

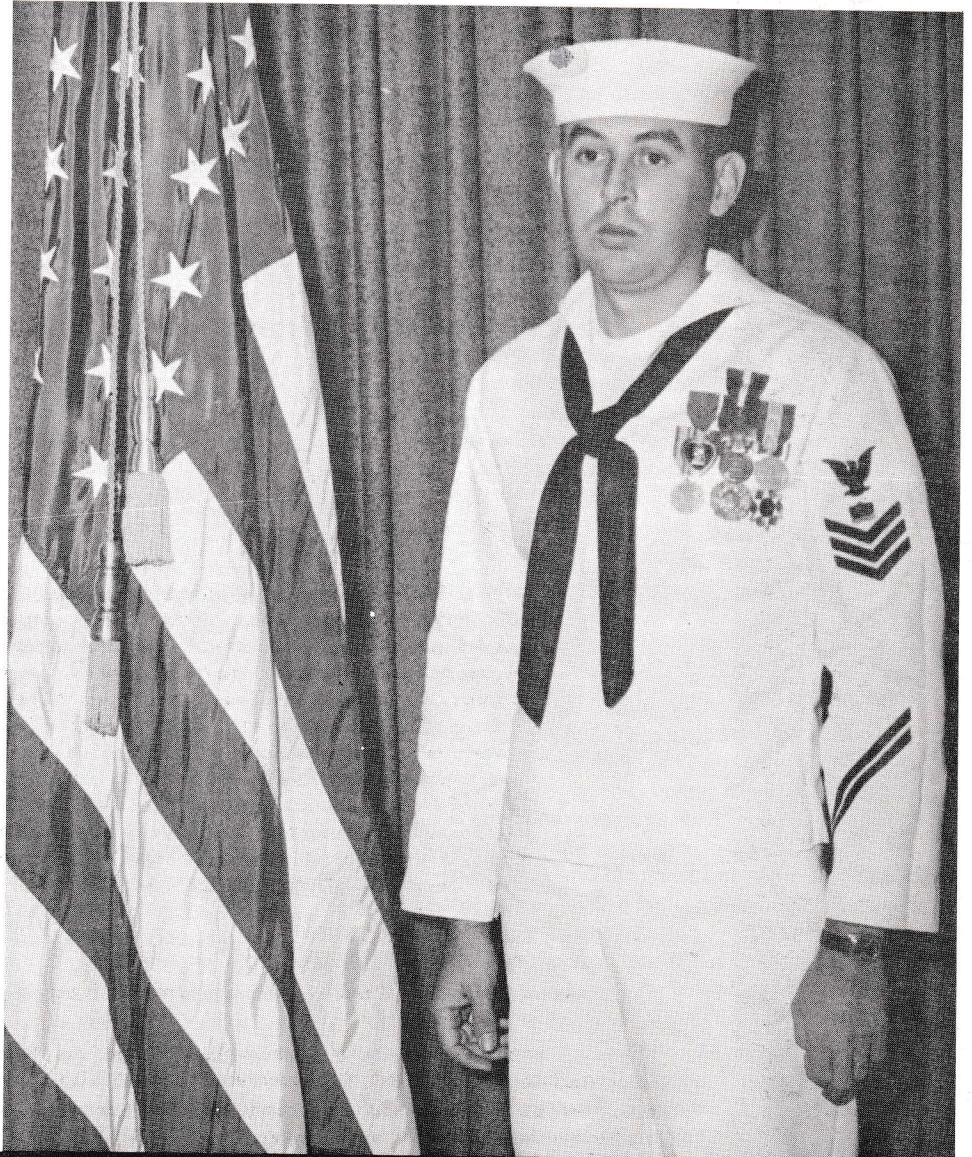
*mine and depth-charge*

# THE TROUBLESHOOTER

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**AN OFFICIAL NAVORD PUBLICATION**

*in this issue . . .*

*mine and depth-charge*

# THE TROUBLESHOOTER

Published by the Naval Mine Engineering Facility, Yorktown, Virginia 23491

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**COVER PHOTO:** The mineman wearing the Navy Cross, the nation's second highest award for heroism, is MNI Cecil H. Martin. For the exploit that earned him the Navy Cross see story on page 5.

1 JULY 1969

The Troubleshooter, an official NAVORD publication, contains technical information pertinent to the assembly, testing, and delivery of US naval depth charges and mines. It is both authoritative and directive in nature, and reference may be made to a particular issue as the authority for adoption of ideas promulgated therein.

Troubleshooter is also the official journal of the Rudminde Program a world-wide defect-reporting campaign designed to promote a high level of undersea warfare readiness in US naval depth charges and mines. The Program's basic instrument is NAVORD Form 8500/1 (2-68) Everyone who encounters problems with these weapons should report them via this form direct to the Naval Mine Engineering Facility as prescribed by NAVORDINST 8500.3.

**MARK W. WOODS**

Rear Admiral U.S. Navy  
 Commander, Naval Ordnance Systems Command

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**THE OFFICIAL JOURNAL OF THE RUDMINDE PROGRAM**

# FL SHOPTALK

NMEF FLEET LIAISON DESK • 703/887-2411 • AUTOVON 555-3480 • EXTENSIONS 492 & 695

FL Shoptalk is a column of observations general and specific, prepared by members of NAVMINENGRFAC's Fleet Liaison (FL) Department. Head of the department is LT M. D. Horn, Jr. Other members include LT R. L. Anderson, LTJG T. W. Mudd, and LTJG D. C. Tuttle,

## CAL QUALS

The program for using Test Set Checkout Group Mk 1 to qualify your test equipment is an NAVMINENGRFAC responsibility. Whenever you experience problems concerning the program, questions should be directed to NAVMINENGRFAC. If directed elsewhere, your queries can only result in confusion and delay in getting prompt action. Permanent Change 1, Chapter 4 to OP 3379 Volume I, speaks to the specifics of the program. Take a look!

## MN VS MRC

No contest . . . just a gentle reminder about those MRCs you use when performing mine maintenance to convert a mine to a higher configuration. These cards serve a specific purpose and, if disregarded, can get you into a bind — particularly when they concern safety. One moment's carelessness can cost lives (that's plural, brother); so take our advice and get with the program.

