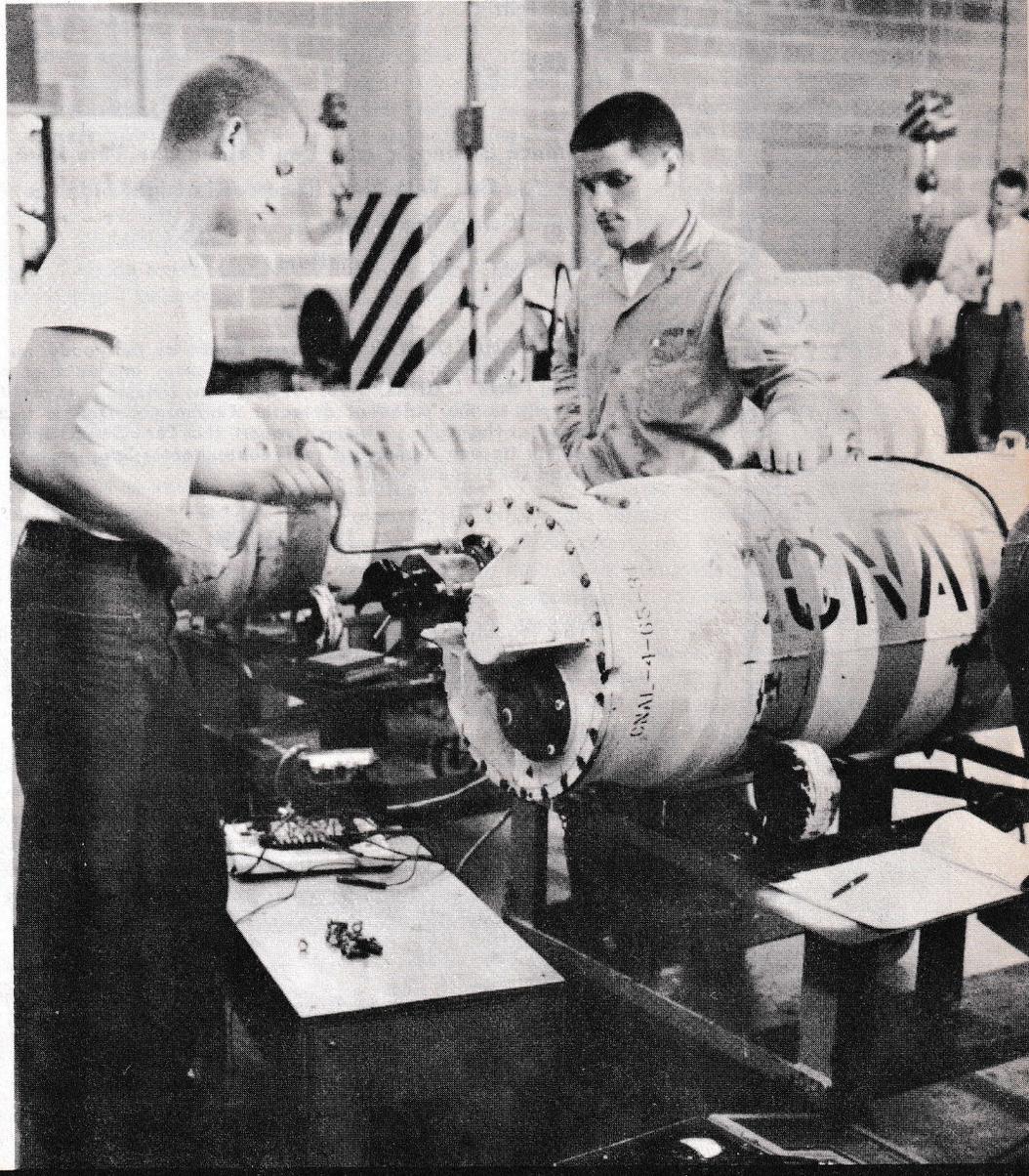


mine and depth - charge

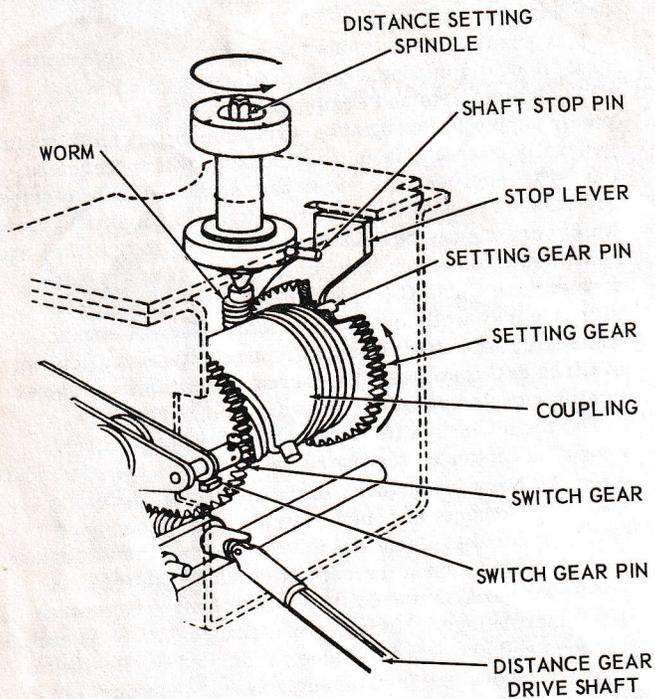
THE TROUBLESHOOTER

- ▶ Keeping Recorder Right Side Up
- ▶ When CA-95 Won't Plug In
- ▶ Seal Saver Tool



