready when you need them for delivery.



Readers of Publications Report should be aware that a number of Marks, Mods, and OAs of mines were declared obsolete in the final months of 1970 by CNO and NAVORDSYS COMHQ letters. This action will necessitate obsoleting technical manuals identified with those mines and associated publications such as Ordalts, ODs, OSRs, etc. All are identified in Troubleshooter Bulletin 239. Also affected portions of manuals pertinent to mine systems in general, such as OP 1452, will require deletion when it can be economically scheduled. Meanwhile here is the latest report of mine pubs recently released or well along in the mill.

### Recently Distributed

- OP 1452 VOL 2 REV 4 CH 2: Adds B-tests Hydrostatic Switches Mk 41 and 42.
- OP 1452 VOL 5 REV 4 CH 0-2: Adds B-test for Magnetic Pole Detector Mk 10.
- OP 2718 VOL 1 REV 2: Mine Mk 57 Assembly (Service)
- OP 3388 VOL 1 REV 1 CH 1: Test-Set Qualification Adds instructions for protecting meters in storage and shipping.

### Released to Print

- OP 1860 VOL 1 REV 3 CH 1: Alters Set 456 Calibration procedure.
- OP 2572 VOL 2 REV 3: Mine Mk 56 Assembly (Drill)
- OP 2608 VOL 1 PT 2 REV 1 CH 1: Updates standard operational settings.
- OP 2718 VOL 2 REV 2: Mine Mk 57 Assembly (Drill)
- OP 3504 VOL 4 REV 4 CH 1: Updates battery and spacer requirements.

### In Final Preparation

- OP 1765 REV 4 CH 1: Shifts requirement for visual clock inspection to Extender Installation Job Sheet.
- OP 1892 REV 3 CH 1: Shifts requirement for visual clock inspection to Extender Installation.
- OP 3232 REV 0 CH 1: Adds operational assembly chart, prohibits use of limited standard arming wires, deletes instructions on drill-mine carriage by aircraft.
- OP 3504 VOL 5 REV 2 CH 1: Adds test equipment allowance.

### In the Works (in order of intended release)

- OP 3379 VOL 1 REV 1: Maintenance Guide
- OP 1452 VOL 2 REV 4 CH 4: Adds B-test for Anchor Mk 56 Safety Device.
- OP 1860 VOL 6 REV 0 (Secret): Adds Sets Mk 435-0, Mk 436-0, and Mk 450-0.
- OP 1452 VOL 4 REV 4 CH 1: Alters B-tests CD-8, CD-10, CD-14, and CD-17.

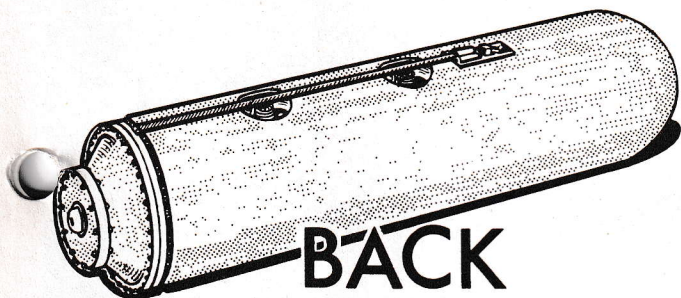
\* This report is designed to keep readers abreast of what is going on behind the scenes concerning technical manual projects. It is not designed to compete with OP 3504 VOL 7, which is the only list of technical manuals, revisions, and changes authorized for fleet use.



LTJG J.R. Swager, of EOD team holds Mk 12 extender removed from mine.



Japanese Ground Self Defense Force engineers load veteran Mk 12 mine onto Navy truck in the fishing village near Nagoya, Japan after it had been disarmed.



## BACK FROM THE WARS 28 YEARS LATER

**T**ROUBLESHOOTER has reported several inert mines being washed up on beaches or recovered from the waters of the Pacific but it remained for Japanese fishermen to catch a live one in their net to give EOD personnel something more than a dry run. The mine was one beyond the memory of most minemen aboard today, a Mine Mk 12 laid by a submarine during World War II in December 1942. It was the U.S. Navy's first influence mine to see wartime service.

