

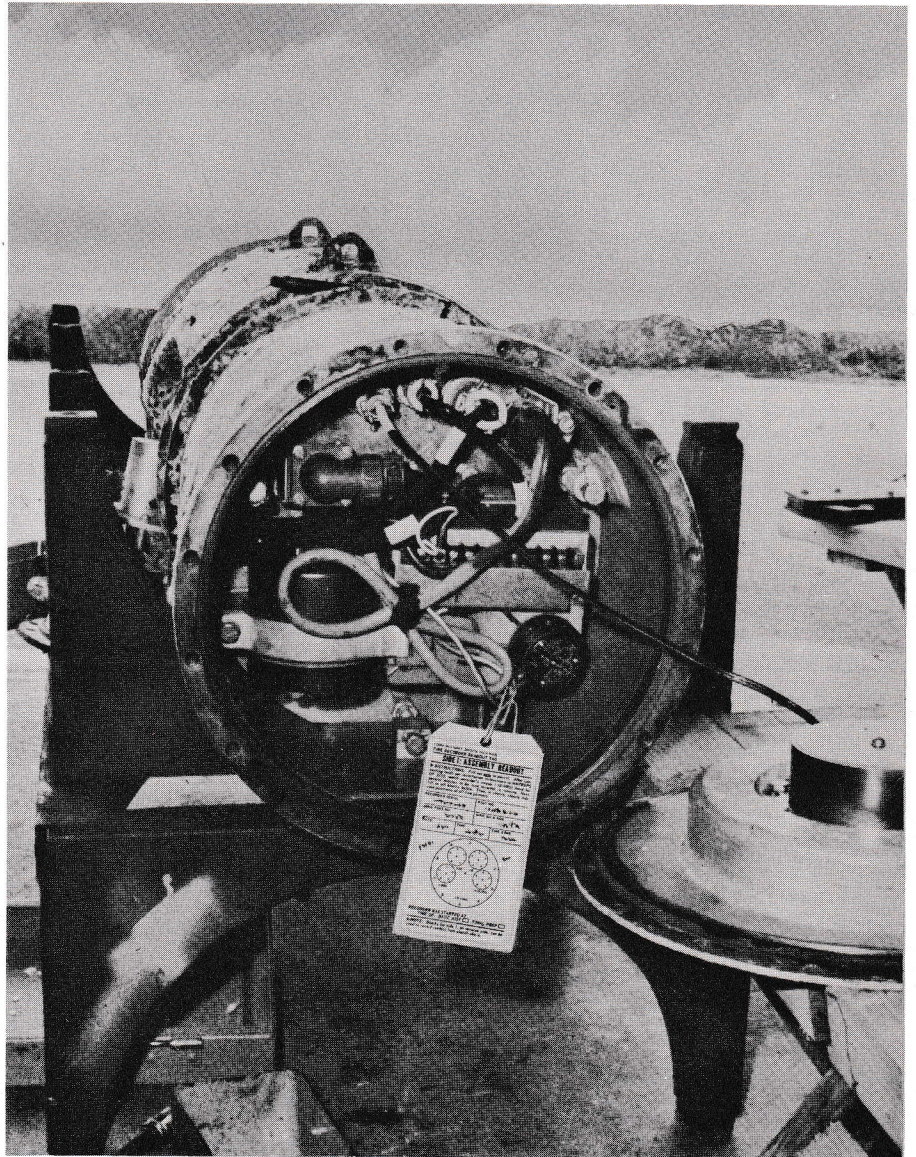
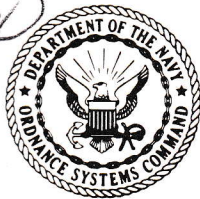
THE MINE AND DEPTH CHARGE TROUBLESHOOTER

INTRODUCING FIAT
PAGE 1

**KEEPING TEST SET
TIGHT AND DRY**
PAGE 3

CERTIFY NEW TRUCK
PAGE 8

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3114



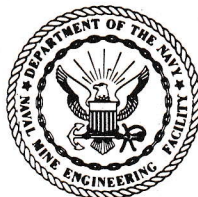
AN OFFICIAL NAVORD PUBLICATION

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RADM MARK H. WOODS, USN
Commander, Naval Ordnance Systems Command

The Troubleshooter is an official NAVORD publication which disseminates informative articles pertaining to assembly, testing, safety, configuration, maintenance, and delivery of U.S. Naval mines and depth charges. When the word **DIRECTIVE** appears as a part of the mine heading of the article, the content that follows contains information requiring action that is mandatory and shall be acted upon promptly. The Troubleshooter issue is your authority for subh action.