AN OFFICIAL BUWEPS PUBLICATION

DISTANCE SETTING SPINDLE CAN'T STAND ONE TURN MORE



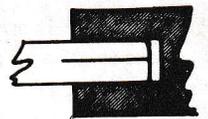
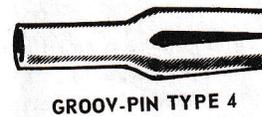
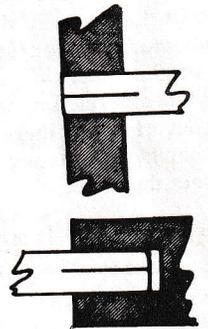
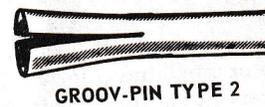
DISTANCE setting units in Mods 1 and 2 of Mine Vehicle Mark 1 are turning up inoperative after maximum distance settings are made, resulting in a number of Rudmines asking why. The reason lies in the number of turns given to the distance-setting spindle. This unit is designed for 20-7/8 turns maximum, but there are units in the field which at one time or another have been given 21-7/8 turns. The result: stop levers have been bent in the doing, and the mechanisms thereby rendered unfit for service use. How could this happen? It happens like this:

As the distance-setting spindle is turned, the worm gear on the shaft rotates the setting gear. And as the setting gear rotates, its pin pushes the stop lever into a slot. When the lever bottoms in the slot the mechanism is set for maximum distance. This occurs at 20-7/8 turns, which is also the point where the shaft's stop pin strikes the stop lever, to insure that no more turns are made. This is as it should be.

But . . . the Groov-pins used in some as yet unidentified manufacturing lots (they function as the shaft's stop pins) were, at the time of manufacture, pressed too deep into their holes, permitting them to clear the stop lever, after 20-7/8 turns of the shaft, thus allowing that extra turn. The stop lever, caught between the slot and the

pressure of the setting-gear pin, had nothing to do but bend when the distance-setting spindle was turned up to max.

The real cause goes back to the manufacturers' use of an improper Groov-pin: one designed for through-drilled holes, known as type 2. The proper pin is a reverse-taper groov-pin for use in blind holes, known as type 4. The reverse taper of the type 4 jams the pin and holds it firm.



So what should you do when you come across a unit that turns up to 21-7/8? First, do not try to reposition the stop pin. It won't help, since the lever of the mechanism is also bent. In this condition the unit is not acceptable for service use and your only recourse at present is to tag it Code B and order a replacement.

Soon, though (in response to recent NMEF action), those type 4 Groov-pins will become available via APL 23521.01002, which already lists the stop levers. When they do, you can overhaul, using the instructions in OPs 1935 Vol 1 and 2363 Vol 1, and install new stop levers and the type 4 pins.

That should put your units back in Code A!

A MATTER OF REACH

TOLERANCES being what they are, the 5/8-inch screws used to secure the end caps to the Search Coils SC-20 Mod 1 are sometimes too short to reach the Cap Retainers. So for future procurement the drawing for the retainer (DWG 1419903) has been revised, to provide a fix for this, and other problems too.

Right now, in the field, though, the best you can do is to get a longer screw. This is a cadmium-plated machine screw, No. 10-24 NC x 3/4-inch flat head for 82° countersunk, 5305-958-5471. In some cases this longer screw may bottom and have to be shortened a

HOT STUFF

by B. Arnaclebutt, MNC



Gasket larceny

Dear Barnacles

Are Sinking Valves Mk 2-0 used on Mark 6 mines being issued without gaskets installed these days? We have been getting them that way despite ODs for the mine which say the valve comes complete with gasket.

FH MNC

Dear FH

Up to now sinking valves have been stocked and issued with gaskets installed, but lately someone's apparently been robbing them. In any case, this will be different from now on.

Namely, all hands will have to start ordering those gaskets separately. The one to get is 1350-592-9910. This is a rubber Bushing DWG 72093-5, not Gasket DWG 443328, formerly used with the sinking valve. The bushing, which is also used on the H-Plugs and H-4 Devices, will be used on the sinking valve from now on, and OPs and ODs on Mines Mk 6 will be changed accordingly.

So when ordering Sinking Valves Mk 2, order those bushings separately. Sinking valves will not be packaged with gaskets or bushings in new procurements.

B. Arnaclebutt

New clamps for old

Dear Barney

We're having fit problems with cable clamps DWG 1281165 which hold the CA-99 male connector in place when attached to the power plug's drill-mine female connector on Mines Mark 52/55, all mods. The clamps are too narrow to fit properly on the

protective caps for the power plugs, so that when the clamp is tightened down the CA-99 drill cable sticks up at a weird angle.

SUC MN3

Dear SUC:

You are not alone. Douglas L. Guy, MN2, when at Minecraft Support Unit, Charleston, had the same trouble with those clamps. The cause is poor design of the older clamps now being phased out of the system. While they can be jury rigged to work, it's not worth the effort.

New clamps per Revision C to DWG 1281165 do not exhibit the misalignment and undersized radii. So if you get old ones that don't fit, you can order new ones from fresh stock via 1350-672-0321. These will fit fine.

