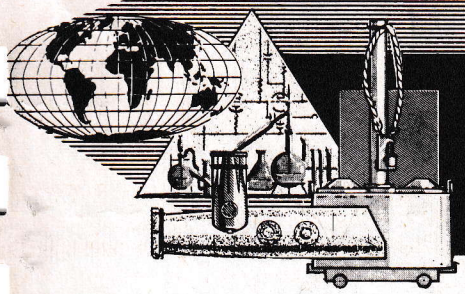
No. 1-61



mine and depth-charge

THE TROUBLESHOOTER

- *Mine Mk 10 Tools*
- *Fleet Test CSP 3-61*
- *Air Delivery Trick*

THE OFFICIAL JOURNAL OF THE *RUDMINDE* PROGRAM

in this issue . . .

mine and depth-charge

THE TROUBLESHOOTER

Published by the Naval Mine Engineering Facility, Yorktown, Virginia.

George T. Ragon, CDR, USN ..... Officer-in-Charge
Haines A. Miller ..... Technical Director
John V. Koman ..... Publications Chief
Frank N. Potter ..... Editor

REGULAR FEATURES

ARTICLES

COVER PHOTO: Chief D. G. Hutchison isn't posing for "Medic," he's checking operation of the fire recorder in a Mine Mk 49 for use in Fleet Service Mine Test CSP 3-61. NMEF's observer couldn't recall the name of the other man, but says he's "a real nice guy." Page 9 has more on CSP 3-61.

Rudminde is a world-wide troubleshooting campaign designed to achieve and maintain a high level of undersea warfare readiness through the discovery and correction of material defects, through refinement of weapon design, and through encouragement of the unique knowledge and skills demanded of highly specialized segments of the U.S. Navy and Coast Guard. The basic instrument of the program is Navord Form 2776—"Report of Unsatisfactory or Defective Mines, Depth-Charges, or Associated Equipment." Anyone who encounters problems with these weapons is encouraged to report them to the Naval Mine Engineering Facility using this Form, as prescribed in NAVORD INST 8500.7.

Troubleshooter is published quarterly by the Naval Mine Engineering Facility's Publications Division and printed by DPPO-5ND using funds approved by the Director, Bureau of the Budget, on 10 November 1958. Contributions, questions, address changes, and requests for distribution should be addressed to: Editor, The Troubleshooter, Naval Mine Engineering Facility (Ts2), U.S. Naval Weapons Station, Yorktown, Virginia.

THE OFFICIAL JOURNAL OF THE *RUDMINDE* PROGRAM

SOUNDINGS

The Changing Scene In Undersea Warfare

SUBSURFACE ACTIVITIES

MERMAIDS TOO? According to all known laws of speed in relation to expended energy, a fish just shouldn't be able to swim so fast. So says a Naval Ordnance Testing Station crew of scientific sleuths from the University of Washington who are fishing for the answer at China Lake, California.

One thing they've found is that live fish get along faster and further than fish-shaped models boosted along by the same amount of energy. One explanation is that the water churned up behind has something to do with propulsive efficiency. Possible outcome: better submarine designs.

NOW HEAR THIS: A 20-pound portable dishpan-size sonar is helping Navy frogmen investigate dark or [illegible]y water. The diver, wearing headphones, hears signals from any object spotted by the sonar's beam.

The new unit is self-contained, has negative buoyancy to make underwater handling easy, and is powered by flashlight cells.

SIMPLE SIGNALS: About the simplest, cheapest "scientific" device on record is the one used by the Navy to keep tabs on subsurface sand slides in an underwater gulch near Port Hueneme, California. Sealed, empty bottles, buried in the sand, start bobbing to the surface when the sand begins to slide.

CENTS SENT: When folks ran out of those copper tenth-of-a-dime coins at the Naval Base at Sasebo, Japan, Yokosuka Naval Supply Depot — also in Japan — obliged with 50,000 one-cent pieces delivered in a forward torpedo tube of the sub POMFRET!

SEAGOING SCAFFOLD: Capt. Semon Kronhaus of Los Angles has been awarded patent No. 2,919,763 for his invention of an underwater marine [illegible]fold that telescopes horizontally [illegible]ertically. Designed to aid repairs on all types and sizes of vessels at sea or in harbor, it can also be lowered to considerable depth to aid in deep-sea salvage and other ocean-floor operations.

MINE DESIGN

FIFTY-SIX SWITCH: Operational Assembly 01 of Mk 56-0 mine has been declared obsolete. Meanwhile, Assembly 02, using an improved firing mechanism, has been released to production.

SLUGGISH PLUNGERS: Jamming contact-plungers in the adapter heads used with Test Sets Mk 8-1 and Mk 9-1 will get a quick fix as a result of two Ordalts, now being readied for printing and distribution to the major mine depots.

FOREWARNED IS FOREARMED: With the appearance of an improved mod of SE-3-type actuation counters and the resultant need to alter Firing Mechanisms A-5 (see *Mass Change* in *Pubs-S-Crawlin'*) watch for a similar effect on Firing Mechanisms Mk 19-0.

RED READINESS

LONG AGO AND FAR AWAY? Seems not so long ago that Russia's shoe-thumping Premier announced that big warships were good only for ceremonial purposes . . . that all of Russia's would be laid up. Now, according to NATO intelligence, K has stopped mothballing the Red Navy's cruisers, plans to convert them into missile-launching ships.

SOVIET THREAT: It has been forecast that Russia will be able to plant a rocket with a 10-megaton warhead within one mile of stateside targets by 1964 . . . hardly a near miss when you consider that 10 megatons is equivalent to almost 500 Hiroshima-sized A-bombs. Whether the forecast is true or not, the Joint Chiefs are pushing for a fast-moving command ship, perhaps a submarine, to serve as headquarters if Washington should ever be knocked out.

TOO MUCH TOO SOON? The publishers of *Jane's Fighting Ships*, long-standing bible of world naval power, state that Russia has amassed more submarines than the rest of the world combined . . . 450 to 500 including at least six atomic-powered subs, and six guided-missile subs either in commission or now on the building ways.

The Soviet submarine goal: capability to sweep the seas clear of shipping and starve our NATO allies into submission, say the naval experts. And Raymond Blackman, *Jane's* editor, adds in his foreword to the new third edition that even Russia's World War II submarine capability was "enough to bring the United Kingdom to the brink of starvation, not only as regards food but as regards the vital raw materials necessary to prosecute the war."

BUCKS AND BRAINS

WELL SPENT: Congress will probably approve $275 million to cover a shortage of defense funds for the fiscal year ending next June. This would cover last year's pay increase for civilian employees and reinforcement costs in Korea, the Caribbean, the Mediterranean, and the Far East.

McNAMARA'S BRAND: General Carl Spaatz (USAF Ret.) recently said that our very existence as a nation depends upon success or failure in organizing the world's most powerful defense system at a cost the nation can stand. With this in mind, here are some interesting facts that reflect the man who has just inherited this most challenging task — Defense Secretary Robert Strange McNamara.

Joining the Air Corps as a captain in World War II, after a fabulous record as a scholar, McNamara won the Legion of Merit and rank of lieutenant

colonel. Then — at the war's end — he organized with nine other brilliant young officers who went out job seeking as a unit. The group was snapped up by the then financially ailing Ford Motor Company and has since become famous throughout industry as the "whiz kids."

At Ford, McNamara managed the planning and analysis office, became controller in 1949, and moved steadily upward until he was elected president of Ford just five weeks before being tapped by President Kennedy for the top defense job. Known among other things for his uncannily accurate market projections, he is credited with saving the Thunderbird from extinction, playing a major part in developing the financially supersuccessful Falcon, and planning the forthcoming Volkswagen-size Cardinal. Says Henry Ford II: "He has the ability to keep in his head the facts and figures that most of us have to look up." Says a former Ford executive: "He commands respect because of his braininess, he's a walking encyclopedia." Says John H. Martin, longtime friend: "He's just plain brilliant." Says a former Ford associate: "I had to read all sorts of books just to find out what this guy was talking about at lunch."

