Corrected f/Trouble Shooter 1-61 10-1-63 RC

No. 2-60

mine and depth-charge

THE TROUBLESHOOTER

- *Those Federal Stock Numbers*
- *Material for Mine Mk 25-2*
- *Drill Gear Dope*

THE OFFICIAL JOURNAL OF THE *RUDMINDE* PROGRAM

in this issue . . .

THE TROUBLESHOOTER

mine and depth-charge

REGULAR FEATURES

ARTICLES

COVER PHOTO: Assembly by the numbers — federal stock numbers, that is — takes place at Mine Project 4, NWS/Y, as C. F. Boynton, MNSA (left) and Marty Mahoney, MN1, check out new material list for Mine Mk 25-2. For more about material lists and FSNs see story page 12.

The Rudminde Program 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 program is sponsored by the Bureau of Naval Weapons.

The basic instrument of the program is Navord Form 2776—"Report of Unsatisfactory or Defective Mines, Depth-Charges, or Associated Equipment"—supplies of which can be requested from NSC Norfolk or NSC Oakland. Anyone who encounters problems with these weapons is encouraged to report them to the Naval Mine Engineering Facility using this Form. Instructions for its use and handling are contained in NAVORD INST. 8500.7.

The Troubleshooter is an official BUWEPS publication; technical information contained in it supersedes pre-dated BUWEPS notices, instructions, and official technical publications, and should be acted upon accordingly.

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THE OFFICIAL JOURNAL OF THE *RUDMINDE* PROGRAM

SOUNDINGS

The Changing Scene In Undersea Warfare

THE WORLD BELOW

SWEEPERS' PRAYERS ANSWERED: When German General Rommel (the Desert Fox) was ordered to France in 1944 to beef up Atlantic-Wall defenses, he demonstrated an incredible proclivity for mines of all types.

Finding 1,700,000 land mines already in place, Rommel ordered a minimum of 50 million — a maximum of 100 million mines, to include coastal mines close in on the beaches, ground mines with acoustic and magnetic firing mechanisms farther off, and various types of moored mines still farther offshore!

Fortunately for the allied invaders, time did not permit Rommel's orders to be carried out. While nearly 4 million land mines had been planted, the 29-foot Normandy tides and disagreements with the Naval Group Command West (who should have known better) delayed preparation of the undersea defenses.

NATURE, IT'S WONDERFUL! Having covered shark etiquette, octopuses that read, beetles that simplify electrical circuitry, and the never-ending lessons of the birds and the bees (see T-SHOOTER 1-60, page 1) we now learn that DR. JOHN C. LILLY has been providing the Navy with detailed information on the vocal communications that take place among porpoises. He's reported rattles and grunts audible to the human ear and numerous sounds above the frequency of human hearing.

Based on Dr. Lilly's report that porpoises also frequently whistle, we'll take bets on what the favorite topic of his fun-loving subjects' bull sessions will turn out to be!

THERMAL LAYERS BARED: For many years subs have been able to take cover merely by diving into a thermal layer where they have been secure from detection devices now used aboard ships and subs. The thermal layers resemble cloud banks, and often extend more than thousand feet in depth.

Now a Variable Depth Sonar detection system (VDS) has been announced. Reportedly it can probe into or through thermal layers and pick up lurking submarines. ASW experts in the Pentagon call this new gear "very promising". If and when it becomes operational, surface ships will be able to discover undersea enemies in time to use their long-range antisub weapons.

MAIL-BUOY ROUNDUP

ABILITY WILL OUT: When THOMAS S. GATES, JR., moved up to Secretary of Defense, JAMES H. DOUGLAS left the Air-Force-Secretary slot to become Deputy Secretary of Defense, and DUDLEY C. SHARP was appointed Secretary of the Air Force. During WWII Sharp was skipper of several ASW vessels before moving to Washington for duty in the Navy's Office of Procurement and Material.

THERE'LL ALWAYS BE A BUZ — While Buz Sawyer, comic-strip Navy Commander and flyboy, was painting his hallmark on the Russian sub testing our ASW Alpha group, "his" VX-3 outfit folded at Oceana, Va. In real life VX-3 was active in developing battle tactics for jets and Sidewinder air-to-air missiles before deactivation on 1 March.

Four similar air development squadrons are still open for business.

ANOTHER NEVERSAIL: Latest announcement of a land-bound ship comes from Bell Telephone who have just taken the wraps off a modern mockup cable-laying ship christened BLDLCS FANTASTIC (Bell Laboratories Dry Land Cable Ship).

Getting ready to link the world's phone system with new lighter cables, Bell had to come up with a new system of laying them. Now — 28 miles inland on a New Jersey hilltop — their men are busy aboard the FANTASTIC winching cable over the side, studying methods of gripping the cable, how fast to pay it out, how long it will take to settle on the bottom, and how much stress the cable must stand during the laying operation.

BE NICE TO 'EM SANFORD: Mine Detail Augmenting Unit 0325 has moved in at NAS Sanford, Fla. This is not the MDAU 0325 formerly at Chincoteague Air Station, Virginia. That one, under Fasron 121, was decommissioned some time ago.

The new MDAU 0325 started up under Fasron 51 but now, under O-in-C J. D. BRADFIELD, AVORDTECH, reports direct to NAS Sanford. Enlisted personnel are still arriving on board.

GOOD SAILING, FASRONS: Now that the program to decommission all FASRONS is over one year old, their maintenance and support missions have largely been assigned to naval air stations. Thus the Mine Detail Augmenting Units (MDAUs) formerly attached to the FASRONS remain under Fleet operational control but are now administratively controlled by local air-station commands. As a result, no bloc transfers of MDAU personnel have occurred.

THREE'S NOT A CROWD

AND HE STILL MAKES 31 KNOTS: Those who hail SS GEORGE WASHINGTON as "Father of the New Navy", will do well to scan some quotes from a recent interview given by straight-talking ADMIRAL ARLEIGH BURKE, CNO:

On nuclear subs — "She (SSNB WASHINGTON) is useless for limited wars. It (the sub) has a lot of advantages but it can't cook . . . in other words there are a lot of things it can't do."

On new weaponry — "For every measure there is eventually some sort of a counter-measure. A heat-seeking homing device still has to get within range . . . it is possible to provide a

lot of heat sources which aren't necessarily ships . . . you can give them a lot of radar targets which are not necessarily ships. Homing devices have a pre-set mechanism, a pre-set idea, and you can mix them (the devices) up."

On surface ships — "Control of the seas is dependent upon surface ships because the cargo of the world is carried in surface ships . . . support of our allies, support of our own forces is done by surface ships."

On general war — "With the advent of the ballistic missile, combined with nuclear weapons, the probability of a general war is becoming more and more remote, but we always have to be prepared for it. In the event there is a general war the role of ships at sea will actually be increased. A ballistic missile is something that requires a fixed address. Ships at sea, not having fixed addresses, are less subject to destruction by ballistic missiles. So as nations spend more of their effort on the production of ballistic missiles, they spend less of it for things that will destroy naval ships — or any ships."

Asked whether he was satisfied with the Navy's ability to protect the Atlantic and Pacific sea lanes and with ASW capability, Admiral Burke replied: "I'm not satisfied with any capability we've got."

He continued: "We would like to detect at much greater ranges . . . miles, tens of miles. If we were sure we could pick up all submarines and identify them at 20 miles or 30 miles we would be happy. We are short of ships, particularly modern ships, and we're concerned about our shipbuilding."

Asked if the Navy and Marine Corps could be both a limited-war striking force and nuclear deterrent now that Polaris is being added to the Fleet, Burke said: "In a general war there is no one weapon or no one service . . . no one of anything that can win all by itself. We are dependent upon the Air Force doing their job — we are dependent upon the Army holding in Europe and Korea. If they don't hold we are in a bad spot in the Navy. Likewise they are absolutely dependent upon us because if we don't perform, their people just won't accomplish anything. They all tie in and you can overcome a defect in one by an increased excellence in another.

"So for that reason, I don't think it is good to conceive of any one service being *the* service. That is one of the reasons, of course, why I am not in favor of a *single* service."

ROUGH LOG

MINESWEEPER DELAYED: Navy's 1960 shipbuilding program is still being evaluated. To date three DDGs — primarily ASW ships mounting twin Tartar short-range surface-to-air missile batteries, two nuclear attack subs of the Thresher class (advanced Skipjacks), one DE, one Oceanographic Research Ship (AGOR), one hydrofoil-type subchaser, one LPD, and one LPH have been approved for new construction funding.

Conversion listings include a Liberty into a technical research ship, and an LST into an advanced aviation ship.

Meanwhile a guided-missile cruiser, seven DDs, and one MSS have been put back on the conference table for further discussion.

THOSE FABULOUS 60s: BUSHIPS is reviewing its MIL SPECS and standard drawings to identify items in general use which could be procured commercially from sources now providing similar material to the merchant marine, private shipping, and the boating industry.

But don't look in your latest mail order catalog for a Hull, CVA-133. That may be a couple of hash marks away.

THE RESERVES ARE BACK: Eleven MSC(O)s have been assigned to the reserve mine warfare program. In addition to a 21-man reserve crew each craft will have an 8-man active duty crew including a LCDR skipper, a LT exec, LTJG mine countermeasures officer, a LTJG engineer, and four whitehats.

Eight ships draw east-coast ports and three get west-coast assignments.

RUDMINDE REPORT TO THE FLEET

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

RUDYARD KIPLING was no mineman and never saw a Rudminde. Instead he accumulated fame writing dictums like "east is east, west is west, and never the twain shall meet."

Our own Rudyard — Rudyard Rudminde that is — could also pen a word or two about east and west. He's just returned from visiting most of the mine activities along the eastern seaboard from Key West to Brunswick, Maine. His reason for making the trip was to try to make east more like west (WESTPAC that is) when it comes to reporting unsatisfactory or defective mine and depth-charge material!

To get his orders cut for basking in Florida sunshine while the Facility languished under history's worst seasonal snows, Mr. R. merely showed the boss that 75% of all Rudmindes have been originating in WESTPAC activities. And while this is good because WESTPAC's stepped-up participation seems to have been spurred by a similar trip made last year through the Pacific, it highlighted the fact that some east-coast people just haven't been getting the Rudminde word. Weather or no weather.

The person-to-person visit among eastern commands turned up many new faces in some of the unit command slots, many of them still buried deep reading Station Battle Bills, T/Os, Security regs, local SOPs, and Plans of the Day.

Though on their required reading list, NAVORD INST 8500.7, 10 Jul 57, was still buried. This is the document which set up the reporting system that brings unsatisfactory reports on mine and depth-charge material to the attention of the folks who can do something about them — the ones at good ol' NMEF.

A few unit commanders were familiar enough with the Instruction, but frankly felt Rudmindes should be filled out in triplicate and forwarded, through them, via chain of command. *Two even hinted that Rudmindes could be used to show that they weren't doing their job, and would eventually downgrade their effort!*

Fortunately nothing could be further from the intent, purpose, or operation of the Rudminde Program. Hundreds of minemen know this at first hand because they have seen Rudmindes of their own start action that changed OPs, reworked test procedures, secured new material to replace stuff that wouldn't work, cleared up conflicting procedures, interpreted the intent of OPs, even forced a couple of top level policy decisions to be made!

A few shops admitted they'd had a lot of *little* things they *could have* reported. What they'd been waiting for was something of real consequence.