B. Arnaclebutt

Switching the switch

Dear B. Butt,

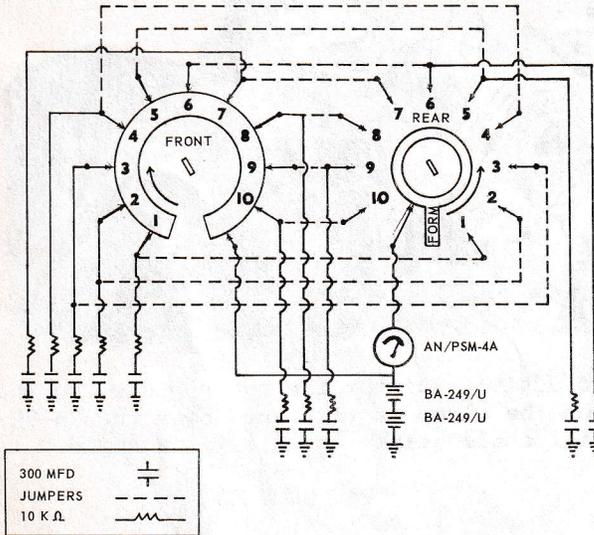
We're having trouble finding a switch that fits the circuit used in making the test panel for 300-mike condensers as described in T-Shooter 4-64. Could you help us out?

GPS MNC

Dear GPS

The switch called out in our parts lists for the test panel is a good one for the job but if you can't find that one 5930-248-6596 will get you a rotary switch that is an adequate substitute. This switch is in a single section with contacts front and rear of the wafer. To make

it work you have to jumper between contact 1 on the front and contact 1 on the rear, and continue through all 10 contacts. The schematic here shows how the connections are made.



You should also change our operating procedure in the first paragraph of the right-hand column, top of page 12, where 100 MA/2.5v should read: 100 micro-amps/2.5v.

B. Arncliffe

Easy on the hammer, Mac

Dear Barnacles:

We have some rough looking extender- and clock-well flanges on inert-loaded Mk 36 Mod 2 cases, as though somebody had cleaned them with a chipping hammer or chisel. The result is a lot of radial scratches across the phonographic grooves and we suspect a good gasket seal cannot be obtained with flanges in this hacked-up condition.

S. K. G., MN2

Dear S. K. G.:

You are right. We've had a look at some pix sent by Mineman Siluk at ZIP Navy No. 96670 and they don't look so good to us either. The way to clean these flanges is by scraping, not chipping. True, it takes a little more time and effort. But then you end up with a serviceable item instead of junk.

A sharp instrument such as a scribe should be used to clean out the grooves.

B. Arncliffe

Battery bracket stretch

Dear B:

All of a sudden we get pinger batteries (Batteries Y-159) that do not fit their mounting brackets, NMEF DWG 4233. They were mixed in a group of batteries issued for FSMT Mines Mark 6. Some fit and some didn't. How come?

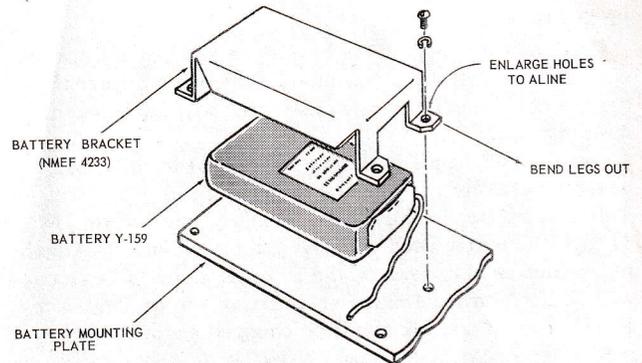
GWJ MN3

Dear GWJ

That bracket 4233 (specified for Mines Mks 6, 10, 25, 27 and 49) was designed to fit the first lot of Batteries Y-159 received from the manufacturer. Later the manufacturer shipped in some batteries that were longer by a fraction of an inch, and that's the cause of your trouble.

In future procurements, length will be controlled so those Y-159s will fit the brackets properly. Meanwhile, when you get a long one, bend the bracket legs slightly at the battery-connector-card end, and your battery will fit.

To install it, though, you'll also have to enlarge the two holes in the bracket legs with a round file, so they'll line up with the holes in the mounting plate. The same fix is needed for Brackets NMEF 4222 when an oversize battery has to be installed in a Mine Mk 18.



Arrows point the way

Dear Hot Stuff:

Lately we've seen a lot of Mk 6 anchors with arrows painted on their plummets any way but the way called for in the OPs, which tell us the arrows should be painted on the upper halves of the plummets' side plates, and that when plummets are hung on the anchors' hooks they should be turned so that arrows point toward the anchors. Often, it seems, plummets are being hung with the arrows pointing away from the anchor.

Maybe it isn't important to hang 'em right but if not, why do the OPs go to such length to tell how to do it?

PSA MNC

Dear PSA

It is important to follow the established pattern for painting those arrows which, of course, indicate direction of rotation of the plummet spool. And those responsible for final prep should follow OPs 1853, 2129, or (soon) 3346. They all specify alike for the Mk 6 mods they cover.

Furthermore, you're not alone. From DRILLMIN-PREPFAC, Long Beach, Chief G. W. Russell has sent us beaucoup photos showing arrows at all points of the compass, all of which leads us to believe that the purpose of OP directions concerning this procedure is not very well understood.

The function of the arrows on the plummet is to indicate the direction of rotation of the plummet's spool, so that personnel installing the plummets will know in which direction to wind the spool to take up slack without breaking the cable stops. The requirement for the arrows to be on the upper half of the side plates is so the arrow won't be hidden by the buffer when the plummet is installed on the anchor.

The requirement for the arrow to point toward the anchor, however, is merely for uniformity of assembly. Uniformity is of no significance in connection with the operation of the plummet, but when applied across the board you'll have to admit it does make it easier to spot assembly errors.