Says Charles B. Thornton, original leader of the whiz kids: "Bob has the sincere, dedicated type of personality. He's neither gregarious nor shy. He is very human, and . . . stimulates those who work with and for him. He is a very balanced, practical intellectual, highly respected by those who have an ability and show a willingness to work and shoulder responsibility. He is open minded but very penetrating. He doesn't buy bags of wind. He'll never ask anyone to work longer or harder than he works himself, but the pace he sets is dammed difficult to keep up with."

Even McNamara's concept of relaxation is likely to make lounge lizards shudder. His favorite sport is skiing and his idea of a perfect vacation is scrambling up the Grand Tetons! He actively dislikes and assiduously avoids "society," rarely makes the popular cocktail circuit (drinks an occasional Canadian Club and water), lived away from Detroit while at Ford content with what were unbelievably modest trappings for a member of the motor industry's free-wheeling aristocracy, is cautious with newsmen almost to the point of hostility.

UNDERSEA SEEKERS

STINGER BEE: Although it's the Navy's most compact nuclear sub, the recently commissioned TULLIBEE — especially designed as a hunter/killer — carries more sonar than was installed in all U. S. submarines used in World War II. She is also the first U. S. sub to have torpedo tubes located amidships rather than in the bow.

AIRBORNE OSCAR: Pacific-based Navy Patrol Squadron 28 lifted the Capt. Arnold Jay Isbell Trophy for excellence in anti-submarine operations, and the 1960 Battle Readiness Excellence Pennant, too!

The trophy was presented by Vice Admiral J. S. Thach, Commander Antisubmarine Defense Forces, Pacific, who emphasized the Navy's need for superior antisubmarine warfare forces in readiness "against the day the Russians have nuclear submarines. . ."

Rear Adm. G. B. H. Hall, Commander Fleet Air, Hawaii, presented the Readiness Excellence Pennant, stressing the constant need "for basic skills and . . . preparation for efficient use of modern electronic submarine-detection devices."

HUMMINGBIRD: To keep a 'copter suspended "motionless" takes a slick man on the stick and real stamina in the machinery. Yet in flight tests Navy's new twin-turbine sub-seeking 'copter hovered continuously for more than three hours over one spot!

SUB-SEEKING SUBS: Navy Intelligence has revealed that a Soviet sub landed agents on the Central American west coast — probably in Guatemala — in October. This was about the time of a widely-reported search for a mystery submarine reported in the eastern Pacific — a search in which no ASW subs appear to have been used — that focused attention on the growing need for atomic-powered undersea hunter-killers.

Although carriers and destroyers will continue to be a vital part of our ASW system, and in spite of the fact that aircraft are especially adap[ted] cover wide areas of ocean and give th[e] general location of a suspected sub Navy experts claim that only high speed, deep-diving, nuclear-powered subs with up-to-date detection device[s] can go down and pinpoint modern sub[ma]rine prowlers.

In commission: about a dozen Needed to go: 100, say the experts.

POLARIS AND FRIENDS

GLASS CASE CLICKS: With th[e] launching of the new Polaris 1,500 nautical-mile A-2 missile, the Navy wound up 10 years of research devoted to production of a successful high performance fiberglass-cased solid propellant rocket motor. One result better range and payload than th[e] Polaris A-1 already operational aboard the submarine GEORGE WASHINGTON

Previous rocket-motor chamber have been steel or aluminum. The ne[w] one is made of continuous glass fila[ments] surrounded by flexible resin, process resulting in greater simplicity and flexibility, and lower cost.

The new motor is slightly lo[nger] than the A-1 and uses a new type solid propellant with a stronger specific impulse.

SHERWOOD FOREST: Far fro[m] being babes in the woods, the Polaris missiles constantly "at ready" aboard the sub GEORGE WASHINGTO[N] must nevertheless be wet-nursed co[n]tinuously: computers set to receive fi[re] control data, gyros warmed u[p] switches checked out, and ready f[or] action on 15-minute notice.

The WASHINGTON's payload h[as] more destructive power than all t[he] bombs dropped by both sides in Wo[rld] War II. Yet with the WASHINGTO[N] PATRICK HENRY, PROTEUS, and ETH[AN] ALLEN, the Navy still has only abo[ut] one eleventh of the Polaris subs wants by 1965.

With 30 on station, say the bra[ss] 480 Soviet targets would be constan[tly] within range.

CURIOUS: The Royal Navy repo[rts] that Red subs are getting busy off t[he] Scottish coast now that the deal f[or] a Polaris sub base at Holy Loch firm.

— Fishing, no doubt.

RUDMINDE REPORT TO THE FLEET

What's Been Reported? What's Being Done?

IT ALWAYS makes us feel good when we can give our readers something they've asked for. And that's never been more true than in the case of the cumulative index to all your back issues of TROUBLESHOOTER that you will receive before our next issue.

The first request for such an index reached us about a week after T-Shooter 2-59 was mailed out. But even before it came we knew that some kind of index would be needed. The Rudminde Program had already logged more defect reports, more valuable answers to technical questions, and more good safety dope than anyone could possibly keep track of on his own. It had been obvious from the beginning that a lot of this good dope was doomed to get lost in the shuffle if we didn't do something about it.

Meantime, as the requests kept coming in, we've had to concentrate on finding a way to reach our goal of producing four issues a year. That promise became an accomplished fact in 1960 and made the publication of number 4-60 a milestone of sorts. And now, with the cumulative index, we're marking a milestone that we feel is just as important.

How so? When you've seen the index we think this question will answer itself, not because it makes it easy for you to find things that we've written up, but because it gives every last mineman and torpedoman — everywhere in the world — a tangible easy-to-use key to almost every problem that's been encountered in the use of our weapons over a three year period throughout the whole bean-eating U. S. Navy!

Now that's saying a lot. And the reason we're able to say it with so much pride is not because we put it together, *but because the whole thing from beginning to end is a cumulative result of the really valuable contributions from our readers.*

Mates, you've done yourselves proud. When you examine your copies of the index you'll see that through Rudminde you've made a contribution to mine and depth-charge warfare readiness that will startle the whole Navy Department.

Brother, Can You Spare a Dime?

Anybody who reads newspapers or magazines knows that money, dough, moolah, cash, spinach, scratch, coin of the realm, *the green* is getting harder and harder to come by in ye Department of Defense in this year of our Lord. And one of the toughest of all deals to swing is to get money for travel. This, friends, is why you haven't seen the smiling face of an NMEF Rudminde representative on your premises of late. That's why you may not be seeing one anytime soon. That's how the mop flops.

That's also too bad, because we sure appreciate the big flow of Rudmindes which comes in after you've had a chance to bat the breeze with one of our roving ambassadors. We know you all send them between visits but we're depending on you more than ever now that we'll be sort of isolated from you for the interim.

It shouldn't be too tough to take the time to tell us about some of the rough spots that trip you up here and there. Sure, you can mostly lick the problems right on the spot; but it's important for us to know about these choppy areas in the mine game. Knowing helps us get busy with solutions to keep your weapons the world's best. One real important way you can take care of 'em and also give a big boost to weapon readiness is to keep those Rudmindes rolling.

Another thing, you'd be surprised how important some apparently nit-picking reports can turn out to be. So don't hesitate to use Rudminde even if the problem doesn't seem like too much on the surface. It's what goes on under the surface that can mean a whale of a lot. But it shouldn't be necessary to tell a mineman about that.

At the bottom of this page you'll find stock numbers for the special tools for mine Mark 10 as promised last issue. Starting on the next page is your table of defects reported via Rudminde during the last quarter.