Troubleshooter is also the journal for the Rudminde Program, a world-wide defect-reporting system, which promotes a high level of readiness in U.S. Naval mines and depth charges. Problems with these weapons are to be reported via NAVORD Form 8500/1 (2-68) to the Naval Mine Engineering Facility as directed by NAVORDINST 8500.3.



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THE MINE AND DEPTH CHARGE

TROUBLESHOOTER

ISSUE 2-70

1 JULY 1970

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COVER

The Mine Fire Recorder was still running when this picture of a Mk 50 mine, that had just been recovered and opened up, was taken. The mine was clean and dry, and the Readout Tag was telling the truth when it showed the clock was ticking in its 335th day, 8035.16 hours. For the explanation see story and more pictures on page 6.

PUBLISHED BY THE NAVAL MINE ENGINEERING FACILITY, YORKTOWN, VIRGINIA, 23491

Troubleshooter is published quarterly and printed by NPPSO-5ND, in accordance with NAVEXOS P-35. Contributions, address changes, and matters concerning distribution should be addressed to: Editor, The Troubleshooter, Naval Mine Engineering Facility, Yorktown, Virginia 23491, USA. Requisition additional copies from the Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, Pennsylvania 19120, in accordance with NAVSUP 2002. Distribution outside the Department of Defense must have prior approval of the Naval Mine Engineering Facility.

NEW IN MINEMAN'S LEXICON: FIAT

Mine activities that have been receiving visitations from a briefcase-carrying group traveling under the title of "FIAT" may be wondering just what started the shooting and why. What is a FIAT?

If in all lower case letters Webster tells you:

fi-at, n.(L., let it be done), 1. an order issued by legal authority; decree. 2. a sanction; authorization.

If with a capital F automotive buffs would recognize it as a vehicle of Italian make.

But in all capital letters it means Fleet Introduction Assistance Team, a group of specialists who visit mine activities with the intent of sharing their knowledge so that the quality of shop methods for the test, assembly, storage and maintenance of a new weapon, the Mine Mk 56, may be improved.

Taking all definitions of this collection of letters into consideration it is possible that by fiat a FIAT could be in a Fiat on their way to a mine shop. It is improbable that the team could be crowded into a Fiat but they did travel to mine shops in both the Pacific and Atlantic to share their expertise on the Mine Mk 56.

Team Goes West

COMSERVPAC first conceived the idea to apply the FIAT principle to introduce the new mine to the Fleet and got the blessing of NAVORDSYSCOMHQ for the project. The task of organizing the team and implementing its performance was given to NAVMINENGRFAC. The purpose was to accomplish on-site certification of sites that will receive the new mine. The members of the team to visit Pacific sites were LCDR L. M. Stryker (team leader), Mr. G. E. Pennington, Mr. David L. Hamilton, all from NAVMINENGRFAC; Mr. Ray Roberts from Aerojet General, Mineman Chief J. D. Hallstrom from COMSERVPAC, Mineman Chief R. E. Martin from the Mine Warfare School, and Mineman First Class John C. Amburgy from MOMAUPAC as the COMINEPAC representative. Mr. Pennington's and Chief Martin's area of responsibility was assembly, test and disassembly, while Mr. Hamilton's was with tools and support handling equipment. Mr. Ray Roberts oversaw the overall QA procedures and results. Chief Hallstrom's area was supply and First Class Amburgy's was Safety. All personnel were involved in the inspection of assembly, test and disassembly at one time or another.

The Team's first stop was the Aerojet General Factory at Sacramento, California. Aerojet General, as the prime contractor for the Mine Mk 56 not only builds the explosive section, mechanism section and anchor, but receives components from subcontractors and assembles the mine to Configuration Delta for delivery to the Navy. At Aerojet the Team gained first-hand knowledge of assembly methods including tricks of the trade beneficial to site maintenance and readiness requirements.