B. Amadebut

Seeing red

Dear Chief,

When ordering glyptol under 5970-642-9919 we get Lacquer Cement No. 1276 which is white and sticky instead of red and sticky as old Barnaclebottom says in Troubleshooter 4-63. Also the white stuff won't harden. Can't you get us back in the red?

WAF MNC

Dear WAF:

Yes . . . by sending you a color photo of our editorial face. But you can get glyptol that's red too, like I said. All you have to do is use stock numbers 5970-098-9280 for a 4-oz can, or 5970-161-7421 for a pint can.

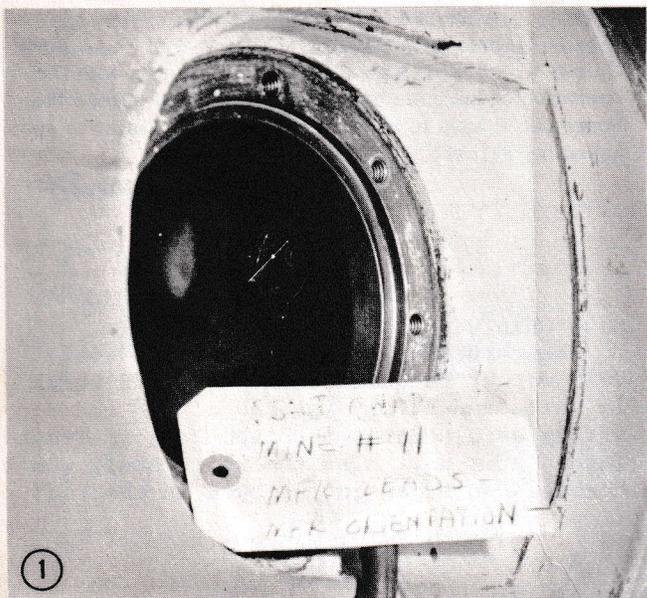
Once again, somebody slipped this old chief a technical mickey!

B. Amadebut



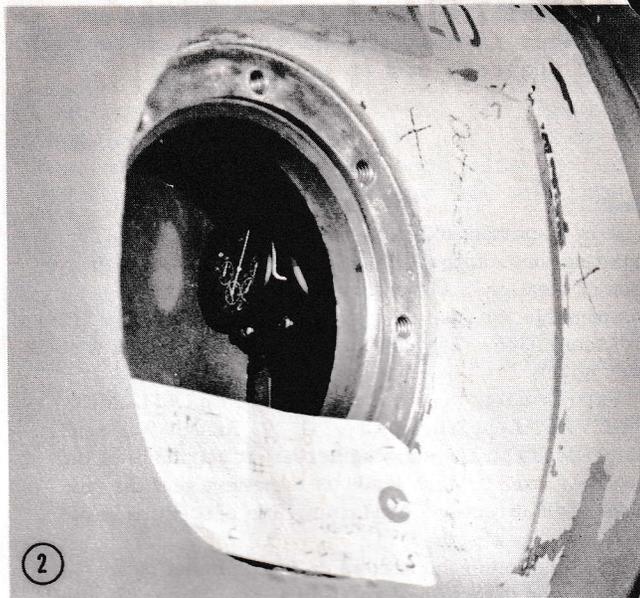
Scene after the presentation of the MOMAT 0322 plaque to COMINLANT Chief of Staff, CAPT F. L. Bogart. Left to right are: LT H. E. Sprecher, OIC; LTJG K. R. Peterson; J. Nasco, PN2; F. Reid, MNCM; CAPT F. L. Bogart.

Above is a group photo of the enlarged MOMAT 0322, Charleston. The consolidation of the MCSU Mine Division with the MOMAT the first of this year has made it the largest of the Mobile Mine Assembly Teams. Front row (kneeling), left to right, they are: F. Cavaricci, MNC; F. A. Reid, MNCM; J. A. Beetar, MN3; W. R. Bell, MNSN; T. Daniels, MN2; J. A. Gore, MNSN; T. V. Sannino, MN3; L. D. Moir, MN3; J. J. Hartmann, MN1; D. L. Guy, MN2; R. W. Campbell, MN2; J. J. Nerino, MN2; J. D. Fann, MNSN; O. L. Woodard, MN2; LTJG P. W. Hanks. Middle row: W. G. Bean, MNCS; W. Dove, MN2; D. M. Steen, MN3; E. L. Boyle, MN3; R. M. Austin, MN1; M. E. Gambrell, MN2; J. L. Caulder, MN3; S. W. Gammon, MN1; P. W. Adams, MN2; H. R. Maddocks, MN3; R. Collins, MN3; A. J. Hume, MNSN; M. E. Snow, MN1; W. J. Little, MN2; R. A. Bates, MNSN; B. W. Luker, MN3; R. P. Lafleur, MN1; LT H. E. Sprecher, OIC; LTJG K. R. Peterson. Back row: H. F. Bright, MN1; D. P. Allgor, MN2; J. C. Harlan, MN3; L. R. Forbes, MN3; P. C. Mathews, MN3; R. E. Bell, MN3; R. J. Anderson, MN1; A. T. Bellamy, MN2; W. C. Carter, MN1; R. W. Gray, MN2; B. W. Pardee, MNSN; M. L. Bryan, MN1; S. R. Carvajal, MN2; T. F. Sonderen, MNSN. Not present for photo: H. Morrow, MN2; G. F. Cronin, MN3; W. F. Hester, MN3; S. J. Kelly, MN2; P. E. Rousseau, MN1; J. P. Womack, MNC; D. Lozen, MN2.