SPECIAL TOOLS FOR MINE MK 10

1	Adapter assembly, drum-test	Z1350-093-0992	
1	Cable grip	Z1350-093-0978	
1	Cord, mooring-arm-release	Z1350-038-8000	
1	Cover, hold-off rod (f/anchor)	Z1350-038-8002	
1	Crank assembly, anchor	Z1350-038-8001	
1	Crossbar assembly	Z1350-093-0975	
1	Die, rethreading ⅜"-16	G5136-237-8270	
1	Hook, spring	Z1350-093-0980	
1	Indicator assembly	Z1350-607-0558	
1	Level, machinist, 12", w/ V-groove bottom, 41-L-1306	G5210-223-9601	
1	Lifter, hold-off rod (f/anchor)	Z1350-093-0979	
1	Mandrel, sizing	Z1350-093-0987	
1	Pin, drift	Z1350-093-0984	
1	Pin, drive	Z1350-093-0982	
1	Pin, punch, 4"	G5120-242-5966	
1	Reservoir (dashpot)	Z1350-093-0986	
1	Scale, balance-spring, 0-15 lbs	Z1350-603-6746	
3	Spacer (f/case & anchor assy)	Z1350-038-7996	
1	Stud-driver, ¼"-20 thread	Z1350-603-6747	
1	Spanner, face, 1½" c to c	G5120-293-0201	
2	Tape, cotton, bleached-twill h'bone-weave, ⅜", 30-lb strength	D8315-262-3354	
1	Tool, camshaft	Z1350-310-2751	
1	Tool, pawl-holding (f/anchor)	Z1350-093-0991	
1	Tool, retracting (f/mooring-arm wedge) 1664668	Not yet assigned	
1	Wrench (f/anchor turnbuckle)	Z5120-093-0972	
1	Wrench, hold-off nut (anchor)	Z5120-093-0955	
1	Yoke assembly, brake (anchor)	Z1350-038-8004	

DEFECTS REPORTED THROUGH RUDMINDE

ITEM	USED WITH	REPORTED DEFECT	REMARKS
Arming Device Mk 5-0	Mines Mk 52 and 55, all mods	1. Needs much repair after FSMT use. 2. Piston failed to retract.	1. Don't repair them; place in Code 9 and request disposition from BUWEPS. 2. Treat as "explosive-loaded" until rendered safe by EOD personnel. BUWEPSINST on this soon.
Bleeder Assembly DWG 1620873	Mines Mk 25-2; 27-2, 3, 4, 5; 36-1, 3; 49-2	Terminal block broken.	Replace with 12Z-7002-777. NMEF looking into extent of this trouble. Keep Rudminding each instance.
Cable Assembly CA-308	Mine Mk 27-2, 4	Lead markings wrong.	See *Screening meemies* in HOT STUFF this issue.
Cable Assembly CA-652	Test Set Mk 26-1, 2	Won't mate with CA-564 of Firing Mech M-11-5.	*The Mating Game* in MILLIE AMP'S BRIEFS, T-SHOOTER 4-60 tells how to make 'em mate. No problem with new procurement.
Case, Mine, Mk 6-6	Mine Mk 6-0, 4, 7, 8 and 14	Well studs not lined up for mounting holes of Mk 6-2 extender.	Try screwing stud-driver on studs and tapping sideways to straighten. Use plastic mallet or other non-sparking tool. Replace any badly bent studs.
Case, Mine, Mk 36-2	Mine Mk 36-1, 2, 3	Not marked *Mine Case Altered, Use with Mine Mk 36-2 Only.*	If battery bracket bent so case can be used in assembling Mk 36-2 mine, case should be so marked, per NAVORDINST 8551.3.
Clock Delay CD-12-0	Mines Mk 25-0, 1, 2; 27-2, 3, 4, 5; 36-1, 2, 3; 49-0, 1, 2	Numerous defects.	Special check will be made of NORD-18636 CD-12-0s. Look your own over carefully before using them and Rudminde us about any defects.
Compensator (depth) Mk 3-0	Mines Mk 52-0, 1, 3, 4, 5, 6; 55-0, 1, 3, 4, 5, 6	Orientation dot not properly located.	Should have ½-inch white dot on flange 120° counter-clockwise from center of flange cutout.
Control Box Mk 13-1	Mines Mk 25-2; 49-2	Mildewed, terminal strip broken, improperly packaged.	Scheduled check on these coming up.
Drill Kit Mk 4-0	Drill mines 25-0; 36-1, 2, 3	O-ring gaskets missing.	No longer included in drill kit. Order separately Z33-P-1561-17; Z33-P-1560-470, and Z33-P-1561-130.
Float D-4-6	Mines Mk 6-0, 4, 7, 8, 10, 11	Contact plate on bottom of float upside-down.	Check of NORD-11049 D-4-6s to be made to learn extent of such condition. Turn 'em over when necessary and tell us about it via Rudminde.
Firing Mech A-5-2	Mines Mk 25-1; 36-2; 49-1	CD-12's black-and-white lead (6) improperly connected.	Should be connected to the SE mechanism securing screw from which the ground strap of the SE-3 was removed (OP 1798, p. 54, par. 48C2).

RUDMINDE REPORT

ITEM	USED WITH	REPORTED DEFECT	REMARKS
Firing Mech A-6-1	Mines Mk 25-2; 49-2	MD-9 motor failed to stop running. SR-9 time-out test on Test Set Mk 65-1 indicated SR-9 not operating.	We've recommended BUWEPS have this activity's A-6-1s and A-8-0s replaced with A-6-3s and A-8-1s.
Firing Mech M-9-1	Mines Mk 27-2, 4; 36-1	Jumpers installed on terminals A and B; C and D.	Make sure these jumpers are removed (OP 1684 2d Rev, p. 15, par. 8).
Gasket DWG 385600	Depth Charge Mk 9-2, 3, 4	Excessive cold flow when under specified torque of 18-22 lb-ft; gaskets made of 3 different types of material, all issued under Z5330-286-9093.	Watch T-SHOOTER for some word on this.
Sensitivity Switch Mk 3-1	Mines Mk 25-1; 36-2; 49-1	Wrong water-inlet tube.	Was a make-do by assembling activity short on specified item. Make sure you stock both: DWG 495562 for Mk 36-2 mines; DWG 451893 for Mk 25-1 and Mk 49-1 mines.
Shield, Drill	Drill Mines Mk 25, 36, 52, 55 all mods	Retainer clips, rivets, and shield corroded.	We're looking into this; probably will recommend change of materials to avoid electrolytic action.
[illegible]nal Mk 25-1	Drill Mines Mk 25, 36, 52, 55 all mods	Signal ignited and partially burned when tear-strip shipping can was opened.	NMEF found small hole in top seal, probably a mfg. accident. Open signal containers outdoors or in a well-ventilated room. Smoke is highly toxic.
Sterilizer Device SD-4-1	Mines Mk 6-0, 4, 7, 8, 10, 11; 10-3, 9; 18-0; 25-0, 1, 2; 27-2, 3, 4, 5; 36-1, 2, 3; 49-0, 1, 2	Electrolytic-cell circuit open.	Most likely inverted banana plugs. See *Effective Detective* in HOT STUFF this issue.
Tail Cover DWG 1467517	Mines Mk 52 all mods	Ribs on tail plate prevent Parachute Pack Mk 20-0 installation.	Next issue of T-SHOOTER will show you how to tackle this trouble on existing stock. Drawing change will eliminate problem in future procurement.
Test Set 75-2	Clock Delay CD-14-3, 4, 5, 6, 7	DWG 1280325 Rev B, steps 14, 15 and 16 specify switch positions JF, KD, HC; test-set panel has FJ, DK, CH.	Either way around means the same. Take your pick.
Test Set Mk 95-2	Clock Delays CD-4-0; CD-8-0; CD-9-1; CD-10-1; CD-12-0-1	Test set will not cycle properly.	Could be you're using dry cells. Try storage battery or other equivalent. See *All wet with dry cells* T-SHOOTER 2-60, page 10.
Test Set Mk 195-0	Firing Mech Mk 19-0 and Microphone MI-7	DWG 978456 Rev C, value of resistor R-51 in schematic does not agree with table.	R-51 should be 6000 ohms. NMEF will change drawing to agree with table.

HOT STUFF

Lip service

Dear Chief:

Crating up some Mk 50-0 mines we found that 9 out of 20 crates had the lips that hold the securing nuts and bolts broken off. So we welded the nuts back on above the broken lip area. Are we alone, or are other people having this trouble too?

