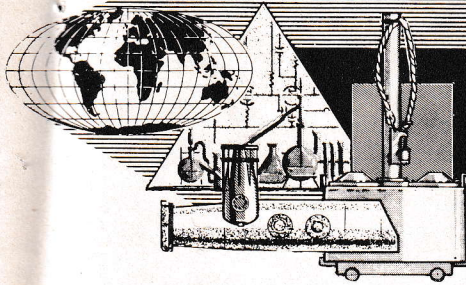


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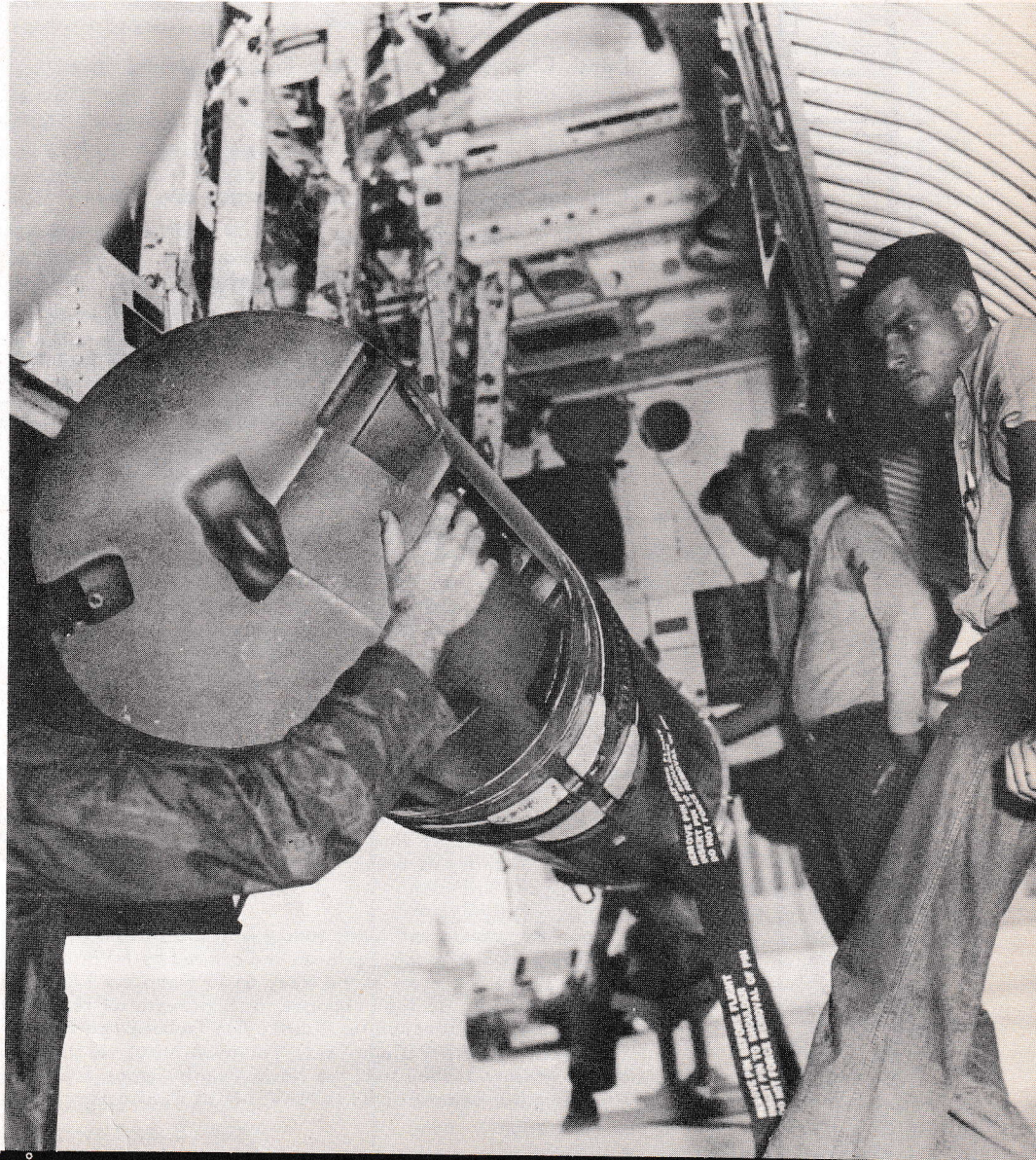
*Am* 43  
No. 4-63



*mine and depth-charge*

# THE TROUBLESHOOTER

- ▶ Keeper Wires
- ▶ Bibliography No. 3
- ▶ Depth Charges  
Dangerous



AN OFFICIAL BUWEP'S PUBLICATION

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*in this issue . . .*

*mine and depth - charge*

# THE TROUBLESHOOTER

Published by the Naval Mine Engineering Facility, Yorktown, Virginia  
Frederick F. Jewett, CDR, USN... Officer-in-Charge  
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**COVER PHOTO:** Presaging early publication of another new aircraft mine-loading check list by NMEF, men assigned to PATRON 30, NAS/Jacksonville (Fla.) perform fit tests of Mk 10 mine in Navy P2H. Former designation of P2H was P2V-7. New check list will cover loading all mine types P2H can deliver, will be designated Supplement B to NAVWEPS OP 3232.

1 OCTOBER 1963

By direction of the Chief, Bureau of Naval Weapons, Troubleshooter is an official BUWEPS publication. Technical content pertinent to the assembly, testing, and delivery of US naval depth charges and mines is both authoritative and directive in nature, and reference may therefore be made to a particular issue as the authority for adoption of ideas promulgated therein. Content which does not fall in this category is reasonably verified before publication but is not to be considered official nor representative of official BUWEPS doctrine.

Troubleshooter is also the official journal of the Rudminde Program, a world-wide defect-reporting campaign designed to promote a high level of undersea warfare readiness in US naval depth charges and mines. The Program's basic instrument is NAVWEPS Form 8500/5 (1-63). Everyone who encounters problems with these weapons is encouraged to report them via this form direct to the Naval Mine Engineering Facility as prescribed by BUWEPSINST 8500.8.

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**THE OFFICIAL JOURNAL OF THE RUDMINDE PROGRAM**



# RUDMINDE REPORT TO THE FLEET

## Down but not out

It seems like only yesterday that a visiting MNC leaned forward in his chair and stared ye T-Shooter editor straight in the eye. "What Ordalt Program?" he growled. "There hasn't been an ordalt on mine gear in years!"

Actually, of course, it wasn't yesterday. It was the day before. And while we'd rather be able to say that this had happened a couple of years ago, our spirits were nonetheless brightened by the fact that, with our visitor still seeing red, we were able to reach into the desk drawer and hand him a copy of Ordalt 10,089 fresh off the press.

"What about that!" we said.

"15 September 1963," he muttered. "Well I'll be. . ."

## . . . and we'll be, too

Now the coming of Ordalt 10,879 may not signal a millennium. Yet if things go as planned, it may well mark the first published step on the way to a complete new look in mine warfare readiness through improvements in mine materiel maintenance. We hope to have more to say about that in future issues.

Meanwhile. . . shifting from a high-flying plan to the more solid concept of a bird in the hand. . . we can also report that a second ordalt will have come off the press by the time you read this, and a third one will be on its way through.

The first, Ordalt 10,089, will alter some Clock Starters Mark 1 Mod 3 to Mark 1 Mod 13. Ordalt 10,088, the second, will provide alteration of a certain number of Extenders Mark 12 Mod 3 to Mark 12 Mod 12. The third, Ordalt 4377-A, will alter Control Units Mark 66 Mod 0 to Mark 66 Mod 1. From this our sharper readers will have deduced that the resultant clock starters and extenders will be new mods. They're for a special application that cuts close to being classified, so that's all we're going to say here.

Mod 1 of Control Unit Mark 66 is already the preferred item which will soon be called for in your OPs and ODs. The ordalt will merely convert some presently unserviceable Mod 0 units into gear that's acceptable for Code A stocks.

## A slightly new look

Producing three short ordalts certainly doesn't constitute a major achievement. Far from it. But coming as it does after a somewhat prolonged ordalt drought, it can be taken as an indicator that there are going to be more ordalts to come. And these ordalts are going to be slightly different from the ordalts you've seen for mine gear in the past.

One change is that the new ordalts will not necessarily be written "for depots only." As it turns out, the three ordalts mentioned above are simply not practicable to perform in the field. Accordingly, each has a statement that it will be performed "only by major depots upon receipt of appropriate work directives from BUWEPS." But it is definitely NMEF's plan that ordalts will be designated for direct field performance whenever practicable.

We think it's going to turn out to be practicable a fair amount of the time.

## And new reports

Still another change is the method of reporting accomplishment. The bible on ordalt preparation, OSTD 65, states that all ordalts will specify reports of accomplishment via NAVORD Form 1345. . . a noble idea but one that would be pretty hard to follow through. Not only does this old (1944) form fail to provide the feedback data we need most, the form is nowhere in stock and — as near as we can discover — hasn't been in stock for quite a few years.

Ordalts-accomplished data, then, has long been virtually non-existent. Our answer: we're seeing to it that new FSNs are assigned and included in the ordalt whenever ordalting will affect a component's interchangeability. That will keep depot stocks from getting intermixed. Then to keep the records straight — materiel requirements and availability records that are now being maintained on all stockpile populations — the new ordalts call for reporting serial numbers, lot numbers, and stock numbers of all ordaltered components by letter direct to NMEF.

## But the same source of supply

NMEF's printer will make initial distribution of all forthcoming depth-charge and mine ordalts to BUWEPS and to the activities that will need them for reference or for work. But the source for extra copies will be the same as in the past: Central Technical Documents Office, Iroquois Station, Louisville 14, Kentucky.

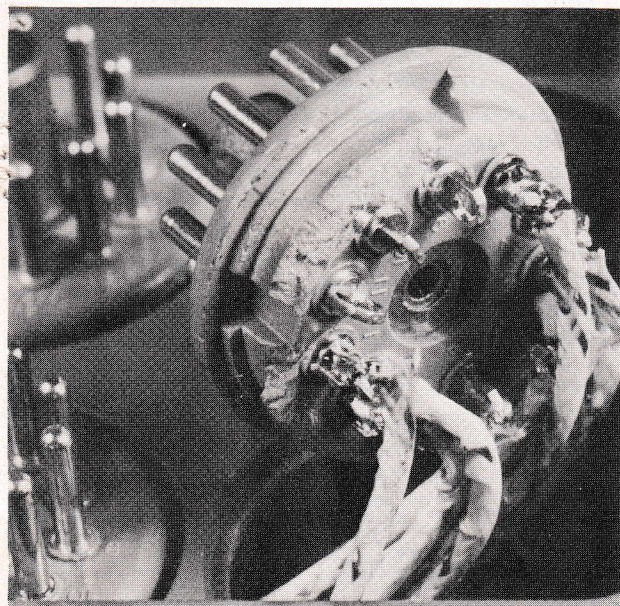
## DEPOTS AND TENDERS PLEASE NOTE

Often raised. . . apparently never resolved by a firm policy decision published for all concerned. . . has been the question of when depot stocks of the various depth-charge firing components should be tested. Now a firm decision has been made.

Chapter 4 of the new second revision to OP 669 (that's the shore-station/ammo-tender portion of the book) is quite specific on the components for Depth Charge Mk 14: in the section on storage and handling it states that boosters shall be inspected and firing components shall be tested just before issue to users, unless their tags indicate satisfactory inspections and tests within the previous six months. And that is the policy which has now been adopted for components being issued for Depth Charges Mks 6, 8, and 9.

Forthcoming changes to the shore-station/ammo-tender portions of OPs 747 Rev 2, 866 Rev 3, and 2960 Rev 0, will add requirements for pre-issue tests within six months of issue for fleet use. Until then, depots and tenders should apply this policy when issuing Mk 6, 8, or 9 depth-charge gear.

# SEALANT STRENGTHENS PLUG-INS FOR JUNCTION BOX CONNECTORS

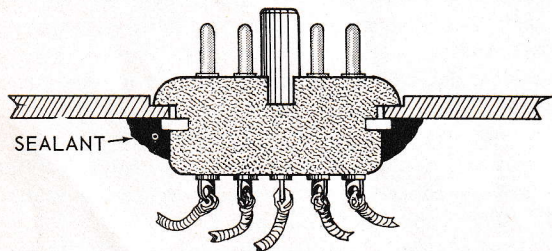


**I**T'S become quite obvious that when Junction Box Mk 35 Mod 0 was designed, the designers didn't consider the amount of training all hands would need in assembly of the Mines Mk 52 and 55 in which that box is used.

The result: you can plug in the instrument cables, plant the mine, and get the desired result. But when you repeatedly plug and un-plug, like in training and drill use, the connectors' lock rings loosen up, damage the bakelite body of the plug sockets, and surprisingly soon the connectors come adrift.

This has been reported on a growing number of Rudmindes, including one from R.T. Craig, MNCS at Navy 555, who was good enough to include evidence (pic at top).

To correct this situation, NMEF has revised drawings to specify application of a sealant that anchors the plugs



JUNCTION BOX COVER

to the boxes as pictured above. That will take care of the problem in new procurement lots.

Those who have Mk 35 junction boxes on hand can make the same fix by applying a similar sealant, thereby re-

claiming weakened or damaged units, and strengthening others before use.

As shown in our sketch, the sealant is applied to the periphery of the plug at its point of contact with the junction box, binding the box, snap ring, and plug together. The sealant, a two-part kit of potting compound and catalyst, can be obtained in a 2½ oz. cartridge, KZ8030-881-2618 (\$2.10), or in gallon jars: KZ8030-823-7953 (\$20.00).

One cartridge will anchor the plugs in three or four boxes depending on how neat a job you do.