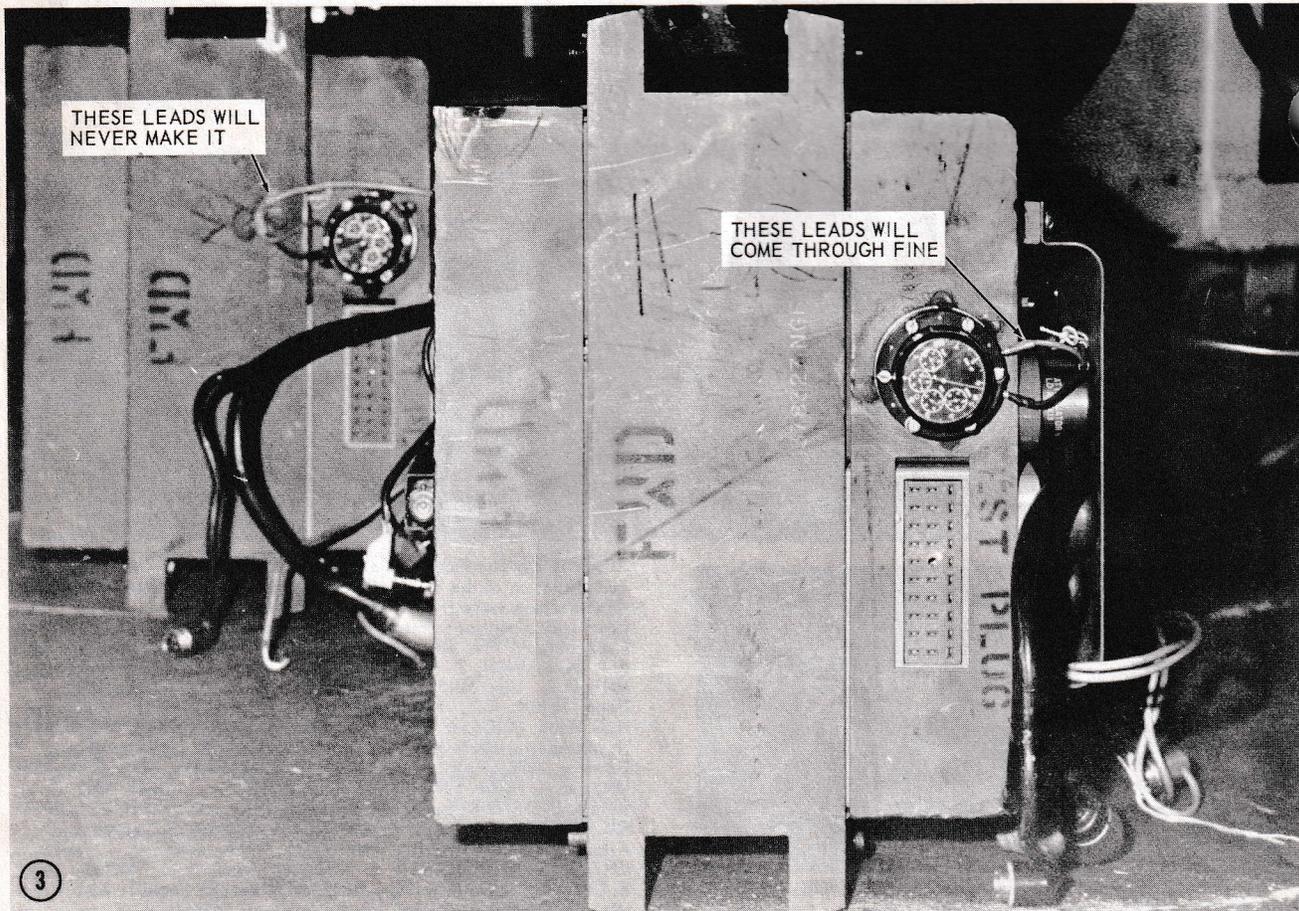
①

Not like this . . .



②

But like this



③

THESE LEADS WILL NEVER MAKE IT

THESE LEADS WILL COME THROUGH FINE

Here's the reason why

HOW YOU CAN TELL WHEN RECORDER IS RIGHT SIDE UP

When Mark 17 fire-recorder data indicates that an air-laid test mine has actuated upon water entry it makes everybody in the mine business sit up and take notice. Mines are designed to lie undetected on the ocean floor until actuated by a target . . . not to act like bombs!

Yet interpretation of fire-recorder data during post-recovery analyses of FSMTs has appeared to tell just this story: actuation upon shock of water entry. The only other probability: recorder stoppage.

Recorder stoppage, in fact, has happened often enough that a special lashup was arranged whereby two recorders were installed in each mine, on the premise that mere "stoppage" would not be likely to stop both at the same time. A fine idea seen one way, in that tests demonstrated zero actuations upon impact. But neither did they reveal any answers to the question of what makes the Mk 17 stop.

Recently, though, a review of all suspected instances of recorder malfunction in test-mine instrumentation revealed that it has occurred almost exclusively in tests of Mines Mark 52 and 55. Then an observation by an alert analysis team at DRILLMINPREPFAC during post-recovery analysis of FSMT CNAP 2-65 uncovered a third cause of premature recorder stoppage, strictly mechanical and man-made. This discovery proves again the old adage that what looks right can well be wrong, while what looks wrong may be right.