We know there are some errors in MRC cards, but not where safety is concerned. If you know of any, we sure have missed your RUDMINDE - and you sure haven't done your buddy working next to you any favors. So, do yourself a favor and take a new look at Chapter 5 of OP 3379 Volume I. Only you can make the system work!!!

## SERVICE-WIDE EXAMS

We have it straight from the horse's mouth that editions of the Navy Times are often in error concerning the programmed advancement of Minemen to MNC. One edition labeled the MNC rating with an asterisk to indicate that all who passed the exam were to be advanced. We understand there were quite a few MNI's who were kicking themselves - some for not putting in enough time on those "blue-backs", and some for not bothering to take the exam at all. A subsequent issue of the Navy Times however, indicated that only one MNI would be advanced, which was a drastic departure from previous information. So, FL got on the horn with NAVPERS and asked them, "what gives?" At this writing - which will be old news by the time you read it - the straight scoop was that four MNI's would make the grade. The moral of this story is that the initial news published by Navy Times could have been gospel and a lot of you otherwise - qualified MNI's would have missed the boat. For some of you, there would have been extenuating circumstances, we know, but for you others - particularly those that just plain didn't take the exam - we would like to know your valid excuse. Think before answering! Remember that the higher up the ladder you go, the more weight, the more value, your contribution to the fleet is. Ex-

perience and success go hand - in - hand. Don't negate this by some hardheaded attitude and don't let someone else talk you into how impossible the situation is. We can name dozens of examples to disprove this defeatist thinking. Even if only one advancement is to be made, you can be the one if you've got the savvy. In fact, these are the ones that prize their promotion the most. If you don't believe us, ask one of them who made it during "frozen" periods. Then turn and ask one of the MNI's that didn't even "go-up" because the odds were against him. Comparing answers is most interesting. Even if you "go-up" and don't make it because of quota, you're six months ahead of the guys that didn't, as far as finding the trend of the questions asked on the exams.

## ABOUT THOSE RUDMINDES

We cannot emphasize enough the importance of being very specific with the information you use to fill in your RUDMINDE reports. It is always better to have more information than you think you need, otherwise the wheels of progress come to a screeching halt while we query you for more information to aid us in our investigations. Most of you Minemen are very good at "second-guessing," so we ask you to try to look ahead, when filling in your reports, and ask yourself: What kind of information will be needed on the other end of the line in order to act on my report? As we've said before, a polaroid snapshot goes a long way especially when explaining a "fit" problem.

## FSMT FORMS TOO

This problem of specific information also relates to filling in those OPNAV 3370 forms as well. For example, to write the statement, "aircraft failure - could not jettison station," is all well and good, but it doesn't go very far when we have to scratch our heads and ponder whether it was a cartridge failure, a solenoid failure, an aircraft arming system failure, or whatever. You can see the problem. And the problem begins to boomerang when Constitution Avenue begins to query us as to how many failures we can attribute to a particular or specific problem. Keep in mind that these reports are necessary and do provide important technical data that will be used. Those little often left-out details can go a long long way toward solving a big problem.

One of the principal reasons for revising the FSMT GUIDE was to update and expand the chapter on reporting. The forms and reports serve as reference material for endless inquiries covering a wide range of areas.

*Continued on page 2*

# FL SHOPTALK

Continued from page 1

Instances where the mine sheets do not agree with the narrative report are particularly discouraging since this kind of error results almost always from carelessness, and can render a considerable amount of expensive effort worthless. The thumbrule still stands: Will the report and forms, if standing alone, provide enough information so that the status of each mine can be determined throughout that particular reporting phase?

## PIN ACTION

No bowling information here, but we would like to pass along some info about those infamous pins #5 and #6 that were misconnected on some MK 22-1 Firing Mechanisms. These culprits were previously reported by MN2 Donald P. Allgor of Naval Air Support Unit, Iwakuni. NAF Naha picked up the ball and went a bit further, as reported by MN1 Billy Gates, and came in with a suggested rig to aid in discovery of this discrepancy without having to go through all the assembly and operational test criteria imposed by Troubleshooter Bulletin #177. This represented a new and different idea and an approach towards saving much time and effort. NAVMINENGRFAC recognized this and went to work. The result can be seen in the Job Right of Troubleshooter Issue 1-69.

## NEW NEC FOR MINEMEN

Acting on the recommendation of the Naval Schools Mine Warfare, NAVPERS has approved the NEC MN-1201 Mine Test Set for inclusion in the "Q" revision of the Manual of Navy Enlisted Classifications. This became effective 1 July 1969. All MN personnel who have attended NSMW since June 1967, Class BMU 6703, and have satisfactorily passed the test set maintenance and repair course will be assigned this NEC.

## PIECE d' RESISTOR

We are receiving reports that MK 10-0 sterilizers, coming in for overhaul, are found to have resistor plugs installed in them. This poses a serious question in addition to the obvious, "Why?". When the resistor plug is present it must be assumed that some sterilization time has been expended on the Mk 1 Timing Elements. Since there is no valid test that can show how much current drain time the elements have seen, it must be assumed that they have deteriorated to the extent that 100% replacement is required. This becomes costly and impracticable if the Mk 10 Sterilizer has seen only limited bench and op-test current drain in which case the elements are still good. Another consideration is that someone's stockpile of resistor plugs has been needlessly reduced. Might we suggest that in the future, Mk 10 Sterilizers that have had limited or no current drain should be identified so that the useful life of the installed elements may be realized. In any case, the resistor plug is not a piece - part of the sterilizer and should not be shipped with it.

# TEST SET RESISTORS EARMARKED

MINE MK 25/36-1, 2/50/52/55/56/57:

Good news for you chaps who have had to scratch to obtain those close tolerance resistors needed to check out the Mk 250 test set before performing Class B tests on hydrostatically operated components. In the past the problem has been non-availability of the specified resistors because of their silent removal from the stock system and cancellation of FSNs resulting in a recurring search for adequate substitutes.