Well, these units, too, are way out in left field. This Rudminde Program has been carefully put together. It contains several built-in qualities, one of the best being the way hundreds of minuscule "inconsequential" defects may be catalogued, indexed, and filed, *. . . but are periodically dug out and reviewed.*

For instance, several Rudmindes came in on the 83-cent CA-959 telling us one of the leads has to be stripped an extra three inches so the lead can span battery terminals.

This was a real minor gripe, so the first one received clerical action only — "log and file." The same treatment was given the next. And the next. But then, some months later, still more came in. Finally — as a result of periodic review — they formed a statistic that converted itself into a Facility Job Order which ended up with the Bureau issuing a NAVORD INSTRUCTION and NMEF revising DWG 1170901 before the file was closed out as "complete."

One savvy second class summed up the whole deal when he piped up at an open forum discussion. "What you're telling us is Rudmindes give us minemen a weapon we can use to shoot down some of the $§%¢&* red tape," he said. "Like an enlisted man can fill out a Rudminde, go over it with his Chief, and then ship it straight off to NMEF."

Amen stripes, amen. And that goes for your men out in the Fleet who have minor troubles with your depth charges too. Who knows, you just might be responsible for making a weapon work better, easier, or go together faster in outfits like your own all over the world! As a matter of fact WESTPAC changed over to this way of thinking and tripled their output.

Remember, in the Rudminde business quantity is just about as important as quality. With this word passed along to the east-coast cliff dwellers, maybe we'll see a real contest between east and west. Maybe the first Rudyard's theories about east and west will turn out to be wrong after all.

Editor's Note: *What with the problems of finding prices and new stock numbers with which to order mine and depth-charge components and hardware, we've included a feature article on page 12 to help you along the way. We've also included a material list for Mine Mk 25-2, complete with new numbers and prices starting on page 14, and a similar list of drill-mine hardware on page 18.*

To do this we've had to eliminate our PUB-S-CRAWLIN' column from this issue. The table of pubs errors reported by Rudminde, usually printed with PUB-S-CRAWLIN', follows the table of defects reported by Rudminde which, as usual, starts on the next page.

DEFECTS REPORTED THROUGH RUDMINDE

ITEM	USED WITH	REPORTED DEFECT	REMARKS
Air Dryer Mk 10 Mod 1	All mines except Mk 18-0	Too large to fit in Retainer (DWG 452049) used in Mine Mk 25-0.	You can put it in double without too much trou just remove the retainer, then re-install all t gether. Fig. 17 in OP 956 shows it this way.
Arming Device Mk 5 Mod 0	Mines Mk 52-0 through 6; 55-0 through 6	Flange thickness tolerances too great.	You're so right. DWG 1875083 will be revised specify acceptable tolerance.
Battery BA-248/U	Mine Mk 39-0	Failed load test of 12-volt section on Test Sets Mk 130 Mod 1 and Mk 127-3.	See "Batteries Anonymous" in HOT STUFF this issue.
Battery BA-249/U	Mines Mk 16-1; 18-0; 25-2; 27-2,3,4,5; 36-1,3; 49-2	Leaking electrolyte.	Leakage usually means an exhausted battery. cable hookups and electrical components okay?
Case, Mine Mk 6-6	Mines Mk 6-0, 4,7,8,14	Extender-well studs not perpendicular to flange.	Thanks. We'll be watching closely for more examples in our world-wide Surveillance Progr
Control Box Mk 32 Mod 0	Controlled Mine System Mk 1 Mod 0	Fuse 150 MA (DWG 893528) failed to open circuit when clearing-voltage was applied.	We think a new type of time-delay fuse may be needed; more on this later.
Depth Charge Mk 9 Mod 3	NA	Nose-ring bracket broken from case, exposing TNT.	Clean up any leaking exudate and get that thing from other explosives pronto. "From Here to Eternity," p 9 of T-Shooter 1-60 tells how.
Drill Mines, All	NA	SD-4s are superfluous in drill mines.	Seems like CD-14 Mod 3 clocks should be enoug Watch your T-Shooters for possible development
Dolly, Mine Handling (4 wheel)	Mines Mk 6 all mods (cases)	Tips easily when handling cylindrical mines.	See "Make It Legal" in HOT STUFF this issue.
Firing Mech A-6 Mod 1	Mines Mk 25-2; 49-2	Failed pressure-look test using Test Set Mk 65-1.	The outfit that sent these out as Code 0 has been alerted. Meanwhile watch for new operational tes using A-6-3s (preferred item) coming as OP chan soon.
Firing Mech A-6 Mod 3	Mines Mk 25-2; 49-2	Cycles on pressure look alone.	The MD-9 (5) switch is defective. Could be that t mech is a Mod 1.
Firing Mech A-8 Mod 0	Mines Mk 27-3,4; 36-3	Failed to operate on pressure look.	The outfit that sent these out as Code 0 has been alerted. Meanwhile watch for new operational test using A-8-1s (preferred item) coming as OP chang soon.
Firing Mech M-9 Mod 2	Mine Mk 18-0	Failed to pass pre-assy tests using Test Set Mk 8. Defects varied but mainly failed SR-5 sensitivity.	Test Set 8 is a Type A & B set as defined on p 7, T-Shooter 1-60, so should not be used for pre-ass tests. Instead use bench-test on p 18 of T-Shooter 1-58 accepting new 108± 10 OA cycling time and ne SR limits on p 20, T-Shooter 1-60. Complex, but this is the word.

Defects reported through Rudminde, continued

ITEM	USED WITH	REPORTED DEFECT	REMARKS
Firing Mech Mk 20 Mod 0	Mines Mk 52-2, 3, 5, 6; 55-2, 3, 5, 6	Brass spacers under corners of lid cause interference when installed in instrument rack of mine.	This trouble does not occur often enough to warrant revising manuals. Firing Mech Mk 20 Mod 0 being replaced by Mod 1 in new production. Meanwhile, in case of spacer interference, file them off.
Relay, Time Delay TD-16 Mechanism	Mine Mk 10-3, 7, 9	Rubber insulation dried out and cracked.	In November 1959 NMEF recommended rework of all TD-16s and replacement of the defective stock reported via Rudminde.
Relay, Sensitrol SR-7 Mod 2	Mines Mk 25-2; 27-3, 4, 5; 36-3; 49-2	Failed to operate within limits in OP 1844.	So try the new limits on p 20, T-Shooter 2-60 and in Change 3 to OP 1452.
Search Coil SC-7 Mod 0	Mines Mk 36-1	Bakelite disc on end of coil broken.	To get the right discs study remarks on SC-7, T-Shooter 1-60, p 5.
Search Coil Mk 27 Mod 0	Mines Mk 52-2, 3, 5, 6; 55-2, 3, 5, 6	Coupling nut for search coil not torqued to specified limits.	Should be torqued to 15 lb-ft.
SE Mount Assembly DWG 1558534	Mine Mk 39-0	Wood spacer in SE-3 Mount Assembly (DWG 1558534) too thick.	See "A Stitch In Time," HOT STUFF this issue.
Test Set Mk 61 Mod 2	Firing Mechanism A-5 Mod 2	Pilot light and ELEC-CAL control improperly grounded causing stray AC currents.	We've written a repair procedure for these sets. BUWEPS will be getting it out.
Test Set Mk 66 Mod 0	Firing Mechs A-6-3 and A-8-1	Clamping arm broken.	Your set's obsolete. You can turn it in for a strong-arm version, Test Set Mk 66 Mod 1.
Test Set Mk 66 Mod 1	Firing Mechs A-6-3 and A-8-1	Clamping Arm (DWG 496851) broken.	This IS the new strong-arm version. Could it be you're installing too tight?
Test Set Mk 95 Mod 2	Clock Delays CD-8, CD-9, CD-12	Stepping switches failed to operate.	Using dry cells instead of storage battery as your DC supply will cause this; see "All Wet With Dry Cells," T-Shooter 2-60 page 10.
Test Set Mk 110 Mod 1	Firing Mech Mk 15 Mod 0	Voltage between terminals K and M exceeds maximum allowed by OS 5887.	MIL-T-18580 (NOrd) supersedes this OS. NOL is now revising this...DWG 399020 and OP 1860 which also affect. We think outcome of this will provide cure.
Test Set Mk 137 Mod 1	Control Box Mk 13-1; 15-0	Cable Assembly CA-656 not plainly marked.	See "Talley's Fally," HOT STUFF this issue.
Test Sets, all marks and mods	NA	Instructions do not specify whether supply voltages are no-load or load voltages.	We're stumped! If we can manage to cook up an answer, you'll find it in T-Shooter first.

PUBLICATIONS ERRORS REPORTED THROUGH RUDMIND

PUBLICATION	USED WITH	REPORTED ERROR	REMARKS
DWG 383839 Revision E	Cable Assembly CA-274	White and yellow leads incorrectly designated.	Get Revision F. It designates white lead as D and yellow as L.
DWG 978439 Rev C	Case, Mine Mk 36-2 (explosive-loaded)	Stencilling instructions disagree with OP 2238, Ch. 4 par 4.	We're revising several drawings on this; identification info on case will be moved...loading and inspection info will go on an attached tag. Future T-Shooter issues will tell more.
DWG 1191471 Rev F (RTP)	Test Set Mk 264-0	Par 1-4 (q) reads position A on line 2, position B on line 3.	Should say position B on line 2, position A on line 3. NOL has cog; we've asked them to correct.
DWG 1343611 Rev C (Schematic)	Mine Mk 25-0 OA's 01, 04, 07, 17, 21	Shows reversed color codes for WH & YEL leads of CA-274.	We're correcting this, also DWGs 1343612, 1343613, and 1363033 which contain same mistake.
DWG 1343627 (Schematic)	Mine Mk 52-5	C-section of battery hookup reversed.	We're revising it now.
NAVORD LIST 22500	Depth Charge Material	Item # 174 has wrong Federal Stock Number.	Correct one is FSN N5960-262-0280.
OD 7303 Vol 1 2d Rev	Mine Mk 25-1	Item 204.0, 1-in. bolt, too short to secure spanner bracket on Microphone MI-4.	Install the other 6 bracket bolts first, then this one will take hold. A longer bolt will bottom in the hole; don't use.
OD 7309 2d Rev	Mine Mk 6-0	In "used with" column, items 404 through 414 are wrong.	Item 404 is correct as printed. Remaining items should have numbers in "used with" column as follows: 405.0-226.0; 406.0-226.2; 407.0-226.2; 408.0-226.0; 409.0-229.0 & 229.1; 410.0-228.0, 228.1, & 228.2; 411.0-228.0, 228.1, & 228.2; 412.0-228.0, 228.1, & 228.2; 413.0-228.0, 228.1, & 228.2; 414.0-228.3, & 228.4.
OD 9170	Mine Mk 52 Mod 6	Par 17, line 2, on page 92 reads "mixer run."	Should say "control-box run." Final draft will correct.
OP 948 1st Rev	Mines Mk 10-3, 7, 9	Page 83 says install fiber washers on studs before clock starter is installed.	Must have wrong book...p 70 par 60 covers this in our copies and is correct. In any case don't install fiber washers first; they go on top of the flange under the steel washers and nuts.
OP 956 3d Rev	Mine Mk 25-0	1. Table 8 and fig 4 disagree on connections of CA-23 to TB-19. 2. Figs 3 & 4 incorrectly show 141V section of BA-239/U connected to starting anode of G7. 3. Page 12 col 2, description of SD-4 operation is inaccurate.	1. Figure 4 is wrong; color codes and numbers for each pair of switch leads are reversed. 2. Starting anode (grid) should not be connected to 141V; also connection should be shown between left-hand primary winding and cathode. 3. So it is. Next change to this OP will correct each of the errors listed here for OP 956.
OP 1452 2d Rev	Mine Accessories	Change 3 to OP 1452, item 16 specifies change to column 1, page 139.	Should go in col 2 page 139 instead, making line 17 read: "This may be done with a screwdriver by turning the adjusting screw as shown in figure 102."
OP 1765 2d Rev	Mine Mk 25-2	1. Fig 25 shows CA-23 leads disconnected during operational tests. 2. Operational assy numbers for figs 13 & 14 are reversed. 3. Page 2 first par says release mech and nose spoiler are torn off when chute opens.	1. They must be connected like p 52 of this OP says. 2. They are. 3. Water impact tears 'em off. (Cont'd on next page)