The fishermen brought their find to a pier in a small fishing village about 20 miles south of Nagoya where an EODGRUPAC Detachment from Yokosuka identified it as explosive loaded and dangerous. Japanese police cleared the area, moving the villagers 300 meters from the area where a sea wall afforded them protection, before the detachment started the work of disarming the mine. Those in the detachment included LT J.D. Conner, LTJG James L. Swager, BM1 W.F. Lackey, and EN1 J.A. Taylor. They received the cooperation of members of the Japanese Ground Self Defense Force. The mine was disarmed in July 1969 without incident and removed to NOF Yokosuka.



A Japanese Self Defense Force Officer looks on as BM1 W.F. Lackey (left) and LT J.D. Connor, Explosive Ordnance Disposal men, disarm explosive loaded Mk 12 mine.

The EOD report of the disposal operation included the statement that the mine's Mk 12 extender showed that the mine had armed in normal sequence and no cause of a malfunction was evident. The interior of the mine was described as in fair condition with no flooding although considerable moisture was present as a result of being submerged for more than 26 years. In conclusion: "The EOD team members were impressed by the cooperative spirit, attitude, and friendliness of villagers and local police. The presence of LT Kurokawa, CO of JMSDF EOD Unit, was also a significant contribution to the smooth, safe, and expeditious completion of the task."

Thanks to CWO F.P. LaFleur, NOF Yokosuka, who, with Lieutenant Conner, dug into the "Mine Warfare Information Summary of Allied Mines In Japanese and Korean Waters" dated January 1947 to come up with the information that in December 1942, on two different occasions, the USS SUNFISH laid fields of Mk 12s in the vicinity of the entrance to Ise Wan, Honshu, approximately 30 miles south of Nagoya.

That is how he explained the strange fish in the Japanese fisherman's net.

# HOT STUFF

## Battery mix-up

MINES MK 52/55:

Dear Butts:

Recently discovered Batteries BA-310/U with jackets that represented them as BA-324s. The batteries were identical in appearance with BA-324s, but Test Set 127 Mod 4 was not fooled. It rejected the batteries when set up to test BA-310s. Others should be warned that batteries identified as Union Carbide BA-324s with manufacturing date 11-66 may be in fact BA-310s with a wrong jacket identification. If in assembly of 52/55 mines your BA-310s turn out to be BA-324s you can be sure you will have a short-lived mine.

MN1 WAB

Dear WAB:

Thanks for passing along information of your discovery of batteries incorrectly jacketed. Happily these 11-66 BA-324s are at the end of their shelf life even if stored frozen. But what is more important is that your experience shows the importance of testing all batteries before putting them on the line for mine assembly. When it comes to batteries never ignore the job sheets in OP 1452 VOL 1. Jackets may lie but electrical B tests tell it how it is. The operational C test would also catch an error but don't rely on it for then you will have the extra work of tearing down an instrument rack to find the offending battery(s). We are looking in Rudmines or B & C Reports on this one, Sailors. To keep a high standard of mine maintenance we need reports on each discrepancy.

*B. Arnaclebutt*

## Switch delay test

DRILL MINES:

Dear Barney,

Where did it go? The instructions for testing and adjusting the hydrostatic switch of the Mk 64 Mod 3 delay switch, is what I'm asking about.

MN-3 WDG

Dear WDG,

Change 1 to OP 1452 Volume 3 has added a drill section to the pub. This is where you'll find the instructions for testing, but not adjusting, the hydrostatic switch. The current policy is, if the proper reading is not obtained, do not adjust . . . reject the delay switch.

*B. Arnaclebutt*



## Keeping pinger serials straight

FSMT MINES:

Dear Chief Butt:

It has been noted that certain serial numbers for the Transmitter Mk 62 Mod 0 have been duplicated. Where this duplication occurs the one number invariably has a nameplate identifying its source as Yorktown and the other Forest Park. Further identification by manufacturer's name as well as serial number is keeping things straight until corrections are made.

MNC SND

Dear SND:

Duplication does exist but poses no problem. It occurred when transmitters assembled at WPNSTA Yorktown in 1965 were assigned serial numbers 201 through 1200. Subsequently transmitters manufactured by NOS Forest Park were assigned serial numbers 201 through 1300. These serial numbers will not be re-assigned. If it is necessary to identify specific transmitters in the range of duplication when preparing reports, correspondence, etc., add the letter Y to the serial numbers of transmitters with the Yorktown name plate, or F to the Forest Park jobs. This will satisfy all needs for specific identification.

*B. Arnaclebutt*

## New wrench socket

MINE 56:

Dear Chief:

No wrench socket in the tools for the Mine Mk 56 will remove or secure the latch-bolt nuts on the all-up crate for that mine. What is needed is a deep socket that will reach the nut when it is secured, or when you want to secure it.