Photo number 1, for example, shows a Mk 52 resting in its normal position, suspension lugs up. Looking through the arming-device well, you can see that the fire recorder's dials are also "up".

In photo No. 2 the mine is in the same lugs-up position, but the recorder's dials are upside down. By that we mean that the numbers on the dials are upside down.

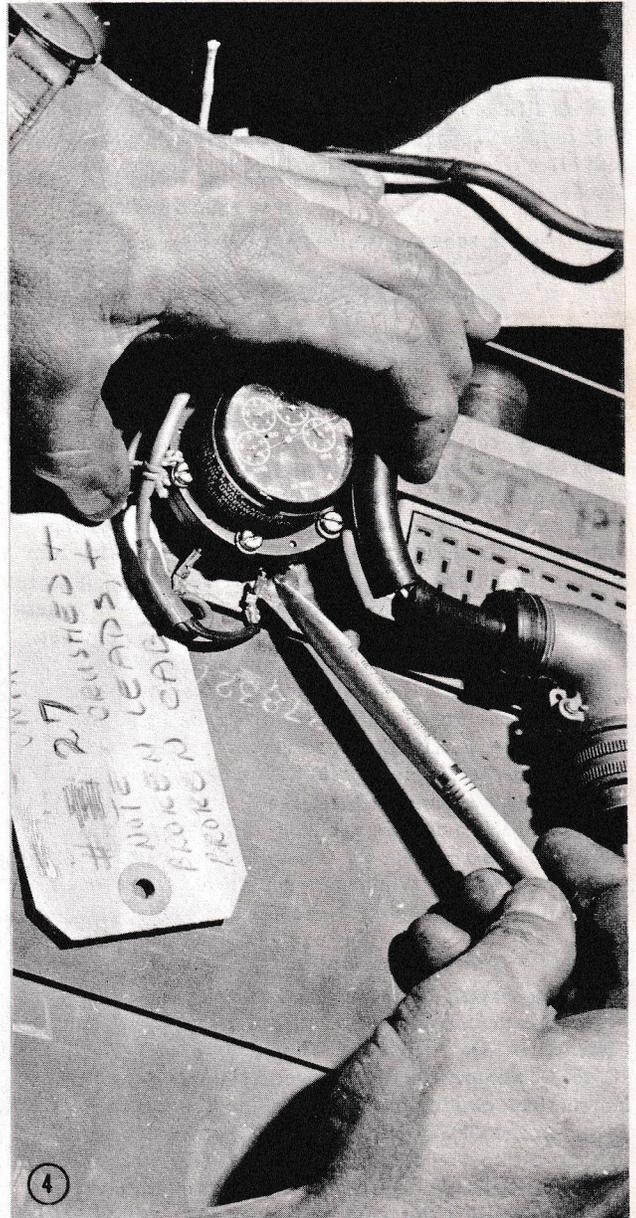
So which is right? Upside down! And a look at photo No. 3 shows why. Of the two instrument racks from Mk 52 mines, you can see that in the one on the right the orientation of the recorder's leads would be "up" when the dials are "upside down". As you can see, this allows a clear shot for the recorder's cable, through the rack's cable cover and aft to the terminal board.

The rack on the left, though, with the dials "up", shows the recorder's leads pointing to the lower left. In this position the leads are in a bad way indeed: they are forced to lay in a position where they'll be jammed between the instrument rack and the bulkhead of the explosive compartment when the rack is installed in the mine case.

Jammed tight enough to break electrical contact? At time of rack installation, maybe yes and maybe no. But at time of water entry the answer is all too often affirmative. The leads are crushed and the connector pins are often broken off the recorder exactly as you see in photo

No. 4 . . . whereupon one more of those "actuated-upon-water-entry" reports shows up in the record!

So where does it tell you the right way to install those recorders? Job Sheets 10 and 11 in OP 3233. Make sure yours are labeled change 3, install those recorders exactly as they specify, and you'll not be misled.



That stops the clock

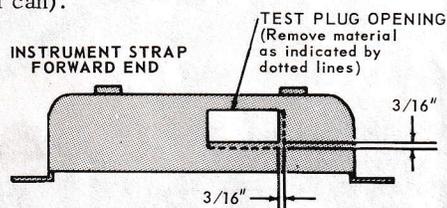
WHEN A CA-95 WON'T PLUG IN

IT'S a rather close fit where the test receptacle in Junction Box Mark 35 Mod O meets the instrument strap's opening in the Instrument Rack Mark 3 Mod O, used in Mines Marks 52 and 55. By taking advantage of the tolerances provided, though, bolting the instrument rack together so they'll index has been fairly easy.

But now there's a problem. A slight offset in the manufacture of some junction boxes under a recent contract has made it close to impossible to plug the test plug of Cable Assembly CA-95 through the strap and into the receptacle.

To solve the problem fleet activities are authorized this temporary field fix:

- ▶ Disassemble the rack and remove the instrument strap.
- ▶ Enlarge opening as shown by grinding, filing, sawing or any suitable means available.
- ▶ Remove all ragged or sharp edges.
- ▶ Paint all exposed metal with one coat primer MIL-P-8585 (8010-297-0593 for 16-oz aerosol can) and finish with olive drab MIL-P-10687 (8010-848-9272 for 16-oz aerosol can).



Test Policy, cont'd from page 1

Class B testing, normally performed by depots before issuing components to mine-assembly activities, should be repeated by the assembly activities when selecting material from their local supplies, for assembling into mines. Depending on available time and people, however, Class B tests can be bypassed as prerequisites to assembly at the discretion of the mines officer. By contrast, Class C tests are vital to safety and operational predictability and thus are mandatory when assembling mines.