Now the required resistors, once four but now six, needed by intermediate and depot level activities responsible for the check-out are nailed down by a user-interest code that establishes a underwater mine requirement for them. The added resistors are needed to meet requirements to accept continuity of certain components at 0.5 ohms and reject at 0.6 ohms. Procedures for their use will be included in upcoming changes to OPs 1452 Vol 2 and 1860 Vol 4. The resistors and their FSNs are:

0.2 ohm, $\pm 1\%$ , 2 watt	5905-902-2894
0.24 ohm, $\pm 1\%$ , 1 watt	5905-959-6055
0.5 ohm, $\pm 1\%$ , 2 watt	5905-959-5738
0.6 ohm, $\pm 1\%$ , 2 watt	5905-665-6138
45 megohm, $\pm 1\%$ , 2 watt	5905-617-7531
50 megohm, $\pm 1\%$ , 1 watt	5905-199-6878

Order two each of the resistors to permit cross checking and to allow for loss or damage. Use normal supply channels.

## ANALYZING DEFECTS

### ALL MINES:

NAVMINENGRFAC is involved in a continuing long range program of detailed analysis of defective components. These defective components are turned-up in various ways; i.e., Class B tests, maintenance cycles, FSMTs, etc. The purpose of analysis is to identify causes of repetitive defects and initiate corrective actions.

In the past it has been feast (components sent to NAVMINENGRFAC whether requested or not) or famine (components disappeared by the time requested).

Here is what to do if everything is to go smoothly:

- ▶ Once a defect is found - Rudminde it!
- ▶ Request disposition in the space provided; a "yes" in block number 35 on the new NAVORD form 8500/1 (2-68). If using old forms state you are requesting disposition, under item 45, "Recommendations and Remarks".
- ▶ Identify the defective component. Keep it segregated and available.
- ▶ When and if NAVMINENGRFAC requests component for analysis ship component promptly. Be sure it is carefully packed, identified by its serial number, Rudminde serial number, defect, etc.

But please, do not send unless requested to do so, and give us time to decide whether or not we need it before you dispose of it otherwise. This applies to all defective components found under all circumstances.

# RUGGEDIZED POWER SUPPLY MK 20-1

MINES MK 25-0/39/49-0:

Power Supplies Mk 20 Mod 1 manufactured prior to 1954 were designed with 5Y4G electron tubes which have since been replaced by a ruggedized type, the 5Y3WG7B, MMC 4P59002.

Although drawings and schematics in current publications reflect this modification, some Mk 20 Power Supplies are still equipped with the older 5Y4G tubes.

To have all Mk 20 Power Supplies conform to current documentation all holders of these power sources for Test Sets Mk 26 and Mk 96 should remove chassis cover and check sockets V1 and V2 to determine if they contain 5Y4G or 5Y3WG7B rectifier tubes.

If 5Y3 tubes are present remove cabinet base and check socket wiring to determine that Pins 6, 4, 8, and 2 are connected for both the V1 and V2. If they are, replace base and connect power supply to 115 V, 60 Hz source. If tubes light the changeover is correct. This double check insures against mis-wiring as illustrated here.

If the 5Y4 tubes are present determine if they operate or not. If the filaments don't light it is possible someone has changed the circuitry without changing the tubes. Remove base and check socket wiring. Although the tubes are interchangeable they are different electrically so that the socket wiring for one will not serve for the other. If the 5Y4 tube filament does light disconnect power source and proceed as follows:

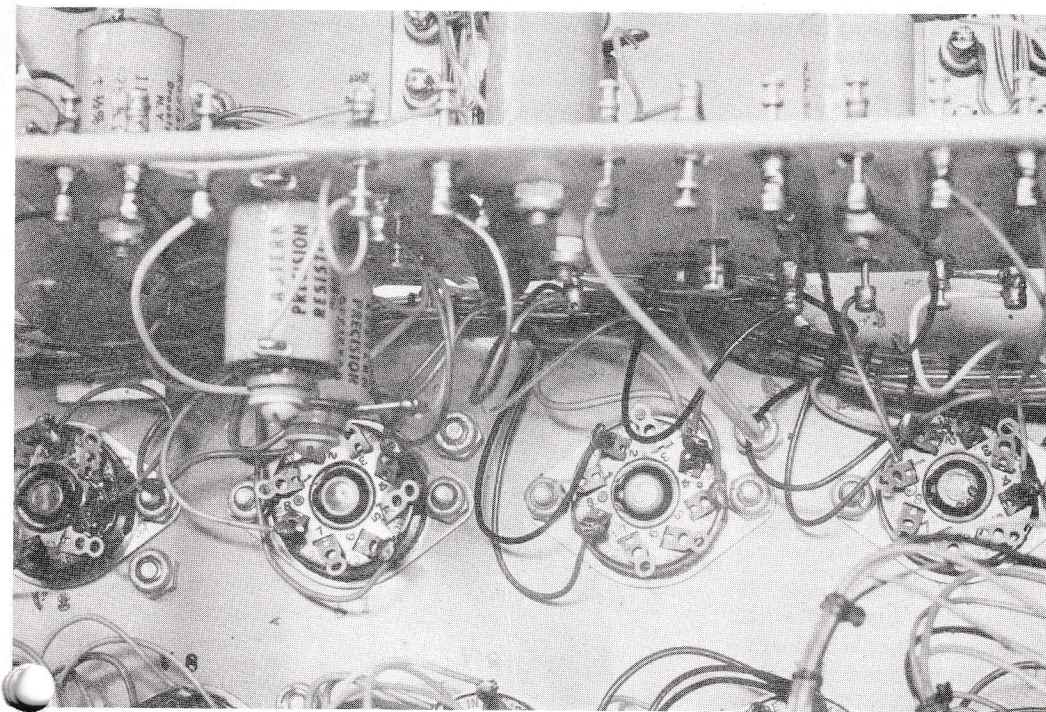
▶ Replace 5Y4G tubes in Sockets V1 and V2 with 5Y3WG7B Tubes; install new tube retainers, FSN 5960-615-4439 and secure chassis cover.

- ▶ Remove cabinet - bottom from chassis.
- ▶ Locate socket V1 under chassis and unsolder wire from Pin No. 7 and solder to Pin 2 (Pins may be located by counting clockwise from key-way).
- ▶ Unsolder wire from Pin 3 and solder to Pin 4.
- ▶ Unsolder wire from Pin 5 and solder to Pin 6.
- ▶ Locate socket V2 and repeat procedure as for socket V1 with the exception that two wires are connected to Pin 3 of the V2 and both wires should be moved to Pin 4 since this is a tie point for another circuit.
- ▶ Secure cabinet - bottom to chassis.
- ▶ Place strip of tape inscribed "Tubes 5Y3 installed" on face of test set.