## DANGER ON YOUR TAFFRAIL?

**B**ACK in 1956 a number of Depth Charge Pistols Mark 12 Mod 0 were modified for experimental purposes. At the conclusion of the test BUWEPS (then BUORD) had no further use for these pistols and ordered their destruction but a recent examination of records shows destruction reports for fourteen modified pistols were never received. They are serial numbers 38048, 38135, 38196, 38202, 38253, 28281, 28371, 38414, 38433, 38525, 38534, 38538, and two bearing the same serial number: 38199.

The 12-0 pistols are used in Depth Charge Mk 14. And the things to watch out for is the fact that pistols – as modified – can cause the charge to premature. For this reason, the modified pistols were supposed to have been stencilled with a warning against their use. That could still be a clue. . .if the stencilling is still good.

In any case all hands should keep an eye open for pistols with the serials listed above. And anybody who finds one should take action as follows:

- ▶ Vessels should remove detonators if installed and turn in pistols to nearest ammunition issuing activity for destruction.
- ▶ Stations should mutilate the pistols in accordance with NPR&D Regulation No. 1, and dispose of the scrap in accordance with that regulation.
- ▶ A speedletter report of the destruction, with serial number of each device destroyed shall be sent to BUWEPS (FWAM-3) with copies to BUWEPS (FTMO-4) and to NMEF.

## NAVORD OD 10,000 OBSOLETE

NAVORD OD 10,000, dated 19 December 1955, has been official declared obsolete. Fleet activities should destroy all copies as classified matter in accordance with the Navy Security Manual for Classified Information. OD 10,000 will not be replaced, since the information contained in it is available in current OPs.

# DEPTH-CHARGE BOOSTERS GIVE TROUBLE ABOARD SHIP

**I**N spite of the many precautions we've mentioned in past issues, we're still finding evidence of Depth Charges Mk 6, 8, and 9 being carried aboard ship in a dangerous condition.

The culprit is the Mark 6 Booster used in these charges. All hands may eyeball these boosters carefully for leaks at the seams, signs of corrosion, etc. before issue or use. Yet we find that the constant vibration they take when installed in the central tube of a depth-charge case on the after deck of a vessel at sea still causes them to open enough to leak TNT.

Now let's make no bones about this: The condition is dangerous . . . treat depth charges in which particles of TNT have leaked out of a broken booster can as fully-armed weapons. The reason: Enough TNT particles on or near a detonator can act the same as a booster, and fire the main charge.

Now to a solution that should help. In underwater mines, most of which use boosters quite similar to the Mk 6 boosters used in these charges, it's SOP to install a booster insulator that's made of heavy "fish" paper and is available in the supply system as Insulator, Extender-Well, A1350-093-0693. In mines the prime intent is to

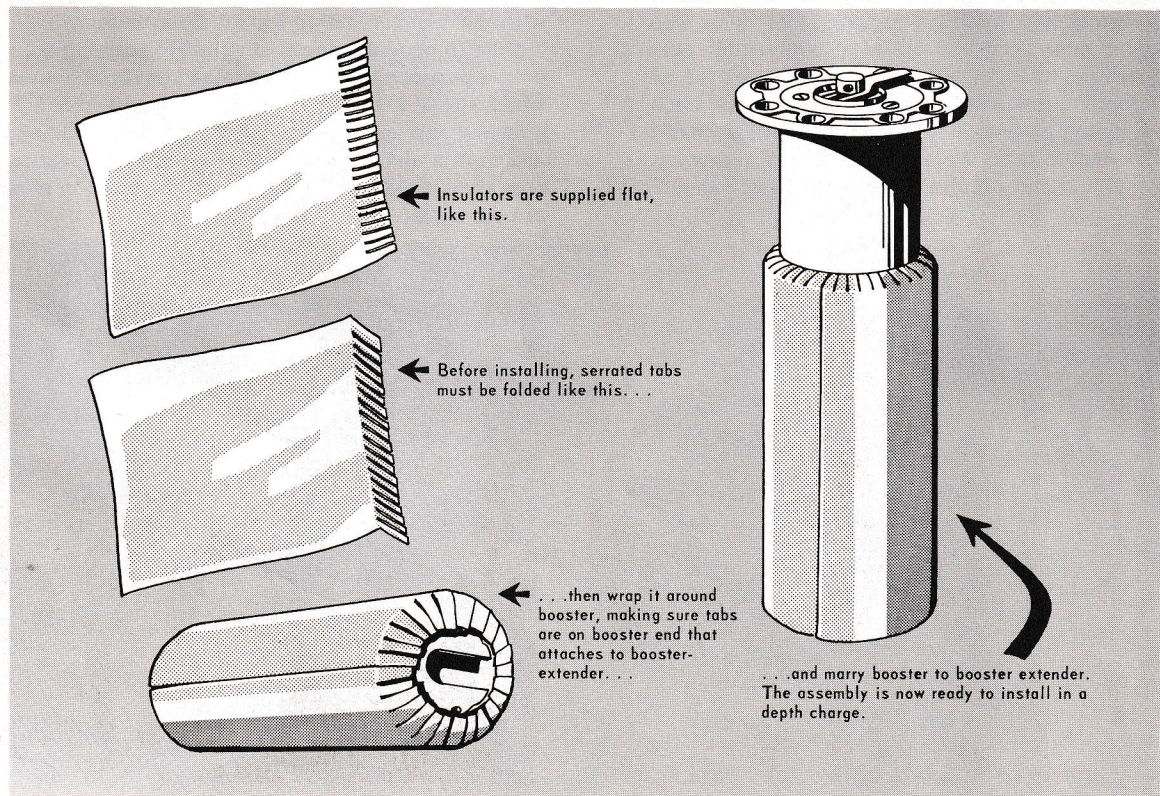
## WARNING

If you have to clean out the central tube of a depth charge in which TNT has leaked, don't use anything but air jet, wooden scrapers, or anti-spark brushes. If a booster will not pass into the charge's tube without jamming or binding, dispose of it. Never try to repair or re-shape a booster.

provide electrical insulation. But they can be equally effective in insulating installed depth-charge boosters against vibration.

In the mill, therefore, are changes to OPs 747 Rev 2, 866 Rev 3, and 2960 Rev 0 that will specify use of these insulators in all Depth Charges Mark 6 Mods 0, 1, and 2, Mark 8 Mods 3, 4, and 5, and Mark 9 Mods 2, 3, and 4. - Meanwhile gun crews aboard all vessels that carry these charges should NAVSTRIP a supply of these insulators and install them wherever Boosters Mark 6 are used.

(For changes affecting the depot sections of these OPs, see page 1.)



# FSMTs...

# Good Show!

**F**SMs CNAP 7-63 and CSP 8-63 are history and the results, for the record, can be stamped "successful." The tests were conducted concurrently with Task Force 72 (COMFAIRWING ONE), Submarine Flotilla 7, Mine Flotilla 1, and personnel from WESTPAC mining activities. The mines were planted by the USS Razorback (SS 394) and Patrons Four, Six, Forty, and Fifty. The target ships were USS Wahoo (SS 565) and USS Epping Forest (MCS-7). Minesweeping operations were conducted by units of MINRON THREE.

Both the aircraft-laid mines and the submarine-laid mines performed well: better than 90% of those recovered had actuated.

Components for assembly were drawn from Code A stocks on hand and rejections were not excessive. Packaging methods and materials varied but were found to be adequate, the most prevalent discrepancy being improper container identification.

Flooders, the curse of previous tests, were notable by their scarcity. One, a 25-0, was attributed to leakage through the search-coil cover seal. . . a small leak but nevertheless enough to short the batteries. This was attributed in post-recovery analysis to assembly errors.

On the whole, though, both tests were quite free of errors which caused mine failures. There was some trouble figuring out proper orientation of flight gear for CNAP 7-63 due to lack of clarity in OP instructions. Head scratching and common sense apparently saved the day.

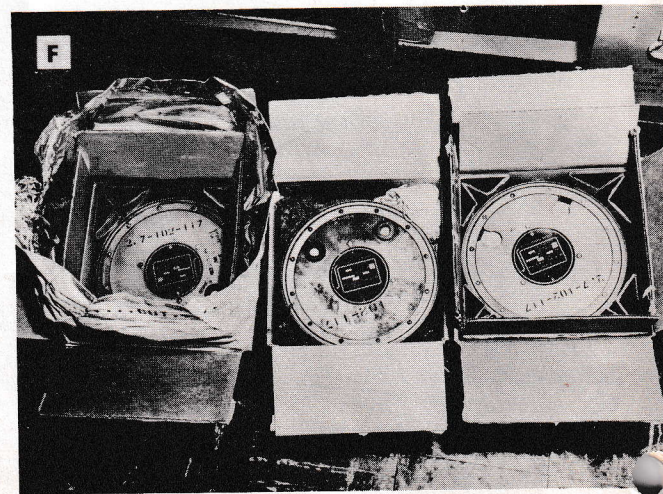
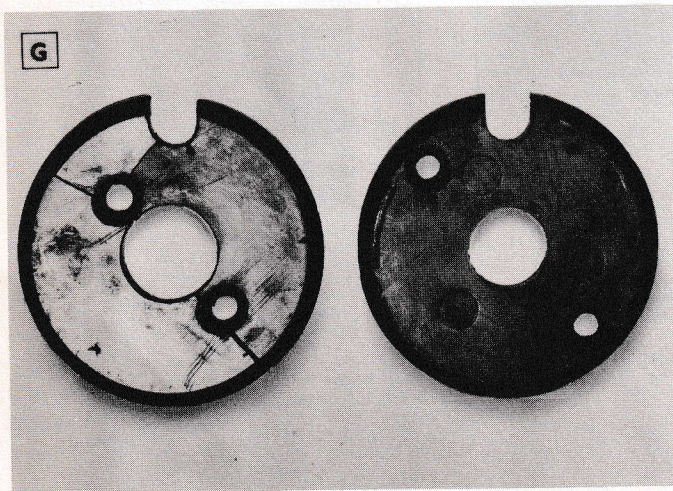
In delivery, three mines fell free due to early parachute pack separation or failure of chute to operate, but all were recovered and two of them had fired. The third, with a large dent in its tail section, suffered damage to firing mechanism and batteries. Yet it passed an operational test after a new battery was installed by the post-recovery crew.

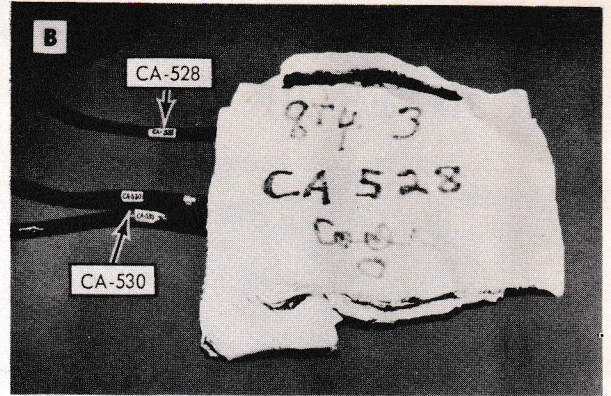
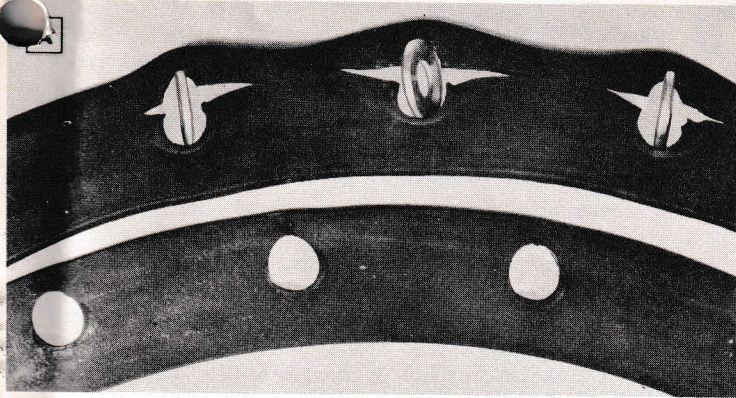
Another mine wobbled in flight and its chute barely blossomed in time. It was not recovered.

A Mk 25 mine that dropped safe was recovered with arming wires intact and keeper wire still attached. Because the mine was found to be operational, a dud was chalked up to a keeper wire made of material too flimsy for the job.

In the instrumentation of the mines both Mine Fire Recorder Mk 17 Mod 0 and the CD-12 type recorders were used and both performed well. The Mk 17 proved to be accurate and reliable, and the shipping-tag form of readout data card (secured inside each Mk 17-equipped mine) was found to be sufficiently satisfactory that NMEF has now designed a standard tag that will soon be supplied with the new recorders for all fleet tests.

FSMTs provide plenty of valuable training but their prime purpose is to collect mine operational data, of which CNAP 7-63 and CSP 8-63 yielded a-plenty. Good planning and apt supervision seems to have been the key, and to this end the NMEF observers were gratified to note their FSMT Brochure being consulted in most phases of both tests.





A. Trouble was experienced with gaskets tearing. Most of the tears (washers are used to spread them) occurred in molded gaskets while stamped gaskets appear to behave better. NMEF is studying the problem before reaching a conclusion. Your Rudminds needed, please!