Errors reported through Rudminde, continued

PUBLICATION	USED WITH	REPORTED ERROR	REMARKS
OP 1765 2d Rev (cont'd)	Mine Mk 25-2	4. Page 54 par 51 Fire Test doesn't specify one-minute wait between steps b & c. 5. Page 54 Fire Test should be rewritten for Fire Mech A-6-3.	4-5. Right both times. We've written complete new tests, now on their way through the mill with change 1 which corrects about 40 errors in this book.
OP 1792 (Prelim)	Firing Mech Mk 15-0	Page 41 step 3, page 42 step 6 say reject mechanism if any lamp lights.	Page 41 step 3 should read: "If any other lamp lights, reject the firing mechanism." Page 42 step 6 should read: "The green lamp will light; if any other lamp lights reject the firing mechanism."
OP 1797 2d Rev	Mine Mk 25-1	Page 44 par e specifies method of battery installation that places terminals flush with side of battery compartment.	Even if you turn 'em 180 degrees they still sometimes short out. We'll try to find a suitable fix.
OP 1798 2d Rev	Mine Mk 36-2	1. Page 58 par 54c confusing on CA-365 hookup; red & white leads on some cables equal length. 2. Fig 18 shows CA-665's strain loop on cover screw for A-5-2 sensitivity adjustment. 3. Split lockwashers specified p 52 par 44d keep falling into slots in plate.	1. "Long" means red lead w/flag-type lug; connects to SE-3-2 terminal 1. 2. That's okay but don't leave screw out of hole any longer than necessary. 3. Use 3/8-in. internal-external tooth 12-Z-3010-498 and the problem is licked. Next change to this OP will fix up these kinks.
OP 1809 1st Rev	Mine Mk 49-2	Page 4 does not specify which strain loop is secured to Bleeder Assembly.	CA-93's loop is the one.
OP 1816	Drill Mines Mks 25 and 36	Page 12 says cut off 6 leads of CA-23 when installing CD-12 in extender well.	Get advance copy to 1st rev of this book; it tells you to tape 'em back.
OP 1878 Advance copy of 1st Rev	Drill Mine Mk 10-3	Page 76, fig 30 shows incorrect test voltages.	Newest book on this mine is 1878 1st Rev Preliminary Copy dated 10 Aug 1959. It shows TB-7 voltages exactly like the older book except that you should get 9 volts on both terminals of the 4th pair from the bottom of the figure (TD/blank) and 9 volts on both terminals of the 5th pair up (CD/M-5).
OP 2282	Mine Mk 52-1	1. Page 29 par 2 does not indicate insulating of switch-cable lugs to prevent accidental contact during planting. 2. Page 31 par 4 omits battery-cable number. Reference to spacer 1 out of order here. 3. Page 32 par 8. Battery positioning instructions wrong.	1. Future procurement of CA-948s will have insulating sleeves on the leads to the thermostatic switch; meanwhile use tape. 2. Battery cable is CA-948. Disregard last sentence of par 4. On page 32 last sentence of par 5 should read: Position spacer 1 against the batteries with identification number showing as in fig 16; then plug CA-948 into batteries making sure that all plugs are tight. 3. Place a BA-310/U to the right of the cable block and a BA-1322/U with a spacer 15 behind it on top of BA-310/U. (Cont'd on next page)

Errors reported through Rudminde, continued

PUBLICATION	USED WITH	REPORTED ERROR	REMARKS
OP 2282 (cont'd)	Mine Mk 52-1	4. Page 35 par 4c mentions control box which is not used. 5. Page 35 par 6 omits instrument-cable number. 6. Page 98 par 15 omits ½-minute wait after moving selector.	4. Disregard mention of control box. 5. Instrument cable is CA-831. 6. After moving the MECHANISM-TEST selector to 23, wait ½ minute before depressing hydrophone diaphragm. For more dope on this book see "Decisions" in MILLIE's BRIEFS this issue.
OP 2283	Mine Mk 52-2	1. Page 31 par 2 does not indicate insulating of switch-cable lugs to prevent accidental contact during planting. 2. Page 33 par 2, page 34 par 5 specify spacer No. 10. 3. Page 34 par 7 specifies wrong batteries. 4. Page 71 par 5 reads "positions 1 to 25". 5. Page 75 Instrument Test lacks setting instructions. 6. Page 77 par 10 not clear. 7. Page 85 par 19 reads "step 12". 8. Page 85 par 21 line 1 reads MIXER RUN. 9. Page 85 par 23 line 2 mentions a test pot.	1. Future procurement of CA-948s will have insulating sleeves on the leads to the thermostatic switch; meanwhile use tape. 2. Should be spacer 21. 3. Change BA-316/U to BA-326/U. Change BA-1311/U to BA-1322/U. 4. Should read "1 to 19". 5. Use settings from page 36, par 5 before starting test. 6. See steps 7 and 8 of test set's operating instructions. 7. Change to "step 16". 8. Should read CONTROL-BOX RUN. 9. Disregard mention of test pot. For more dope on this book see "Decisions" in MILLIE's BRIEFS this issue.
OP 2284	Mine Mk 52-3	Page 88 par 23 line 2 reads MIXER RUN.	Change to read CONTROL-BOX RUN. Also see "Decisions" in MILLIE's BRIEFS for new scoop on this book.
OP 2285	Mine Mk 52-4	Page 86 par 20 line 2 reads MIXER RUN.	Should say CONTROL-BOX RUN. See "Decisions" in MILLIE's BRIEFS for news on this book.
OP 2286	Mine Mk 52-5	1. Page 2 table 1 mixes instrument and battery cables. 2. Page 17 fig 7 calls out wrong cable. 3. Page 31 par 2 omits insulating of switch-cable lugs to prevent accidental contact during planting. 4. Page 33 par 5: reference to spacer 1 out of order. 5. Page 79 Instrument Test lacks setting instructions. 6. Page 90 par 20 line 2 reads MIXER RUN. 7. Page 81 CAUTION disagrees with Test Procedure Sheet No. 1441919.	1. CA-835 is instrument cable; CA-948 is battery cable. Color codes are right for cable numbers as listed. 2. It's CA-951. 3. Future procurement of CA-948s will have insulating sleeves on the leads to the thermostatic switch; meanwhile use tape. 4. Page 34 par 5 last sentence should read: Position spacer 1 against the batteries with identification number showing as in fig 16. 5. Use instructions from page 37 par 5 before starting test. 6. Change to read CONTROL-BOX RUN. 7. See "Decisions" in MILLIE's BRIEFS this issue.

HOT STUFF

Bracket racket

Dear Chief,
While clamping Air Dryer Mk 10-0 into its bracket in Mine Mk 49-0 (and other mines too) the dryer busts open. This is because the dryer is bigger than the bracket instead of vice versa

And another thing. The 10-0 is the standard dryer for most mines. Why can't air dryers be made up in different sizes to fit different size brackets?

A.D.F., TM2

Dear A. D. F.,
Someone's feeding you the wrong scoop, Charlie. That 10-0 air dryer is an alternate item in all mines, including your 49-0.

So maybe you mean the 10-1 air dryer. If you do you're still off beat 'cause that one goes in like Flynn when you slide it *diagonally* into the bracket. Anyhow, adding items to the stock system is a real bad deal, as you can find out by reading our feature on the numbers biz in this issue.

If somebody doesn't start *reducing* our stores we'll all be riding in rowboats at the ends of tow lines while the stores take over the quarters.

B. Arnaclebutt

My time is yours

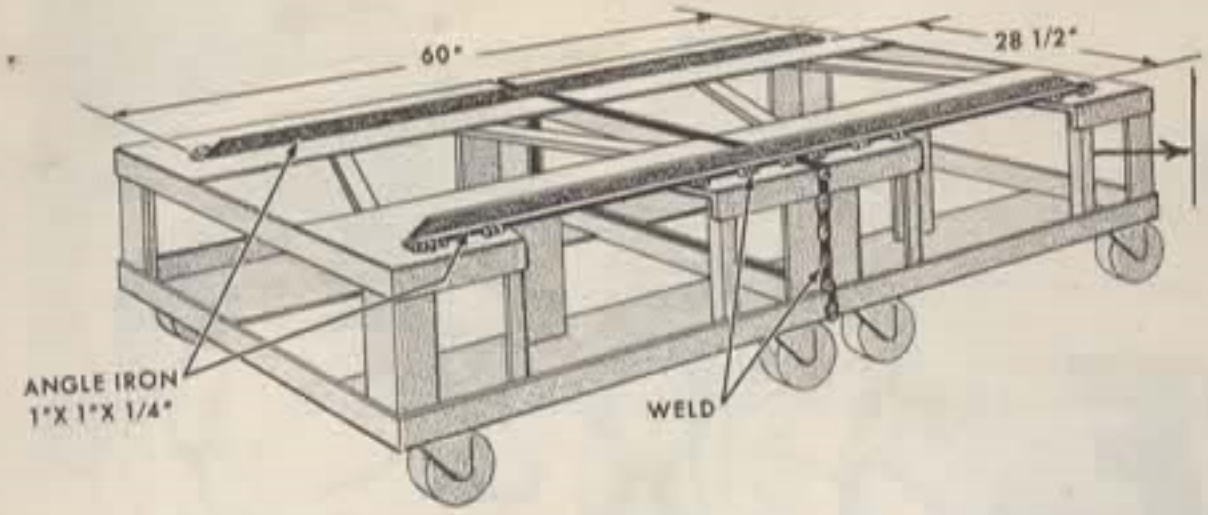
Chief B-Butt,
When assembling Drill Mines Mk 49-0 our CB 1-0s wouldn't pass the interlook dead-period test according to page 111 of our advance copy to OP 1889 1st Rev. Meanwhile OPs 956 3d Rev and 1807 1st Rev call for slower times on the same test. We used these and our CBs were acceptable. So does this mean we have good or bad circuit breaks?

T.A.D., MN1

Dear T. A. D.,
I don't recommend testing to limits other than those in the OP for the specific mine. But in your case two OPs are better than one and you were exactly right in using the longer times.

You'll find NOL has cleared this one — and some others as well — in the new preliminary copy to OP 1889 1st Rev dated 10 Aug 59 which supersedes and cancels your advance copy, dated 1 Feb 57. You can get one through the usual channels, but meanwhile use the interlook- dead-period times in 956 or 1807.

B. Arnaclebutt



NOTE: Weld along both sides with 1/4-inch fillet welds, one inch long, at three-inch intervals. Add two 1-inch angle-iron braces, each sixty inches long, to the top, to provide side support for mine crates. Space braces 28-1/2 inches apart; weld with 1/4-inch fillets, 1-inch long, spaced six inches apart.

Make it legal

Dear B. Arnaclebutt,

Something should be done about those Mine Dollys G-0734001 (FSN 1350-038-7657). In the first place they're unbalanced. Put too much downward pressure on either end of any cylindrical mine, like when tightening tail plates and firing mechanisms, and it either rolls away from you or else the mine topples to the deck with a thud while the dolly takes off across the shop in the opposite direction.