L.O.D. MN1

Dear L. O. D.,

Some 50-0 crates are of better design but we've found, as a result of a NWS/Y Rudminde, that there are quite a few like the ones you describe. So we're changing the drawings to improve new procurement, whenever it comes.

Meanwhile it looks as though local fixes like yours are the answer.

B. Armacleabitt

Tale of Two Test Sets

Dear Chief:

Using a Mk 181 test set with a Mk 4-1 and sensitrol test stand, we had 13 out of 29 SR-7s throw their relays in the NO-GO position. Then we tested the unlucky 13 with a Mk 65 test set and they all checked out okay. So the question is, are they rejects or not? And while I'm at it, here are a couple more things I'd sure like to know.

1) OP 1452 says on page 97 that test set Mk 65 is more accurate than the 181; why?
2) Why the difference between OP 1844 and OP 1452 test limits for the SR-7?
3) Which SR-7 test should be used?
4) Would a reduced or increased ratio for the 4-1 help test the SRs best?
5) What about using jumpers on the amphenol terminals when stowing SR-7s?

M.D.H. MN1

Dear Maurice,

The chaplain told me there'd be times like this. But I'll try, friend, I'll try.

To begin with, your 13 "rejects" per Test Set 181 can be considered acceptable *provided* your set 65 is properly calibrated, and you used the new SR-7 limits from Change 3 to 1452 or T-SHOOTER 1-60. And now I'll run down your list of questions and maybe, if I don't fall flat on my face, you'll see why.

1) Test Set Mk 65 has a slight edge in accuracy over the 181 because the 65 uses a standard cell and galvanometer to balance current source whereas the 4-1 (current source for the 181) uses resistors for calibrating.

2) As a result of Change 3, more relaxed limits in OP 1452 permit a greater number of SRs to be accepted. OP 1844 will also be changed.

3) Use the 181 for testing SR-7s, like OP 1452 tells you to.

4) For test purposes the accuracy of the 65 and the 181 cannot be set up in any ratio. But if each set is properly calibrated and operated right no difference will be noted in the test results.

5) During shipment or storage a Weston Shorting Spring (or equivalent) should be used on SR-7-0 and 2 and a Shorting Bar Assembly DWG 1402216 should be used on SR-6-1 and SR-7-1. Either helps dampen the movement of the pointer so under normal conditions keeps the sensitrol pointer centered — the position in which it was adjusted by the manufacturer.

Naturally, then, you've always to make sure the needle is centered when you install the external short. And you should always tag it REMOVE BEFORE USE. *A-men!*

B. Armacleabitt

Screening Meemies

Dear B. Butt:

Ran a polarity check on a Mine Mk 27. Found it reversed. Checked T-Shooter 1-59's fine polarity article but got no clues, so rechecked all connections in the mine but it still tested reverse. Had another man check while I hunted through back T-Shooters for clues. That was yesterday. But it's still reversed today, and while we'll probably find it sooner or later, I decided to drop a line anyhow. Just to let you know that there are still some things your fine magazine hasn't touched.

G.H.H. MN2

Dear G. H. H.,

We love you, every last one of u. It's real good to know that peop. turn to ye T-SHOOTER for help.

And now here's a squib that ma. save time for the next guy with 27-2 or 4 polarity snafu. It's simpl. just make sure the two leads of C. 308 from the batteries aren't rever. Seems that several have turned

...n their neg leads labeled + and their positive leads labeled −, and there's always a chance that one of these has been dumped in your lap.

B. Arnaclebutt

Ah, so?

Dear Barnacles:
A guy can be a real whiz with the diabolical puzzles they peddle out here in Japan and still get stumped by OP 948 where it says on page 63 to put one eye of the bronze mooring-cable extension on the shackle. Maybe it's cheating to beat on the cable eye, but sometimes one good bong helps it along. Okay?

O.N.B. MN1

Dear Wun Bong:

Desist! Easier to skin cat like so: First put the *mooring cable's* eye on the shackle, then run the shackle bolt through one eye of the bronze cable extension just like we show here. This is a switch from the way your book shows in figure 50, but it's legit.

Because a 1955 revision to the drawing for *Connector and Shackle Details* calls for a smaller shackle eye that ...minates this trouble, your OP 948 ... not be changed. But most of the Mk 10 anchors in the stockpile got there before the drawing was revised, so make a note in your book about how to outfox this shifty-eyed shackle.

B. Arnaclebutt

Ah-choo!

Dear B-B:
We got one cat here who has to keep everything cool, like even firing condensers for which he says we should put in a Benny Sugg to store 'em in freezers so they won't grow moss inside. Personally I think his idea is frigid. I say he should turn like blue.
You too?

A.J.L. MN3

Dear A. J. L.,

You may be right but don't put the cat down. I mean he's at least *thinking* and these days, man, that's like rare.

As a matter of fact it could very well be that refrigeration would make them last longer. But on the other hand they're hermetically sealed, cost little, and are good for five years or more under almost any conditions.

What I say, then, is store them refrigerated if you've got facilities handy. Otherwise forget it. The ones already installed in firing mechs like the A-5, M-11, and Mk 19 will automatically get good treatment, and the others will probably make out okay.

Also don't forget what it says in NAVORDINST 8550.23: that jazz about firing condensers with DWG 542134-H and the name AEROVOX stamped on them (FSN 1350-671-5173) being the only ones you should use in these mechs. If you get any without the "H" after the number, give 'em the yo heave ho and bug us by Rud!

B. Arnaclebutt

Pin pointing

Hi Chief:
In testing ten Mk 26-1 test sets, we found six with 150-ohms resistance between the SC simulator's pin 5 and the M-11 cable connector's pin b. OS 5875 Rev C specifies only 12 ohms, but it seems to me that 150 should be about right.

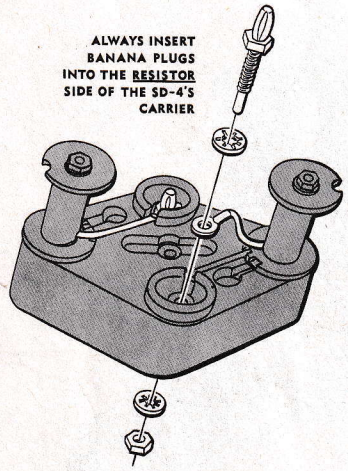
A.E.H. MNC

Dear A. E. H.,

It used to be that 160 ohms was right, but then Rev A to DWG 399029 removed the 100-ohm resistor that was between the SC simulator's pin 5 and the M-11 cable connector's pin b, and also changed transformer T-1's secondary connections to pins 1 and 2, thus giving the 12-ohm resistance specified in your OS 5875. As I see it, then, what we need is an Ordalt to make those older 26-1 sets like the ones that were made after DWG 399029 was revised.

Meanwhile . . . thanks for the tip.

B. Arnaclebutt



Effective Detective

Dear Chief,

Testing for SD-4 current drain per OP 948 we got low values, no values, and even values that changed up and down. Checking for why, I found that some of the guys who'd installed resistors, when they removed the black ones from the carriers (the ones where you have to take out the whole banana-plug assemblies) had then put the banana plugs back in upside down. In other words, they no longer plugged tight into cathode.

What happens is that the carriers will still seat okay. But sometimes only one terminal makes contact, in which case the test reading will only be half the specified drain.

And what I also discovered was that in some cases both would make contact and current drain would measure okay, yet any slight jarring could break and then remake either contact. Since this could result in SDs that might test okay yet still be useless in the mines, why don't you tell everybody to always make it a rule to put those banana plugs back in the carriers from the side on which the resistors are mounted?

W.C.L.

Dear W. C. L.,

You told 'em better than I can. Let's hope everybody will do this exactly like you say, and meantime we'll try to make the instructions in OPs 948 and 1452 more explicit.

Many thanks.

B. Arnaclebutt

Fitting and proper

Fitting and proper

Dear B-Butt:

CA-59 that comes with Test Chamber Mk 4 Mod 1 is strictly NG for testing Explosive Fittings Mk 2 and Mk 4. Its probes fit so loose in the fittings' cinch clips that it's just about impossible to get a closed circuit.