B. The package says three CA-528s but inside were one 528 and two CA-530s.

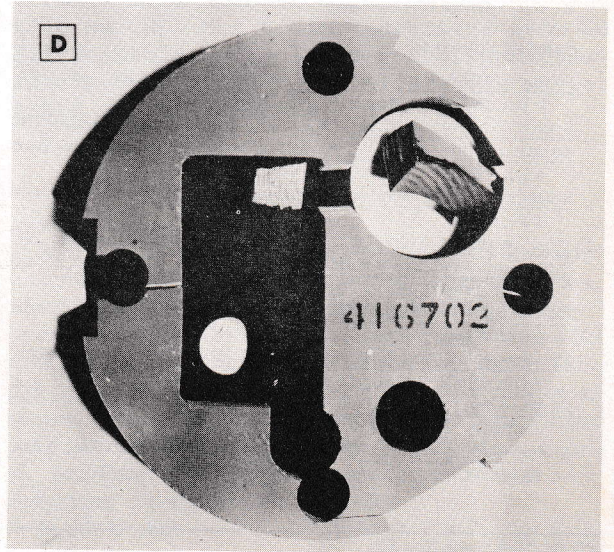
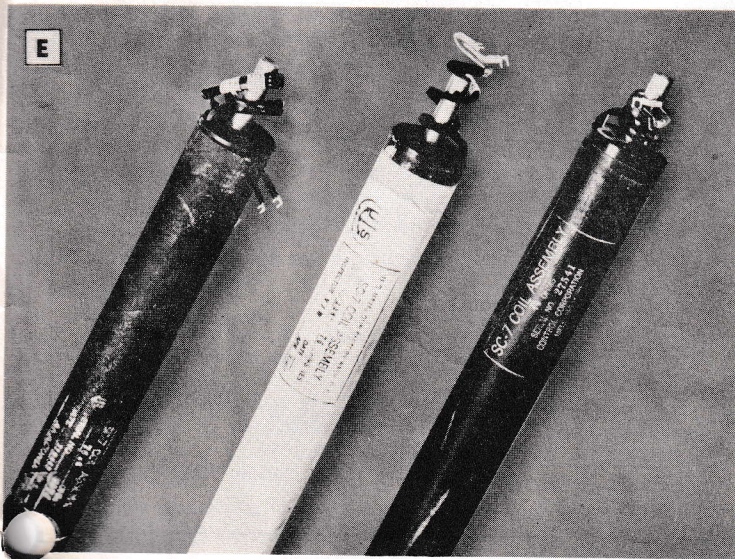
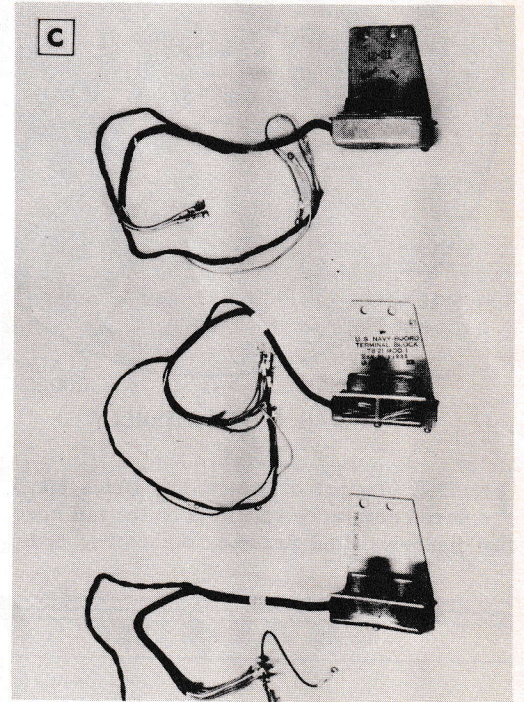
C. Six of the seventeen TB-21s, all inventoried as Mod 1, turned out to be Mod 0 (alternates) when unpacked for CNAP 7-63. All lacked uniformity. The TB-21 at the top has "Reject" stamped on its bracket.

D. This pine wood M11 top spacer deteriorated in stock and went to pieces. Specs for this piece have been changed - it will be made of plywood in the future.

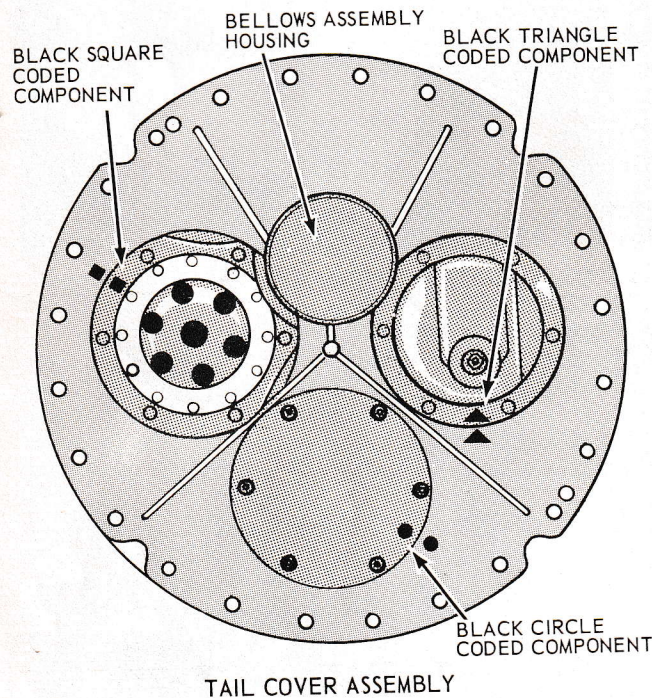
E. It can cause some head scratching when you get three search coils out of Code A stock and find what appears to be three different mods. All are stenciled to indicate SC 7-0s but only four of the 14 broken out fitted the description.

F. Some originality was shown in packaging the Firing Mechanism M9 Mod 1. Also in whether or not to install grommets!

G. The holes in this SC 7-0 replacement end and cap shifted in transit?



# CHANGE LOCATING PIPS FOR MINES MK 52-55



**I**N THE original drawings for Mines Mk 52 and 55 colored dots were specified on the tail covers and on the flanges of the pressure detectors, hydrophones,

and depth compensators, to insure their correct orientation. Then came MIL - STD 709 , Ammunition Color Coding, giving another meaning to these colors. - The result: we've had to switch from colors to symbols (squares, round dots, and triangles) in solid black.

Master drawings of the affected 52/55 gear have already been changed to conform to the illustration and table on this page, and these changes will automatically be picked up on all new lots of 52/55 gear as procured. This leaves the question of what to do about gear in stock that still has the colored dots.

Part of the answer lies in changes to OPs 2608 and 2974, scheduled for production by NMEF. Beyond this all hands should paint their gear as we indicate here. This doesn't mean that issuing activities have got to pull all stocks post haste. But they certainly should change the coding whenever they pull components from stock for issue to assembly activities.

Component	Obsolete	Current
Pressure Detector Mark 2 Mod 0	Yellow dot 1/2-inch diam.	Stencil 1/2-inch black <u>square</u> over yellow dot
Hydrophone Mark 6 Mod 1	Blue dot 1/2-inch diam.	Stencil 1/2-inch black <u>dot</u> over blue dot
Depth Compensator Mark 3 Mod 0	White dot 1/2-inch diam.	Stencil 1/2-inch black <u>triangle</u> over white dot

## STARTING DATES AT MINE WARFARE SCHOOL

### OFFICER COURSES

- Surface Mine Warfare Familiarization (3 weeks - secret):  
6 Jan, 3 Feb, 6 Apr, 4 May, 1 June 1964
- Senior Foreign Officer (9 weeks - confidential): 9 Mar 1964
- Aviation Mine Warfare Familiarization (2 weeks - secret):  
6 Jan, 1 June 1964
- Submarine Mine Warfare Familiarization (2 weeks - secret):  
3 Feb 1964
- Mine Warfare Staff Officer (24 weeks - secret): 6 Jan 1964
- Unit Commander Familiarization Course (6 weeks - secret):  
4 May 1964
- Introduction to Mine Warfare (Senior Officer) (1 week - secret):  
First Monday monthly, as requested
- Minesweeping Engineering Officer (6 weeks - confidential):  
9 Dec 1963; 2 Mar, 11 May 1964
- Degaussing, Ranging and Deperming Officer (8 weeks - confidential): 13 Jan 1964
- Minesweeping Officer (8 weeks - secret): 9 Dec 1963; 2 Mar,  
11 May 1964

### ENLISTED COURSES

- Minesweeping Engineering Class C (16 weeks - confidential):  
13 Jan, 24 Feb, 6 Apr, 18 May 1964
- Electrician Mate Ranging and Deperming Class C (6 weeks - confidential): 11 May 1964
- Minesweeping Boatswain Mate Class C (6 weeks - confidential):  
6 Jan, 24 Feb, 20 Apr, 1 June 1964
- Mineman Class A (15 weeks - confidential): 13 Jan, 23 Mar,  
27 Apr 1964

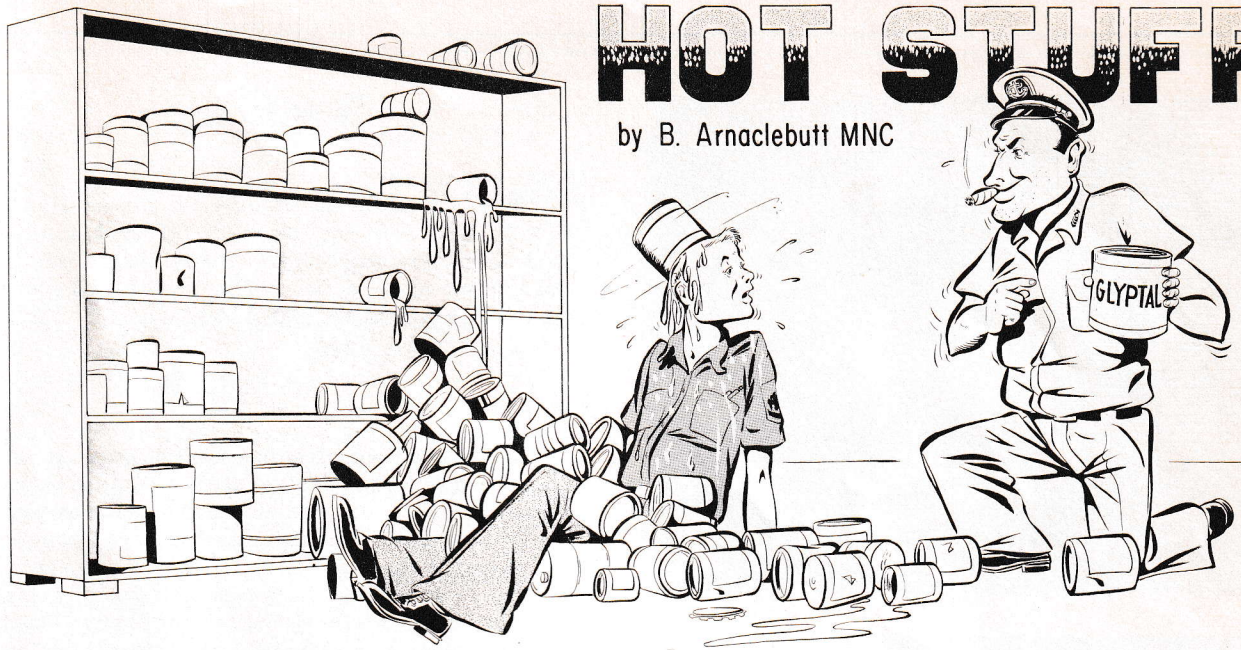
### OFFICER & ENLISTED COURSES

- Mineman Class B (20 weeks - secret): 13 Jan, 24 Feb 1964
- Aviation Mine Assembly Class C (11 weeks - confidential):  
30 Mar 1964
- Submarine Mine Assembly Class C (12 weeks - confidential):  
20 Jan 1964
- Mine Mk 57 (2 weeks - secret): 10 Feb 1964
- Mine Mk 59 (1½ weeks - secret): 13 Jan, 23 Mar 1964



# HOT STUFF

by B. Arnaclebutt MNC



NOTE: Information in this feature has been verified by BUWEPs' design-cognizant agency for depth-charges and mines. Except where otherwise indicated readers are therefore authorized to adopt these ideas and procedures pending preparation of changes and revisions to master design documentation.

## What's red and sticky?

Dear Barnacle:

Glyptal specs have me puzzled. OD 7569 does not list a sealer being required for Mk 49 mine assembly while OP 1808 Vol 1 says use Sealer 52-C-3116-3 for the 49's Sensitivity Switch Mk 3-1. Also glyptal (item 227 in OD 7569) can't be found in the OSO supply system. OP 1808 calls for use of 52-C-3097-60 and 12-Z-30300-16 but OD 7569 lists neither. Also 12-Z-30300-16 can't be found in the OSO supply system.

Isn't there just one stickum that could be designated to get us out of this sticky business?

D.G.H.

Dear D.G.H.,

You bet: Use Varnish, Glyptal, GE-1201, Red. The stock number is Z5970-642-9919 (pint can). This is the one we'll be specifying in your new allowance lists, ODs, OPs, etc., etc.

-Thanks to you.

*B. Arnaclebutt*

## Color me blue

Dear B.B.

In talking about color coding in Troubleshooter 3-62 where you say detonators should

be painted yellow or have yellow bands. It also reads that the color code for "Training/Practice" is blue. So we're painting our all-yellow Mk 46 Mod 1 dummy detonators blue.

J.R., MN3

Dear J.R.

Right. Blue means "drill, target" or dummy. So use blue, color 35231, MIL-E-10687.

*B. Arnaclebutt*

## Down again, up again

Dear Chief Butt,

Back in T-Shooter 4-60, on page 4, you told us CS 1 Mod 4 clock starters from NORd 11179 should be replaced and disposition should be requested. So last week we get seven as replacements! How come?

J.D.R., MN2

Dear J.D.R.,

Millie Amps fixed it in No. 4-61: CS 1-4s manufactured under NORd 11179 in stock at prepositioned activities should be placed in Code 4 (awaiting inspection) and screened against OP 1452 test limits. Only those CS 1-4s that fail get Code 8 and are to be reported to the Bureau for replacement, so chances are that your lucky seven passed those tests, or they wouldn't have been shipped.

Of course, Code 4 is now Code E and Code 8 is Code B. And Pub-S-Crawlin' this issue tells you to go back and cross out what we said in 4-60.