Then there's the business of trying to move them. Any stray nut, bolt, pebble, or crack in the deck stops those puny little wheels cold. This skids the mine on the dolly, and if it slides only a couple of inches the thing's off balance again. The mine lands on the concrete hard and the dolly flies bent for election.

It's happened more than once with 2000-lb explosive-loaded cases right here in our own shop. This could kill.

R.J.S.,MNC - W.B.,MNC

My Friends,

I seldom recommend matrimony as a solution to any man's problem — not after fourteen years of homilies, homespun, and hash. But if you marry those dollys like we show here they'll be a lot easier and safer to use. Welding, like we show, is probably best. But you can come out almost as well using nuts and bolts if there's no welding rig handy in the suburb where you are.

As for the terrific ideas for *new* dollys you sent, they look fine and I think you can be pretty sure they'll be used. When, of course, is another question, so next issue I'll try to squeeze in something on your ritzy Mk 2 Bomb Trailer lash-up for the rest of the boys.

B. Arnaclebutt

Talley's folly

Dear B-Butt,

In my day I've seen quite a few Test Sets 137-1 with CA-656s whose markings couldn't be read. This could mean wrong hookups causing reverse polarity in the control-box tests, converting expensive components into junk. It wouldn't happen so easy if NOLR 1086 and OP 1844 had included more specific hookup dope. So why not get out a change?

C.W.W., MNC

Dear C. W. W.,

Old buddy E. P. TALLEY, Mine Project 4, came through on this one too, and we appreciate the word from you both even though Talley talked about 12 volts where he must have meant 14. In your case I can't figure out the reference to NOLR 1086 which was deceased years ago . . . and I can't change 1844 because that one is still NOL's baby.

What we did was suggest that NOL use you guys' idea in OP 2567, the new book they're writing to cover *all* firing mechs.

Meantime you'll be getting a new revision to OP 1844. It's at the printers right now, but maybe we can crank the dope in with a change after it comes off the press. Until then anybody who's wondering should hook up that CA-656 like this:

Black (14) to + 14 volts.
Red or Green (6) to + 6 volts.
Yellow or White (—) to NEG.

If that doesn't do it, there's still a sure way: use your trusty ohmmeter to check the leads' continuity. In this case you should know that the + 14-volt terminal connects to plug-terminal 3, the + 6-volt terminal to plug-terminal 2, and the NEG to plug-terminal 1.

The extra few minutes it takes to make sure will save BUWEPS beaucoup bucks. Thanks.

B. Arnaclebutt

The chicken or the egg?

Chief Butts,

OP 956 3d Rev says to balance the firing mech and circuit break on the bench before installation in Mine 25-0, but OP 1889, printed after OP 956, says to balance the Drill Mine 49-0 components after installation in the case. Are we to assume that newest means best?

R.J.B., MNC

Dear R. J.,

I've chipped through two sets of Navy choppers trying to get this one straightened out. And I thought I had when I wrote *All Hands Hear This* in T-SHOOTER 1-59, page 10. Check me on that!

Now page 172 of your new book tells you to balance the circuit break and firing mechanism, and to check the interlook dead period and adjust sensitivity. But apparently the author couldn't make up his mind. On the same page (172) he says these tests can be omitted. Then only three pages later (page 175) he tells you to yank the components out of the mine if the stuff doesn't balance, and only one page after that (176) he tells you to yank 'em again to adjust sensitivity. And that's not all. He's got you hoisting components *again* on pages 177 and 178!

Me, I say you should do just like it says in OP 956. Wire 'em up on the bench, exchange or adjust components until your M-11-4 and CB-1-0 are in balance, adjust sensitivity and check interlook dead period . . . *then*

tall the gear in the mine and run intership-dead-period and firing tests.

Soon as we can, we'll get your book changed. Like I said back in T-SHOOTER 1-59, it's busting our knuckles juggling all this gear in and out of the mines that's earned guys like you and me the dubious title: *old hands.*

B. Armacleburt

Batteries anonymous

Hey Butt,

Having just tested two stacks of BA-248/Us, I'm tired of playing Lifo-Fifo, Put & Take, and other Dry-Battery games. Better we should keep beer in the reefers 'cause these cells just don't make points on the meter like it calls for in OP 1452. If you've got a solution, be sure it fits battery lot 28066-P-58.

L.E.R., MN

Dear Len,

My solution, like yours, is 3.2 percent alcohol. Trouble is, it does *not* fit those BA-248 batteries manufactured under Signal Corps Contract 28066-P-58.

You should have found a card like BUWEPS ordered Hawthorne and Yorktown to attach to every battery from this specific lot, reading: *"Attention! In lieu of the .63 meter reading specified by the Mk 130 Mod 1 Test Set Instructions, the minimum acceptable value for this battery when testing the low voltage section is .56."*

In everyday language this means they've reduced the voltage requirement in your OP 1452 from 9.6 volts to 8.5, but only for Lot 28066-P-58. Use these readings and get that beer out of the reefer and drink it and I predict you'll *both* end up in Code 0.

— You bet.

B. Armacleburt

A stitch in time

Dear B.B.,

OP 1736, Mine Mk 39-0, says in "Tests Before Detonator Installation" (step 11) to check for resistance of ½-ohm or less between DET 2 and a bare spot on case.

I did this and got a consistent 3-ohm reading. Then we whittled the wooden cushion on the SE-3 mounting plate down to 1/8-inch thickness and got the test called for by the OP. Good idea to pass along to the troops?

H.S.S., CWO

Dear Gunner,

Sounds like your knife is sharp enough for bear but your safari is hexed by obsolete 39-0 hardware and a superseded "Guide to the Woods."

First your guide: get OP 1736 2d Rev. To go with this you'll want the newest General Requisities: OD 7333 2d Rev. Next check your gear for the clock well: if you've got Cushions Mk 37-0 (½-inch felt) for the bottom of the well, give 'em the heave and get ⅛-inch wood cushions Mk 39-0. If you've got the old-type SE-3 mounting plates (1-piece recessed in the center) deep-six 'em and get SE-3 Mount Assembly DWG 1558534.

You can spot this new SE-3 mount easy . . . it's a steel plate with a metal tray for the SE-3 welded on top and a wooden cushion glued underneath. That's what makes me think you're using wrong goods — *how could you whittle off ⅛-inch like you say when this mount has less than ⅛-inch of wood there to begin with?*

As for the high resistance, here's some of that help for the troops. Those new SE-3 mounts have a tough primer that'll up the resistance to ground almost every time. The best deal is to scrape off the primer around the mounting holes *before* you install the mount on the studs in the well.

This'll save someone having to take it out and scrape later to get that resistance down to half-ohm.

B. Armacleburt

A new approach

Dear Chief Butt,

Opening up Mines Mk 36-2 for post-recovery analysis, we keep finding CA-23s pretty badly beat up from being pinched between the MI-4s and the firing mechanism. Any reason why this cable can't be rerouted?

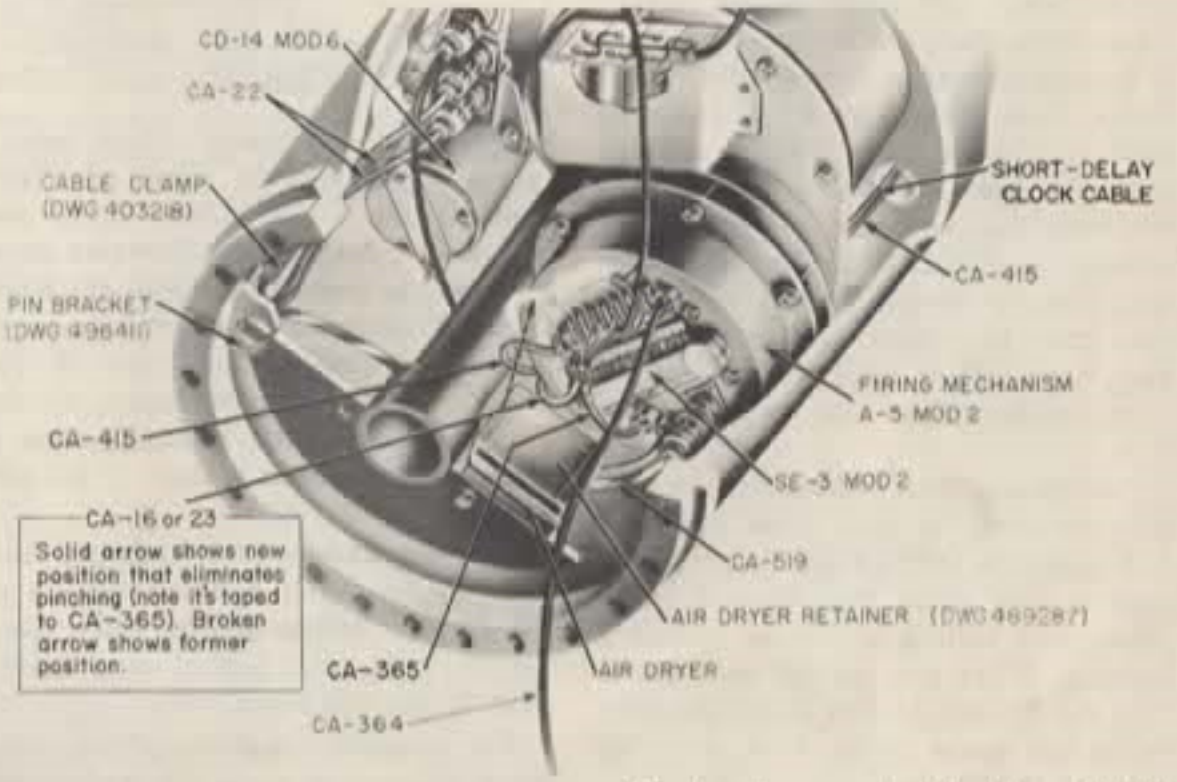
M.F., MN2

Dear Mike,

Not now there isn't. In fact, the next change to OP 1798 will tell you to do it not only with your CA-23 but also with the CA-16, depending on which assembly you're building.

Meantime follow the illustration on this page. Lead the cable in from behind and attach its lugs to the TB backwards, and finish it up by taping your cable to the CA-365 just like we show. This will keep it out of the way while you finish up your assembly.

B. Armacleburt



Clock cables re-routed in Mine Mk 36-2

Let's talk about . . .

Those Federal Stock Numbers

THE HAPPY DAY IS COMING when anyone — in any branch of the armed forces — stationed anywhere in the world — will be able to order any item he needs using the same universally understood federal stock number. But it won't be next Tuesday.

The reason it won't be next Tuesday is that conversion to FSNs is far from a simple, overnight affair. It all ties in with a mammoth, dollar-saving plan for supply unification and simplification known as the Department of Defense Standardization Program. Someday we'll take time to explain the whole plan, but first let's concentrate on answering some of your questions about the info you need to order your weapon components and hardware as of today.

The book you can't do without

The first place to look for a mine or depth-charge item is in OD 12067 — *Index to Navy Ammunition Stock.* This book, as you probably know, comes in 13 volumes, designated by letters.

You want OD 12067-G for underwater mine components, or OD 12067-D for depth-charge components. Both books were revised as of 1 January 1960 (1st Revs). And they're exactly alike in use, so from here on out whatever we say about one applies equally to both, including the fact that they're newer and more up-to-date than any General Requisite you now have. That applies not only to part numbers, but also to nomenclature.

Remember, you want only the new first revision. In rare cases you may find that this OD has given a familiar item a new name that doesn't make sense, like calling a booster spacer a wrench. When you do, tell us about it fast via Rudminde, but order the item using the name in the book until we can get it changed.