Upon completion of the changeover, perform the appropriate checkout procedure per OP 3388 and either qualify or reject the Power Supply in accordance with Chapter 4, OP 3379, Vol 1, Rev 0.

Activities not having a certified Test Set Check Out Group capability, send the power supply to a calibration lab. In this case the changeover should be deferred until a day or so prior to the calibration due-date.

Some activities are under the impression that the Power Supply Mk 20 does not require calibration. Inspection teams have found some tagged with this information which is the wrong dope. These power supplies do have a 12-month recall cycle for calibration and are so listed on the Metrology Requirement List. Activities having proper certification may qualify the power supply in which case the power supply goes to a NCL for calibration once in five years.



This is what you see when the base of the power supply Mk 20 is removed and the underside of the chassis exposed. In this power supply the changeover of wiring to accommodate the 5Y3 tubes is three quarters complete. The changes have been completed on the V1 socket. The wiring has been changed from Pin 3 to 4 but not from Pin 5 to 6 on the V2 socket. To further assist in checking out your power supply for correct wiring to make it operative with 5Y3 tubes see the schematic for the power supply in chapter 9, OP 1860.

# SAVING SHORT-TIME BATTERIES

MINE MK 52/55 - 1,2,3,4,5,6:

From time to time it becomes necessary for activities to assemble a group of Mk 52/55, Mods 1 thru 6, mines for Mine Readiness Inspections, tests, or other short-time assembly purposes as directed. These assembly projects give rise to several problems, not the least of which is the money expended on batteries. With each mine requiring from two to a dozen or more batteries the cost of breaking them out for a number of mines can be prohibitive if the remaining life of these batteries is lost. Each command has been solving the problem, lacking official guidelines, by hit or miss methods.

Now this is no longer true. Here is a standard instruction with approved guidelines for selecting, using and returning to refrigerated stow the batteries involved, BA-309, 310, 324, 326, 327, 340, and 1322, after assembly in Mk 52/55 mines for tests or inspections.

Code A batteries are selected from reefer stow using the rule of First In First Out (FIFO) - those batteries with the least remaining shelf life. After thawing or charging in the case of the BA-340, the batteries must pass required tests. Batteries should be out of refrigeration, thawed or charged, no longer than eight to ten days.

Before batteries are returned to refrigerated stow they will be repackaged following instructions given below. Battery BA-340, normally kept on the shelf uncharged, after charging can be reefer stowed at minus 30 degrees F and subsequently considered in Thaw Class II. To account for the use of the batteries subtract two months from total shelf life by adding 2 months to column 9, "Effective Storage Time" on the Battery History Cards concerned. A newly charged BA-340 would then have, for example, an effective storage time of 22 months.

## Unpackaging, repackaging instructions

Take care of the pieces in unpackaging the batteries; the same materials will be used in repackaging them. Also take a good look at the way the pieces are placed so you can duplicate the fit when repackaging. Remove nails from box covers with nail puller, 7P00166, to avoid damage. Do **NOT** use the old nail holes when you re nail. When polyethelene bags are to be cut do it carefully as close to the sealing seam as possible since you need room for a fold-over upon resealing with pressure sensitive tape 7T00084.

Batteries, except the BA-340, are in inner fiberboard containers. Cut thru tape to open these containers. Remove the batteries which are enclosed in polyethelene bag and fiberboard unit box. After batteries are thawed, cut bag, and remove battery from fiberboard box. Save all material for repackaging.

Batteries BA-340 come in cans which are in compartmentalized hinged wooden boxes with a hasp closure. Open tear-strip can with key supplied being careful not to distort can. Bend back cover (short end of can) at seam and cut seam with diagonal pliers, 7P00082. Dis-

card tear-strip and key. Top and bottom edges of can should be a neat match. Unfold polyethelene bag and remove battery carefully so as not to damage bag which will be reused. Discard top and bottom chipboard spacers but save fiberboard side spacers and dessicant bags. Allow time in your mine assembly plan for charging BA-340s as instructed in OP 1452.

Before batteries are repackaged determine that they will pass Class B test and have a remaining life in excess of three months. If they do not pass the above test requirement, discard. If remaining life is less than three months do not repackage but retain for drill use.

Repackage batteries by reversing procedure above. Be careful not to snag or tear polyethelene bags in the process. Fold the cut edges of the bag over about an inch and seal edges with tape. For BA-340s, refold the top of the bags as closely to the original folds as possible. A short length of tape will hold the last flap snug.

The same 7T00084 tape will be used to reseal inner containers and the BA-340 cans. Before resealing cans check that side spacers and dessicant bags (reactivated if necessary) have been returned with the batteries. Match top and bottom edges of cans for a snug fit and tape crack. Tape should be pre-cut to correct length and laid smoothly to make seal air tight.

Box and return batteries to refrigerated storage accompanied by corrected Battery History Card. No separate report on batteries used as described here is required but appropriate entries must be made on Battery History Card and information on such use must be included in the semi-annual Mine Battery Status Report by the stocking activity.

## CONFERENCE CO-HOST



Shown opening the Annual Mine Conference No. 25, co-hosted by the Naval Mine Engineering Facility and Naval Ordnance Systems Command is CAPT James E. Myrick, who has taken over at NAVORDSYSCOM as Mine Warfare Director, Underwater Warfare Division. With background experience in mine countermeasures aboard a minesweeper in Korea, and as C.O. of an MSO, CAPT Myrick transferred from C.O. USS Sarsfield (DD-837) in March of this year, and replaced CAPT Don E. Hihn. CAPT Hihn, was relieved of duty at NAVORDSYSCOM on 12 June 1969 for assignment as Commanding Officer, NWS, Charleston, South Carolina.

# MINEMAN EARNS NAVY CROSS

It is not often that the Navy Cross, the nation's second highest medal for heroism, is awarded. When the recipient is a mineman, the occasion is rarer still.



Mineman First Class, Cecil H. Martin received the honor at the Naval Schools Mine Warfare, Charleston, S. C. on 5 September 1969. Rear Adm. Douglas C. Plate, Atlantic Fleet Mine Force pinned the medal on Martin's jumper.

Petty Officer Martin, with 11 years service in the Navy, played an important role as the commander of a two-boat patrol with River Division 531 in Vietnam. While in the Mekong Delta on the night of 21 November 1968 Martin's patrol came under heavy attack from ambush.