Times change!

*B. Arnaclebutt*

## Three for two

Dear Barnacles:

When we ordered extension cover plates Z1355-389-1979 for some Mk 27 Mod 4 mines, some came through with three holes where two holes should be. The three-hole covers do not agree with DWG 424073-1, OP 2363 Vol 2, nor OD 9351.

P. P. W., MN2

Dear P. P. W.,

There was a time when the extension cover on the forward end of the war battery section of the 27-4 needed three holes but that was so long ago that no one around here - including me - can find out what that third hole was for. Now only two are needed... for the hydrostatic switches... so the best thing to do with those three holes is to plug the third holes. That's what Charlie Gouer (Navy No. 3002) does with his, and it's thanks to Charlie that we have the pix you see here.

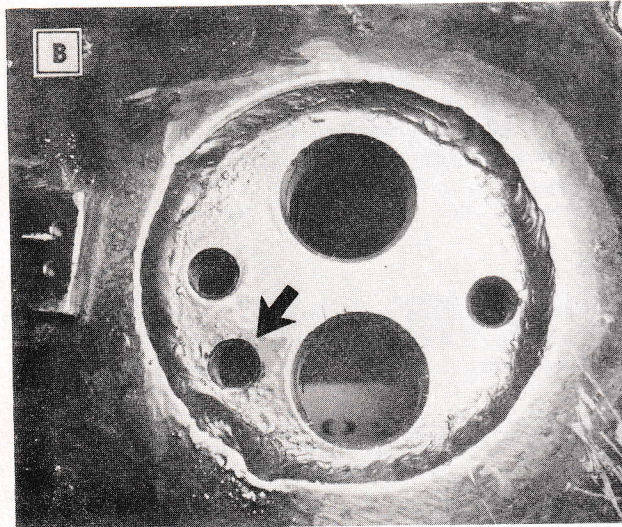
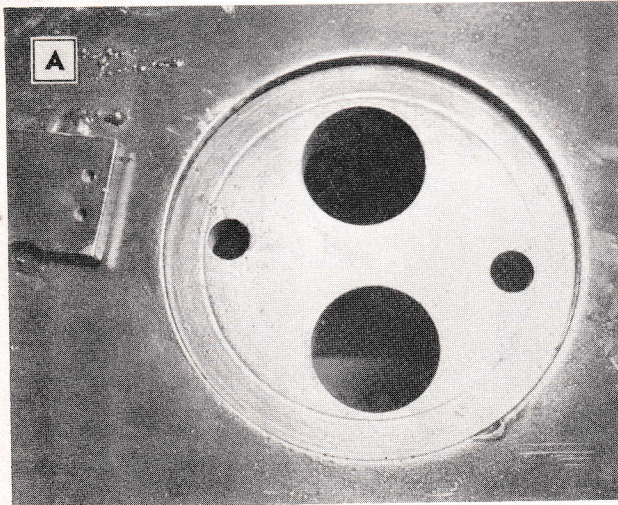
The plugs you'll need are 1/8" - 27 NPT, 9C4730-187-4206, which list for 3 cents per. Whenever you use one be sure to use some glyptal on the threads and check for leaks.

*B. Amalbert*

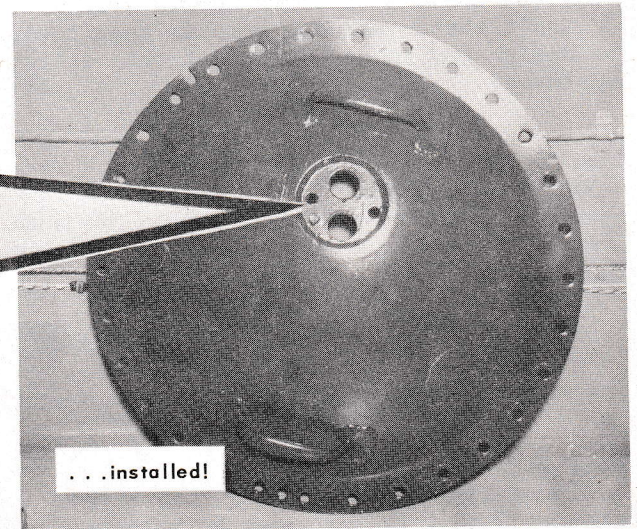
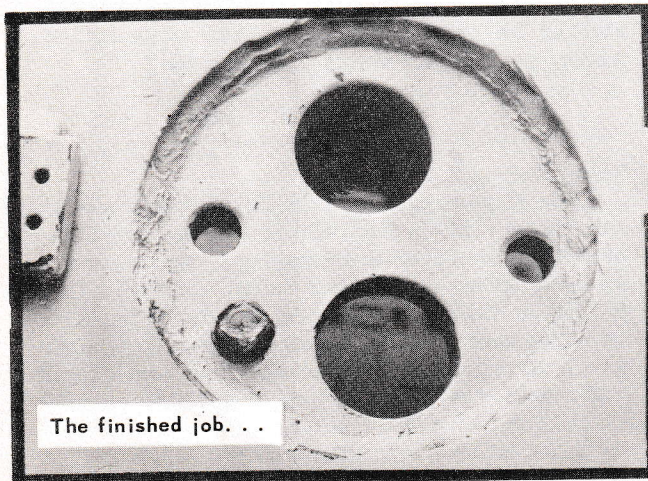
## Stud stretching

Dear B.B.

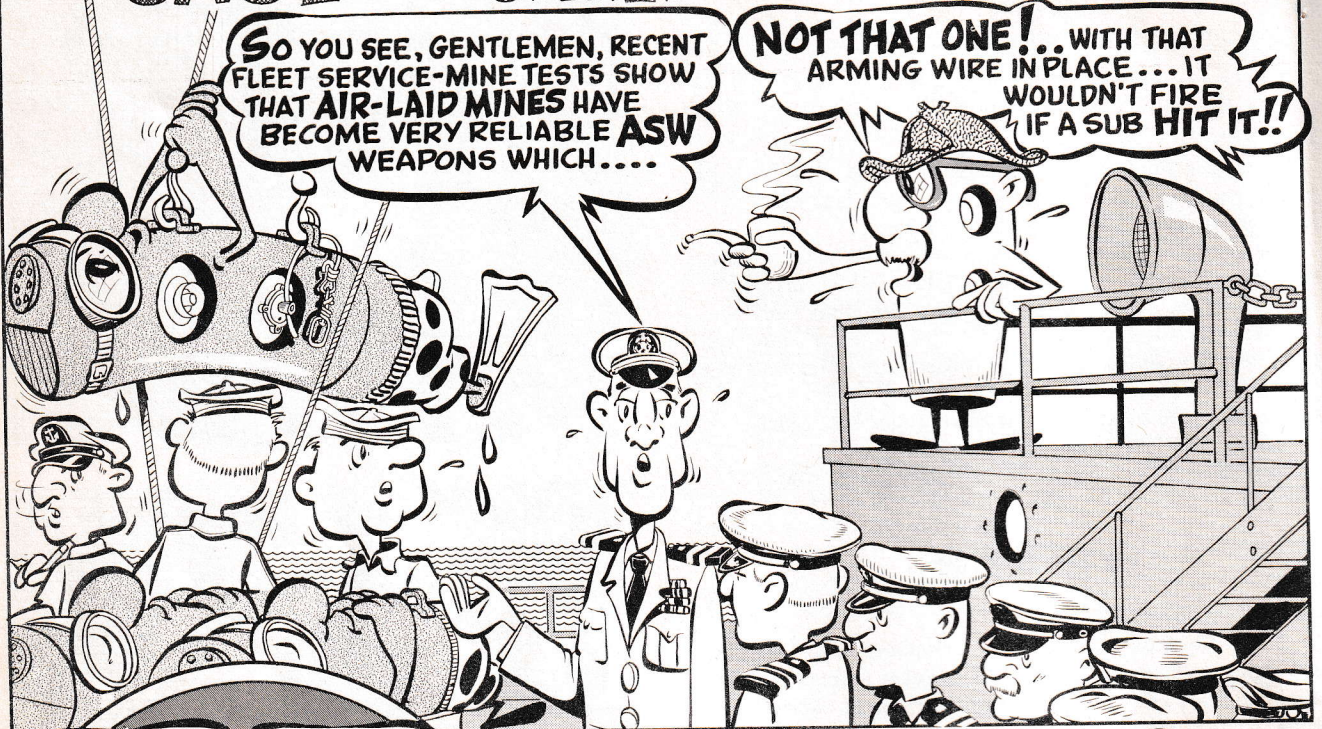
In assembling Mk 27 Mod 3 mines we find some of those 5/16-18 NC studs too short to mount the A-8 firing mechs on the cylinder adapter. The studs are supposed to take the A-8's flange, a gasket, shoulder brushings, flat washers, lockwashers, and



You requisition A and get B. Arrow indicates the hole you must plug.

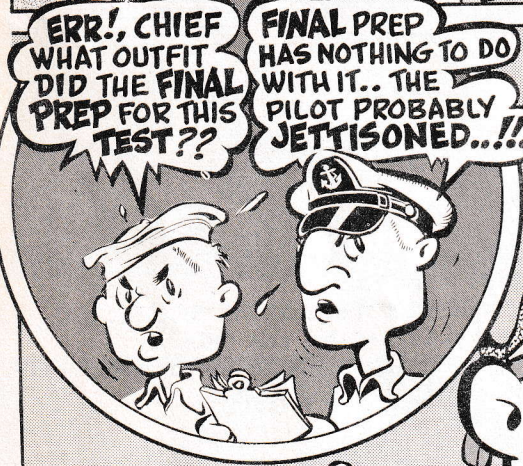


**A.S.W. MINERIGHT solves....**  
**THE CASE of the UNKEPT KEEPER!!**



SO YOU SEE, GENTLEMEN, RECENT FLEET SERVICE-MINE TESTS SHOW THAT AIR-LAID MINES HAVE BECOME VERY RELIABLE ASW WEAPONS WHICH....

NOT THAT ONE!... WITH THAT ARMING WIRE IN PLACE... IT WOULDN'T FIRE IF A SUB HIT IT!!

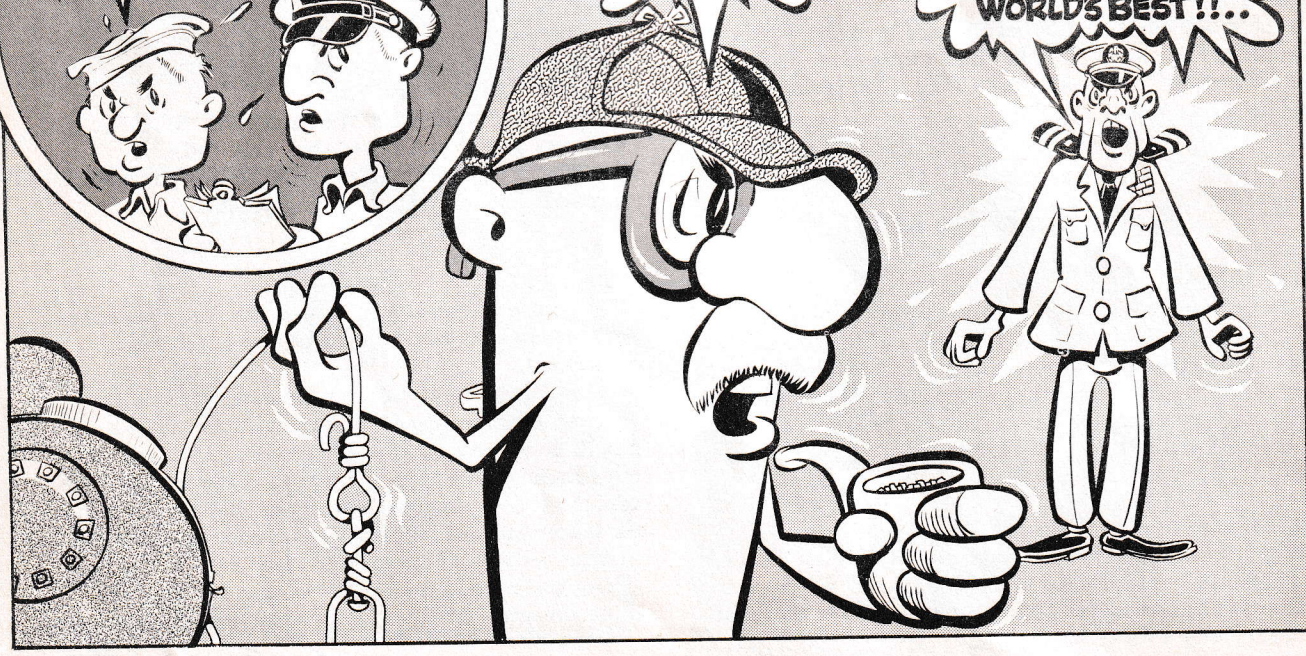


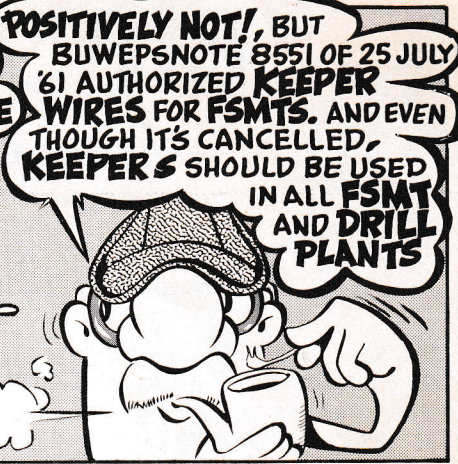
ERR!, CHIEF WHAT OUTFIT DID THE FINAL PREP FOR THIS TEST??

FINAL PREP HAS NOTHING TO DO WITH IT.. THE PILOT PROBABLY JETTISONED...!!