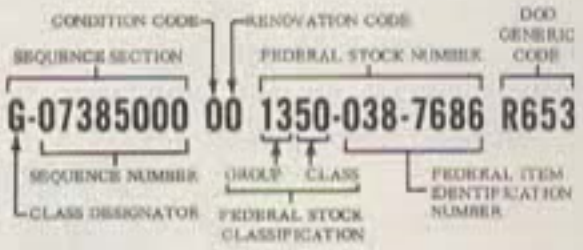
To repeat: OD 12067 is everybody's one best guide to Federal Item Names (latest official nomenclature) for depth-charge and mine components. And that's that.

Fast service on ammo items

One of two things will happen when you look for an item in OD 12067: either you'll find it listed there, or you won't. We'll cover both cases but let's take the first one first. Let's assume you want a soluble washer for an extender.

Because this item is stocked only for use in mines (common-sense must tell you this) *it will be listed in OD 12067-G.* It's listed right on page 134, together with its cost and enough stock numbers to choke a cat. That's real bad for the cat but real good for you, because you can get the *right* washers and get them *fast* if you use every last number that's there.

So now let's write the number down and perform some back-yard surgery to find out what it means.



▸ *The class designator* (first letter) refers to a specific class of Navy Ammunition Stock. Class G, as you now know, contains underwater mine components (hence OD 12067-*G*) while class D includes depth-charge components. Other classes are A for Bombs, B for Pyrotechnics, C for Chemicals, etc. thru V. Each class is defined in the front matter of all new revisions to OD 12067.

▸ *The sequence number* should look familiar too. It's a transposition of the former BUORD identification number . . . the one you've used in the past to get the same item.

▸ *The condition and renovation codes* won't appear in your OD 12067, but we're showing two zeros in their designated locations so you'll know what they mean if you happen to see them. When you do, the first zero may have been replaced by a familiar condition code such as 9 — unserviceable; 8 — suitable for drill use only; or may still be 0 — ready for service use, etc. When ordering, you can indicate the condition you need in this slot.

The second zero may be replaced by a renovation- or disposal-program symbol such as 1, 2, 8, or X. Each is defined in the front matter of all new volumes of OD 12067, together with instructions for their use. But just place a zero here when you order your gear, and make sure you do not alter or delete other symbols you find in this slot unless you are sure you know what you're doing and why.

▸ *The Federal Stock Number* comes next . . . the only number you'll be using after the kinks of conversion have been ironed out.

Its first 4-digit section identifies all items by group and class. In our example the group is 13 — *Ammunition and Explosives*, and the class is 50 — *Underwater Mines, Inert Components.* To date 75 such FSC group numbers and 530 class numbers have been assigned.

The middle (3-digit) and last (4-digit) FSN sections are merely item identification numbers. All FSNs are made up in 3 sections like this one, but any may at times be preceded by one or two letters. We'll explain these prefix letters presently, when we explain "Z-cog" items.

▸ *A DOD Generic Code* completes the 26-digit stock number (DOD stands for *Department of Defense*). Although federal stock numbers will ultimately be used for all requisitioning and most stock reporting procedures, these DOD generic codes group ammo items by type, so can sometimes be used in place of FSNs when knowledge of specific items is not required.

Someday you'll probably be able to drop the DOD generic from your requisitions, but for the time being

st to include it whenever you find it in OD 12067 (some ammo items are not so coded).

So much for the Ammo items that make up your weapons. *Be sure your requisitions include drawing numbers with your item names, quote prices, and give as much of these 26-digit numbers as you can find in OD 12067, and we'll guarantee that service will be fast.*

Cogs turn the wheels

Before the vast DOD standardization program, our defense setup was encumbered with thousands of duplicate items. Often they were procured, stocked, and supplied by as many as twelve different activities, each under a different stock number. Now the program is changing all that.

Today duplicate items by the hundreds are being grouped according to function, standard items to fit all applications are picked and given a single FSN, and then assigned for stock control (cognizance is the high falutin' word) to a single agency. That agency will then handle all future procurement and will supply users.

Such control — or cognizance — is coded, and the "cog" codes are defined in great detail (14 whole pages!) in Chapter 1 of the *Bureau of Supplies and Accounts* (BUSANDA) *Manual, Vol. II.* For your convenience, we've printed a much abbreviated rundown in the box on this page. Look it over now, and keep it as a handy reference. It will help you understand more about the FSNs you're most likely to meet.

And there you are. From what's just been said you can see where a lot of your familiar items will no longer be procured or controlled by BUWEPS. But you now have a "cog" list to refer to, and this brings us back to what happens when you look up an item in OD 12067-D (depth-charges) or -G (mines) and find it's not there.

Try OSO

Let's say your weapon assembly OP calls for a dozen 1 5/16-inch steel lock-washers 43-W-6212-180, or maybe a rubber gasket DWG 415856. Time was when either of these BUORD identification numbers would have gotten your gear with no sweat. Today they won't.

What you need are some good ol' FSNs. You'll never find them in good ol' OD 12067 because that, as we said at the outset, is your index to various classes of Navy Ammunition Stock.

But you shouldn't expect everyday 1 5/16-inch steel lock-washers or gaskets to be listed with Ammo Stocks anyhow, because common sense tells you that unless they're specifically made for a specific weapon, they're probably used by a good many activities throughout the Department of Defense. Cog of anything like that will most likely have been shifted from BUWEPS to BUSANDA's Ordnance Supply Office (OSO) or General Stores. Or — going back to our list and putting it the other way 'round — they've probably become what the "cognoscenti" in supply now refer to as *Z-cog* or *G-cog*.

The first step to getting those FSNs, then, is to dig up a book called *the Master Cross-Reference to the Navy Stock List for Ordnance Supply*

continued on page 20

NAVY SUPPLY COGS

Code	Material	
A	OSO repair parts/ordalt sets	*
B	Industrial equipment	*
C	Construction equipment	#
D	Clothing & textiles	*
E	Photographic supplies	*
F	Major electronic equipment	†
G	General Stores	*
H	Ships' parts	*
I	Forms and pubs	*
J	Ammo stocks listed in OD 12067	§
K	Training aids	¢
L	Medical material	*
M	Subsistence	*
N	Electronics supplies	*
O	Training devices (R&D)	‡
P	Submarine/Reactor parts	*
Q	Ships' Stores	*
R	Aeronautical equipment	*
S	Ship equipment/machinery	*
T	Electronic training devices	*
U	Resale clothing	*
V	Major aeronautical equipment	§
W	Fuel supply	*
X	MSTS material	*
Y	Base equipment & repair parts	*
Z	OSO gen'l ordnance material	*

* Bureau of Supplies and Accounts
\# Bureau of Yards and Docks
† Bureau of Ships
§ Bureau of Naval Weapons
‡ Office of Naval Research
¢ Bureau of Naval Personnel

"BILL OF MATERIAL FO

ITEM	DWG NO.	SEQUENCE	FED STK NO.	DOD Code	OPNL ASSY	NO. PER MINE	COST
* Adapter, parachute	485074		Z1350-038-5358		All	1	.12
¶§ Arming-Wire Assy Mk 4-0	422872	.G09280400	J1350-038-7986		All	2	.38
¶§ Antisieze Compound	239375-4	.G09340213	J1350-603-6751		All	½ pt	.32
§ Battery, dry, BA-249/U	343047	.G016249YQ	J6135-179-0510	U249	All	2	5.60
§ Bleeder Assembly, 5600-ohm	1620873	.G06843051	J5905-691-4643		All	1	.65
* Booster Mk 6-5	713147	.G01850650	J1351-310-2705	R708	All	1	3.53
§ Bracket, anti-rotation, search-coil (replaces DWG 484761	1385263		Z1350-038-7011		All	1	1.10
§ Bracket Assembly, air-dryer, cross-type	383802		Z1350-038-5374		All	1	.57
# Bushing, horn-hole plug, rubber (for use see "Plug, horn-hole")	72093-5 343106-3		Z1350-592-9910		All	1	.06
§ Cable Assembly CA-30	1378735	.G01980300	J1350-093-0490	S400	All	1	1.00
* Cable Assembly CA-410	383847	.G01984100	J1350-038-6011	S424	All	1	1.07
§ Cable Assembly CA-529	416136	.G01985290	J1350-038-6026	S429	All	1	1.77
§ Cable Assembly CA-559	416618	.G01985590	J1350-038-6031	S432	1,4,7,13,14, 15,17,20,21, 24	1	3.39
§ Cable Assembly CA-958	1236447	.G01989580	J1350-038-6121		All	1	5.60
# Cam Assembly, replacement, #3, (f/CD-4)	496072		Z1350-038-6304		1,3	1	1.50
* Case Mk 25-1, HBX-1 load	384548	.G02222510	J1351-093-0619	R740	All	1	533.00
# Case Mk 25-1, inert load	384548	.G02142510	J1350-038-6207	R130	All	1	275.00
¶§ Cell, arming, Mk 2-1	489282	.G02360210	J1350-038-6706	R181	All	2	3.80
¶§ Cell, arming, Mk 2-2	489283	.G02360220	J1350-038-6707	R182	All	2	3.80
¶§ Cement, glyptal	485826	.G09340173	J5970-642-9919		All	½ pt	.70
§ Clamp, cable (f/TB-18-0)	1183119		Z5340-598-2537		All	1	.04
§ Clock-Delay Mechanism CD 8-0	489971	.G02250805	J1350-038-6276	R196	1,3,4,6,7,9, 17,19,21,23	1	46.30
* Clock-Delay Mechanism CD 12-0	386239	.G02251207	J1350-038-6289	R200	2,5,8,13,14, 15,18,20,22 24	1	52.80
# Clock-Delay Mechanism CD 12-0	489782	.G02251207	J1350-038-6289		1,3	1	52.80
					2,13	2	52.80
§ Clock-Delay Mechanism CD 14-6	1438495	.G02251460	J1350-707-0660	R207	1,4,7,13,14, 15,17,20,21, 24	1	55.40
					2,3,5,6,8,9, 18,19,22,23	2	55.40
§ Coil, search, SC-20-1	1442444	.G07112010	J1350-625-4353	R257	All	1	146.00
§ Condenser, electrolytic 300-mfd (f/A-6-3)	542071	.G02270220	J1350-671-5174		All	1	1.05
§ Control Box Mk 13-1	489960	.G01921310	J1350-038-5924	R272	All	1	74.00
* Control Unit Mk 66-0	1358602	.G06056600	J1350-038-7456	R761	17,18,19,20, 21,22,23,24,	1	68.00
§ Core Extension CE 5-0 (f/SC-20-1, tail)	384947		Z1350-038-6765		All	1	.52
§ Core Extension CE 6-0 (f/SC -20-1, front)	384948		Z1350-038-6766		All	1	1.95
§ Cushion, instrument, Mk 21-1 (fiberglass, f/SD-4)	1245921		Z1350-038-6813		1,4,7,13,14, 15,17,20,21, 24	2	.31
§ Cushion, instrument, Mk 27-0 (cellulose, 4-pc set, f/SR-7)	416492 497875		Z1350-038-6819		All	1	9.90
* Detonator, electric, Mk 46-1 (f/Ext 14-2)	1252238	.G03154610	J1351-093-0658	R766	All	1	1.80
§ Dryer, air, Mk 10-1	1240872		Z1350-038-5370		All	1	.09
* Extender Mechanism Mk 14-2	343296	.G03401420	J1350-038-6869	R317	All	1	20.30
* Fairing Mk 1-0	284686	.G03440100	J1350-038-6963	R327	7,8,9,15,17, 18,19,20	1	122.00
* Fairing Mk 10-0	1438422	.G03441000	J1350-707-0630	R333	21,22,23,24	1	122.00
* Fin Mk 9-0	293336	.G03450900	J1350-707-0652	R350	21,22,23,24	1	60.00
§ Firing Mech A-6-3 (replaces A-6-1)	1501810	.G03480630	J1350-620-3419	R366	All	1	184.00
* Fitting, explosive, Mk 1-0	1236841 1153511	.G03860100	J1350-658-3240	R791	17,18,19,20, 21,22,23,24	1	6.00
§ Flange, adapter (f/Fire Mech A-6-3)	485072		Z1350-038-6512		All	1	1.40
¶§ Gasket, cover, search-coil-tube, full-type, rubber	1557721		FSN not yet assigned - use alternate below pending procurement				
¶§ Gasket, cover, search-coil-tube, full-type, rubber (alternate)	415856		Z5330-297-6500		All	1	.06
¶§ Gasket, EX & CS, full-type, rubber	239249-5 231440-3 385823		Z5330-285-3587		All	2	.14
¶§ Gasket, tail-cover, full-type (replaces DWG 1227597)	1509758		Z5330-671-5191		All	1	.12
* Insulator, booster	497673		Z1350-093-0693		All	1	.08
§ Lock Assy, safety, arming-wire (f/EX 12-4, 14-2, CS 1-4)	385484		Z1350-038-6923		All	2	1.70