His cover boat was hit by two rockets on the initial assault wounding all men aboard and causing the craft to run aground directly in front of enemy positions.

Finding himself beyond the center of attack, Mineman Martin ordered his coxswain to reverse course to rescue the besieged crew. Re-entering the ambush area under unceasing enemy fire, and while directing effective and daring counterfire, Mineman Martin directed his boat to a position between the helpless cover boat and the blazing enemy shore batteries.

He then directed rescue operations and at crucial intervals personally manned a machine gun to suppress enemy fire. Boarding the disabled craft, he extinguished a fire and helped transfer the casualties to his boat.

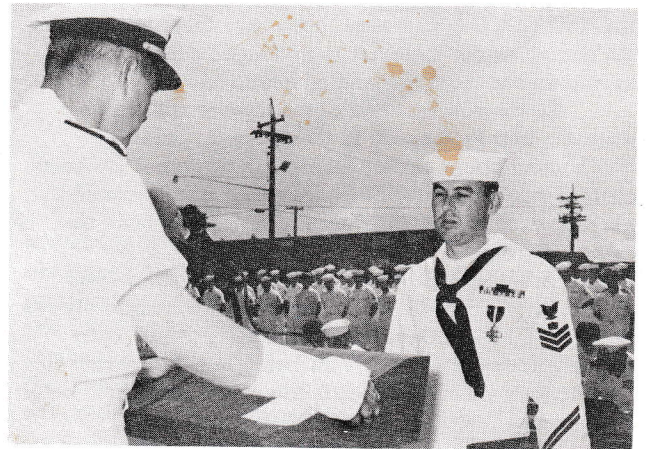
While maintaining contact with the Naval Operations Center, and advising of the attack, he directed a successful withdrawal and rendered first aid to the wounded.

A native of Grandvill Township, Illinois, and a veteran of 11 years in the Navy, Mineman Martin is currently attached to the Naval Schools Mine Warfare as a student in the Mineman Class "B" course. He resides in Charleston, S. C. with his wife, the former Kazuko Yamamoto of Yokohama, Japan, and two children, Regina and Toby. He enlisted in the Navy on 23 July 1958 and completed his recruit training at NTC, San Diego, Calif. He was initially assigned to the Naval Weapons Station, Yorktown, Va., from 28 Oct 58 to 24 Apr 59 as a student. Ordered to the Naval Schools Mine Warfare to attend the Mineman Class "A" school, he graduated as Honorman, first in his class, on 30 Oct 59. He returned to the Naval Weapons Station, Yorktown, Va., for duty from 16 Nov 59 until 1 Nov 60. From Yorktown he transferred to the Naval Ordnance Facility, Yokosuka, Japan, where he served until 7 Nov 62. From there he went to COMINERON Seven at Long Beach, Calif., and served until 30 Aug 63. He served from 19 Sep 63 to 30 Aug 66 at the Naval Air Station, Atsugi, Japan. From 3

Oct 66 to Feb 68 he was attached to the Naval Ordnance Facility, Yokosuka, Japan. From 28 May 68 to 24 May 69 it was duty with River Squadron Five in Vietnam as a patrol boat captain.

In addition to the Navy Cross, Mineman Martin has earned the Republic of Vietnam Cross of Gallantry with Bronze Star, Purple Heart, Combat Action Ribbon, Good Conduct Medal, Vietnam Service Medal, Republic of Vietnam Campaign Medal and the National Defense Service Medal.

In the words of the citation: "His great personal valor in the face of heavy and sustained enemy fire was in keeping with the highest traditions of the United States Naval Services."



Admiral Douglas C. Plate presents Navy Cross to Mineman First Martin in Ceremony at Naval Schools, Mine Warfare, Charleston, S.C

## TO BE OR NOT TO BE

MINE MK 52/55 - 1,4,5,6:

Mine assembly activities deciding whether to accept or reject Firing Mechanisms Mark 21 Mod 0 with connectors that have cracks or chipped areas in the phenolic resin, may use the following inspection criteria as a general rule:

Cracks or chips detected outside the perimeter of the pin circle . . . accept.

Cracks or chips detected inside the perimeter of the pin circle, or between pins . . . reject.

A study of units so "impaired" disclosed that such imperfections are the result of stresses on the phenolic compound during curing of the epoxy potting material in which the under side of the connectors is imbedded. Serviceability of the FM is not in question provided the affected area extends outward of the perimeter of the "pin circle". In all probability, cracks will not be present within the pin circle; however, should this be the case, the possibility of failure from shock at time of water entry would be likely.

## AIR-LAID MINES:

### Play it cool

Dear Chief Butt:

Now that Parachute Control Unit Mk 66 is classified for shipment as non-explosive ammunition (non-regulated ordnance material) per described in NAVORDNOTE 8023, do the yellow (explosive) coding dots come off?

WAC

Dear WAC:

They do not. The basis for the 8023 downgrading from Class C explosive to non-regulated is because the explosive content is so small that its effects, if initiated, will be contained within the outer shipping container. NAVORDNOTE 8023 warns, however, that upon opening the container the material is no longer considered harmless and must be handled cautiously.

So the downgrading of the hazard applies only when the unit is encased in its shipping container - which should be marked, labeled or tagged: "Contents contain small quantity of explosives - Handle carefully when opening." Shipping documents should bear the same wording.

Speaking of the Mk 66 unit, here's more you should know. The thermal battery it contains is always ready to go. Thus whenever the safety pin is withdrawn without an arming wire being in place percussion-type primer will fire immediately and ignite chemically impregnated heat pads to melt the electrolyte.

That unit is nothing to have in your hand if this happens.