J.A.F. MN1

Dear J. A. F.,

So don't use it. Instead remove the round plastic cover from the inner end of the chamber's breech block (two round-head screws). Under it you will find two contact pins onto which those fittings — after their shorting bars have been removed — will fit just right.

This, incidentally, is also the way this chamber should be used to test the Ejectors for Signal Mk 26 Mods 0 and 1. So what's that CA-95 supposed to be used for?

I've never been able to find out.

B. Arnaclebutt

Barrel roll blues

Dear B. Arnaclebutt:

What's your remedy for opens through Test Chamber Mk 4 Mod 1? We've received two now that won't cut the mustard.

A.E.T. MN2

Dear A. E. T.,

First make sure there's no detonator in the chamber. Please.

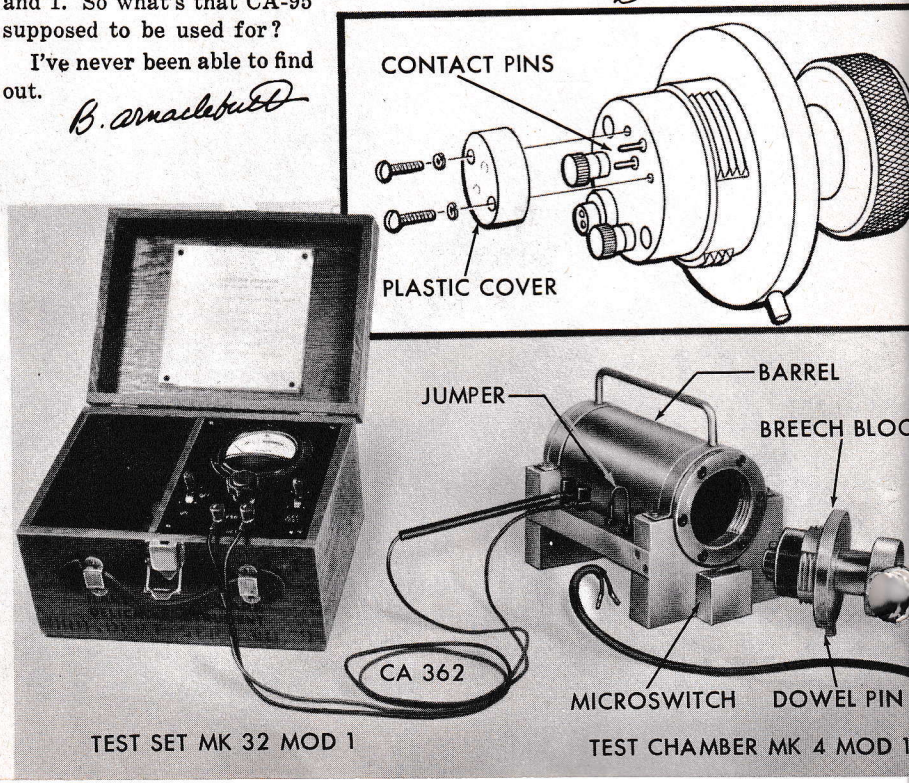
Then connect a Cable CA-362 between the chamber's test-set terminals and the DET terminals on your Test Set Mk 32-1, and jumper the chamber's DET terminals like we show on this page.

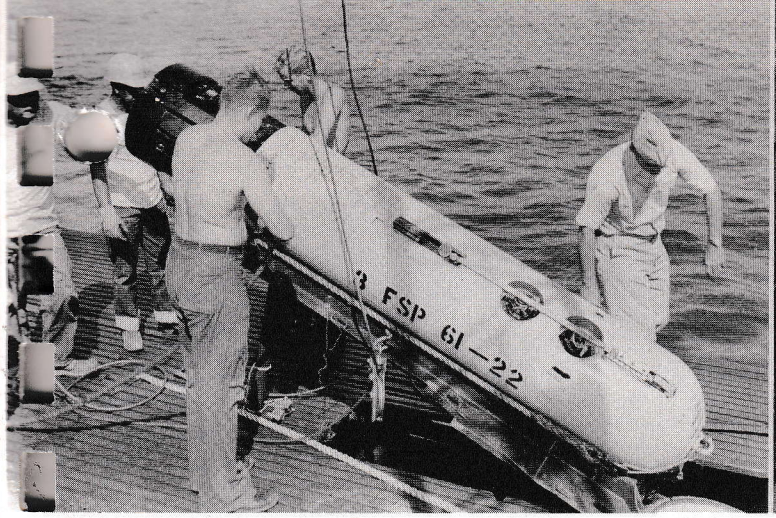
Next close the test set's ON/OFF switch and — holding the DET-TEST switch down — zero the meter with the ZERO-ADJ knob. Then let go the DET-TEST switch and lock the breech in the barrel.

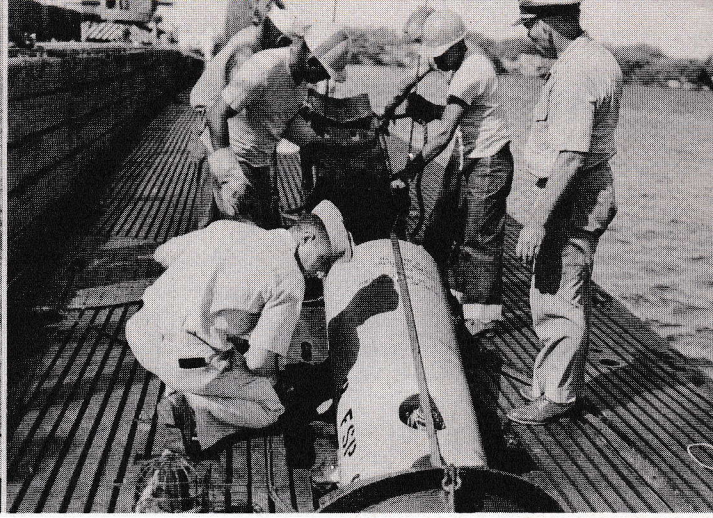
Now you're ready to adjust: Loosen the screws that hold the barrel to the base, turn the barrel clockwise until the pin on the breech actuates the micro-switch giving a reading of ½-ohm or less on the set's meter, and retighten the four screws. That should do it, but you better recheck the operation of the micro-switch by unlocking and locking the breech assembly a couple of times.

One more step: *when you're through, don't forget to remove that jumper from the chamber's DET terminals!*

B. Arnaclebutt







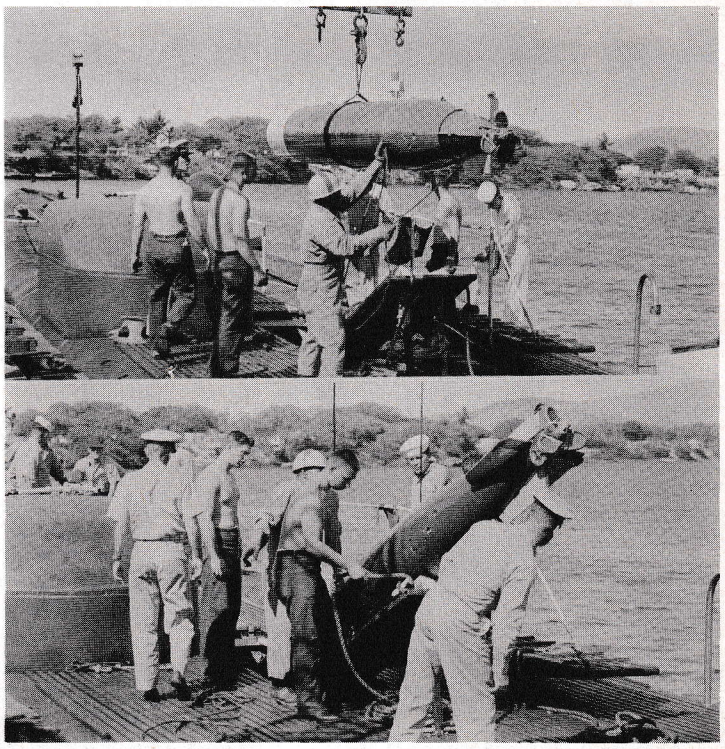
TEST CSP 3-61 "VERY SUCCESSFUL"