..MORE LIKELY A SOLENOID FAILURE... ..IN ANY CASE THIS IS INEXCUSEABLE!!

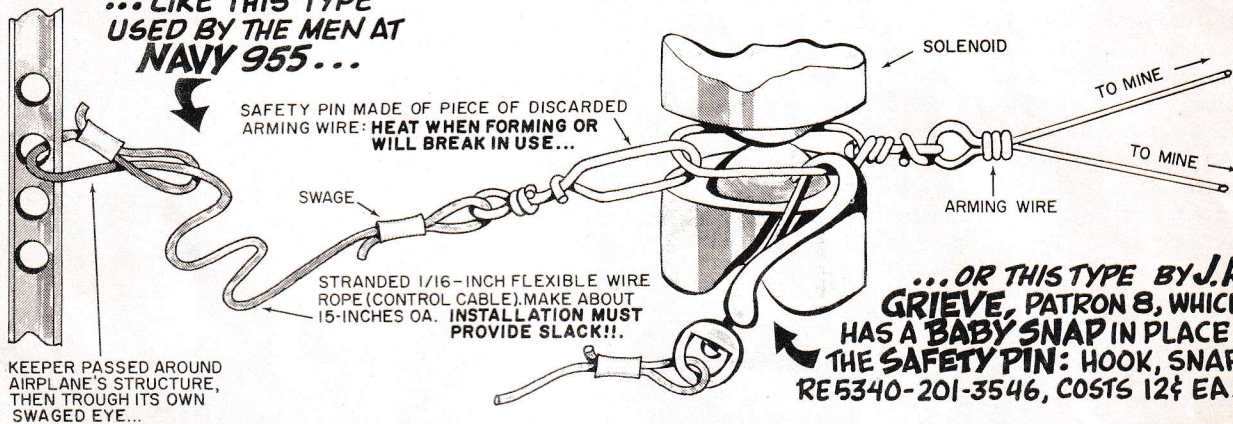
HOW, SIR!... CAN YOU SAY THAT!! IN WAR WE HAVE TO ACCEPT FAILURES EVEN WITH U.S. NAVY EQUIPMENT... THE WORLD'S BEST!!...



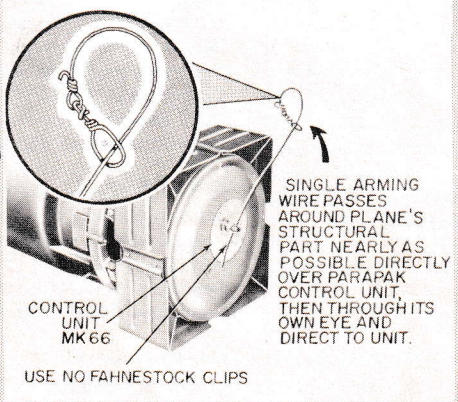
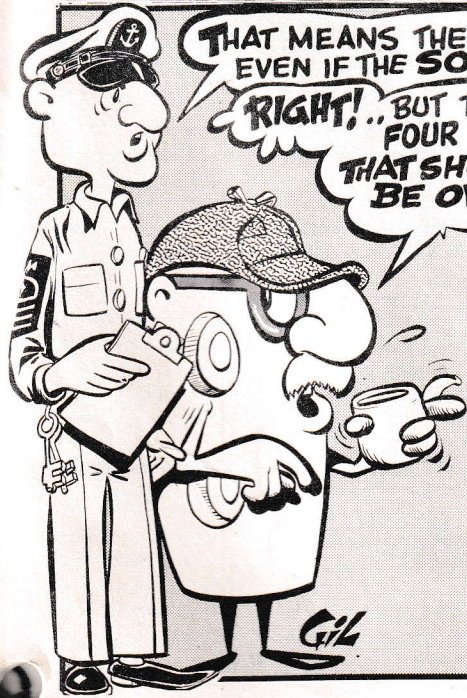


**SHARP AOs AND MNs MAKE UP THEIR OWN....**

... LIKE THIS TYPE USED BY THE MEN AT NAVY 955 ...



... OR THIS TYPE BY J.R. GRIEVE, PATRON 8, WHICH HAS A BABY SNAP IN PLACE OF THE SAFETY PIN: HOOK, SNAP, RE 5340-201-3546, COSTS 12¢ EA.



✓ **FIRST**, NEVER CUT A DOUBLE ARMING WIRE DOWN TO A SINGLE WITHOUT BENDING THE REMNANT BACK... OTHERWISE THE EYE WILL PULL FREE!!



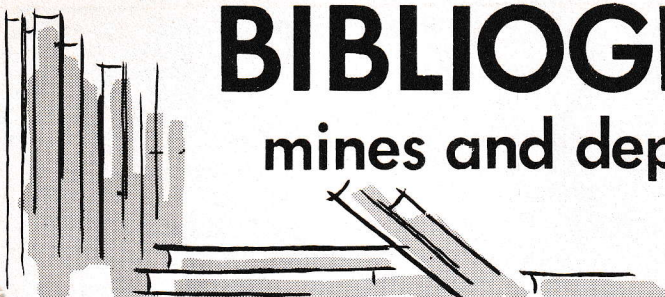
✓ **NEXT**, BE SURE TO ATTACH THE KEEPER TO THE ARMING WIRE'S BIG EYE... THE ONE SOLENOID HOLDS...

✓ **FOR CONTROL UNITS MK66**, BYPASS SOLENOIDS ALTOGETHER, LIKE THIS...

✓ **FINALLY**, REMEMBER KEEPERs SHOULD NEVER BE USED FOR AN ACTUAL STRIKE MISSION. THEY SHOULD BE USED ON CLOCK-STARTER, EXTENDER, AND ARMING-DEVICE ARMING WIRES TO GUARANTEE POSITIVE ARMING IN ALL DRILL AND FSMT PLANTS... BUT IN COMBAT THEY'D PREVENT THE PILOT FROM JETTISONING SAFE!!..

# BIBLIOGRAPHY NO. 3

## mines and depth charges



**T**HE introductory remarks to our last bibliography (T-Shooter 1-63) stated that it superseded all mine and depth-charge bibliographies including one that had been promulgated by BUWEPSINST 8500.1C. This was in complete accord with a BUWEPS letter of August 1962 so instructing.

But it turned out that the Bureau had neglected to cancel INST 8500.1C, and this raised a question in at least one reader's mind as to how T-Shooter could rightfully make such a claim. The point was well taken.

So now 8500.1C has been cancelled and, by BUWEPS' direction, we've put together a new bibliography that's as official and as accurate as we know how to make it . . . in a format that includes OP stock numbers in answer to so many readers' requests. Here's how it works:

▶ Always check footnotes pertinent to the entries in which you are interested. To make the bibliography as up-to-

date and accurate as possible, it's been necessary to qualify many of our listings.

▶ In a few cases, due to publishing oversights, the revision and change numbers are not sufficient indicators as to whether or not you have the latest edition of a listed pub. In these cases the bibliography gives a specific title-page date for the latest approved edition. In each case the stock number listed is the number for the latest approved edition.

▶ Except where otherwise indicated, order OPs and changes via Navstrip from the Naval Supply Depot, 5801 Tabor Avenue, Philadelphia, Pennsylvania, and simply write in the changes you want. If the latest change as listed in the bibliography is "Ch 3," for example, write "include changes 1, 2, and 3" in the remarks section of the Navstrip card on which you order the OP by stock number.

### SUBMARINE-LAID MINES

#### Mine Mk 10 Mod 3

Service Assembly: OP 948 Rev 1 Ch 2: I-0609-094-8000.  
Drill Assembly: OP 1878 Rev 1 Ch 1: I-0609-187-8000.  
Fire Mech: OP 2567.<sup>a</sup>  
Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Gen'l Requisites: OD 7318 Rev 2 Ch 2.<sup>c</sup>

#### Mine Mk 27 Mod 2

Vehicle Assembly: OP 1935 Vol 1 Rev 1 Ch 6: I-0609-193-5100.  
Mine Assembly: OP 1935 Vol 2 Rev 0 Ch 2, Oct '62 edition  
I-0609-193-5200 only.  
Ballasting Instructions: OD 10577 Rev 0 Ch 1.<sup>c</sup>  
Drill Assembly: None  
Fire Mech: OP 2567.<sup>a</sup>  
Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Gen'l Requisites: OD 9683 Rev 1 Ch 0.<sup>c</sup>

#### Mine Mk 27 Mod 3

Vehicle Assembly: OP 1935 Vol 1 Rev 1 Ch 6: I-0609-193-5100.  
Mine Assembly: OP 1935 Vol 3 Rev 0 Ch 1, Oct '62 edition,  
I-0609-193-5300 only.  
Ballasting Instructions: OD 10577 Rev 0 Ch 1.<sup>c</sup>  
Drill Assembly: None.  
Fire Mech: OP 2567.<sup>a</sup>  
Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Gen'l Requisites: OD 9684 Rev 1 Ch 0.<sup>c</sup>

#### Mine Mk 27 Mod 4

Vehicle Assembly: OP 2363 Vol 1 Rev 0 Ch 6: I-0609-236-3000.

Mine Assembly: OP 2363 Vol 2 Rev 0 Ch 1, Oct '62 edition  
I-0609-236-3200 only.

Ballasting Instructions: OD 10577 Rev 0 Ch 1.<sup>c</sup>  
Drill Assembly: None  
Fire Mech: OP 2567.<sup>a</sup>  
Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Gen'l Requisites: OD 9351 Rev 0 Ch 0.<sup>c</sup>

#### Mine Mk 27 Mod 5

Vehicle Assembly: OP 2363 Vol 1 Rev 0 Ch 6: I-0609-236-3000.  
Mine Assembly: OP 2363 Vol 3 Rev 0 Ch 1, Oct '62 edition  
I-0609-236-3300 only.  
Ballasting Instructions: OD 10577 Rev 0 Ch 1.<sup>c</sup>  
Drill Assembly: None.  
Fire Mech: OP 2567.<sup>a</sup>  
Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Gen'l Requisites: OD 9352 Rev 0 Ch 0.<sup>c</sup>

#### Mine Mk 49 Mod 0

Service Assembly: OP 1807 Vol 1 Rev 1 Ch 1: I-0609-180-7100.  
Drill Assembly: OP 1807 Vol 2 Rev 1 Ch 1: I-0609-180-7200.  
Fire Mech: OP 2567.<sup>a</sup>  
Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Gen'l Requisites: OD 7568 Rev 2 Ch 1.<sup>c</sup>

#### Mine Mk 49 Mod 1

Service Assembly: OP 1808 Vol 1 Rev 1 Ch 1: I-0609-180-8100.  
Drill Assembly: OP 1808 Vol 2 Rev 1 Ch 1: I-0609-180-8200.  
Fire Mech: OP 2567.<sup>a</sup>

for footnotes see page 14

## BIBLIOGRAPHY

Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Gen'l Requisites: OD 7569 Rev 2 Ch 1.<sup>c</sup>  
**Mine Mk 49 Mod 2**  
Service Assembly: OP 1809 Vol 1 Rev 1 Ch 1: I-0609-180-9100.  
Drill Assembly: OP 1809 Vol 2 Rev 1 Ch 0: I-0609-180-9200.  
Fire Mech: OP 2567.<sup>a</sup>  
Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Gen'l Requisites: OD 7510 Rev 2 Ch 2.<sup>c</sup>

**Mine Mk 57 Mod 0**  
Service Assembly: OP 2718 Vol 1 Rev 0 Ch 0.<sup>g</sup>  
OP 2718 Vol 2 Rev 0 Ch 0.<sup>g</sup>  
Drill Assembly: OP 2718 Vol 2 Rev 0 Ch 0.<sup>g</sup>  
Fire Mech: OP 2567.<sup>a</sup>  
Opn'l Characteristics: OP 2816 Rev 0 Ch 0.<sup>g</sup>  
Ballistic Table: None.  
Gen'l Requisites: OD 9354 Rev 0 Ch 0.<sup>g</sup>

## SURFACE-LAID MINES

### Controlled Mine System Mk 2 Mod 0

Acoustic System 6-0: OP 1854 Rev 1 Ch 0: I-0609-185-4000.  
System Installation & Mine Mk 51 Assy: OP 1930 Vol 1 Rev 0 Ch 0  
I-0609-193-0100.  
Maintenance: OP 1930 Vol 2 Rev 0 Ch 0: I-0609-193-0200.  
Operation: OP 1930 Vol 3: I-0609-193-0300.  
Fire Mech: incl in installation manual.  
Opn'l Characteristics: incl in operation manual.  
Gen'l Requisites: OD 9682 Rev 0 Ch 0.<sup>c</sup>

### Mine Mk 6 Mods 0, 4, 7, 8, 10, & 11

Service Assembly: OP 1853 Vol 1 Rev 1 Ch 0, Apr '62 edition:  
I-0609-185-3100 only.  
Drill Assembly: OP 1853 Vol 2 Rev 1 Ch 0, Apr '62 edition:  
I-0609-185-3200 only.  
Fire Mech: OP 605 Rev 2 Ch 0: I-0609-060-5000.<sup>e</sup>  
Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Gen'l Requisites: OD 7309 Rev 2 Ch 1 (Mod 0).<sup>c</sup>  
OD 7311 Rev 2 Ch 0 (Mod 4).<sup>c</sup>  
OD 7312 Rev 2 Ch 0 (Mod 7).<sup>c</sup>  
OD 7313 Rev 2 Ch 0 (Mod 8).<sup>c</sup>  
OD 7314 Rev 2 Ch 1 (Mod 10).<sup>c</sup>  
OD 7315 Rev 2 Ch 0 (Mod 11).<sup>c</sup>

### Mine Mk 6 Mod 14

Service Assembly: OP 2129 Rev 0 Ch 1: I-0609-212-9000.  
Drill Assembly: None  
Fire Mech: incl in service assy manual.  
Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Gen'l Requisites: OD 7338 Rev 1 Ch 0.<sup>c</sup>

### Mine Mk 18 Mod 0

Service Assembly: OP 902 Rev 2 Ch 2: I-0609-090-2000.  
Drill Assembly: Ch 1 to OP 902 2d Rev (available only from  
NMEF).  
Fire Mech: OP 2567.<sup>a</sup>  
Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Gen'l Requisites: OD 7325 Rev 3 Ch 0.<sup>c</sup>

### Mine Mk 59 Mod 0

Service Assembly: OP 3159 Rev 0 Ch 1.<sup>g</sup>  
Drill Assembly: None  
Fire Mech: Incl in assy manual.  
Opn'l Characteristics: Incl in assy manual.  
Gen'l Requisites: In preparation.