*B. Armacle butt*

MINE MK 25/27-3,5/36/39/49/50/52/55/56/57:

### Electrolytic cell disposal

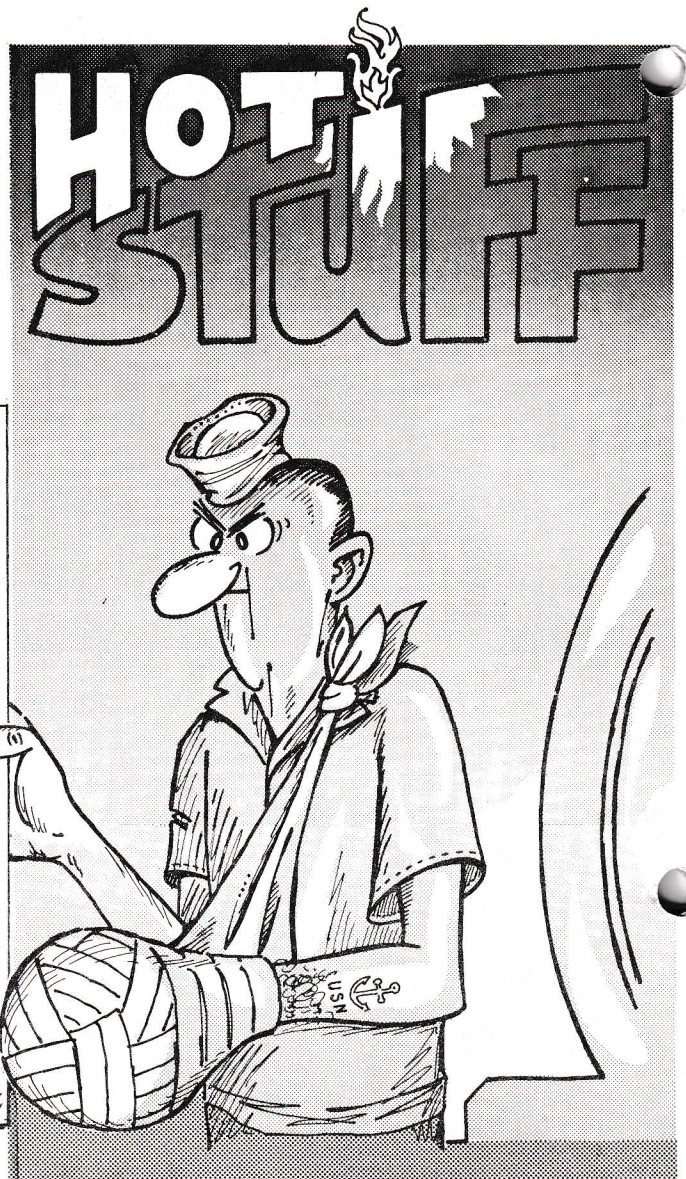
Dear Barney:

What do we do with electrolytic timing elements which have been activated and removed during overhaul of Mk 22-1 Clock Delays? They are being held in Code H for disposal or salvage. Please give us the word.

CAJ

Dear CAJ:

Discarded elements should be disposed of by burial in an area prescribed by local safety regulations. Under no circumstance attempt salvage since the electrolyte is highly toxic and hazardous to health if vapors are inhaled or skin contact is made. As long as the cells are not ruptured and leaking they are safe to handle. There are other electrolytic timing elements that



should be disposed of in the same manner when expended. They are Timing Element Mk 1 Mod 0, and the timing element for Clock Delay Mk 21 which just recently has been designated Mk 4 Mod 0, MMC 11304. No change has been made in clock or element; the element merely has been given a mark and mod for identification.

*B. Armacle butt*

MINE MK 52/55/56/57:

### Fixing Sterilizer Mk 10 screws

Dear Butt:

During assembly of Mk 52 and 55 Mines it is observed that, in some instances, the six screws used to secure the cover on the Mk 10 Sterilizer protrude from the underside of the case when everything is tightened down. This causes difficulty in obtain-



ing a snug fit when installing components into the instrument racks. These long ones can be cut off but why should it happen?

LCS

Dear LCS:

An accumulation of tolerances can be the cause of screws protruding a thread or two. This accident of design will be eliminated in future procurement by changing documentation to incorporate a slightly shorter screw. Meanwhile if cutting or filing off the excess doesn't work and you need replacement screws, get the ones listed as MMC OS30274, MS 35202-50.

*B. Amadebut*

ALL MINES:

## Missing torque wrench?

Dear Butt:

Tool lists for several job sheets call for use of a 0-25-ft-lb torque wrench. Op 3504 doesn't list this wrench. An omission?

MN3 MTN

Dear MTN:

The trouble lies with the job sheets, which will be corrected as OPs are updated, not with OP 3504. The 0 to 50-ft-lb torque wrench, 7W00228, is the only one of the ft-lb type that is required as a common requisite for mine assembly, so use that wrench when job sheets in current OPs call for the use of a 0 to 25-ft-lb wrench. The more frequent torques specified are in the 16 to 20-lb-ft range and it is better to read to the middle range

of a wrench's capability than to its extreme.

Other wrenches in common requisites are of the in-lb variety. Under special requisites the 0 to 75-ft-lb, (7W00693), and 175-ft-lb, (7W0064), wrenches are in the system as special tools for the assembly of Mk 56/57 Mines.

*B. Amadebut*

MINE MK 52/55-3,4,6:

## Follow the book

Dear B:

The label on the cover of Container Mk 23, for the Pressure Detector Mk 1, states that storage temperatures should range from 21° F to 55° F. OP 2567 puts the limits at -30° F to +55° F for indefinite storage life. Which lower limit is applicable?

MN2 ASD

Dear ASD:

Use the figures in Table 11-1 of OP 2567 Part 1 Vol 2 and ignore the label which is in the process of being updated to agree with the figures in the book. It is the top figure of the temperature range that is critical as any temperature below +55° F means indefinite storage life for the pressure detector as long as the nitrogen atmosphere pressure is positive. As a rule the colder the better but avoid cyclic temperature changes, they adversely affect the pressure detector.