MN2 LBS

Dear LBS:

The socket you need to do the job is a 12-point deep socket 11/16" with 1/2" drive 7S00228. The FSN is 9Q5120-243-7343. The wrench handle to use with the socket to loosen latch bolts is already listed under Common Requisites in OP 3504 VOL 5, a reversible ratchet handle with 1/2-inch drive 7H00030. This handle with its ratchet can also be used to snug down the latch-bolt nuts, after which specified torque must be applied by torque wrench. All this is spelled out in the assembly manuals.

*B. Arnacletts*

## Testing Control Box Mk 39

MINES MK 52/55-2, 3, 4, 5, 6:

Dear B. Arnacle:

During recent testing of a number of Control Boxes Mk 39 Mod 1 using Test Set Mk 340 it was noted that lamps 1 through 7 located on test set panel differed in their sequence of operation. OP 2567 requires that all lamps be lit at the end of the test cycle with no sequence specified. A majority of units evaluated yielded a lamp operating sequence of lamps 1, 2, 3, 4, 5 and after a brief period, lamp 7 would light and remain

lit until the control box neared the end of the test cycle; then lamp 7 would go out and shortly thereafter, at the end of the test cycle, lamp 6 and then lamp 7 would light. The units in question had the same lamp sequence with the exception that lamp 7 did not light shortly after lamp 5 lit but did light at termination of test cycle. Does it make a difference?

LOS

Dear LOS:

Since OP 2567 designates no sequence for the operation of panel lights on Mk 340 test set no sequence is required, only that all lights are lit by the end of the test cycle. Therefore when lamp 7 does not light shortly after lamp 5 but does light at the end of the test cycle the variation in sequence is acceptable and the control box should not be rejected because of it.

Your reported failure of lamp 7 to light after lamp 5 is due to an overlap of live-time and dead-time circuit operation. The live-time function is monitored by timing circuits in the test set. Any failure of the live-time circuit to operate within design limits will be detected then.

*B. Arnacletts*

## KILO STANDS FOR KEFLAVIK



MOMAUANT's Kilo Detachment at Keflavik stands muster for its photograph with its departing (CWO Ron Chapin) and its newly arrived (CWO Sam English) Officer in Charge. For Sam English, to coin a phrase, it was a case of out of the frying pan into the ice box. Sam came to Iceland from Subic Bay, P. I. where most of the time was spent in supporting Southeast Asian Operations. If he has lost the pleasures of the tropics, at least he has gained the serenity of the long arctic nights in which to cogitate on the question "why me". Detachment officers and men, as they posed for this photo 19 August 1970, are, left to right:

Standing: CWO R. C. Chapin, MNSN H. V. Benton, MN3 K. J. McWeeney, MNSN R. W. Hadel, MN3 T. E. Harris, MN2 S. A. Silker, MN2 F. R. Hockett, MNSN R. J. Moran, MNSN M. E. Rich, CWO S. A. English. Kneeling: MN3 M. A. Nicholson, MN2 D. M. Dunning, MN1 G. D. Arnett, MNCS M. H. Sanborn, MN1 L. E. Dufilho, MN3 D. L. Doane, and MN3 W. A. Glenn.

# 26th MINE CONFERENCE

THE ANNUAL mine conferences hosted by the Naval Mine Engineering Facility at the Naval Weapons Station, Yorktown, Virginia have been steadily gaining in importance to the mine community. The 26th Annual Mine Conference held in October 1970 was considered the most successful in their history, both technically, and from the standpoint of attendance and participation--a history dating from 1956 with the establishment of NAVMINENGRFAC.

Those who wonder about such things have questioned how twenty-six annual conferences could be held in fourteen years. The answer is simple. They were not always annual affairs. The early conferences were limited in subject matter and attendance. They were held at irregular time as circumstances prompted with representatives of the then BUORD, NOL, and NAVMINENGRFAC meeting in closed session at Yorktown. Later they became quarterly sessions with a certain amount of fleet representation. Annual conferences were not held until 1967 and have been held annually ever since. So there have been 26 mine conferences but only four of them annual affairs.