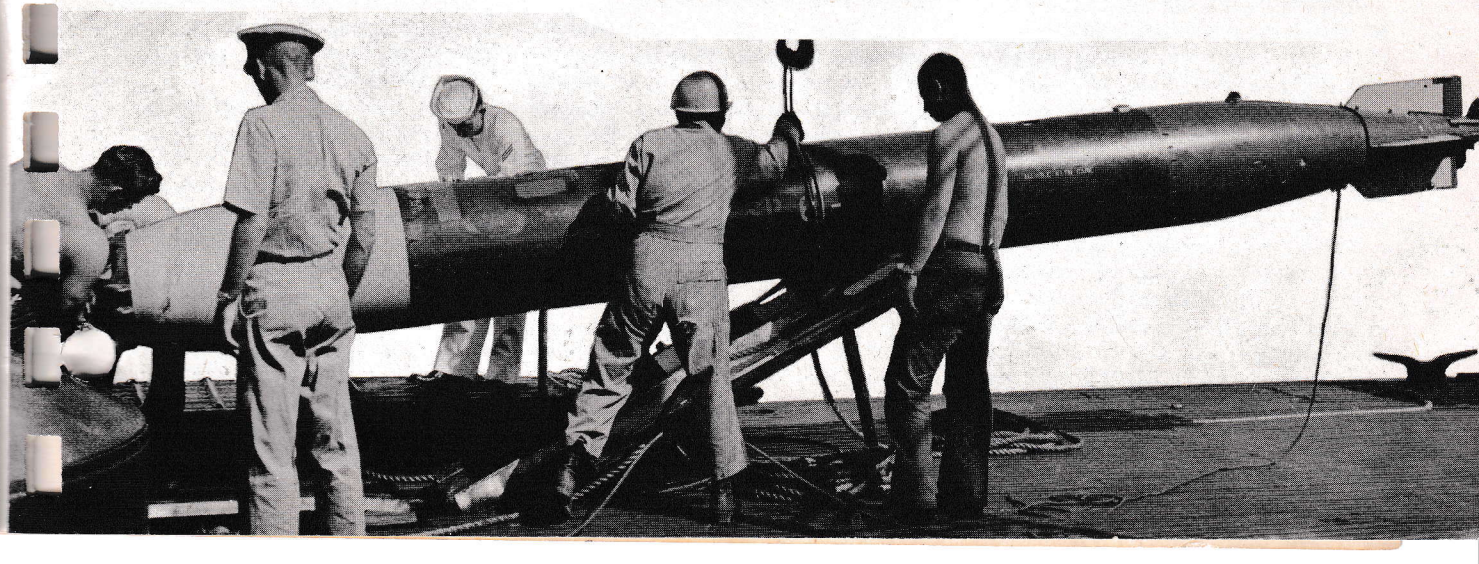
THE TEST INCLUDED SAMPLES of submarine-laid Mines Mk 10, 27, and 49. WEST LOCH BRANCH, NAD/OAHU, did the assembly. Planting was done by the USS SABALO, locating and buoying was done by EODU Team No. 1, and recovery was accomplished by the GREENLET (ARS–10).

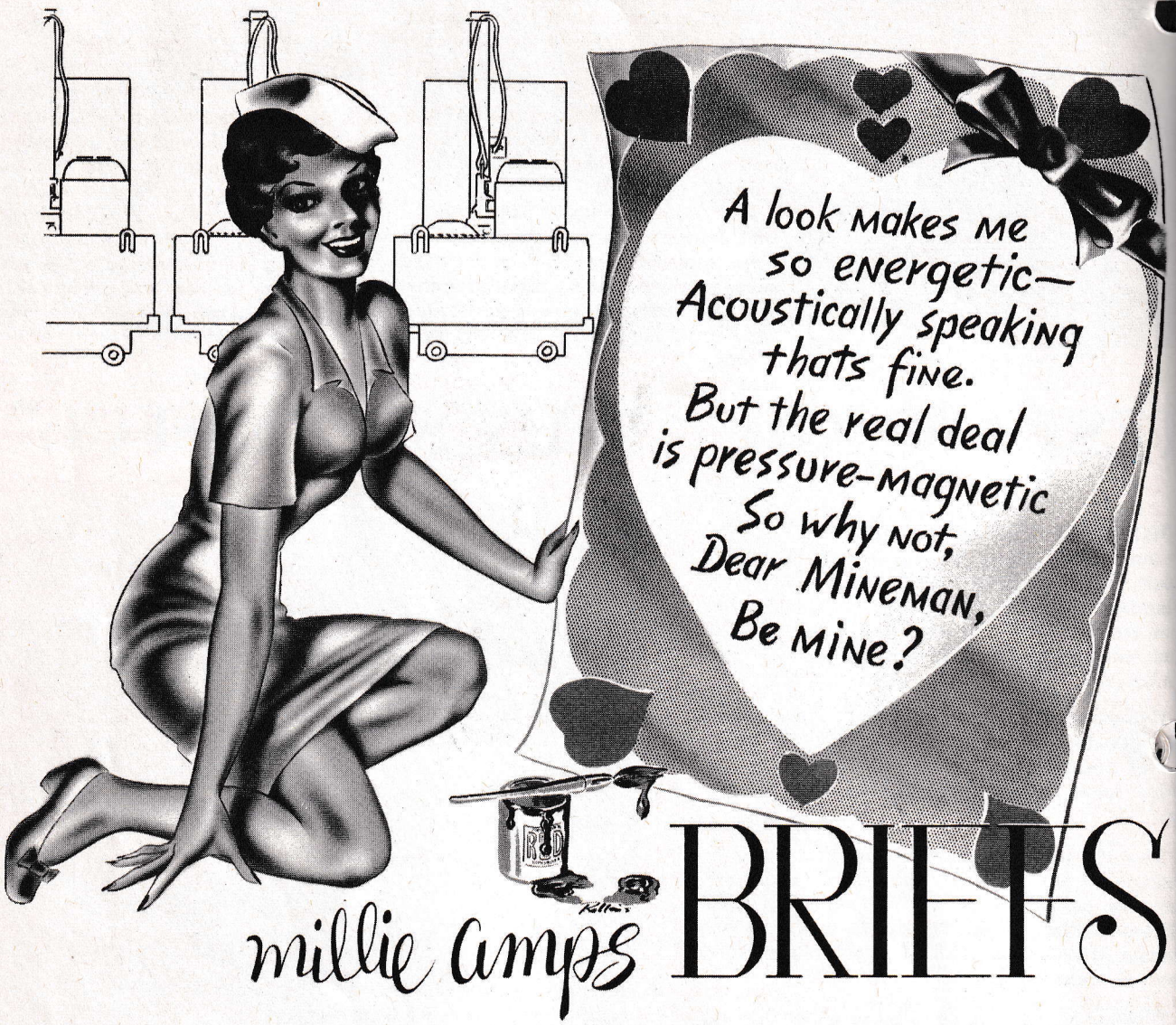
Hydrostat failure is believed to have caused a Mk 10-3 "floater," another Mk 10 had a faulty fire recorder, and one 49-1 failed to fire. Other than that the test was completely successful.

The 10s were assembled by a crew under G. PECUCH, MNC; the 27s under W. BEAN, MNC; and the 49s under D. G. HUTCHINSON, MNC. Mineman First V. L. THOMPSON and Mineman Second WAUGHTELL, both of MINPAC, performed the post-recovery analyses.

The fine pix were shot by Photographer STRAYER of NAD/OAHU . . . the best anyone has shipped in to T-SHOOTER to date.







A matter of reach

A screw that's too long can usually be cut short, but when a screw is too short . . . well, the answer may be simpler than you think! At least it's simple when it's the screw that secures the cap to Search Coil SC-20 Mod 1, and that's precisely the one that's been bothering my friend BILL ROBERTS from up Newport way.

What we're doing as a result of your Rudminde, Bill, is making a change to the drawing for the coil's cap retainer (DWG 1419903) so those SC-20 Mod 1s will take the same caps and screws as the SC-20 Mod 0s. That, of course, will help whenever new gear is procured, but in the meantime what's to do? Naturally, you'll just have to find a longer screw.