*B. Amadebut*

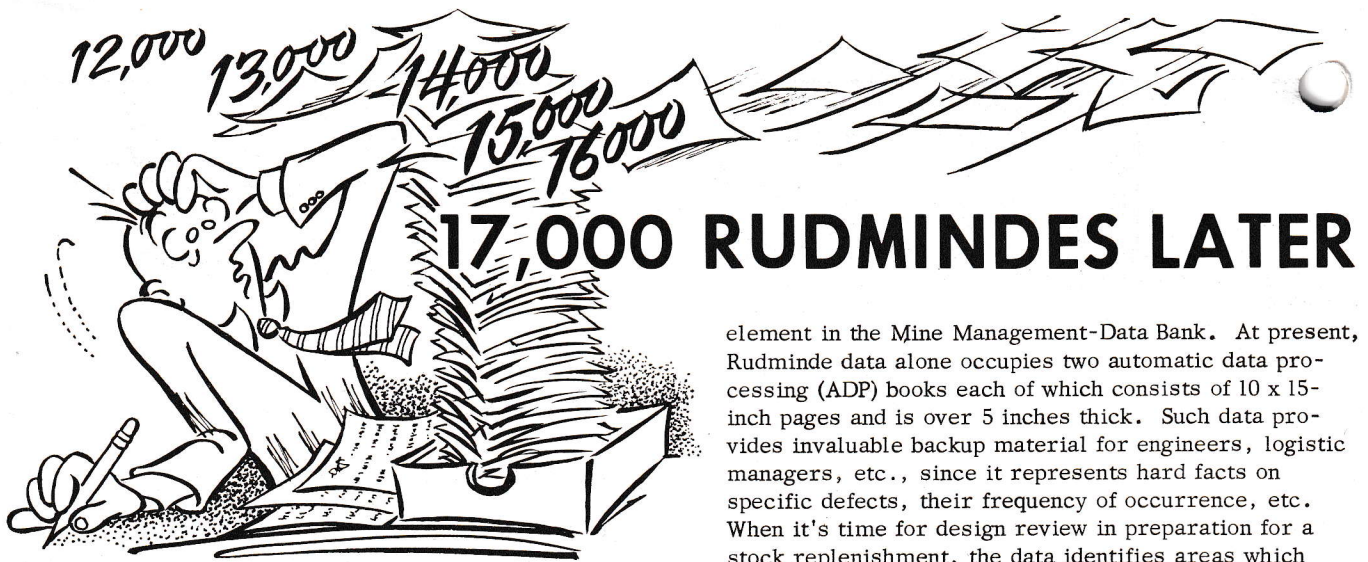


### MOMAUANT CHANGE OF COMMAND

LT Harold E. Elston became the new commanding officer of Mobile Mine Assembly Unit Atlantic, U. S. Naval Station, Charleston, S. C. at change of command ceremonies March 14, 1969. He relieved LCDR Roger A. Janke who had served as commanding officer since the unit's inception July 1, 1968. LCDR Janke's new duty station is with the Test and Evaluation Detachment, Key West.

LT Elston came to MOMAUANT from the staff, Commander Mine Force, U. S. Pacific, Fleet, where he served as mine warfare specialist. For his outstanding performance of staff duties LT Elston was awarded the Navy Achievement Medal by the Secretary of the Navy. The medal was presented by Rear Admiral D. C. Plate, Commander Mine Force, U. S. Atlantic Fleet on 28 March 1969

◀ On the podium at change of command ceremonies, left to right, LCDR R. A. Janke, LT H. E. Elston and LT R. F. Ruhland.



## 17,000 RUDMINDES LATER

On 24 September 1957 the first Rudminde was logged in by NMEF. Originated by Indian Island Annex, NAD Bangor, it reported 484 of 1054 Cable Assemblies CA-785 unserviceable. It was initiated by N. K. Bradley and countersigned by F. C. Channell, Jr., and kicked-off an NMEF effort which resulted in placing CA-785 and similar cables on surveillance, produced a repair procedure for the cable, and recommended design changes for a number of similar cables. It also sparked a rash of correspondence between NMEF and what was then the Navy Bureau of Ordnance.

Total input for the first month of operations, however, amounted to only 5 Rudmindes . . . a meager beginning for a program that has since funneled more than 17,000 Rudmindes to the NMEF Rudminde Desk!

In scope, those 17,000 Rudmindes have ranged from defect reports, to complaints, to cries of distress, and requests for special assists. Accordingly, NMEF's responses have run the gamut from simple "Thank You" to all-out efforts to provide prompt, far-reaching solutions. Mostly, Fleet reception to the program has been gratifying though there have been some sour notes too, especially when someone feels that NMEF has failed to fully understand his problem, or produced a solution that's worse than the problem, or lost track of the problem altogether. Yet even the gripes have generally been resolved to the satisfaction of the originators, NMEF, and NAVORD, with the result that the record as of today is, we think, commendably clean.

### The Other Side

The word "Rudminde," of course, is an acronym derived from the full name of NAVORD Form 8500/1: Report of Unsatisfactory or Defective MINes, Depth charges, or associated Equipment. And as this name implies, direct action in response to reported defects is only one side of the Rudminde coin. Another major aim is the collection of data on hardware (weapon, tools, test equipment, etc.) which forms an important

element in the Mine Management-Data Bank. At present, Rudminde data alone occupies two automatic data processing (ADP) books each of which consists of 10 x 15-inch pages and is over 5 inches thick. Such data provides invaluable backup material for engineers, logistic managers, etc., since it represents hard facts on specific defects, their frequency of occurrence, etc. When it's time for design review in preparation for a stock replenishment, the data identifies areas which need to be looked at. It also helps identify trends which may be short-stopped by some timely action.

No less important is the accumulation of Rudminde data pertinent to software: OPs, ODs, Ordalts, etc. Such publications are written, illustrated, printed, and used by humans, so it is predictable that problems will arise in this area. When they do it is extremely valuable to have such concise and specific data available as is provided by the "software" Rudmindes and thus, until the perfect publication is published, Rudminde will continue to be a valuable link between user and writer in developing good publication.

### Two Sides Are Enough!

The two functions of corrective action and data acquisition constitute the complete "legal" function of the Rudminde Program as set forth in NAVORDINST 8500.3. Over the years, though, it has been used in various quarters as an avenue for suggestions (bypassing the Benny Sugg System), to request interpretations and improvements of policies (NMEF can only control the policy of NMEF), and number of other non-Rudminde functions. Needless to say, Rudminde is a fruitless avenue for such ploys, and that brings us to a very important point.

When Rudminde began it was a voluntary thing. Now, however, it has been made mandatory and thus we thoroughly endorse a careful reading by all hands of NAVORDINST 8500.3 . . . also those detailed instructions on the back of the Rudminde form itself . . . thereby to insure that the fullest and best use will be made of Rudminde facilities as time marches on.

One idea, with the advent of new instructions and forms, could be a refresher class on Rudminding. This idea was the subject of a cover photo back in Troubleshooter 4-65 in which Mineman R. W. Wilson was shown explaining details of the original 1963 form to civilians as well as to members of the mine shop crew at NAD Earle, Colts Neck, N. J. A good idea worth bringing up-to-date.