## AIR-LAID MINES

### Mine Mk 10 Mod 9

Service Assembly: OP 948 Rev 1 Ch 2: I-0609-094-8000.  
Drill Assembly: Incl in service assy manual.  
Fire Mech: OP 2567.<sup>a</sup>  
Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Ballistic Table: OP 1459 Rev 1 Ch 0: I-0609-145-9000.  
Gen'l Requisites: OD 7320 Rev 2 Ch 0.<sup>c</sup>

### Mine Mk 25 Mod 0

Service Assembly: OP 956 Vol 1 Rev 3 Ch 0: I-0609-095-6100.  
Drill Assembly: OP 1816 Vol 1 Rev 2 Ch 0: I-0609-181-6100.  
Fire Mech: OP 2567.<sup>a</sup>  
Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Ballistic Tables: OP 1394 Rev 1 Ch 0: I-0609-139-4000.  
OP 2843 Rev 0 Ch 0: I-0609-284-3000.  
Gen'l Requisites: OD 7302 Rev 5 Ch 0.<sup>c</sup>

### Mine Mk 25 Mod 1

Service Assembly: OP 1797 Vol 1 Rev 2 Ch 2: I-0609-179-7100.  
Drill Assembly: OP 1816 Vol 2 Rev 2 Ch 0: I-0609-181-6200.  
Fire Mech: OP 2567.<sup>a</sup>  
Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Ballistic Tables: OP 1459 Rev 1 Ch 0: I-0609-145-9000.  
OP 2843 Rev 0 Ch 0: I-0609-284-3000.  
Gen'l Requisites: OD 7303 Vol 1 Rev 4 Ch 0.<sup>c</sup>

### Mine Mk 25 Mod 2

Service Assembly: OP 1765 Vol 1 Rev 2 Ch 2: I-0609-176-5100.  
Drill Assembly: OP 1816 Vol 3 Rev 2 Ch 0: I-0609-181-6300.  
Fire Mech: OP 2567.<sup>a</sup>  
Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Ballistic Tables: OP 1459 Rev 1 Ch 0: I-0609-145-9000.  
OP 2843 Rev 0 Ch 0: I-0609-284-3000.  
Gen'l Requisites: OD 7304 Vol 1 Rev 4 Ch 0.<sup>c</sup>

### Mine Mk 36 Mod 1

Service Assembly: OP 1684 Vol 1 Rev 2 Ch 1: I-0609-168-4100.<sup>e</sup>  
Drill Assembly: OP 1816 Vol 4 Rev 2 Ch 0: I-0609-181-6400.  
Fire Mech: OP 2657.<sup>a</sup>  
Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
Ballistic Tables: OP 1395 Rev 1 Ch 2: I-0609-139-5000.  
OP 2563 Rev 0 Ch 0: I-0609-256-3000.  
OP 2843 Rev 0 Ch 0: I-0609-284-3000.  
Gen'l Requisites: OD 7306 Vol 1 Rev 5 Ch 1 (OAs 01 thru 16,  
incl drill assys).<sup>c</sup>  
OD 7306 Vol 2 Rev 1 Ch 1 (OAs 17 thru 24).<sup>c</sup>

### Mine Mk 36 Mod 2

Service Assembly: OP 1798 Vol 1 Rev 2 Ch 2: I-0609-179-8100.  
Drill Assembly: OP 1816 Vol 5 Rev 2 Ch 0: I-0609-181-6500.  
Fire Mech: OP 2567.<sup>a</sup>

for footnotes see page 14

**Mine Mk 36 Mod 2, Cont'd**

Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
 Ballistic Tables: OP 1395 Rev 1 Ch 2: I-0609-139-5000.  
 OP 2563 Rev 0 Ch 0: I-0609-256-3000.  
 OP 2843 Rev 0 Ch 0: I-0609-284-3000.  
 Gen'l Requisites: OD 7331 Vol 1 Rev 4 Ch 1 (OAs 01 thru 16,  
 incl drill assys).<sup>c</sup>  
 OD 7331 Vol 2 Rev 1 Ch 1 (OAs 17 thru 24).<sup>c</sup>

**Mine Mk 36 Mod 3**

Service Assembly: OP 1892 Vol 1 Rev 1 Ch 2: I-0609-189-2100.  
 Drill Assembly: OP 1816 Vol 6 Rev 2<sup>d</sup> Ch 0: I-0609-181-6600.  
 Fire Mech: OP 2567.<sup>a</sup>  
 Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
 Ballistic Tables: OP 1395 Rev 1 Ch 2: I-0609-139-5000.  
 OP 2563 Rev 0 Ch 0: I-0609-256-3000.  
 OP 2843 Rev 0 Ch 0: I-0609-284-3000.  
 Gen'l Requisites: OD 7332 Rev 4 Ch 1 (OAs 01 thru 12, incl  
 drill assys).<sup>c</sup>

**Mine Mk 39 Mod 0**

Service Assembly: OP 1736 Rev 2 Ch 0: I-0609-173-6000.  
 Drill Assembly: None.  
 Fire Mech: OP 2567.<sup>a</sup>  
 Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
 Ballistic Tables: OP 2120 Rev 0 Ch 1: I-0609-212-0000.  
 OP 2595 Rev 0 Ch 0: I-0609-259-5000.  
 OP 2959 Rev 0 Ch 0: I-0609-295-9000.  
 Gen'l Requisites: OD 7333 Rev 2 Ch 1.

**Mine Mk 41 Mods 0, 1, & 2**

Practice Assembly: NOLR 949 Rev 0 Ch 1 (available only from  
 NOL).  
 Drill Assembly: None.  
 Fire Mech: None.  
 Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
 Ballistic Table: Incl in assy manual.  
 Gen'l Requisites: OD 7334 Rev 1 Ch 0.<sup>c</sup>

**Mine Mk 50 Mod 0**

Service Assembly: OP 1811 Rev 0 Ch 1: I-0609-181-1000.  
 Drill Assembly: Obsolete  
 Fire Mech: OP 2567.<sup>a</sup>  
 Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
 Ballistic Table: OP 1459 Rev 1 Ch 0: I-0609-145-9000.  
 Gen'l Requisites: OD 7337 Rev 3 Ch 0.<sup>c</sup>

**Mine Mk 52 Mods 0 through 6**

Service Assembly: OP 2608 Vol 1 Rev 0 Ch 0, Feb '62 edition  
 I-0609-260-8100 only.<sup>f</sup>  
 OP 2608 Vol 2 Rev 0 Ch 0, Feb '62 edition  
 I-0609-260-8200 only.<sup>f</sup>  
 Drill Assembly: See footnote for service assy manuals.  
 Fire Mech: OP 2567.<sup>a</sup>  
 Opn'l Characteristics: OP 2637 1st Rev.<sup>b</sup>  
 Ballistic Tables: OP 2562 Rev 0 Ch 0: I-0609-256-2000.  
 OP 2843 Rev 0 Ch 0: I-0609-284-3000.  
 General Requisites: OD 9670 Rev 2 Ch 1 (Mod 0).<sup>c</sup>  
 OD 9671 Rev 2 Ch 1 (Mod 1).<sup>c</sup>  
 OD 9672 Rev 2 Ch 1 (Mod 2).<sup>c</sup>

## FOOTNOTES

- a ▶ See general-reference section for OP 2567 titles and stock numbers.
- b ▶ See general-reference section for OP 2637 titles and stock numbers.
- c ▶ ODs do not have stock numbers; order by letter, from Central Technical Documents Office, Louisville, Kentucky. ODs listed for Mk 25 mines and OD changes listed for Mk 52/55 mines are new, sked for distribution Nov 1963.
- d ▶ Covers drill mine using Float Mk 15. For improved drill gear, see listing for volume 2 of service-mine OP.
- e ▶ New revision in preparation. Advance copies or preliminary editions of next revision no longer available, but authorized for use by holders.
- f ▶ Vol 2 contains Vol 1 assy & test instructions reiterated in instruction-sheet form. Both vols cover drill OAs using new universal gear; for drill OAs using Float Mk 15, assemble per OP 1816 Vol 7 Ch 0: I-0609-181-6700.
- g ▶ New mines not yet released for service use; preliminary manuals released only to selected activities; available only from BUWEPS RUME-2. Revision 1 to 2718 sked for initial distribution February 1964.
- h ▶ Copies of OP 1118 not available; manual gradually being replaced by new mine-loading check lists being published as supplements to OP 3232, the first three of which are listed herein.
- i ▶ Preliminary edition of 3d revision out of stock but approved for use by holders for tests of components not included in 2d revision. Otherwise, use 2d revision pending release of 4th revision, now in preparation.
- j ▶ Only edition dated 15 July 1963 is official; released to calibration labs and major depots only. Covers sets below Mark 300. For sets above Mark 300, see individual OP listings in general reference section.
- k ▶ OP 2567 Part 1, Vol 1 sked for distribution to all hands 20 Nov 1963; first release of Part 1 Vol 2 23 Dec 1963. Release of Vols 1 and 2 of Part 2 not yet scheduled.
- l ▶ OP 2637, with revision and changes listed, supersedes ORD 696B. Rev 1 to Vol 1 sked for release Oct-Nov 1963; changes were released 15 Feb 1963. Distribution is to operational planners only; others must request from BUWEPS/RUME-2 by letter explaining need for copies.
- m ▶ Changes 1, 2, 3, 4, 5, 7, and 8 to OP 2165 are listed in cog-I index but there has never been a listing for change 6!
- n ▶ Gives description and maintenance info but is chiefly for use of calibration labs. Non cog-I; distributed only to selected activities; available only from BUWEPS RUME-2.
- o ▶ OP 3232 Supplement E available from cog-I stocks; Supplements A and B scheduled for initial distribution late December 1963.
- p ▶ New manual on Test-Mine Locating System Mk 1, Fire Recorder Mk 17, etc. Initial distribution scheduled 30 November 1963.

## BIBLIOGRAPHY

OD 9673 Rev 2 Ch 1 (Mod 3) .<sup>c</sup>  
OD 9674 Rev 2 Ch 1 (Mod 4) .<sup>c</sup>  
OD 9675 Rev 2 Ch 1 (Mod 5) .<sup>c</sup>  
OD 9676 Rev 2 Ch 1 (Mod 6) .<sup>c</sup>

### Mine Mk 53 Mod 0

Service Assembly: OP 2370 Rev 0 Ch 0: I-0609-237-0000.  
Drill Assembly: None.  
Fire Mech: Incl in assy manual.  
Opn'l Characteristics: OP 2637 1st Rev .<sup>b</sup>  
Ballistic Tables: OP 2563 Rev 0 Ch 0: I-0609-256-3000.  
OP 2843 Rev 0 Ch 0: I-0609-284-3000.  
Gen'l Requisites: OD 9350 Rev 1 Ch 1 .<sup>c</sup>

### Mine Mk 55 Mods 0 through 6

Service Assembly: OP 2974 Vol 1 Rev 0 Ch 0, Sep '62 edition  
I-0609-297-4100 only .<sup>f</sup>  
OP 2974 Vol 2 Rev 0 Ch 0, Sep '62 edition  
I-0609-297-4200 only .<sup>f</sup>  
Drill Assembly: See footnote for service assy manuals.

Fire Mech: OP 2567 .<sup>a</sup>  
Opn'l Characteristics: OP 2637 1st Rev .<sup>b</sup>  
Ballistic Tables: OP 1395 Rev 1 Ch 2: I-0609-139-5000.  
OP 2843 Rev 0 Ch 0: I-0609-284-3000.  
Gen'l Requisites: OD 10504 Rev 2 Ch 1 (Mod 0) .<sup>c</sup>  
OD 10505 Rev 2 Ch 1 (Mod 1) .<sup>c</sup>  
OD 10506 Rev 2 Ch 1 (Mod 2) .<sup>c</sup>  
OD 10507 Rev 2 Ch 1 (Mod 3) .<sup>c</sup>  
OD 10508 Rev 2 Ch 1 (Mod 4) .<sup>c</sup>  
OD 10509 Rev 2 Ch 1 (Mod 5) .<sup>c</sup>  
OD 10510 Rev 2 Ch 1 (Mod 6) .<sup>c</sup>

### Mine Mk 56 Mod 0

Service Assembly: OP 2572 Rev 0 Ch 0 .<sup>g</sup>  
Drill Assembly: Incl in service assy manual.  
Fire Mech: OP 2567 .<sup>a</sup>  
Opn'l Characteristics: OP 2815 Rev 0 Ch 0.  
Ballistic Table: OP 2562 Rev 0 Ch 0: I-0609-256-2000.  
Gen'l Requisites: OD 9353 Rev 0 Ch 0.