ITEM	DWG NO.	SEQUENCE	FED STK NO.	DOD Code	OPNL ASSY	NO. PER MINE	COST
§ Lug, suspension, British	452533 3690225		Z1350-038-6543		All	1	.40
§ Nut, hex, semi-fin stl, 1/4"-20 (f/Air Dryer 10-1)			GF5310-260-7893		All	2	.004
* Pack Assembly, parachute, Mk 3-2	384552	G06010320	J1350-038-7429	R473	1,2,3,13	1	103.00
* Pack Assembly, parachute, Mk 13-2	490927	G06011320	J1350-038-7435	R478	4,5,6,14	1	181.00
* Pack Assembly, parachute, Mk 13-5	1441845	G06011350	J1350-707-0626	R480	7,8,9,15	1	138.00
¶§ Pack Assembly, parachute, Mk 19-0	1236429	G06011900	J1350-038-7442	S029	All	1	132.00
* Pack Assembly, parachute, Mk 26-0	1438469	G0601260	J1350-000-0000	R492	17,18,19,20, 21,22,23,24	1	208.00
§ Pad, battery-housing, wool felt	369024-4 452556		Z1350-038-6555		All	1	.08
§ Plate, mounting (f/Air Dryer Mk 2)	451904		Z1350-038-6567		All	1	.28
§ Plug Assy, Jumper (replaces CD-14 when directed)	1261820	G02267140	J1350-672-0333		1,4,7,13,14, 15,17,20,21, 24	1	1.50
# Plug, Horn-Hole (closes tail-cover gland hole in shipment)	343106		Z1350-038-7310		All	1	1.55
§ Relay, Sensitrol, SR 7-2	416518 416537	G07290721	J1350-038-7642	R550	All	1	60.00
* Release Mechanism Mk 7-3	384471	G06570730	J1350-038-7523	R562	1,2,3,4,5,6, 7,8,9,13,14, 15	1	11.60
¶§ Release Mechanism Mk 17-1	1467532	G06571710	J1350-651-5575	R571	All	1	20.10
* Release Mechanism Mk 22-0	1438453	G06572200	J1350-707-0612	R575	17,18,19,20, 21,22,23,24	1	43.60
§ Resistor, "L", bl & wh, 82800-ohm (f/SD 4-0 as directed)			Z5905-093-0714		1,4,7,13,14, 15,17,20,21, 24	2	3.10
§ Screw, mach, stl, pan hd #6-32 x 5/16" f/bleeder assembly)			G5305-043-5885		All	1	.39/Gr
§ Screw, mach, stl, pan hd 5/16" x ½", (f/air-dryer mount)			GT5305-558-5730		All	4	.78/Gr
§ Screw, mach, stl, pan hd #6-32 x 7/16" (f/bleeder resistor assy)			G5305-043-6664		All	4	.46/Gr
§ Screw, mach, stl, pan hd slotted, 2" #10 (f/air-dryer mounting plate)			G5305-043-6758		All	4	.88/Gr
§ Screw, set, soc hd, cup pt, 1/4"-20 x 3/8" (f/SC-20 core extension CE-5)			G5305-253-3619		All	1	.03
# Shield assembly (float container)	1236417		Z1350-038-7390		All	1	18.30
§ Shunt Assy (kit—includes #6, 10-ohm; #4, 20-ohm; #3, 30-ohm; #2, 50-ohm; #1, 100-ohm—f/Control Box 13-1)	166702		Z1350-093-7624		As req'd	1	4.70
* Spacer Assembly, booster, Mk 2-1	883387		Z1350-038-5891		All	1	.87
§ Spacer, wood (f/cushion 27-0, SR-7)	443843		Z1350-038-6325		All	4	.07
§ Spring, helical (spacer f/alternate SC-19)	452555		Z1350-038-6450		All	1	.10
§ Starter, clock, CS 1-4	385975	G02650140	J1350-038-6718	R231	All	*1 #2	12.40
¶§ Sterilizer SD 4-1	384265	G07470415	J1350-038-7692	S260	1,4,7,13,14, 15,17,20,21, 24	1	57.00
¶§ Tape, retracting, battery	1182766		DA8315-641-4375		All	1	.60/Ri
* Target-Strip, plastic, (f/Ext Mk 14-2)	1385000		Z1350-671-5238		All	1	.04
§ Terminal Board, TB 18-0	384187	G08001800	J1350-038-7805		All	1	21.00
¶§ Washer, flat, .049" (f/arming-wire safety lock)	430552-0		Z5310-205-4203		All	1	.05
¶§ Washer, flat, .03" (f/arming-wire safety lock)	430552-1		Z5310-205-4201		All	1	.05
§ Washer, lock, int-tooth, 5/16" (f/air-dryer mount)			GM5310-[illegible] 639-8061		All	4	.12/C
¶§ Washer, insulating, fiber f/Extender 12-3,4; 14-0,1,2	124988 486533		Z5330-093-0668		All	16	.01
* Washer, soluble, blue (f/EX & CS)	369146-3	G07382430	J1350-038-7683	R650	All	1	.26
* Washer, soluble, green (f/EX 12-2)	239346-4	G07380690	J1350-038-7666	R643	All	1	.26
* Washer, soluble, green (f/EX 14-1,2)	403296	G07382440	J1350-038-7684	R651	All	1	.26
* Washer, soluble, pink (f/EX & CS)	369146-1	G07382410	J1350-038-7681	R648	All	1	.26
* Washer, soluble, white (f/EX 14-1)	362745-4	G07380720	J1350-038-7667	R647	All	1	.29
* Washer, soluble, white (f/EX 14-6)	443622	G07382400	J1350-038-7680	R652	All	1	.28
* Washer, soluble, yellow (f/EX & CS)	369146-2	G07382420	J1350-038-7682	R649	All	1	.26
* Washer, spring-lock, 1/4" (f/air-dryer mounting plate)			GF5310-012-0380		All	2	.075/C

* Service mine only
§ Service and drill mines
# Drill mine only
¶ Expendable with each drill plant

Millie Amps' BRIEFS

My Slip Showed

"You may be an authority on pads," old B-Butt said, but who asked? Naturally he was talking about my article *Silly Boy* in T-SHOOTER 2-59. Then he dropped the original Rudmindes from BILL SEGESSER, Navy 3002, and MAURICE HARMON, Navy 214, on my desk and stomped out. So I'm choking on crow.

If Bill and Maurice are still reading my column, here's what I should have written:

In OP 956 3d Rev the text in par 37a, page 40, says to install those dear side spacers "with the ends . . . with no felt padding toward the *base* of the M-11 . . ." This is *wrong*! It should read: . . . with the bare ends of the three wooden side spacers at the M-11's terminal end.

In other words, Fig. 13, page 43, is right and shows the three wooden side spacers DWG 452552 correctly installed. This means it's figure 12 on page 41 that's wrong. And those side spacers are *not* completely covered with felt the way figure 12 shows; 1.625 inches of one end of each is bare wood.

Somewhere in the mill there's a change to OP 956. When you get it I think you'll find this scoop cleared up.

Strip For Action

From now on when you get a Test Set Mk 26-2 you'll have a new preliminary to perform before it's ready for business.

What happens is that the meters get damaged in shipment. To prevent, we're changing the drawings to call for a shunt installed across th meter, and a tag pasted on the pan to remind you to remove the shun before use. When you do, you shoul also strip the tag from the panel.

—Okay?

We've Popped a Button!

The joker who named submarinin the silent service must have manage shore leave whenever the re-load crew were rassling mines into or out of th torpedo tubes. What with the need t rig loading poles, fish block-and-tack rigs, and man-handle those 2,000- devils, I'm told the language gets raucous that it would never do f my ladylike ears to hear.

From now on, though, things shou be a little bit better. Our tall

st distinguished-looking engineer as designed a button attachment for lder submarine-laid mines which is lso part of a completely new con- ector assembly for linking mines when they're stored in the tubes.

The idea was *not* to satisfy Rudmindes from the chaplains, but to standardize handling gear on the sub-laid 10s and 49s with that on the newer Mk 57s, and also adapt them for handling by the automatic power-loading equipment on the Skipjack and other up-to-the-minute nuclear-powered jobs.

Right now we're cranking the scoop into a change to OP 1808 (Mine Mk 49-1) and similar changes to OPs 948, 1807, 1809, 1878, and 1889 will follow up fast. Watch for them if you work with these mines.

It's an Old County Custom

It was all started by some letters asking about a particular stud, namely Stud DWG 1826872, which has been added to some Basic Tool Kits is headless and thus — so far as correspondents were concerned — useless.

First one of the technicians in our Rudminde Branch tried to find out what it was for. He got nowhere, but managed to arouse the curiosity of a design engineer.

The engineer miked it down to the last ten-thousandth, speculated on the kind of steel it contained, but turned glassy-eyed and incoherent when pinned down to explain its use.

At that point that evil old B-Butt was dragged into the act. During the next half-hour he invented at least a hundred names for it that I wouldn't dare print, and finally covered up for his ignorance by saying that it should be turned over to me because I'm such an expert on studs.

Well — being a country girl at heart, maybe I am. Anyhow I'm running a picture so you can see what it's like, and I can tell you it's darned handy to use as a locating pin when you're doing a one-man installation of those heavy firing mechanisms in Mines Mk 25, 36, and 50.

Imagine, the whole place dumbfounded over a simple stud. And they call this a *service* organization!

STUD DWG 1826872

FIRE-MECH LOCATING PIN

Hank Shoots a Blank

HENRY M. WILLIAM, MN2 at Key West, sent us a Rudminde with a correction to OP 685 on Mine Mk 27-0. Both the 27-0 and 27-1 are now considered obsolete. I don't know of any official announcement of this from BUWEPS as yet, but we're treating it that way on their say-so here at NMEF. Suggest y'all boys do the same.

It's Not So Fishy

If you're one of the many who flipped upon receipt of new Mk 7-1 air dryers for K-type firing mechs, don't feel too bad. Finding the dessicant (moisture-absorbent crystals) enclosed in plastic containers with no holes for the air to pass through, one of our multi-degreed engineers blew his cork too.