In the early days attendance was limited to representatives from the Washington bureaus and NAVMINENGRFAC gathered about a table. At the 23rd Conference attendance had outgrown the space provided by the NAVMINENGRFAC conference room and the most recent meetings have been held in a converted mess hall, in the Skiffes Creek section of the Weapons Station. Number 26 not only included representatives from CNO and NAVORDSYSCOMHQ, but also agencies such as NOL, NAVAIR, NWHL, and NAVMINENGRFAC. Fleet command staffs were represented as well as far-flung mine shops. The result was a frank and profitable exchange of ideas, concepts, and philosophies in the field of mine weaponry; a sounding board for all echelons. The top echelons voiced its plans and hopes while the lower echelons voiced their problems. Everybody came away with a better understanding of what the other half was doing.

One of the prime desires of the fleet has been for unity of content and format of mine publications. The progress being made to meet these desires for standardization was the subject of several speakers and their points were emphasized by a display of newly-released mine publications. Other displays included samples of the proposed mer-cad batteries, handling equipment, and a breadboard model of the Mk 26 firing mechanism. The firing-mech model was so admired as an instruction aid by the Naval Schools Mine Warfare representatives that the Facility presented it to them.

The true measure of the success of the conference is that those attending judged it to be the most fruitful in the memory of those who have attended mine conferences for many years. But no one at the Facility is considering this success the last hurrah. The next mine conference will be one that anyone associated with the mine program would find to be of great interest. New programs, and systems are coming down the road, not to mention improvements to current systems being considered for adoption, such as applications of the Integrated Logistics Support plan. The next year promises to be a busy one and every effort will be made to make it worth while if you plan to attend the Annual Mine Conference No. 27.

## ANYTHING YOU NEED TO KNOW

Data backing up OP 3504's seven volumes puts a wealth of information in the hands of minemen. This reservoir of information is constantly under scrutiny for updating. The figures: The computerized mine material management-data system now controls over 7000 line items, with approximately 100 data elements registered against each item, which means there are nearly one million individual entries of technical data now in the automated data retrieval system for underwater mines. The result is more than 166,000 lines of published computerized data now available to users.

## MINEFIELDS WITH ICE COVER



### NAVAL MINEFIELD CONFERENCE

The 14th Technical Conference on the Naval Minefield, which has become the major annual forum for exchange of information by the minefield community, was attended by more than 400 military and civilian leaders in development of minefield technology from this country, Canada, and the United Kingdom. Problems of Minefields with Ice-Cover, was the theme of the Conference's eight sessions, which were hosted by the Naval Ordnance Laboratory, White Oak, Maryland, in January. Navy Responsibilities in the Arctic was the subject of the address by the Chief of Naval Operations, Admiral Elmo R. Zumwalt, Jr. at the dinner meeting at Fort McNair. Those at the head table at the banquet, from the left, are: Rear Admiral J. A. Dare, Commander of Atlantic Fleet Mine Forces; Dr. G. K. Hartmann, NOL Technical Director; Admiral Zumwalt; Captain W. L. Zimmerman, office of the CNO; Dr. J. B. Hersey, Deputy Assistant Oceanographer for Ocean Science; and Captain G. G. Ball, NOL Commander.

*photo by F. X. Smith, courtesy of The Oak Le*



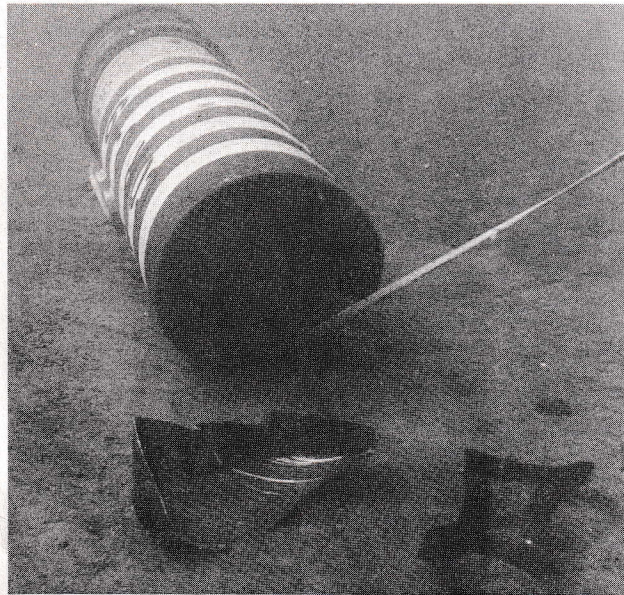
# A FISH'EYE'S VIEW OF A DRILL PLANT

**M**INEMEN are familiar with the appearance of Drill Mines Mk 36 and Mk 25 when they go aboard an aircraft but their appearance when they reach the bottom is a rarer sight. Here are a few of a number of underwater photos by NAVMAG Subic EOD divers that give you that view. The mines were planted in the course of qualification required by air groups that have a mine laying mission.