Instructions for Class A tests are to be found in the drawings and specifications for the item to be tested. Instructions for Class B tests are to be found in OPs 2567 (firing mechanisms) and 1452 (other components) and should in no case be included in mine assembly manuals. Instructions for Class C tests are to be found in the mine assembly manuals and should in no case be included in the manuals for Class B.

Get your instructions on terra firma too!

In some cases, self-contained instructions for testing — once a requirement — are still to be found in many Class C, B, and A/B sets. When found, such instructions should be removed and destroyed, since only the testing instructions printed in the design documents (for Class A) and in the OPs (for Class B and C) will continue to be maintained up-to-date.

In Issue 2-64 we said that this policy applied only to mines in NMEF's design cognizance (e.g., Mks 6 through 55). Now, thanks to BUWEPS concurrence, it applies to

any and all service-approved mines. The only exception: newly-designed test sets may sometimes have self-contained operating instructions for use during the OPEVAL process, and instructions for testing newly-designed components will be found in NOLR 1216, but only pending incorporation in official OPs.

Bibliography changed

Pending release of Bibliography No. 5, the definitions here supersede those to be found in the introductory portion of section 3 of Bibliography No. 4. To make section 3 in No. 4 consistent you should also make the following pen and ink changes:

- For Test Set Mk 2 Mod 2: change B to read Class C
- For Test Set Mk 2 Mod 3: change B to read Class C
- For Test Set Mk 25 Mod 1: change B,C to read Class C
- For Test Set Mk 32 Mod 1: change B,C to read Class C
- For Test Set Mk 61 Mod 2: change B,C to read Class B
- For Test Set Mk 65 Mod 1: change B,C to read Class B
- Cross out Test Set Mk 109 Mod 0: it is now obsolete
- For Test Set Mk 133 Mod 2: change B,C to read Class C
- For Test Set Mk 195 Mod 1: change B,C to read Class B
- For Test Set Mk 263-0,1: change B to read Class C
- For Test Set Mk 303 Mod 0: change B,C to read Class C
- After Set Mk 303 write in: Mk 305-1, Class B
- For Test Set Mk 335 Mod 0: change B,C to read Class B
- For Test Set Mk 336 Mod 0: change B,C to read Class B
- For Test Set Mk 340 Mod 0: change B,C to read Class B
- For Test Set Mk 358 Mod 0: change B,C to read Class B
- For Test Set Mk 407 Mod 0: change C to read Class B

LEST WE FORGET

For those minemen who have ambitions for their offspring it is a good thing to remember that the Society of Sponsors of the United States Navy awards scholarships to young men to prepare them for entrance into the United States Naval Academy. Young men are eligible in the following order of preference:

- ▶ Category I — Sons of deceased, retired, and active Navy and Marine Corps personnel. (Sons of deceased and retired Navy and Marine Corps personnel take precedence over sons of active duty personnel.)
- ▶ Category II — Sons of personnel of the other military services.
- ▶ Category III — Sons of civilians.

To receive a scholarship an applicant must be acceptable to the Scholarship Committee of the Society of Sponsors. The financial situation of the parents, or of the applicant himself in case he is an orphan, must be such as to warrant the expenditure of funds of the Society in making such an award.

For application blanks write Mrs. Roy S. Benson, Quarters "O", Navy Yard, Washington, D. C. 20390.

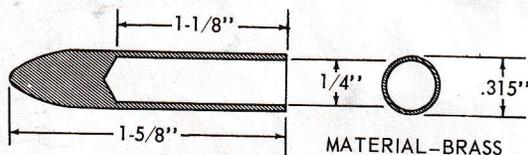
Do You do this Job Right?

SEAL-SAVER TOOL FOR IMPELLERS

Rudmines tell us that a high percentage of impellers fail the hydrostatic leak tests required during overhaul of the nose sections of the Mk 27 mines' Vehicle Mark 1 Mods 1 and 2. This we attribute to two circumstances:

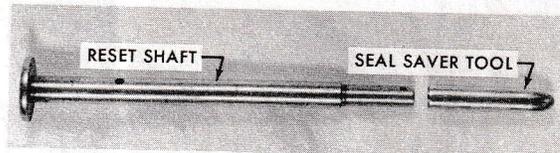
- ▶ The required water pressure (135 psig) is too high.
- ▶ The fluid seals are frequently damaged by the blunt ends and raised portions of reset and impeller-wheel shafts, when the shafts are passed through them.

To fix, the first volumes of OPs 2363 and 1935 will be changed to require only 75 psig. To insure that the fluid seals are not scarred by the ends and shoulders of the reset and impeller-wheel shafts when they are forced through them, here is a "Seal-Saver Tool" that should be used.



SEAL SAVER TOOL (Cross Section)

To make, turn a piece of brass rod to .315-inch outside diameter and shape nose on lathe. Cut to 1-5/8-inch length, then reverse ends in lathe chuck, center a quarter-inch drill, and drill the rod to 1-1/8-inch depth (plus drill point) as shown.