What he'd done, much to his chagrin, was overlook the properties of the plastic.

To see what I mean try buying a goldfish at an up-to-date dimestore. The lass will scoop your fish from the tank, put it in a clear plastic envelope with some water, heat-seal the top of the envelope, and hand you your piscatorial prize. If you query her (most of us women hate you when you don't) she'll explain that even if you forget and leave Fishy sealed up overnight, he'll still be okay . . . that even though the plastic won't leak, fresh air can pass through it both ways!

The material, men, is cellulose acetate, and NOL claims it really does let those new air dryers breathe. If you look close you'll also notice that two of the plastic caps on each assembly are only partially sealed. This lets even more air pass in and out, so there's no need to drill holes in them like some of you thought you should do.

Decisions, Decisions

When you're running the instrument tests on Mods 0 thru 6 of Mine Mk 52, the various OPs tell you to shift Test Set 263's MECH-TEST selector promptly to 2 if the set's meter reads low when you turn it to 1.

The instructions in the set cover the same possibility, but tell you to make the promp shift to 0, and this distributed CWO H. CLARK at MDAU 0305 no end.

The answer, of course, is that either position will keep you from messing up the works. Nevertheless we've asked NOL to eliminate the need for decisions by specifying position 0 as standard throughout. That's how it will be in OP 2608, a new OP to cover assembly of all Mk 52 mods, replacing OPs 2281, 2282, 2283, 2284, 2285, 2286, and OD 9170.

millie Comps

DRILL GEAR AGAIN

WAY BACK WHEN our prototype T-SHOOTER 1-58 reached the Fleet a lot of minemen glommed onto page 11 and framed it. It was the first time they'd ever seen a picture of every last part for Float Mk 15-1 with detailed callouts so a striker could identify and order the replacement items fast. We know because the fan mail kept us up in the clouds for a long time.

Then new federal stock numbers came in and people started taking our picture off the wall so it wouldn't confuse them in the search for cross-indexes, prices, and FSNs.

One man we know tried to draw a cutter-gland plug with the DWG number only, and supply wouldn't break one loose even when he identified a pile of them in a front bin . . . something about not having the FSN would louse up their inventory control!

So now you're needing new numbers and we're needing a new supply of mail. So we're running that picture again, this time with latest DWG, Sequence, FSN, and DOD numbers, and each item's price. We're also including a bonus.

The items listed on the next page are not parts of the float assembly, but are used to adapt it to Drill Mines Mk 18, 25, 36, 52, and 55, or to indicate drill-mine actuation.

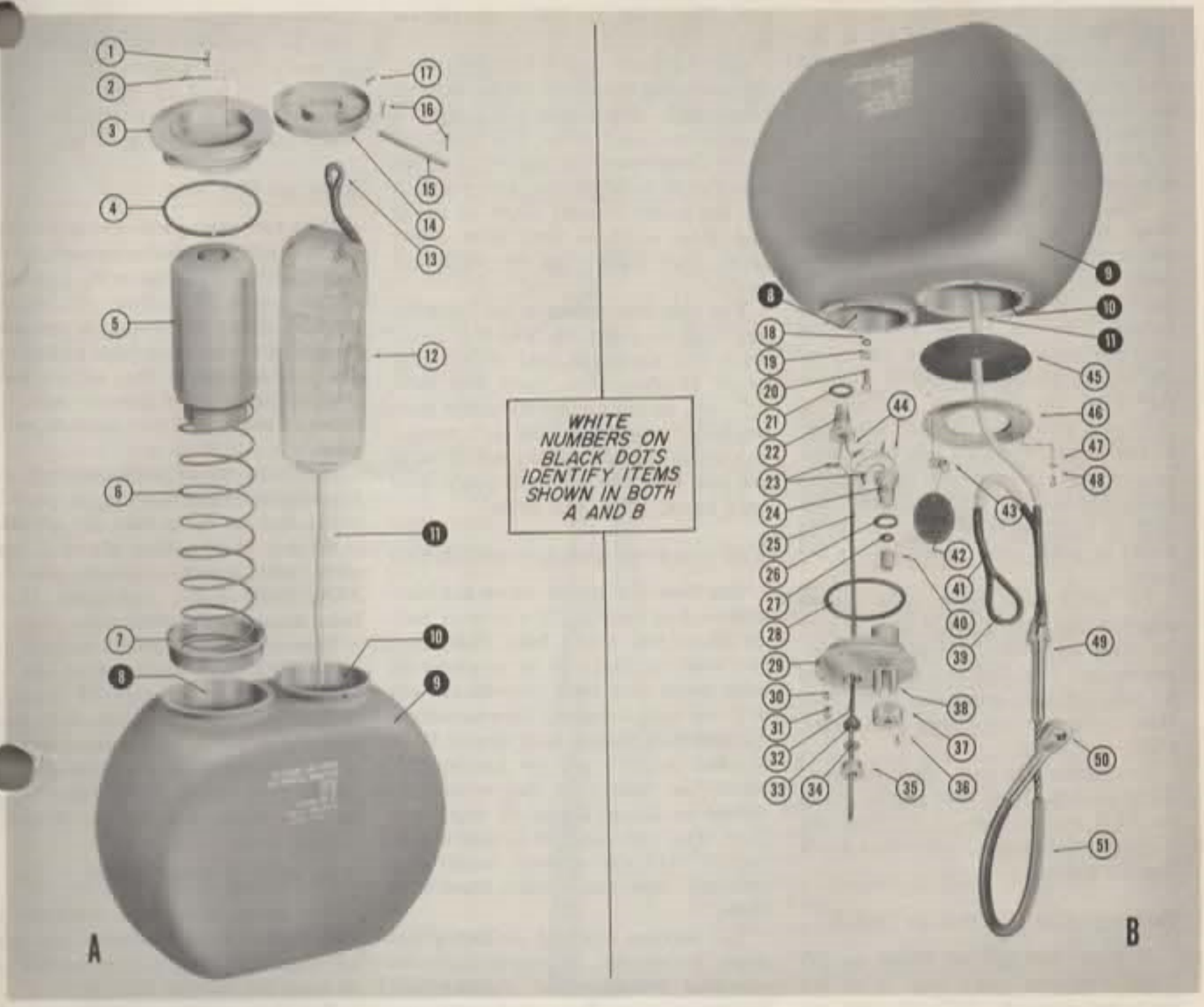
The gland and associated parts listed there provide watertight pa age for CA-958, which makes el trical connections between the flo explosive fittings and the drill min internal firing circuits. Because no enclature has been badly kick around in various OPs, ODs, pa lists, etc., we're also showing t gland's various parts to help y identify each with its correct na and federal stock number.

So here's hoping this new scoop w eliminate flak from the wareho gang. All they've got to remember not to send you any mod 1s until t Float 15-0s are used up.

As far as we know, the gear show here can be used with both.

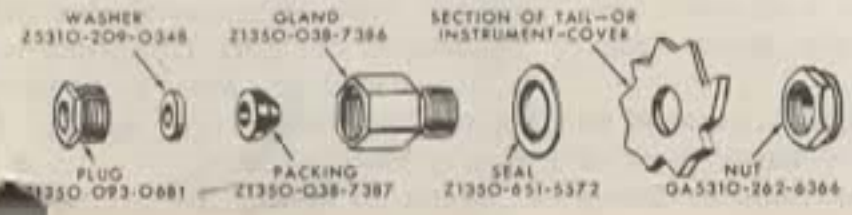
ITEM	FED STOCK NO.	COST
1 Pin, Cotter, 1/16" x ½" (6 incl w/[9])	GF5315-251-4701	.16/C
2 Rivet, alum, drilled (6 incl w/[9])	Z1350-593-7833	.10/C
3 Cap, punch, signal-tube	Z1350-512-7335	.55
* 4 Packing, O-ring, 4" OD	GM5330-194-3732	.22
5 Signal Assy Mk 25 Mod 1 Sequence G05452510, ¶ DOD Code R811	J1351-651-5571	19.10
6 Spring, compression (signal ejector) DWG 1385172	Not Coded	.75
* 7 Cup, compression-spring, DWG 1191333 (incl w/[5])	Not yet assigned	XX
8 Tube, signal (integral w/[9])		
9 Float Mk 15 Mod 0, DWG 1338995, Sequence G03871500, ¶ DOD Code R424	J1350-038-7221	72.60
Float Mk 15 Mod 1, DWG 1442479, Sequence G03871510, ¶ DOD Code R425	J1350-651-5576	112.00
10 Tube, mooring-line (integral w/[9])		
11 Tail, mooring-line (integral w/[51])		
12 Pack, mooring-line (integral w/[51])		
13 Eye, mooring-line bitter end (integral w/[51])		
14 Cap, mooring-line tube, DWG 1170891	Not yet assigned	XX
* 15 Bar, mooring-line retainer, DWG 1170892	Not yet assigned	XX
16 Pin, cotter, 1/16" x ½"	GF5315-251-4701	.16/C
17 Pin, cotter, 1/16" x ½"	GF5315-251-4701	.16/C
* 18 Packing, O-ring, 7/16" OD (f/signal anchor-screw, incl w/[5])	GF5330-187-3631	.055
* 19 Washer, flat, stl, 5/16" (incl w/[5])	G5310-637-5554	.01
* 20 Screw, fillister hd, 5/16" x 7/8", DWG 1420208 (signal-anchor, incl w/[5])	Not yet assigned	XX
* 21 Packing, O-ring, 1-1/16" OD (f/expl fitting, incl w/[9])	GM5330-196-5379	.08
* 22 Fitting, explosive, Mk 3-0 (signal) Sequence G03860300, ¶ DOD Code R794	J1351-038-7207	1.80
* 23 Splice, conductor, crimp-type (4 incl w/[9])	Z5940-502-1785	.01
* 24 Fitting, explosive, Mk 3-0 (cutter) Sequence G03860300, ¶ DOD Code R794	J1351-038-7207	1.80
* 25 Cable Assy CA-958, Sequence G01989580	J1350-038-6121	4.60
* 26 Packing, O-ring, 1-1/16" OD (f/expl fitting, incl w/[9])	GM5330-196-5379	
* 27 Packing, O-ring, 5/8" OD (f/cutter, incl w/[9])	GF5330-050-1221	
* 28 Packing, O-ring, cutter-housing, 3½" OD	GM5330-194-3727	
* 29 Housing Assy, cutter (incl w/[9])	Z1350-038-7226	
30 Washer, lock, stl #10 (8 used)	Z5310-012-0217	
31 Screw, mach, stl, RH #10-24 x ½" (8 used)	Z5305-290-2521	.28/
32 Gland opening (integral w/[29])		
* 33 Packing, gland, neoprene (cutter-housing gland, incl w/[9])	Z1350-038-7387	
* 34 Washer, flat, alum (incl w/[9])	Z5310-209-0348	
35 Plug, mach-thread, (cutter-housing gland, (incl w/[9])	Z1350-093-0681	
36 Screw, mach, RH, SS, #6 x 3/8" (cutter-cap lock)	G5305-273-7336	.35/
* 37 Cap, cutter	Z1350-038-7225	
38 Jaws, cutter (integral w/[29])		
39 Eye, hold-down loop (integral w/[51])		
* 40 Cutter	Z1350-038-7224	
41 Loop, hold-down (integral w/[51])		
* 42 Tag, Warning: "REMOVE CLAMP AND RELEASE NYLON LINE BEFORE ASSEMBLING FLOAT IN MINE", DWG 1170885	Not yet assigned	
43 Clamp, hold-down loop	Z5340-550-8026	
44 Sleeving, insulation (spaghetti)	GM5970-284-8866	.00
45 Gasket, retainer-plate, mooring-line	Z1350-038-7253	
46 Plate, retainer, mooring-line, DWG 1170883	Not yet assigned	
47 Washer, lock, stl, #10 (6 used)	Z5310-012-0217	
48 Screw, mach, RH, stl, #10-24 x ½" (6 used)	Z5305-290-2521	.28/
49 Spear (swaged), recovery-line (integral w/[51])		
50 Eye (swaged), (integral w/[51])		
* 51 Line Assy, Recovery (includes integral nylon float-mooring line)	Z1350-038-7233	30.