At COMSERVPAC, Rear Admiral Combs and his staff were briefed on Team objectives and, in the absence of precedent, it was agreed the purpose of the FIAT

was not just to inspect but to extend assistance. This meant responsibility did not end with the discovery of discrepancies, but included advice and initiating action that would remedy discrepancies. This was the groundwork before visiting the sites.

It took a while at each site for the Fleet personnel to accept the FIAT as something other than just another inspection team. Once FIAT members convinced the minemen they were not there primarily in the capacity of inspectors, but as instructors and helpers as well, the operation gained momentum and valuable information was exchanged.

The FIAT does not replace functions provided by the Mine Warfare School. The School does an excellent job in introducing the assembly, tests and operational functions of the mine to Fleet personnel. What the FIAT did do was to provide the opportunity for the site to upgrade, downgrade, and to perform biennial maintenance on an assembly line basis, including all Class B testing under the conditions normally encountered by each site. It also gave personnel at each site the opportunity to operate as a team and to iron out problems on the spot.

Some of the problems encountered would not have been discovered except under actual operating conditions. Some problems that could not be solved at the on-site level have either been or are in the process of being resolved by the organization involved.

After the Pacific sites were inspected, the FIAT returned to COMSERVPAC and held a critique on the results. Then back to NAVMINENGRFAC to evaluate the experiences of the trip.

Then Off to Atlantic Activities

The FIAT was back on the road again a month later to repeat its performance for activities in the Atlantic at the request of COMINELANT and with the concurrence of NAVORDSYSCOMHQ. LCDR L. M. Stryker was again the team leader. Mr. Pennington, Mr. Hamilton, Mr. Roberts and Chief Martin were the other veterans from the Pacific FIAT. The newcomers were LT. H. E. Elston the Commanding Officer of MOMAULANT and LCDR H. E. Sprecher from COMINELANT. The objectives of the Atlantic FIAT were the same as those for the Pacific. All Pacific and Atlantic sites were certified to maintain the Mine Mk 56.

Continued on page 2

The FLEET LIAISON STAFF

Naval Mine Engineering Facility, Yorktown, Virginia 23491

The FL Desk responsible for this Shoptalk column stands ready to assist minemen everywhere with their problems, large and small.

Lt. Paul W. Hanks, Department Head
CWO B. E. Wharton CWO P. E. Dechene
CWO O. G. Smith CWO R. W. Padgett

(703) 887-2410 AUTOVON 723-1900
EXTENSIONS 492/695

SHOPTALK

Continued from page 1

A bonus of the FIAT tour was that it gave NAVMINENGRFAC civilian members of the team an opportunity to observe the workings of a mine shop and conditions under which you sailors have to work. This first hand knowledge creates a better understanding of problems encountered by Fleet personnel and they will now be able to relate to conditions as attributed to the individual site.

The FIAT scheme was evaluated a success and the hard work and cooperation at all of the sites contributed to it. Their success makes the establishment of a FIAT whenever a new mine weapons system is introduced to the Fleet a definite possibility.

The TROUBLESHOOTERS will contribute a large amount of space to the Mine Mk 56 and the specific results of the FIAT in an upcoming issue.

SO WHAT ELSE IS NEW?

In case you haven't noticed it in The Fleet Liaison Staff box, which is a part of the new format for the Shoptalk page, there has been a turnover of personnel in the Fleet Liaison Department. It looks like the Navy's decision to reinstate the Warrant Officer Program has been felt by NAVMINENGRFAC. There are now no less than four CWO's in FL.

The types of duty these officers have had gives the FL Department a wide and varied cross section of mine and naval experience. Here is the current roster for the Fleet Liaison Department.

LT. P. W. Hanks; Primary Duty: Department Head; Code FL. Last duty station, NAVMAG GUAM.

CWO P. E. Dechene; Primary Duty: Mine Test; Code FL-1. Last duty station, MOMAUPAC.

CWO R. W. Padgett; Primary Duty: Submarine-laid Mines; Code FL-2. Last duty station, MOMAULANT.

CWO O. G. Smith; Primary Duty: Air-laid Mines Technical; Code FL-3. Last duty station, USS GRAND CANYON.

CWO B. E. Wharton; Primary Duty: Air-laid Mines Interface; Code FL-4. Last duty station, COMFAIR-WESTPAC, Cubi Point, P. I.