## DEPTH CHARGES

### Depth Charge Mk 6 Mods 0, 1, & 2

Assembly: OP 747 Rev 2 Ch 0: I-0609-074-7000.  
Depot/Tender Instns: Incl in assy manual.  
Shipboard Instns: Incl in assy manual.  
Opn'l Characteristics: Incl in assy manual.  
Gen'l Requisites: OD 17160 Rev 0 Ch 0 .<sup>c</sup>

### Depth Charge Mk 8 Mods 3, 4, & 5

Assembly: OP 2960 Rev 0 Ch 0: I-0609-296-0000.  
Depot/Tender Instns: Incl in assy manual.  
Shipboard Instns: Incl in assy manual.  
Opn'l Characteristics: Incl in assy manual.  
Gen'l Requisites: OD 17160 Rev 0 Ch 0 .<sup>c</sup>

### Depth Charge Mk 9 Mods 2, 3, & 4

Assembly: OP 866 Rev 3 Ch 1: I-0609-086-6010.  
Depot/Tender Instns: Incl in assy manual.  
Shipboard Instns: Incl in assy manual.  
Opn'l Characteristics: Incl in assy manual.  
Gen'l Requisites: OD 17160 Rev 0 Ch 0 .<sup>c</sup>

### Depth Charge Mk 14 Mod 0

Assembly: OP 669 Rev 2 Ch 0: I-0609-066-9010.  
Fire Mech: Incl in assy manual.  
Depot/Tender Instns: Incl in assy manual.

Shipboard Instns: Incl in assy manual.  
Opn'l Characteristics: Incl in assy manual.  
Gen'l Requisites: OD 17160 Rev 0 Ch 0 .<sup>c</sup>

### Depth Charge Mk 15 Mods 0 through 11

Assembly & Use: OP 2386 Rev 1 Ch 0: I-0609-238-6000.  
Gen'l Requisites: OD 17160 Rev 0 Ch 0 (Mods 0 thru 5 only) .<sup>c</sup>

### Depth Charge Mk 16 Mods 0 & 1

Assembly: OP 2107 Rev 0 Ch 0: I-0609-210-7000.  
Firing Mechanism: OP 669 Rev 2 Ch 0: I-0609-066-9010.  
Depot/Tender Instns: Incl in assy manual.  
Shipboard Instns: Incl in assy manual.  
Opn'l Characteristics: Incl in assy manual.  
Gen'l Requisites: OD 17160 Rev 0 Ch 0 .<sup>c</sup>

### Signal, Underwater-Sound, Mk 50 Mods 0 & 1

Assembly & Use: OP 2386 Rev 1 Ch 0: I-0609-238-6000.  
Gen'l Requisites: OD 17160 Rev 0 Ch 0 (Mod 0 only) .<sup>c</sup>

### 12".75 Rocket Mk 1 Mod 0 (ASP)

Assembly: OP 2027 Rev 1 Ch 0: I-0609-202-7000.  
Fire Mech: OP 1792 Rev 0 Ch 3 (Preliminary): I-0609-202-7000.  
Shipboard Instns: Incl in assy manual.  
Opn'l Characteristics: Incl in fire mech manual.  
Ballistic Table: OP 1829 Rev 0 Ch 0: I-0609-182-9000.

## GENERAL REFERENCES

NAVWEPS ORDALT 00 Rev 0 Ch 1: Index of Alterations to Ordnance Equipment (30 January 1961) .<sup>c</sup>  
NOLR 1204 Rev 0 Ch 0: Environmental Considerations in Testing Mine and Depth-Charge Influence Mechanisms (available only from NOL/White Oak).  
NOLR 1216 Rev 0 Ch 2: New Mine Components and Accessories (available only from NOL/White Oak).  
OD 6678 Rev 5 Ch 0: Operational Assembly Charts for Service and Drill Mines .<sup>c</sup>  
OD 9363 Rev 0 Ch 0: Nomenclature Manual for Mines, Depth Charges, and Associated Equipment .<sup>c</sup>

OD 9364 Rev 0 Ch 0: Nomenclature Manual for Test Sets, Cable Assemblies, Batteries, and Associated Equipment .<sup>c</sup>  
OD 10 604-Vol 1 Rev 2 Ch 0: Active Assembly Material for Service Mines and Drill Mines  
Vol 1 Rev 2 Ch 0: Marks 6 through 50 .<sup>c</sup>  
Vol 2 Rev 0 Ch 0: Marks 51 through 55 .<sup>c</sup>  
OD 16135 Rev 2 Ch 1: Navy Ammunition Logistics Codes .<sup>c</sup>  
OD 12067-D Rev 1 Ch 1: Index to Navy Ammunition Stock, Depth Charges and Accessories .<sup>c</sup>  
OD 12067-G Rev 1 Ch 2: Index to Navy Ammunition Stock, Mines and Mine Material .<sup>c</sup>

for footnotes see page 14



- OD 16086 Rev 0 Ch 0: U. S. Naval Underwater Weapons, Operational Characteristics and Tactical Data (Section B).<sup>c</sup>
- OP 0 Rev 32 Ch 6, I-0609-000-0000: Index to Ordnance Publications.
- OP 5—Ammunition Ashore .  
 Vol 1 Rev 2 Ch 1, I-0609-000-5100: Handling, Stowing, and Shipping.  
 Vol 2 Rev 0 Ch 0, I-0609-000-5200: Production and Renovation.  
 Vol 3 Rev 0 Ch 1, I-0609-000-5300: Handling at Advance Bases.
- OP 1014 Rev 1 Ch 0, I-0609-101-4000: Ordnance Safety Precautions .
- OP 1105 Vol 6 Rev 2 Ch 2, I-0609-110-5600: Preservation and Preservation-Maintenance of Ordnance Equipment in Shore Storage .
- OP 1118 Rev 2 Ch 0: Instructions for Installation of U. S. Naval Mines in U. S. Naval Aircraft.<sup>h</sup>
- OP 1391 Rev 1 Ch 1, I-0609-139-1000: U. S. Naval Mines, Introduction to .
- OP 1452 Rev 2 Ch 3, I-0609-145-2000: Mine Accessories: Description and Instructions for Testing.<sup>i</sup>
- OP 1631 Rev 2 Ch 0, I-0609-163-1100, Ammunition Hazard Classification, Dimensions and Weights.
- OP 1860—Test Sets for Depth Charges and Underwater Mines: Calibration Instructions.<sup>j</sup>  
 Vol 1 Rev 2 Ch 0: I-0609-186-0111, Class B and C Sets Mk 1 through Mk 66.<sup>j</sup>  
 Vol 2 Rev 2 Ch 0: I-0609-186-0200, Class B and C Sets Mk 75 through Mk 195.<sup>j</sup>  
 Vol 3 Rev 2 Ch 0: I-0609-186-0300, Class B and C Sets Mk 204 through Mk 271 and Misc. Equipment.<sup>j</sup>
- OP 2165 Rev 2 Ch 8: I-0609-216-5000, Navy Ordnance Shipping Handbook.<sup>m</sup>
- OP 2173—Handling Equipment for Ammunition and Explosives .  
 Vol 1 Rev 1 Ch 0: I-0609-217-3100, Mobile Equipment.  
 Vol 2 Rev 1 Ch 0: I-0609-217-3200, Non-Mobile Equipment.
- OP 2213—I-0609-221-3000, Pyrotechnics and Miscellaneous Explosive Items, Descriptions and Uses.
- OP 2238 Rev 0 Ch 0: I-0609-223-8000, Identification of Ammunition .
- OP 2239 Rev 0 Ch 5: I-0609-223-9000, Driver's Handbook, Explosives and Dangerous Materials.
- OP 2567: Underwater-Mine Firing Mechanisms.<sup>k</sup>  
 Pt 1 Vol 1 Rev 1 Ch 0: I-0609-256-7110, Descriptions and Class 2 Tests—A5 through Mk 22 .  
 Pt 1 Vol 2 Rev 1 Ch 0: I-0609-256-7120, Descriptions and Class 2 Tests—Mk 26 and Higher .  
 Pt 2 Vol 1 Rev 0 Ch 0: Engineering and Design Data—A5 through Mk 22 .  
 Pt 2 Vol 2 Rev 0 Ch 0: Engineering and Design Data—Mk 26 and Higher .
- OP 2637—Operational Characteristics of U. S. Naval Mines.<sup>l</sup>  
 Vol 1 Rev 1 Ch 0: Operational Considerations in Mine Warfare .  
 Vol 2 Rev 0 Ch 1: Aircraft-Planted Mines .  
 Vol 3 Rev 0 Ch 1: Submarine-Planted Mines .  
 Vol 4 Rev 0 Ch 1: Surface-Craft-Planted Mines .  
 Vol 5 Rev 0 Ch 1: Summary of Actuation Data .
- OP 2769 Rev 0 Ch 0: I-0609-276-9000, Cable Reeling Machine Mark 2 Mod 0, Operation and Maintenance .
- OP 2771 Rev 0 Ch 0: Test Set Mark 303 Mod 0.<sup>n</sup>  
 OP 2773 Rev 0 Ch 0: Test Set Mark 316 Mod 0.<sup>n</sup>  
 OP 2777 Rev 0 Ch 0: Test Set Mark 335 Mod 0.<sup>n</sup>  
 OP 2778 Rev 0 Ch 0: Test Set Mark 336 Mod 0.<sup>n</sup>  
 OP 2780 Rev 0 Ch 0: Test Set Mark 358 Mod 0.<sup>n</sup>  
 OP 3016 Rev 0 Ch 0: Test Set Mark 406 Mod 0.<sup>n</sup>  
 OP 3017 Rev 0 Ch 0: Test Set Mark 407 Mod 0.<sup>n</sup>  
 OP 3040 Rev 0 Ch 0: Test Set Mark 408 Mod 0.<sup>n</sup>  
 OP 3232 Rev 0 Ch 0: Mine Loading in Aircraft.<sup>o</sup>  
 Supplement A Rev 0 Ch 0, I-0609-323-2001: Loading Check List for Navy P2E.<sup>o</sup>  
 Supplement B Rev 0 Ch 0, I-0609-323-2002: Loading Check List for Navy P2H.<sup>o</sup>  
 Supplement E Rev 0 Ch 0, I-0609-323-2005: Loading Check List for USAF B-57.<sup>o</sup>
- OP 3233 Rev 0 Ch 0, I-0609-323-3000: Instrumentation for Underwater-Mine Tests.<sup>p</sup>

for footnotes see page 14



Here's a recent shot of the mine crew at Navy 555 with mascots Jules, and Juliet, who, we're told, eats Troubleshooters! Front row, left to right: T.G. Young, MNSN; Jules; J.W. Montgomery, MN2; E.L. Boyle, MNSN; L.R. Engberg, MN1; L.E. Hight, MN3; C. Vannella, MN3. Second row left to right: D.M. Steen, MNSN; C.L. Booth, MN3; R.J. Carolonza, MNSN; J.J. Manzolli, MN3; H.E. East, MN1; W.R. McLain, MNSN; N.M. Siversten, MN1; J.R. Coffman, MN1; (LTJG R.A. Janke, Division Officer). Back row left to right: H.F. Bright, MN1; R.F. Stancik, MN2; T.W. Phillips, MN3; W. Bich, MN2; Juliet; C.R. Gracy, MNSN; P.C. Mathews, MNSA; R.L. Watts, MNSN; M.C. Dellolio, TM3. Not present: R.F. Rome, MN1; J.F. Steedly, MN2; W.E. Kersey, MN3; and N.F. Davis, MNSN.

# Pub-S-Crawlin'

with  
Clark Starter, MN2



## A Fall checkup for pubs?

With publication of an up-dated bibliography (page 12) we'd like to suggest that all mine shops, depot pub sections, and scroungers who maintain private collections, conduct a thorough inventory of the publications they have on hand. The reason: a small but persistent flow of Rudminde which, upon investigation, lead us to the conclusion that too many reporting activities are working with outdated editions of OPs or with good editions that lack the latest changes.

This will not, of course, insure your working with tech manuals from which all errors have been removed. But it sure will get rid of a lot of them.

Speaking of pubs errors, do you make it a point to Rudminde every last one you find? You should. It's about the best boost to readiness that you can give, and that brings us to a man who has really done the job right.

## There should be an award!

Every now and then one of our T-Shooter readers does a job that's so outstanding that we wish there was an

award that we could give. Among the men who make up the mine force that's saying a lot, because the percentage with unusual diligence and know-how is so high.

Anyhow, the wish to award is with us again and this time it's because of what looks like an especially good job done by W. R. Segesser, MN1 out at the Drill Mine Prep Facility, Long Beach.

What he did may not seem like much. He simply assembled some Mk 49 mines and sent in Rudminde on the errors he found in the assembly OPs. The thing is, he appears not to have missed anything, and he appears not to have failed to Rudminde anything, with the result that all manuals on all mods of the service and drill 49s will ultimately be tremendously improved. That means more reliable mines for the Navy and an easier job for all hands who assemble them.

Next issue you'll probably be seeing some results of Segesser's work, which we received too late for this one. Meantime here's this issue's crop of OP write-ins.

— and to Brother Segesser, our congratulations and thanks!

► **ODs 9670 through 9676 (Mine Mk 52):** For Items 302.0 (OD 9670) and 402.0 (ODs 9671 through 9676) write note reading, Soluble washers are no longer authorized for air-laid mines, but are mandatory for surface-laid Mk 52 mines. Water filters are mandatory with soluble washers for soft bottom plants. Reference the items to the notes.

► **ODs 10504 through 10510 (Mine Mk 55):** For Items 302.0 (OD 10506) and 402.0 (ODs 10504, 10505, 10507 through 10510) write note reading, Soluble washers are no longer authorized for air-laid mines, but are mandatory for surface-laid Mk 55 mines. Water filters are mandatory with soluble washers for soft bottom plants. Reference the items to the notes.

► **OP 669 2d Rev (Depth Charge Mk 14 Mod 0):** On page 49, under "Pistol Preparation" in illustration write in 2T1340-671-5155 for slotted washer and write in 2T before FSN in step 4.