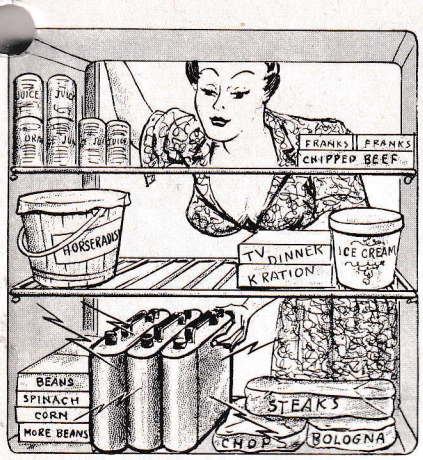
One you can try is a cadmium-plated flat-head No. 10 24NC-2A x ¾-inch. In some cases it may bottom and have to be shortened a bit. But darn it, that's life. That's the way the cookie crumbles. That's the way the ball bounces. That's the best I can do!

It's so good!

Back in T-SHOOTER 2-59 we told all we knew about mine and depth-charge case openings, including the fact that you should use bearing grease on O-rings and the fastenings' threads. Now FRANK KINSINGER at NWS/YORKTOWN has come through with something even better: Grease, Silicone, Z6850-702-4297.

What makes it so good is that it's resistant to steam and hot water, will not attack the rubber in cables or gaskets, and is even compatible with explosives. So use it exactly as we said to use the bearing grease — on O-rings and steel or brass threads but not on flat gaskets. It makes them cold-flow like crazy.

You'll be seeing a new BUWEPSI[illegible] on this soon. Meantime, thank Fra[illegible]



Batteries are like horseradish

Horseradish is something Grandma used to stash in the ice box to keep hot. With mine batteries, it's much the same deal, and that's why the manufacturers are required to ship them to you refrigerated. As explained in our T-SHOOTER No. 1-59 feature on batteries, the colder they're kept, the longer they'll stay hot.

So what do you do if they don't me through cool? You report it to WEPS (FSPP-6). And what if your boss man wants to know how come?

Tell him to read BUWEPS ltr FSPP-61/87 :CJR of 6 July 1960. That's your authority.

A bust for the record!

A Rudminde from D. J. MUNSON, NAD/HAWTHORNE, asks why nobody ever lets the next man know when the hoisting lugs on 25-1 mine cases have been checked out as required by NAVORDINST 8550.12. He suggests that after you check 'em, you should record the fact for the next man by stenciling.

So why not? Because the intent of the Instruction is not that they should be inspected just any old time, *but only during final prep.*

— Sorry to bust up your record D. J.!

Tennis, Anyone?

Speaking of the A-4-0 firing mechs used in Depth Charge Mark 14 Mod OP 669 doesn't mince any words on page 21 where it says *Do not paint, slush, or otherwise coat the diaphram.* That's why some of my favorite huskies out Muscle Beach way thought they'd latched onto something big when they got in a bunch of fleet-return A-4s that had their diaphrams painted olive drab.

Fact is, men, they're okay. Seems that in order to save some money and time, somebody up high in BUWEPS once approved buffing up diaphrams that had scratches no deeper than 0.007-inch, then spraying them with a coat of primer topped off with one coat of OD. Personally, I get a little tired of this endlessly thinking up ways to save time and money, even when it does make the hardware code zero. One of these days I'd like to be able to report that someone had offered to break down and spend a little.

— Like on me!

Not so cheap

When J. A. LAWLESS ordered some items for a Mk 15 float he discovered that a couple of the items weren't the bargains we made them out to be on page 18 of T-SHOOTER 2-60. Seems that the rivets are 10 cents each, not 10 cents a hundred, and the punch caps are $11.00 a piece instead of 55 cents!

We were as surprised as J. A. but when we double checked on these prices, well . . . you'd better correct your T-SHOOTER 2-60.

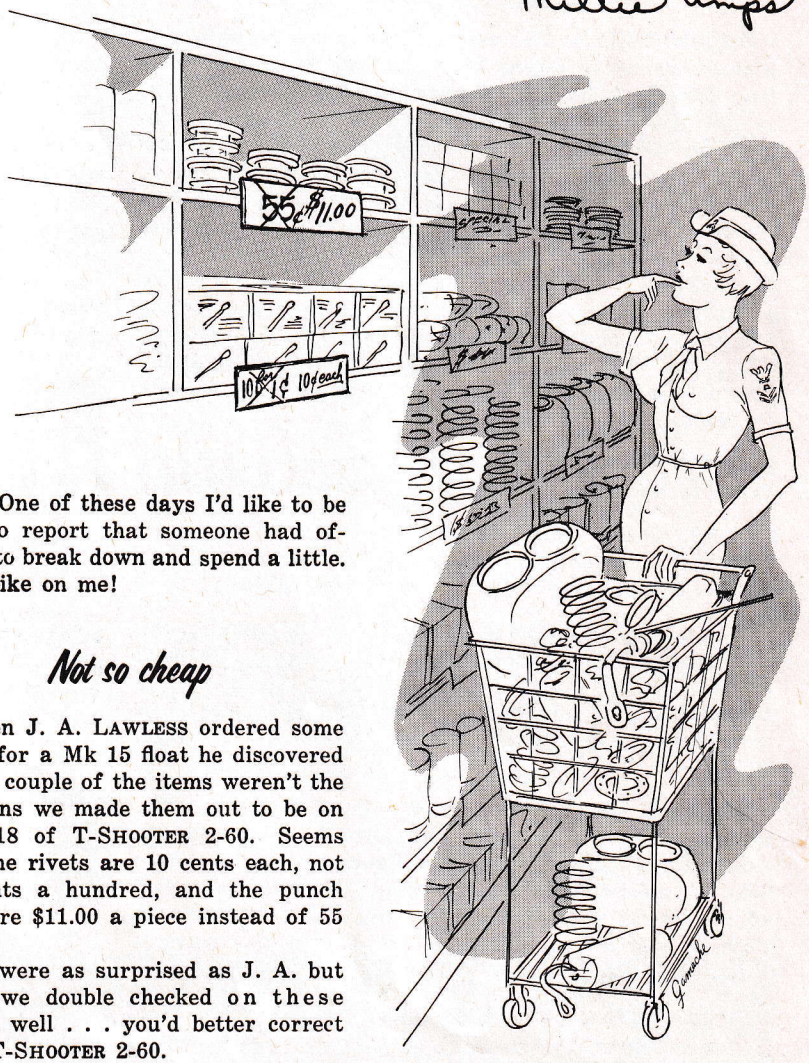
Our Leading Lady

BARBARA HAMPTON at HAWTHORNE has distinguished herself by becoming the first femme to send in a Rudminde! But her complaint was one we've heard from plenty others — the fact that classified issues of T-SHOOTER just don't get the liberal local distribution that the unclassified issues get.

Of course the best way around this is to keep all issues unclassified, and that's exactly what we're trying to do. But if and when we have to go to press Confidential again we'll try to put her suggestion to work. Meanwhile, Barbara, our congratulations and thanks.

Anyone for follow the leader?

Millie Amps



Pub-S-Crawlin'

with Clark Starter, MN2

SOMEWHERE in the directives system there's a Notice or Instruction that calls for making Fleet Service-Mine tests more representative of the facts — giving assembly errors etc. more of a chance to show up — by doing away with the sometime practice of one outfit disassembling and re-assembling another outfit's ready-to-plant mines. That's fine. To the extent that it's done it may well result in more ruddy Rudmindes reporting technical tulips in your OPs and ODs.

But there's also another side to the coin. If assembly people don't *use* those OPs and ODs nobody will ever know which end is up. One recent Rudminde, for example, reports the receipt of six 36-2 mines, presumably ready for planting, with CD-12 leads connected to insulated SE-3 covers leaving the A-5-2 ground circuits open.

Obviously the outfit that did this had not bothered to read par. 48c on page 54 of OP 1798 or Item 22 in the back of this book, both of which tell exactly where these leads should go.