* Expendable each drill plant.
¶ When ordering, use Sequence No., FSN, & DOD Code if given.



Items not shown above

ITEM	FED STOCK NO.	COST
Bail, recovery, DWG 1273589 (Drill Mine Mk 18 only)	Not yet procured - FSN not yet assigned	
* Cable Assembly CA-958, Sequence G01989580	J1350-038-6121	5.60
Container, float, DWG 1696416 (Drill Mine Mk 18 only)	Not yet procured - FSN not yet assigned	
Gland, 7/8" ID x 1" OD, (tail- or instrument-cover	Z1350-038-7386	.20
* Lug, terminal, slotted tongue (f/CA-958)	Z5940-577-2834	.08
Nut, hex, self-lock, 3/4" (f/tail- or instrument-cover gland)	GA5310-262-6366	.07
* Packing, gland, neoprene (f/tail-cover gland)	Z1350-038-7387	.03
Plug, gland, machine-thread	Z1350-093-0681	.08
Rod, hold-down, DWG 1406775 (Drill Mine Mk 18 only)	Not yet procured - FSN not yet assigned	
Seal, bolt, 3/4" (f/tail- or instrument-cover gland)	Z1350-651-5572	.12
Shackle, bronze, ½", (Drill Mine Mk 18 only, 3 used)	Z4030-267-7124	1.40
Shield Assy DWG 1236417 (float container for air-laid mines)	Z1350-038-7390	18.30
* Signal Assy, Mk 39-0 (green smoke) Sequence G05453900, ¶DOD Code R813	J1351-707-0609	55.00
* Signal Assy, Mk 44-0 (red smoke) Sequence G05454400, ¶ DOD Code R815	J1351-707-0608	55.00
* Spring Assy, float-ejection, DWG 1236445	Z1350-038-7392	1.80
Washer, gland, flat, alum (f/tail- or instrument-cover gland)	Z5310-209-0348	.02



* Expendable each drill plant.

¶ When ordering, use Sequence No., FSN, & DOD Code if given.

(continued from page 13)

Office (Z-cog items). In it (or in one of its supplemental changes) you'll find that BUORD DWG 415856 has been converted to an FSN . . . specifically Z5330-285-3569.

But what's that? You wonder why a letter has been added to the FSN?

This happens a lot, and it merely clues you to the "cog" of the item. Sometimes you'll even see another letter inserted after the cog designator, like ZF5330-285-3569. This second letter is called a *fractional code indicator*, and is used mostly by the supply people as a key to whether the FSN represents a fast-moving item or a slow one, whether it's high- or low-priced, and stuff like that there. In any case, these prefix letters don't really change the FSN, and the best part is that you won't need those 26 digits to order your gear. Here's the rule:

To order any J-cog item (items listed in OD 12067) you'll have to give its name, as much of the 26-digit number as you can find in the book, and its price. But to order any item other than J-cog you need only give name, FSN, and price.

You'll need the cost, then, for your Z-cog gasket. Now that you've found its FSN you can use it to enter the *Navy Stock List for OSO* where you'll find its price.

But suppose it's not in OSO?

If your item is not listed in OD 12067 and you can't find it in the cross reference to OSO, chances are it's been assigned somewhere else. To find out where, you'll have to dig into some more books and the first one to try is G-cog, the *Cross Reference to the Navy Stock List for General Stores*.

Here you'll find those 43-W-6212-180 steel lock-washers we've been talking about, together with a zillion other items so common that they're likely to be used for a zillion things by a zillion different defense department activities.

The FSN for your old 43-W number is in fact G5310-010-8579, and here we'll remind you not to confuse this G prefix to the FSN with the G that heads our 26-digit example from OD 12067-G. That one, remember, designated the class of the sequence number. The G on the FSN tells you its cog.

Getting your price for General Stores is only slightly different from other cogs. For G-cog you'll need a green-page book called the *Standard Price Supplement to the Navy Stock List for General Stores*, and you look for the prices of your items by group and class — those first four digits from your FSN that we explained earlier.

For your lock-washers, for example, you turn to group 53, which is hardware and abrasives, and within that group to class 10 — "nuts and lock-washers, including lock-nuts and lock-washers." And with that we'll remind you again: to order items *not* listed in the new OD 12067-D or -G you'll need only name, FSN, and price.

You can even guess — sometimes

One item for which we've not been able to find an FSN is a crystal ball. At times one would help, like when you need to find one of a group of mine parts that were transferred out of J-cog into Z-cog but then somebody decided they should have stayed in J-cog but couldn't get the problem resolved, so right now they're not recorded in J-cog, Z-cog, or anywhere else! You just can't undertake a project of this size without some bugs creeping into the system here and there.

But between now and the happy day when conversion is complete, some educated hunches and guesses can really save time. Take electrical items, for instance.

If you need the FSN for a condenser that's obviously an oddball that could only be used in a mine, you can bet real bucks it'll be listed in OD 12067-G with its price and those aforementioned cat-choking 26 numbers.

But suppose you need a run-of-the-mill 200-ohm resistor that lots of people might use. Well, you *could* check OSO and then General Stores like we've said. But if you look back at our cog list you'll notice that N-cog is Electronics Supply, and it's dollars to doughnuts that you'd save time by checking the N-cog cross-reference book first.

Sometimes, of course, a guess is no good. You'd probably never think of looking for a mine item in D-cog (Clothing Supply) yet we found [illegible] there just the other day — those c[illegible] battery-retracting tapes used in Min[illegible] Mk 25-0, 1, 2 and the 36-2. It's thin[illegible] like this that make us wonder if [illegible] really understand all we know!

Help on the way

If by now you're wondering wheth[illegible] the rest of your service career will [illegible] spent cross checking part numbe[illegible] the answer is *NO*! Your old budd[illegible] here at NMEF are going to get n[illegible] General Requisities printed and out [illegible] you just as fast as they can — boo[illegible] that will give you a mine-by-mine a[illegible] count of every last part number you[illegible] need.

Meantime we of ye T-SHOOTER a[illegible] jumping the gun. Starting on page [illegible] you'll find an up-to-date list of wh[illegible] it takes to build a Mine Mk 25-2, co[illegible] plete with every sequence numbe[illegible] FSN, DOD Code, and price tha[illegible] been assigned for this mine.

Then on page 18 you'll find an u[illegible] dated FSN-oriented rerun of the 6[illegible] odd items used with Mk 15 floats [illegible] build some 21 different drill-mi[illegible] marks and mods. And coming in y[illegible] next T-SHOOTER issue will be a b[illegible] new list of items, prices, and F[illegible] for your Basic Tool Set for Mines.

You take it from there

It's taken some real midnight [illegible] (no FSN for that either — not ev[illegible] any pay) to get up and refine this b[illegible] of material for the 25-2.

For their continuous help with t[illegible] our hats are off to fast-talking fa[illegible] balding Warrant Officer TOM [illegible] ROBERTS and his men of MINE PROJ[illegible] 4, who also drew every last item a[illegible] assembled the mine in their shop [illegible] prove the list would work out (s[illegible] cover photo). Needless to say, w[illegible] hope this work will pay off in ter[illegible] of saved man-hours and better wa[illegible] fare readiness in the corner where y[illegible] are.

Meanwhile, if we find that tho[illegible] new General Requisites cannot b[illegible] prepared fast enough, we'll glady ru[illegible] similar bills of material for oth[illegible] weapons in the next T-SHOOTER iss[illegible] . . . *provided you drop us a card [illegible] let us know whether or not you f[illegible] they're worthwhile.*

— It's up to you.

Do You do this Job Right?

IF YOU'RE WITH IT, you know that anything which contributes to failures of the mine air-delivery system is worth doing something about. And in recent high-speed plants, quite a few duds have positively been traced to E-Rings . . . those little rounded E-shaped retainers that snap into grooves in the release mechanisms' clevis pins.

They're also used in the hinge-pins of newer impact-plate or inertia-weight assemblies.

Actually, no device could be simpler. The rings are made of spring steel so that their three nibs snap snugly into the grooves near the ends of the pins. And there they stay. No shaking . . . no rattling . . . vibration won't break 'em loose.

But it does. And the reason it does is that guys don't install 'em right. They get two of those nibs in the groove but leave the center nib outside. Another reason, I suspect, is that they snap 'em onto the pin once, notice the rings are not seating quite right, so pull them off and start over again. This, my friends, just won't do.

Even an E-Ring that's been installed right must never be used again. They're too brittle. That's why you get plenty of extras with each release mech.

So when you get your copies of the new (3d) revision to OP 1452, you'll find the flight-gear section calling for the use of some new

tools called "E-Ring Applicators." Four different sizes are being added to the Basic Tool Set for Mines, and each size is designated by a "dash" number (e.g., —50) which indicates the decimal diameter of the pin it fits. Eventually all this scoop will also show up in changes to assembly OPs, but until that happens (and at this point I'm naming no dates) you can use the tables below to mark up your books and start doing it right.

The applicators all look like the one we show here. To use, you simply snap an E-Ring round-side-first into its jaws, use it to press the ring into the pin's groove, *make sure the ring's center nib seats home in the pin's groove*, then withdraw the tool.

First, though, you've got to get them. The table below shows which you'll need where. Applicator E-25 is DWG 2109420-25; E-37 is DWG 2109420-37; E-43 is DWG 2109420-43; and E-50 is DWG 2109420-50.

So far FSNs have not been assigned, but they should be by the time your next T-Shooter goes to press. In it you'll find an up-to-the-minute rundown of the complete Basic Tool Kit for Mines, including these applicators, complete with the price and FSN for each item.

— Watch for it.

The Editor

Mine	Assembly OP	Release Mech. & Clevis Dia.	E-Ring for Clevis Pin	Clevis-pin Applicator	Hinge-pin Diameter	E-Ring for Hinge Pin	Hinge-pin Applicator
25 Svce, all mods	956, 1797 1765	22-0/0.50	12-Z-5035-115	E-50	0.25, all listed mines	Z5340-205-4332, all listed mines	E-25, all listed mines
25 Drill, all mods	1816	17-1/0.375	Z5340-598-7980	E-37			
36 Svce, all mods	1684, 1798 1892	21-0/0.4375	12-Z-5035-111	E-43			
36 Drill, all mods	1816	17-0/0.375	Z5340-598-7980	E-37			
50-0 SVce & Drill	1811	15-0/0.375	Z5340-598-7980	E-37			
		30-0/0.50	12-Z-5035-115	E-50			
52 Svce, all mods	2281-2286 OD 9170	18-0/0.4375	12-Z-5035-111	E-43			
52 Drill, all mods	1816	17-1/0.375	Z5340-598-7980	E-37			
55 Svce, all mods	2460-2466	20-0/0.50	12-Z-5035-115	E-50			
55 Drill, all mods	1816	17-1/0.375	Z5340-598-7980	E-37			
56-0 Svce & Drill	2572	23-0/0.50	12-Z-5035-115	E-50			

"... and every two hours send in a RUDMINDE!"