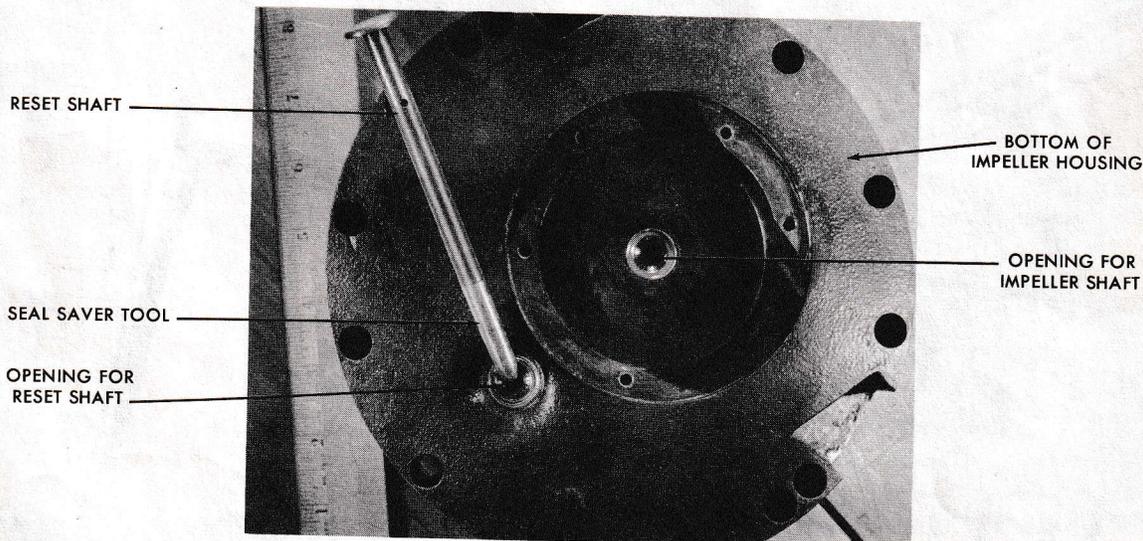


TOOL POSITIONED FOR INSERTION OF RESET SHAFT

To use, place the seal saver on the reset or impeller-wheel shaft you are about to install. It should bottom on the shoulder of either shaft, whereupon the shaft can be pushed through the seal smoothly. On the impeller-wheel shaft, be sure to slip on the washer that bears against the impeller-wheel hub before placing the tool on the shaft (it may not fit over the tool).

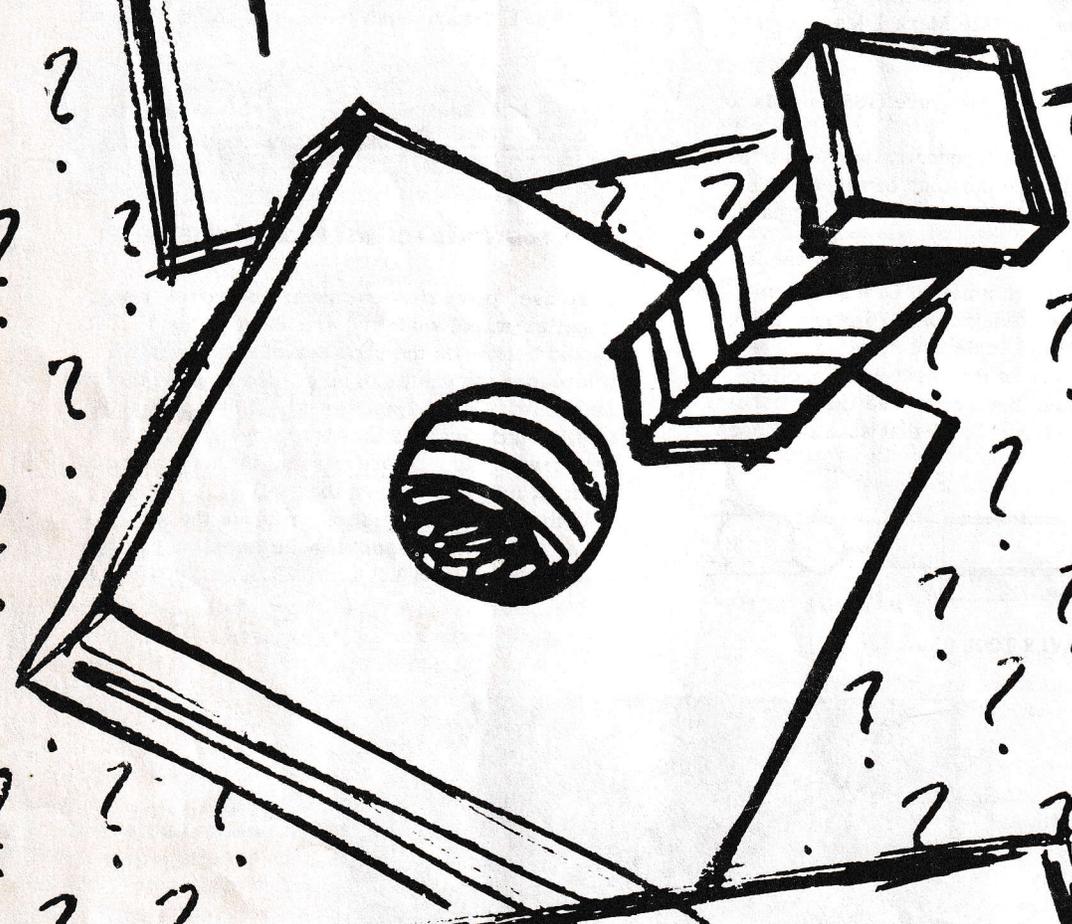
With the shaft in position, remove the seal saver and finish assembling the impeller per figures 74 in OP 1935 Vol 1, or 82 in OP 2363 Vol 1.

the Editor



ASSEMBLED TOOL AND RESET SHAFT READY FOR USE

PUZZLED?



THEN IT'S TIME TO
RUDMINDE