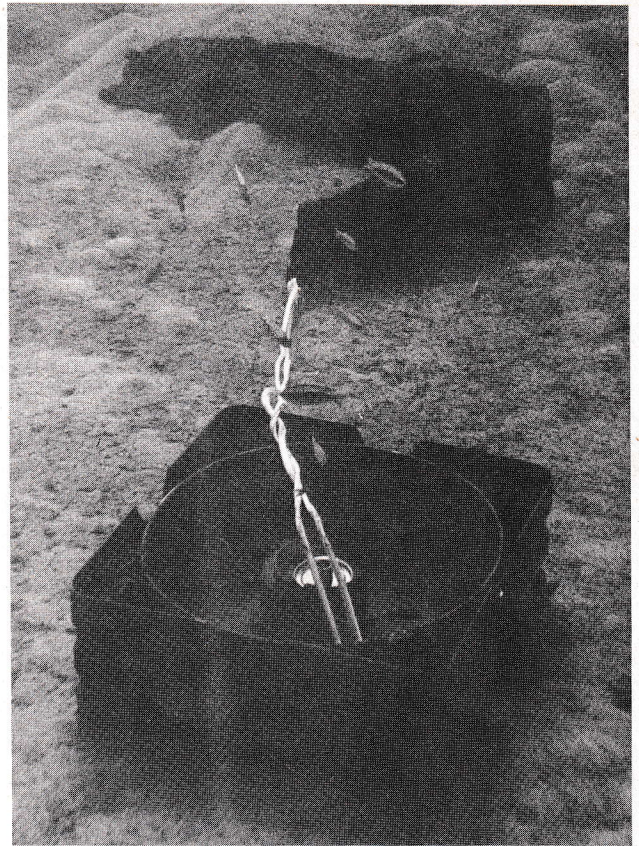
The photos were taken at water depths of from 40 to 60 feet. In all photos the mines are shown just as the EOD divers found them, including the cover photo. Thanks to EOD driver-photographers for their interesting photos and also to LCDR Don DeCrona for making them available.



Which goes to prove just how badly fouled a recovery line can get. Apparently the mine rolled over so the line appears to be coming from the wrong end.



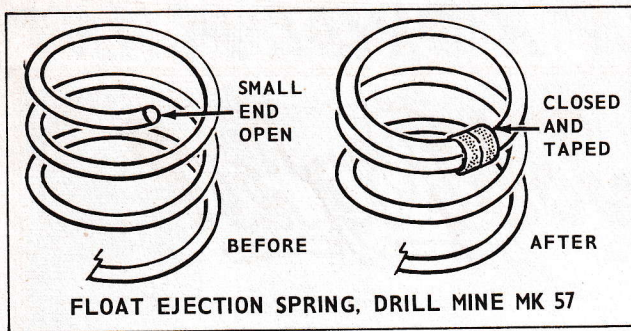
Another view showing the nose of the Mk 36 with the tangled line showing that the nose fairing does tear off. That's a drill-float spacer, folded up, nearby.



Box fin and parapack housing came off in one piece. Can you identify the other piece of gear trailing across it? The fish, if you look closely, appear to be curious too.



What all started out so neatly packed ends up as debris on the ocean floor. The parachute with a tangle of risers, the pack cover, and fairing can be identified here.



## CLOSE UP AND FLY RIGHT

### DRILL MINE MK 57:

THE small end of the conical spring 9S00157, which ejects the float Mk 16 from its well in the drill section of the Mine Mk 57, can foul the float fin and cause Mk 55 signal failure upon mine actuation. The last coil of the spring is open and can hook over the fin, preventing ejection of the float. To eliminate the possibility of this occurring with existing springs use a length of 1-inch waterproof tape, to bind the free end of the spring to the last coil before installing in the base of the drill sections' float well.

This is only a temporary fix for existing springs with open ends. The spring has been redesigned and those coming from new procurement will have the end ground flat and closed, so taping will not be needed.

Other factors seen as contributing to signal malfunction are the erratic behavior of soluble washers, and leakage in the Mk 16 float and Mk 2 drill section. The pink soluble washer, which was erratic, has been changed to blue 9W00045 to resolve soluble washer problem. To eliminate float leakage different types of adhesives and sealants are being evaluated. When suitable materials are identified the stockpile of Mk 16 floats will be reworked to make them leak proof. Elimination of drill section leakage is more difficult. To end it leak test pressures have been increased and specifications drawn up in greater detail to direct manufacturer attention to leak-suspect areas such as welds and castings.