The answer is obvious: use those pubs . . . *sure, get 'em dirty!* Like you, we know they're not perfect. But by finding the imperfections and getting off Rudmindes to us, you can help make them beaucoup better. Meanwhile here are some more write-ins to keep you clued until the changes get out.

— Practical results of practicing what we preach.

MASS CHANGE: The use of heavier fuse wires in new procurement of SE-3-type Actuation Counters (an increase from 0.003 to 0.004-inch) is resulting in a new mod in the supply system — the SE-3 Mod 4 — which should henceforth be used whenever expended or defective SEs are being replaced on Firing Mechanisms A-5 Mod 2. To do so, field technicians will have to convert A-5-2s to A-5-3s by removing the 3-ohm Resistor R-33. You'll be receiving instructions that tell how before the next T-SHOOTER issue. Meanwhile, since neither A-5-2s nor SE-3-2s will be procured in the future, you should write a note in each of the following manuals to modify the A-5 when using an SE-3-4: OPs 1452, 1797, 1798, 1799, and 1808. (The function of the new mods is in each case exactly as described in these books for the ones they replace.)

OD 12067-G 1st Rev (All mines). On page 126, change item 7 to read: *Test Set Mk 246-0 F/Control Unit Mk 66-0.*

OP 902 2d Rev (Mine Mk 18-0). On page 12, in column 3 of table 3, under Extender Mk 14 Mod 1, cross out Test Pot Mk 7 Mod 0 and write in *Test Pot Mk 3 Mod 1.*

OP 948 1st Rev (Mine Mk 10-3, 7, 9). On page 54, par 32*m*, change 2.5-watt on line 7 to read *0.5-watt.* On page 59 *cross out all of par 43i.* On page 59 at the end of par 44*e* write in: *Put the cover back on TB-7.* On page 60 at the end of par 45*h*, again write in: *Put the cover back on TB-7.*

OP 956 2d Rev (Mine Mk 25-0). On page 40, par 37a, change the first word in the sixth line from base to *top.* Also, on page 41, write a note on figure 12 that: *the three long side spacers should have some of the felt padding left off their outer ends just like the ones shown in figure 13.* Then on page 50, par 45a, cross out 15 or 16 and write in *8 or 9.*

OP 1452 2d Rev (Mine Accessories). On page 15, column 2, par e, change line 6 to read: *4.5 to 9 feet* (in Change 3 it now reads 9.5).

OP 1811, 20 Feb '57 (Mine Mark 50-0). Cross out the warning in column 1, page 33, and write this one in: *WARNING — Don't remove the lower safety pin during the following operation. With both pins removed the piston could be pressed home. This would align the detonator with the explosive train.* On page 36, cross out the warning in column 2 and write this one in: *WARNING — Follow the instructions below carefully. Do not pull safety pin's long leg out of the hole until the arming has been passed through the hole as directed.* Make identical changes to the repeats of these warnings on page vi and in items 19 and 23 in the back of the manual.

OP 1844 1st Rev (Firing Mechs A-6 and A-8). On page 34P (in Change 2), par 4, second line, change the word TEST to read *RESET.*

OP 1853, Adv Copy to 1st Rev (Mines Mk 6 & 16). In Volume 3 write a note on figure 49 as follows: *In assemblies that use Flooder Assembly Mk 1, tape the air dryer together and secure them to one of the upright bolts as explained in the text.* (The text calls the bolts *spacers.*)

OP 1905 1st Rev (Firing Mech M-5 Mod 1). On page 3 add a step to par 49 to read: *c. Tape each lug on CA-775 fuse end separately, so that they cannot make electrical contact with each other, or with any part of the mine.*

OP 2052 (Mine 25-0 Opn '1 Characteristics). Starting on page 20, change all figure references in text by adding one (e.g. references to figure 5 should read figure *6*, figure should read figure *7*, and so on through figure 15 which should read figure *16*). Do not alter numbers on figures themselves.

OP 2281 (Mine Mk 52-0). On page 38 par 7, change specified torque to: *16-20 lb-ft.*

TROUBLESHOOTER No. 2-60. On page 15 change the FSN for item 34 (Washer, lock, int-tooth, 5/16", air-d to: *GM5310-639-8061.*

Do You do this Job Right?

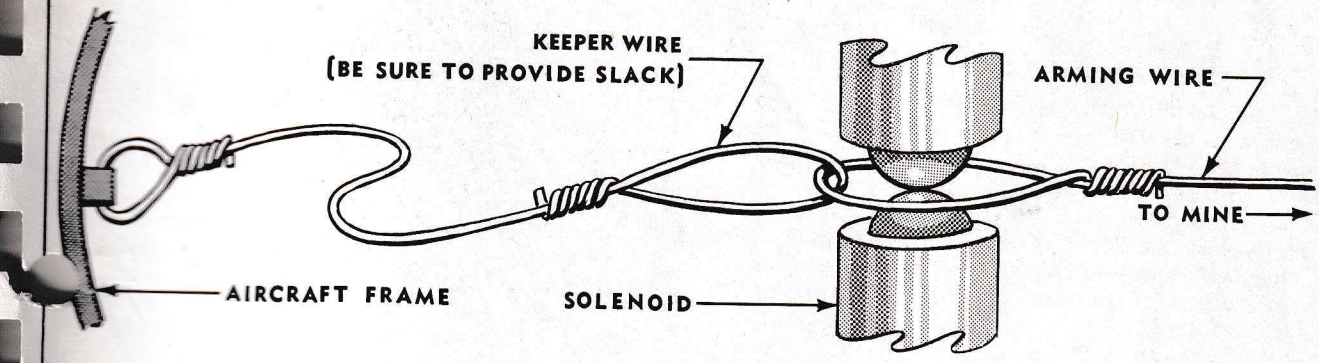
FSMTP AIR DELIVERY PROBLEMS

AS WE'VE SAID BEFORE, anything that helps get bugs ironed out of the mine air-delivery system is worth doing. Here are two new wrinkles:

▸ *The right way to insure positive arming.* Observers of some recent fleet service tests came home with no data on delivery system reliability — data the Navy had spent beaucoup bucks to get. The reason: the mines had been "positive-armed" by attaching their arming wires directly to the planes' frames, bypassing the solenoids.

Sure, the mines armed. There was no way they could have done otherwise. But there was also no way to learn whether personnel errors or mechanical failures would have fouled up the solenoid functioning.

Now there *is* a way that you can have your cake and eat it too. All you have to do is install a keeper wire between the plane's frame and the eye of the arming wire like we show here, then install the arming wire's eye in the solenoid by the book. This way, after the drop, observers will find the arming wires still in the solenoids if the solenoids worked right, or outside the solenoids if they didn't. And in either case the mine will have armed.



Just be sure you give your keeper wires some slack as shown, make sure you don't bypass those solenoids when you "positive-arm," and make sure you restrict this trick to drill and fleet service-test mines.

▸ *The right fins for the right plane.* Another trouble point came to light when a crew tried to install some Mines Mk 25 in the bomb bay of a P2V-5 and found they wouldn't fit . . . the bomb bay doors couldn't be closed!

The reason is not a design deficiency, as some thought, but the fact that Operational Assemblies 21, 22, 23, and 24 of the Mk 25 mine use Mine Fin Mk 9-0. This fin is for high-altitude drops, while the P2V-type — and the P5M where the problem turns out to be the same — are intended for low-altitude plants.

The answer: Leave the fins off these assemblies of Mk 25 mines when planting from P5M-1 or 2, or P2V-4, 5, 6, or 7 aircraft at less than 3000 ft. They plant better without 'em at low altitudes. Your pubs that recommend otherwise will be changed.

the Editor

We have the world's best weapons — Use 'em right!

Let's fill out those FORMS!!

. . . Rudminde Forms, that is—
good ol' NAVORD 2776—the one that's
guaranteed to get rapid results
whether you use it to report test-set tantrums,
policy peccadillos, supply scrambles, tool tangles
pubs poopers, component cranks, or packaging
pranks. Of course there are *some* things it *can't* do.
—Sorry, Lieutenant