► **OP 1765 2d Rev (Mine Mk 25 Mod 2):** In figure 25 identify the clock delay attached to Clock Starter Mk 1 Mod 4 as: CD 8 Mod 0 or CD 12 Mod 0. Identify the cable attached to the clock delay as: CA-16 or CA-23.

Write in the same identifications for the clock delay and cable assembly on Item 29 in the envelope in back of book.

► **OP 1807 1st Rev (Mine Mark 49-0):** On pages 37, 39, and 40, reverse assembly procedure so that BA-239/U Battery Installation comes just ahead of TB-19 and TB-20 Assembly Installation.

► **OP 1816 Vols 1 thru 7 2d Rev:** Change GA5310-262-6366 to KZ5310-272-7019 for nut in figure 18, Vols 1 & 4; figure 19, Vols 2, 3, 5, and 6; and figure 23, Vol 7.

**Volume 2 (Drill Mine Mk 25-1):** In figure 1, cross out Parachute Pack Mk 18 Mod 0 and write in Parachute Pack Mk 19 Mod 0.

**Volume 7 (Drill Mine Mks 52 & 55):** In the caption for figure 21, cross out Mk 25 Mod 1 and write in Mk 44 Mod 0.

► **OP 1860 Vol 1, July '63 edition (Test Sets):** Page iii, under Contents, Chapter 12 should read Mine Test Set Mk 27 Mod 1.

In the contents on page iii, cross out the reference to chapter 30 of volume 2.

In chapter 3, on page 3-3, last line, cross out (1) and write in (12).

In chapter 15, on page 15-12, in figure 15-10, cross out 10V DC and write in 110V DC.

In chapter 19, on page 19-4, paragraph 16, last line, cross out 40 and write in 4.0.

In schematic diagram Fig 19-14 change HR 2 (R11) to HR 2 (R9).

► **OP 1860 Vol 2, July '63 edition (Test Sets):** In the contents on page iii, cross out the reference to chapter 30.

On the title page of chapter 30, write in Test Set Mk 130 Mod 1 is obsolete.

► **OP 1892 1st Rev (Mine Mark 36-3):** On page 44, in paragraph 49, line 5, cross out 13 and write in 3.

► **OP 1935 Vol 1 (Mines Mk 27 Mods 2 and 3):** On page 107, cross out paragraphs 9 and 10.

► **OP 2370 (Mine Mark 53-0):** In table 3, cross out: Wire and Cordage Meter LD 296055.

► **OP 2567 Part 1 Vol 1 (Underwater-Mine Firing Mechanisms, March '61 edition):** In chapter 10, page 10-55, paragraphs 13e and f, under Procedure, cross out "Tag the pressure detector. . . IS FAILED." and write in: If detector exhibits time characteristics of e or f after exhibiting the characteristics of c or d, turn the firing mechanism's CONTROL A clockwise. If the unit can thus be adjusted to exhibit the characteristics of 13 a or b, tag it "Not to Be Used in Mod 4 of Mine Mk 52 or 55." And proceed with disassembly procedure on page 10-56. If the unit cannot be so adjusted, tag it as a reject.

(This correction has already been incorporated in the first revision, scheduled for release 30 December 1963.)

► **OP 2608 Vol 1 (Mine Mk 52 Mods 0-6):** On page 1-4, under "Delay Arming" in right hand column, last paragraph, line 5, cross out word not.

On pages 1-4, 1-7, 9-2, 9-9, and 17-10, write note near appropriate text: Soluble washers are no longer authorized for air-laid mines, but are mandatory for surface-laid Mk 52 mines. Water filters are mandatory with soluble washers for soft bottom plants. Also write note on figures 9-8, 17-7, and 17-8.

In figures 5-6, 7-6, and 8-6, cross out "NOTE: WHEN MINE IS ARMED SWITCHES SHOWN IN RED ARE OPEN."

In figures 5-6, 6-6, 7-6 and 8-6 transpose designations CAM C and CAM F.

On pages 10-36, 10-41, 10-45, 11-43, 11-46, 11-50, 12-41, 12-46, 12-51, 13-44, 13-49, 13-54, 14-42, 14-47, 14-52, 15-44, 15-50, 15-52, 16-46, 16-50 and 16-53 change F6625-643-3399 to read J6625-251-2549.

In tables 10-6, 11-8, 12-8, 13-8, 14-8, 15-8 and 16-8, change F6625-643-3399 to read J6625-251-2549.

On page 17-6, paragraph on Booster check and Arming Device Installation, P-3, under "Material Required," change F6625-643-3399 to read J6625-251-2549.

► **OP 2608 Vol 2 (Mine Mk 52 Mods 0-6):** To titles of Instruction Sheets S-1a, add Mod 0; S-1b, add Mods 1 and 4; S-1c, add Mods 2, 3, 5, and 6; S-5a, add Mods 0 and 3; S-5b, add Mods 1 and 5; S-5d, add Mods 4 and 6.

On Instruction Sheet page S-3c-2 in paragraph 3e, cross out the words "second and third batteries," and write in mechanism (orange case) and the battery.

On pages P-3-1, DA-8-1, DC-1-1 and DC-2-1, under "Material Required," change F6625-643-3399 to read J6625-251-2549.

On Instruction Sheet page P-3-2 in paragraphs 6h and i, change "repeat steps a through g" to read repeat steps b through g.

On Instruction Sheet P-6-1, write note: Soluble washers are no longer authorized for air-laid mines, but are mandatory for surface-laid Mk 52 mines. Water filters are mandatory with soluble washers for soft bottom plants. Also write note on figures 1 and 2.

► **OP 2974 Vol 1 (Mine Mk 55 Mods 0-6):** On pages 1-16, 1-18, 9-2, 9-19, 17-16, and 17-18, write note near appropriate text: Soluble washers are no longer authorized for air-laid mines, but are mandatory for surface-laid Mk 55 mines. Water filters are mandatory with soluble washers for soft bottom plants. Also write note on figures 9-9, 17-7, and 17-8.

► **OP 2974 Vol 2 (Mine Mk 55 Mods 0-6):** On Instruction Sheet P-6, page 1, write note: Soluble washers are no longer authorized for air-laid mines, but are mandatory for surface-laid Mk 55 mines. Water filters are mandatory with soluble washers for soft bottom plants. Also write note on figures 1 and 2.

► **OP 3232 (Supplement E) (Mine-Loading Check Lists):** On pages 17, 34, and 36, place this note, "NOTE: Use of soluble washers in air-laid mines is no longer approved."

► **TROUBLESHOOTER 1-59:** On page 25, in "Job Right" in step 3 and illustration write in 2T1340-671-5155 for the slotted washer.

► **TROUBLESHOOTER 2-60:** On page 19, under "Items not shown above," change GA5310-262-6366 to KZ5310-272-7019 for the nut in the list of items, including the illustration within the list.

► **TROUBLESHOOTER 4-60:** On page 4 cross out remarks block for item Clock Starter Mk 1 Mod 4 and write in: see Hot Stuff, Troubleshooter 4-63.

► **TROUBLESHOOTER 2-63:** On page 9, in item MAKE IT EASY AS ABC, change M1340-671-5155 to 2T1340-671-5155.

► **TROUBLESHOOTER 3-63:** On page 9, under OP 1853, change page 93 to read 92.

On page 9, in heading OP 1935 Vol 2, change "Mine Mk 27-3" to read 27-2. Cross out second paragraph reading "On page 107. . . 9 and 10."

# BEFORE YOU CONNECT SD-4s...

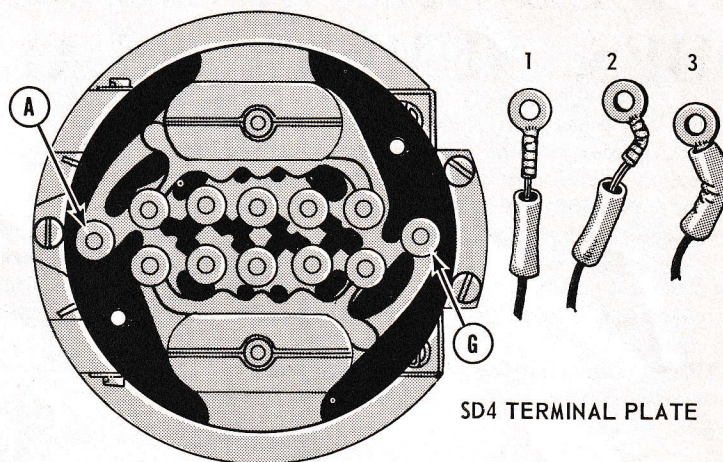
ONE mineman we know loses his religion every time he tries to connect a CA 718 to an SD-4 Mod 1 in Mines Mk 25-1, 36-2, and 29-1.

The problem in each case is the same: The straight lugs on the cables refuse to lay fair in the terminal-plate channels that lead to the SD's terminals A and G. The results are the same, too: The leads prevent the proper fit of the SD's cover. This can cause electrolyte leaks which sooner or later foul the entire deal.

Fortunately, there's a fix that's as simple as the 1, 2, 3 we show here. . .so easy it just doesn't pay to try to make connections to an SD-4 without doing it.

First, push back the spaghetti on those "A" and "G" lugs. Next, bend the lugs to fit the channels.

Then, after eyeballing the connections for obvious breaks, push the spaghetti back over the lugs' shanks. Do this before you connect and more often than not you'll have eliminated the whole problem of cracked SD terminal plates in planted mines.

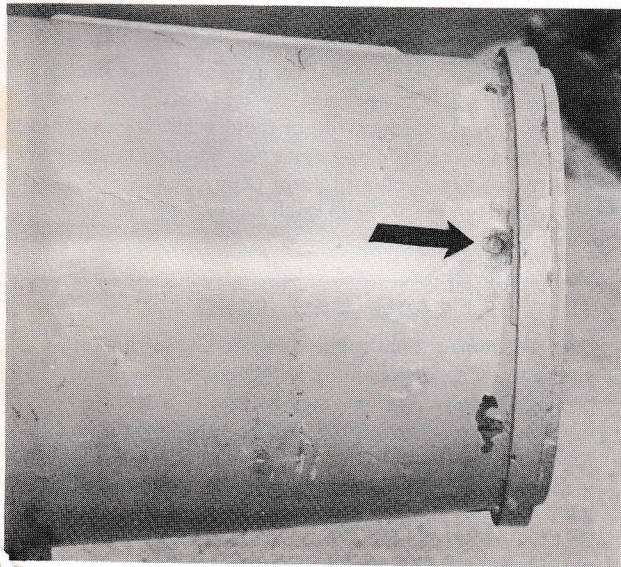


SD4 TERMINAL PLATE

## It was bound to happen?

A question has finally been raised as to proper torque for the cap-screws that secure float shields to air-laid drill mines that use Float Mk 15. The answer, after 10 years of fleet use with no problems: 16-20 lb-ft.

A joke? Not on your life! The question was raised by L. D. Rose, MN3 at Navy 955, and for good reason. While you're waiting to see torque specs show up via changes to Vols 1 through 7 of OP 1816, study this picture he sent us of a 36-2 mine case that was actually punctured by one of those screws!



TROUBLESHOOTER 4-63

## SEND MINTORPES??

According to some, the biggest snag in keeping the four active mods of self-propelled sub-laid Mines Mk 27 up to snuff has been a prolonged case of the split cog disease. The basic mine section has long been in NMEF's design cognizance while the torpedo-like mine vehicle sections have remained under design cog of the Central Torpedo Office, more recently known as the U. S. Underwater Weapons Systems Engineering Center. (In the new standard distribution codes, that's NEC-RGNESYSNPWRTWUVAN spelled backwards!)

However that may be, the split cog has meant reporting defects on one part of these weapons via Rudtorpes to CTO and on the other part via Rudmines to NMEF. Now that's all been changed.

All active mods of Mine Mk 27, in their entirety, are now in NMEF's cog. That means both the mine section and the vehicle.

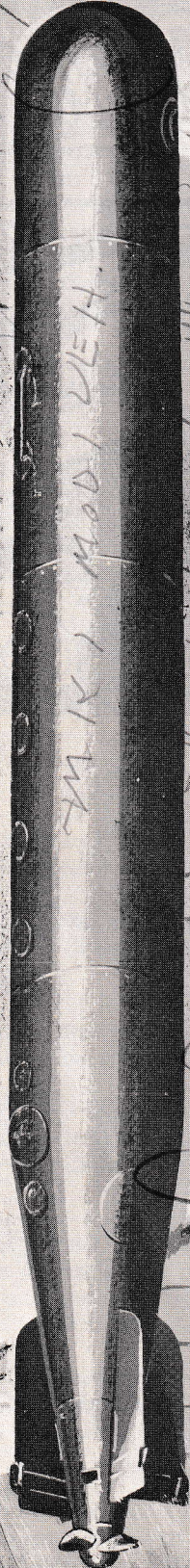
That means all hands should henceforth report defects on these weapons only to NMEF via Rudmines. NAVUWTRWPNSYSENGRCEN (frontwards) is happy and we're happy too!

## Four in one

It's a tight squeeze getting those four Mark 39 Mod 0 mines into P2E and P2H aircraft (formerly P2V-5 and P2V-7, respectively) but it can be done. Here's how:

- ▶ Remove tail fins from all mines.
- ▶ Load the two upper-station mines first (stations 3 and 4 in the P2E, 15 and 16 in the P2H).
- ▶ Load the lower stations.
- ▶ Re-mount fins, turning them so they intermesh but do not interfere with the aircraft structure.

This scoop will appear in the new mine-loading check lists for these planes. . . Supplements A and B to OP 3232, the replacement for OP 1118.



**PLANNED  
FOR SUCCESS**

**don't give it a chance  
to fail**

**RUDMINDE!**

OP 1935 (V)  
FIRST

MINES MARK  
MINE VEHICLE  
DESCRIPTION, OPER

THIS MATTER  
AFFECTING  
UNITED STATES  
INTERESTS