## HAZARD WARNING

A defect that causes a normally nonflammable paint remover to become highly flammable and dangerous has been uncovered in material issued by Charleston Servmart. Although there is no requirement for mine shops to use this material, minemen should be aware of this hazard just in case it has been included in shop supplies inadvertently.

The paint remover is identified as 9Q 8010-160-5800 (1 gal), and 9Q 8010-286-2861 (5 gal), TT-R-251, Type III, Class B manufactured by W. M. Barr, Memphis, Tenn. Do not use this paint remover. If you find any, store it in accordance with procedures for flammable liquids until disposition can be effected.

## KEEP AIR SOURCES SAFE

WITH mine shops making more and more use of air-operated devices the possibility exists that the use of central air compressor plant installations may become more prevalent in shop areas. With this possibility in mind it is well that policies set down by Naval Facilities Engineering Command, LANTDIV NOTICE 11310, be called to the attention of minemen.

In brief the policy is that when central plant air is used for such operations as sand blasting and spray painting the air from the same lines should not be used for respiratory purposes. Such air for breathing should be supplied by compressors at the site of the operation rather than that piped from a distance.

This is a safety precaution that results from an accident in which two sandblast operators using air-line respirators were asphyxiated. Other casualties that resulted were serious. The cause was an oil fire in the air system at the central plant that allowed the products of the combustion to be drawn into the air lines. Before those at sandblasting site were aware of it the damage was done and a minor mishap turned into a tragedy.

This may have been an isolated misadventure but it was enough to make the Naval Facilities Engineering Command, Atlantic Division, issue its prohibition against using air-line sources for respiratory air. If separate air sources cannot be readily provided, project submittals are required to correct the situation.

Insurance against respiratory contamination of respiratory air calls for such precautions as keeping air inlets away from sources of contamination such as fuel storage tank vents, and engine exhausts, and limiting the use of kerosene or naphtha for cleaning internal compressor parts, etc. The use of adequate filters ahead of face masks is a necessity. If you have any doubts at all consult your safety people to make sure.

## BATTERIES VS TEST-SET REPAIRS

### ALL MINES:

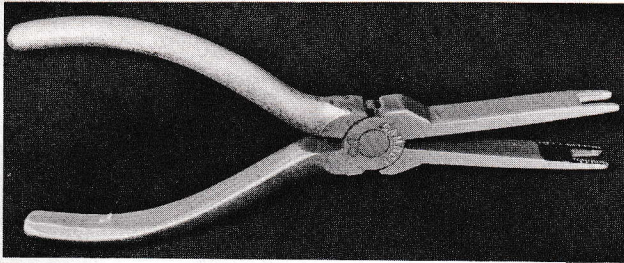
Test sets powered by dry-cell batteries are subject to damage if stored for an extended period with the batteries installed, so don't do it. Battery replacements are cheaper than test-set repairs.

Credit for recommending this action goes to MN2 Gilbert Mason at Subic, who discovered that a leaky BA-1328 had played havoc with the battery adapter for a Test Set Mk 265 while it was standing idle on a shelf. Besides the labor involved in cleaning corrosion from the adapter contact plates, time was lost in performing tests when he needed to use the set.

The same thing could happen to you, so don't stop with Test Set Mk 265 but check all your sets that contain dry cells. That includes mine test sets Mks 2, 3, 4, 25, 27, 32, 41, 237 and 303, and depth-charge Test Set Mk 93. If any will be stowed unused for more than a month, stow them without batteries. The batteries should also be removed when the sets are packaged for shipment.

# Do You do this Job Right?

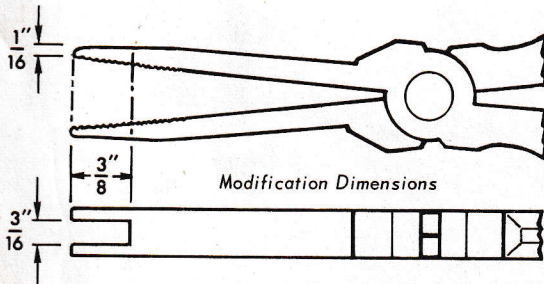
## TOOLS TO HELP YOU



### HUBBELL EXTRACTOR TOOL

#### MINES MK 52/55:

The Hubbell connector is a simple foolproof connector as long as it is out in the open. But when it is tucked away in the search coil tube of Mines Mk 52/55, it is almost impossible to disconnect by hand because there is the problem of getting your fingers into the access hole of the search coil housing to take hold of the connector. One answer is simply to take hold and yank. That works for sure! But it also damages the delicate hook-end contacts of the connectors. This damage to the connectors and the consequent destruction of CA-800 or 1800 series instrument cables has been attributed to the difficulty encountered in the removal of the Hubbell connectors.