The FL Department intends to continue the close relationship with the Fleet established in the past by officers assigned to NAVMINENGRFAC, but we'll be needing your help to fulfill FL's mission. Your input will aid us in furthering your mine maintenance program and enhance the readiness posture of the Fleet. So when you require assistance, give us a call or drop a line.

IS OUR FACE RED?

Since Troubleshooter 1-70 has hit the street our phone has been ringing off the hook from calls regarding the "serial number" comments contained in the last FL SHOPTALK column under "CHECK THE RECORD". We even received mail from way out in the Pacific.

All of you that phoned and wrote are of course correct, there is no requirement by the Naval Mine Engineering Facility for anyone to maintain records of serial numbers other than those called for in the standardized Assembly Check-off Sheets. This subject was thoroughly discussed at Mine Conference No. 25, and it was agreed that we would not sentence material by serial numbers. Assembly record sheets are the prerogative of the individual Type Commanders and mine shops.



Recently Distributed

- OP 1892 REV 3: Mine Mk 36-2, Assembly
- OP 3504: Authorized Configuration Data for Underwater Mines
 - VOL 2 REV 3: Material Applications
 - VOL 3 REV 2: Piece Parts
 - VOL 5 REV 2: Test Equipment, Support Equipment, and Tools
 - VOL 7 REV 3: Deployment References
 - VOL 7 REV 3 CH 0-1: Deployment References

Released to Print

- OP 1452 VOL 2 REV 4 CH 1: Hydrostatic Devices, Descriptions and Class-B Tests. (This change adds pressure and electrical tests for Depth Compensator Mk 3 and Sensitivity Switch Mk 3, using the Test Set Mk 250 and Accessory Sets.)
- OP 1765 REV 4: Mine Mk 25-2, Assembly
- OP 1797 REV 4: Mine Mk 25-1, Assembly
- OP 2567 PT 1 VOL 3: Firing Mechanisms, Description and Class-B Tests. (This volume adds Firing Mechanism Mk 37, and Control Box Mk 49.)
- OP 3388: Mine and Depth-Charge Test Sets, Qualification, Troubleshooting, and Repair
 - VOL 1 REV 1: Test Sets Mk 1 thru 126
 - VOL 2 REV 0: Test Sets Mk 127 thru 264
 - VOL 3 REV 0: Test Sets Mk 265 and above
- OP 3504: Authorized Configuration Data for Underwater Mines
 - VOL 1 REV 3: Cross References
 - VOL 4 REV 3: Bills of Material
 - VOL 6 REV 0: Illustrated Parts Breakdowns

In Final Preparation

- OP 956 REV 5: Mine Mk 25-0, Assembly
- OP 1860 PT 2 VOL 6 REV 0: Test Set Calibration, Mk 435 and above.
- OP 3232 REV 0: Air-Laid Mines, Preparation for Delivery to Aircraft.
- OP 3504: Authorized Configuration Data for Underwater Mines

In the works (in approximate order of intended release)

- OP 1452 VOL 2 REV 4 CH 2: Hydrostatic Devices, Descriptions and Class-B Tests. (This change adds the descriptions and instructions for testing Hydrostatic Switches Mks 41 and Mk 42)
- OP 1860 VOL 1 REV 3 CH 2: Test Set Calibration, Sets Mk 1 thru 60. (This change provides instructions for calibrating altered Test Set Checkout Groups Mk 1 using a meter calibrator.)
- OP 2572 VOLS 1 & 2 REV 3: Mine Mk 56, Assembly
- OP 2718 VOLS 1 & 2 REV 2: Mine Mk 57, Assembly
- OP 3379 VOL 1 REV 1: Maintenance Guide, All Mines

HOW TO KEEP TEST SETS AIRTIGHT AND DRY

TEST SETS:

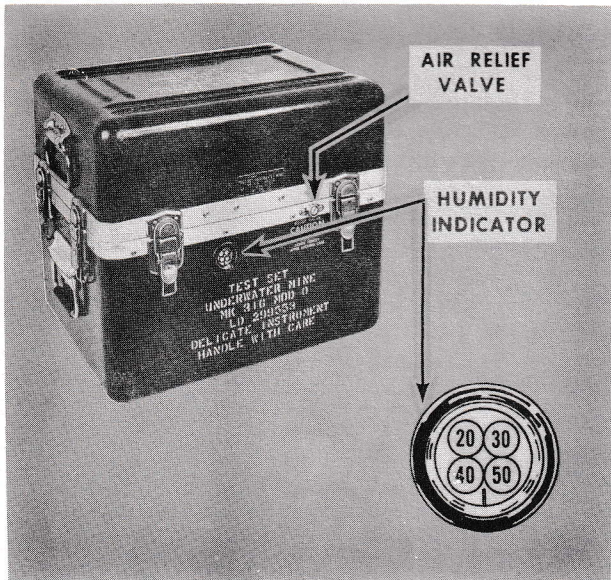
DIRECTIVE

New fiberglass-cased test sets are equipped with an air-relief valve, and one or more air-dryer indicators that call for the use of bags of desiccant that range from 2 to 8 units in size. Directions for use of the valve and instructions for the replacement of the air dryers have not been given the attention they deserve in view of their importance for the proper maintenance of the test sets.

Opening of the air-relief valve before separating the two sections of a test-set case equalizes the pressure inside the case with that outside, breaking a vacuum that otherwise makes it difficult to separate top from bottom. The seal is intended to be airtight so do not try to overcome the vacuum by force. Make opening easy by opening the valve to release the vacuum.

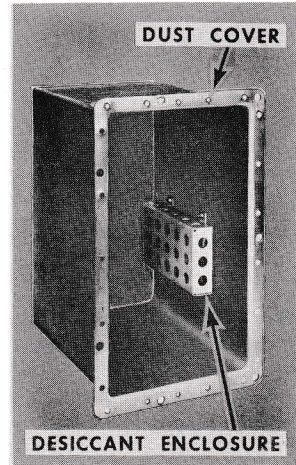
The air-relief valve should be closed after marriage of the two sections and after closing the luggage catches, whose clamping action again makes the case airtight. This maintains the effective life of the air dryers. Follow the directions on the caution plate on the test-set case at the air-relief valve and you can't go wrong. Ultimately, this caution will be repeated in concerned job sheets in OPs 1452, 2567, and applicable assembly OPs.

Air dryers will last longer when the newer test-set cases are kept airtight, but eventually will become exhausted and must be replaced. To tell you when, humidity indicators are built in: one on the



exterior of the case and another on the instrument panel. They are a 4-spot plug type, the spots showing the figures 20, 30, 40, and 50. All spots are blue when the desiccant is fresh. When the 30-spot turns pink it means 30% relative humidity has been reached within the test set case and the air dryer(s) should be renewed. If the 40-spot show pink the set should be examined for humidity damage. The sets should never be let go until the 50-spot turns pink!

The panel indicators show condition of the air-dryers in the containers on the dust cover of the chassis. Case indicators show condition of air-dryer bags stowed in the accessory compartments, or other free space where they will not contact



the equipment. Indicators do not have to be replaced. They should turn back to blue with fresh desiccant.

Instructions for desiccant-bag replacement will eventually appear in revisions to maintenance requirement cards for fiberglass-cased test sets. Meanwhile here is a list of current vacuum-sealed sets, with location of humidity indicators and unit size of desiccant bags. MMC for 2-unit bag is 5D00001, 4-unit bag 5D00005, 8-unit bag

0A00020. Remember when the indicators are in the pink it means the air dryers are not, and these are the items you'll need to replace them.

AIR DRYER REPLACEMENT

TEST SET	INDICATOR	AIR DRYER
Mk 303	Chassis Case	2 units 8 units
Mk 316	Chassis Case	2 units 8 units
Mk 330	Chassis Case	2 units 8 units
Mk 335	Chassis Case	2 units 8 units
Mk 336 (Box 1 of 2)	Chassis	2 units
(Box 2 of 2)	Case	4 units 8 units
Mk 347	Case	8 units (2)
Mk 358	Chassis Case	2 units 4 units
Mk 406	Chassis Case	4 units 4 units
Mk 407	Chassis Case	4 units 8 units
Mk 408	Chassis Case	4 units 8 units

by B. Arnaclebutt, MNC



Foil foils explosive driver

MINE MK 57:

Dear Barney:

Post-recovery analysis of a Mk 57 mine that failed to moor during a Fleet test revealed aluminum foil lodged between contact pins of Explosive Driver Mk 2 Mod 1, in effect shorting out the driver. Is this something new in shorting devices? If so, believe others should be warned about the foil being there.