# Do You do this Job Right?

## FIX FOR TYPE F SWITCHING DEVICE

MINE MK 57-0:

Because of a premature break in the circuit between terminal screws to which the Mine Fire Recorder cable is attached to the Switching Device, Type F, valuable mine actuation data was lost in FSMT CSP 1-69 when some recorders stopped at times that had no possible reference to actuation times. The probable cause was the loss of continuity due to the method of attaching the shorting wire under screws that also hold copper terminal busses. It is this wire that maintains the recorder circuit until blown by the explosive fitting when the mine actuates.

To connect with a fool proof connection, substitute soldering for the wrap-around binding post technique. Use the following wire replacement procedure for rehabilitating blown Type F Switching Devices as well as for replacing wire in operable ones using screws as binding posts. (For future procurement these switching devices will have soldered connections, and use bare AWG 34 copper wire.) You will need Solder 7S00254, Soldering Iron 7S00255, Enamelled Magnet Wire AWG 34, Long Nose Pliers 7P00090, fine abrasive cloth, enamel remover, and Phillips No. 2 Screwdriver 7S00120.

► Loosen side-mounting screws holding copper terminal strip. Remove and discard the shorting wire running through the hole in the insulating block but keep the insulating tubing that is in the hole. Retighten screws but don't overdo it so threads are stripped.

► Cut a working length of enamelled magnet wire, AWG 34, about 4 inches, and remove enameling where the wire comes out of the block at the ends to get a good soldering job. Use an enamel remover such as coat stripper 8010-160-5799. Be sure to read instructions before using enamel remover. Do not scrape the enamel off wire ends. (If you requisition replacement wire get AWG 34 wire, 9Z6145-236-9483.)

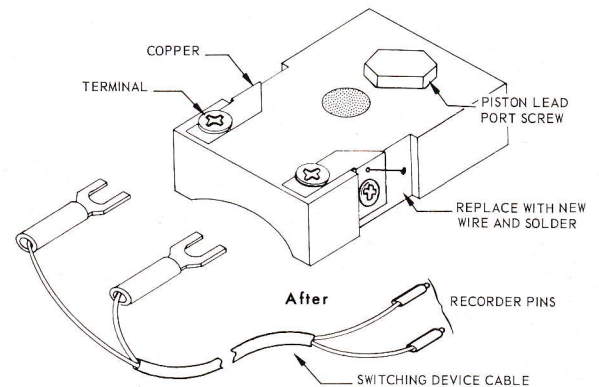
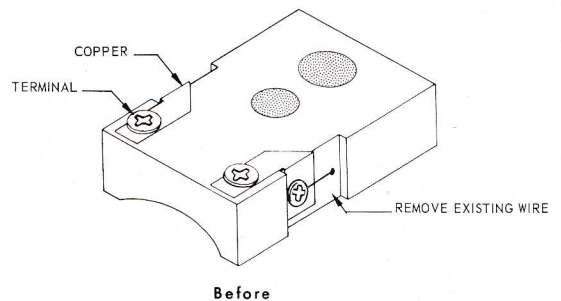
► Brighten an area on terminal strips just above the side-mounting screws with abrasive cloth and tin.

► Tin wire at points of soldering where it passes through insulating block. Replace insulating tubing

► Solder one end of wire to a terminal strip on the

tinned area. Pull taut with long-nosed pliers, making snug bends where wire leaves the hole in the block and duplicate soldering job on the other terminal strip while holding wire tight with pliers. Only a very little solder is needed for a good job. Test with a slight tug on the wire. Cut off excess wire. ► Check with multimeter for continuity. You should have a trouble free Type F Switching Device.

*The Editor*



SWITCHING DEVICE, TYPE F, MODIFICATION

**DANGER  
NO SMOKING!!**

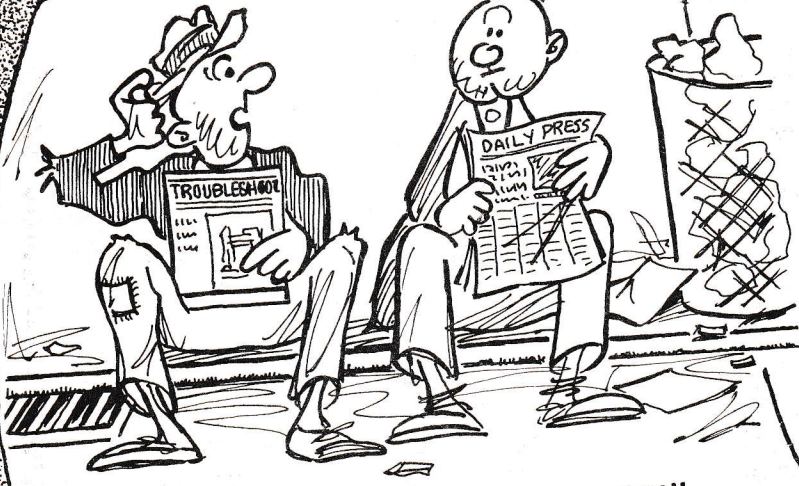


"DON'T GET YOURSELF UNGLUED, BABY . . .  
SMOKING CAN'T BE DANGEROUS, I DON'T INHALE!"

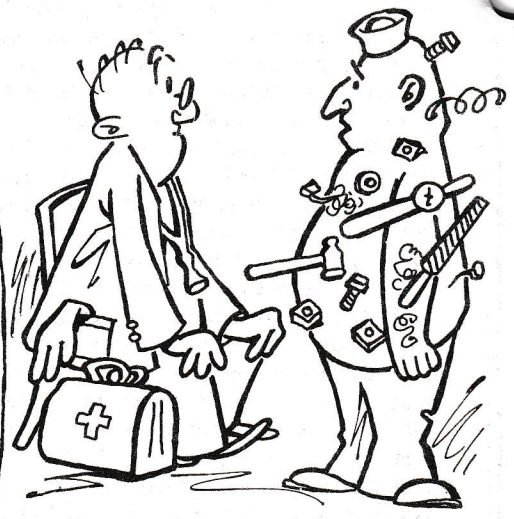
**MINE SHOP**



"WHAT A MAN!"



"WHAT THE HECK IS A RUDMINDE?"



"I SWALLOWED A MAGNET."

BUT *Real* PROBLEMS ARE NO JOKING MATTER....  
**USE RUDMINDE!**