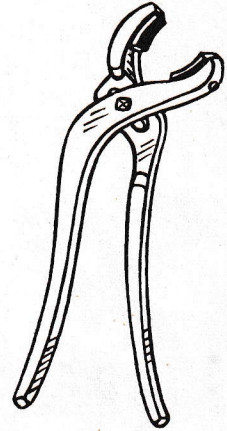
The idea is to lift the spring loaded sleeve out of the connector hole. Now the hook end of the connector can be manipulated to effect a safe removal. To make the job easy construct an extraction tool like the one shown here. This tool was designed by NAVMINENGRFAC by modifying a pair of 6-inch flat nose pliers 7P00098. The sketch gives all critical dimensions and the rest is simple. The result will be a more convenient tool than the bent wire Hubbell extractor that

## FOR A BETTER GRIP

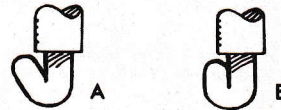
#### MINE MK 56:

A more convenient tool than pliers with tape-wrapped jaws for holding the hydrostat during assembly or disassembly of the Release Pin Mk 5 Mod 0 is the electrical connector pliers, 7P00518, FSN 5120-624-8065. The pin is that used with Parachute Release Mk 23 Mod 1 on the mine Mk 56 flight gear.

Use of the pliers is described in OP 2572. All that is required is to substitute the electrical connector pliers for the one with the taped jaws. As it is shown here the pliers has a slip joint to keep its smooth gripping jaws parallel. It was designed to loosen threaded electric connectors without marring them and is 9 inches long.



those with a long memory will recall as appearing in Troubleshooter 4-63 which also had some excellent illustrations of how a Hubble connector operates.



HOOKS

If the connector hook is spread before it is inserted no tool will help much so the first thing to do when using Hubbell connectors to connect CA-800 or CA-1800 series instrument cables to search coil or hydrophone of Mines Mk 52/55, is to take a good look at the connector's hooks before plugging one in. If it is partially open as in A above, close it as it appears in B.

If you don't it will act like a fish hook when you try to extract it and be so badly bent that to close it will no doubt break it, ruining an instrument cable.

*the Editor*

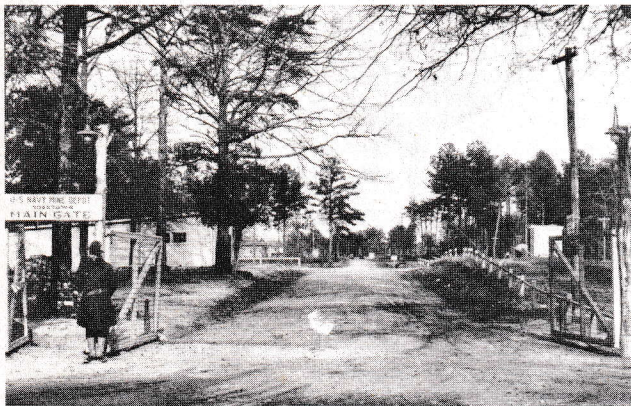
# MINES, MINEMEN & MEMORABILIA

HISTORICAL SERIES No. 6

## THE NAVY MINE DEPOT

Occupied by the tasks of North Sea Barrage, the Navy had been too busy to attend the future of mine warfare. The United States stood on the doorstep of this new science, but no Navy organization existed to become responsible for experimental development and design.

The immediate problem was to find a home for excess Mk 6 mine material, as well as for the new mines that were sure to follow the Mk 6, and so the Navy Mine Depot was established. A commission of three admirals, after considering several sites, selected an area comprising approximately 12,000 acres of hard and marsh land, with 1000 acres under water, about two and a half miles above Yorktown, Virginia, on the York River. Two prime reasons for the selection were the land was cheap, and it abutted on the York River, a self-cleaning river with water depths to accept drafts of naval shipping. The Navy Mine Depot was established at Yorktown by presidential proclamation 7 August 1918.