MN2 EDF

Dear EDF:

The use of aluminum foil is not accepted practice and its presence is an oversight on the part of the manufacturer who used the foil as an in-house safety during manufacture. In its present configuration the Explosive Driver Mk 2 Mod 1 is considered HERO and static safe when the brass protective cap is installed, and the foil is not needed. The foil should have been removed before shipment.

Limited screening of Mk 2 driver stocks reveals that foil may be found in an unpredictable number. Therefore before installing these drivers in Mk 56/57 mines, check for its presence and, if present, remove it. The presence of foil should show up in the Class B Test and be removed then, but check anyway.

B. Arnaclebutt

New pumps for old

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

Dear Chief Butt:

You gave us "New hose for old" for air pumps supplied with Accessory Set Mk 10, Test Set 263, in Troubleshooter 4-69. This is all right for some pumps but what about us who have pumps with worn out hose that is staked to fittings and not replaceable.

MN3 NPN

Dear NPN:

A new problem, a new solution. Order a new pump FSN 4320-854-444 and you're in business again.

B. Arnaclebutt



Cracking down on cracks

MINE MK 56/57:

Dear B:

We are having problems with Radio Interference Filters Mk 4 that have cracked inserts. We surmise that the cable connector is being allowed to turn so that inserts are being put under undue strain. Eliminate the twist and you save a filter.

CFT

Dear CFT:

You are right, when an insert is cracked the filter must be rejected, and the trouble does in fact lie in the way the locking ring on the filter is handled when it is secured to the Cable CA-72. The solution is to prevent the cable from rotating when the ring is tightened. Since there is no keyway, the cable connector must be hand held while the locking ring is being secured, and the ring secured only finger tight. This also applies to the radio filter's flexible lead connected to Explosive Fitting Mk 18.

What complicates the whole thing is that the cable connector and an amphenol-type connector look alike when they are connected. Those not aware of this might confuse the two during disassembly. Use the procedure that would disconnect an amphenol and you are turning a cable connector counter clockwise compounding the error of overtightening and increasing the chance of breakage. If the next move is to reach for pliers break it you will! Therefore it is evident that proper care must be exer-

cised during assembly and disassembly of the locking rings on filter and explosive fitting connections.

Those with long memories will realize the damage to connectors by undue twisting is not new. It happened in 1800 series cables as reported in 1965 Troubleshooters. An old problem in a new mine!

B. Amabile

Make it permanent

MINE MK 27:

DIRECTIVE

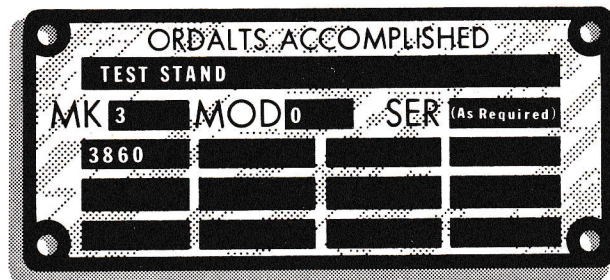
Dear Barney:

We have received Test Stands Mk 3 Mod 0 for repair with the accomplishment of Ordalt 3860 noted either by stenciling or written on tape. Tapes were torn and stenciling damaged so the information was all but obliterated and hard to decipher. The ordalt only specified that its accomplishment be "noted" but it appears more permanent methods should be used for noting such information. We found an "Ordalts Accomplished" plate that would serve the purpose and used it for a better job of identification.

EMO JDE

Dear JDE:

The identification plate you describe, designed for ordalts accomplished, does serve the purpose very well and is okay to substitute for tapes and stenciling as a method of identification in this



case. With notations engraved, etched, or die-stamped, as shown here, the plate should be affixed with drive-on screws below or adjacent to the existing name plate on the panel of the test stand. The FSN of this plate is 909905-639-5856 and the cost 26 cents each.

The reason for the "noted" is no doubt explained by the age of the ordalt which was published in February 1958 when the use of such an identification plate as this one was not common, if in fact it existed at all. But so much for history. Neither completion reports nor identification plates have been required for mine-item Ordalt Instructions published in the last six-or-so years since all of them include mod change and mod change makes a new FSN and, between them, these changes identify the authorized item in the technical manuals and in the logistics system.

So what's next? The Mine Engineering change. Coming soon, MECs will take the place of ordalts and allow even better configuration management, accounting, and control. And to this I say Hasta la vista. No? Yes?