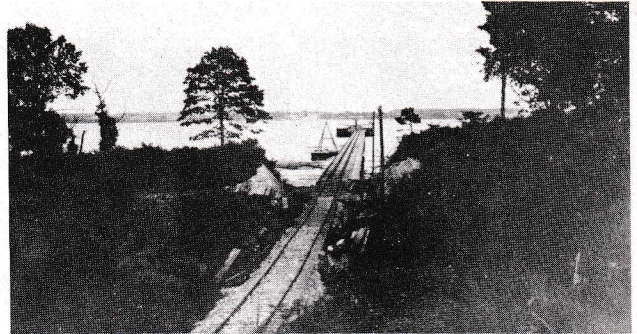
The Navy Mine Depot's main gate looks nothing like the Weapons Station main gate today but as always a Marine stands watch.

The raw material was a tract of land divided into large colonial plantations composed of open farmlands and bearing names associated with colonial history. Such plantation names as Ringfield, Bellfield and Roosevelt are still linked to weapon station topography. Officers' quarters are on Indian field (Kiskiack Village) and Halfway House, a colonial ordinary or tavern on Old Williamsburg Road, is the name of the Officers' Open Mess.

What remained was to construct facilities for the depot on these lands: warehouses, loading plants, magazines, barracks for the Marine Guard and supporting establishments. Construction was started at once. By 1920, the depot began to take shape, and mines which had been stored in the open now were under cover. The uneven terrain lent itself favorably to protective locations for these buildings. The effectiveness of the site was demonstrated in the depot's one serious accident in 1943. At that time an explosion that destroyed a cooling plant caused only minor damage to other buildings.

The name of the depot was changed to the Naval Mine Depot on 1 July 1932. At that time the title of the officer in command was changed from Inspector of Ordnance in Charge to Commanding Officer. On the depot's 40th anniversary, 7 August 1958, the name was changed to Naval Weapons Station.

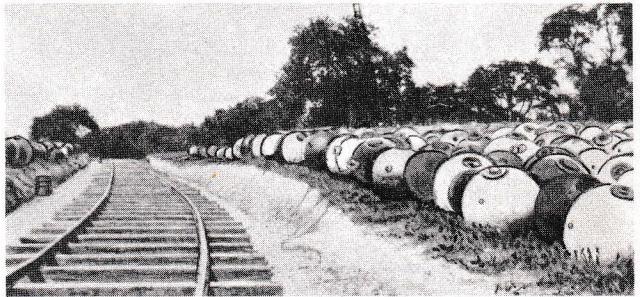
Changes were not limited to those on paper. With the advent of World War II another expansion took place, and by October 1943, 81 projects representing a cost of \$11,078,680 were under construction. Aboard the depot in 1941 were 15 officers, 19 enlisted men and 1181 civilians. By 1943 the figures had jumped to 94 officers, 890 enlisted men plus 250 marines, and 2300 civilians. The mission



The first pier to serve the Naval Mine Depot was built during 1919-1920 before the days of the Colonial Parkway which was cut through along the river's shore in 1933. A second pier was built in 1940 and expanded by new construction in 1963 to look as it does today.

was to store high explosives, to fill, service, and store mines, depth charges, warheads, antisubmarine devices, torpedoes, and aircraft bombs and their component parts, in order to maintain a supply and provide a reserve for the U.S. Fleet.

Prior to 1941 the personnel of the mining section consisted of one officer. The working force for the operations of this activity was drawn from labor crews of other activities on the Depot. Then seven different mark and modifications of mines were being assembled. In 1943, six of the seven mine types then in production were virtually obsolete,



The first arrivals of World War I mine material at Yorktown's Naval Mine Depot were stored in the open awaiting completion of storehouses, and the Depot was working on eleven mine types, all but one of them being acoustic or magnetic. Five officers in mine assembly, seven officers in mine inspection, two ordnancemen and 120 enlisted men were assigned to assemble and test these mines.

The Naval Mine Engineering Facility moved to the Weapons Station in 1956 after being established by order of the Secretary of the Navy. Personnel recruited from Ordnance, a Mine Service Test Group, Quality Evaluation and other departments, as well as from the Naval Ordnance Laboratory, White Oak, Maryland, formed the nucleus of the new organization.

The tradition of mines is upheld at Yorktown today although a far cry from those days of the Navy Mine Depot and the birth of the Mine Mk 6.