B. Amabile



MEN IN WHITE

Looking sharp in their whites, minemen at the Naval Ordnance Facility, Sasebo, arrange themselves in tiers for their most recent group photo. Reading from left to right they are:

Front row: MN2 R.H. Tyrrell, Jr.; MNC F.A. Eck; CDR D.L. Ochs (OinC, NAVORDFAC); LT B. Benintende (Mines Officer); MN2 R. Bonfiglio. Middle row: MN2 R.B. Pricer; MN2 R.M. Fair; MN3 J.D. Owens; MN3 C.E. Cook; MN3 G.B. Price; MN3 J. Snell; MN3 K.D. Abbott. Back row: MNSN J.S. Humphrey; MNSN M.J. Harding; MNSN D.E. Yarbrough; MNSN R.K. Puscher; MNSN J.E. Rick; MNSN D.E. Paul. Absent when photograph was taken: MN2 R. Dreyer; MN2 L. R. Smith; MN3 D.C. Griffin.

Scheduled to leave the group are LT Benintende who will go to NAF Naha as relief for LT Kocher who is returning to NSMW, Charleston, for duty; MN2 Dreyer to MOMAULANT; MN2 Smith and MN2 Bonfiglio to NWS Charleston. Due to report is MN3 Imperial. Some stripes were due to be changed when this picture was taken. MN2 Pricer and MN2 Bonfiglio advance to MN1 in September 1970.

SAVE THAT CABLE

DRILL MINES MK 25/36/52/55:

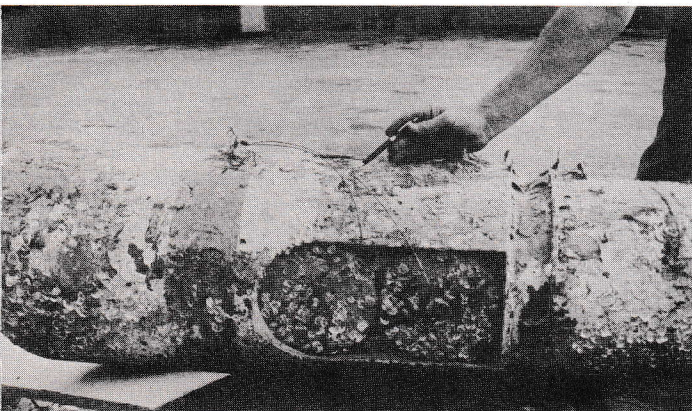
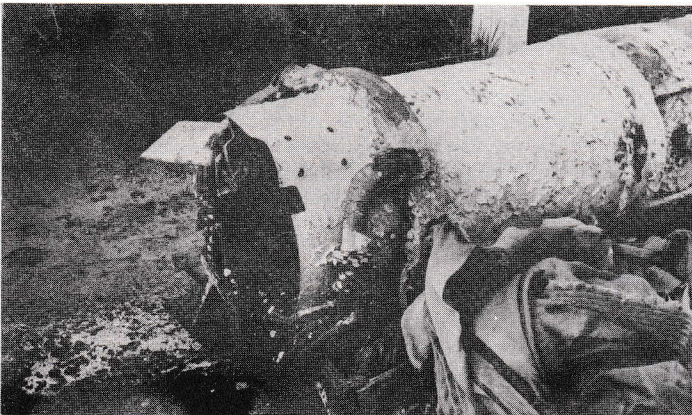
DIRECTIVE

Too many Mk 17 Drill Floats are being returned for overhaul minus the recovery cable or with the cable cut. This nylon cable is not expendable and unless irreparably damaged in the process of drill mine recovery should be kept intact for reuse.

Just in case drill mine recovery crews have not read Mk 17 Float overhaul procedures we repeat the very simple instructions for removing the recovery cable once the drill mine is on the deck. To release the cable from the float unreel the remaining cable on the float spool, if any, until you reach the loop made by the final turn. Cut the seizing (nylon thread) that holds the eye to the standing part of the cable--not the cable. Open the loop until large enough to slip over the float. At the shield end of the cable remove the clevis pin that passes through the boss on the shield and the eye of the cable. The cable is now free, intact, and after washing in fresh water, ready for reuse. Replace the clevis pin.

Two cautions: (1) in washing the cable--do not scrub or use detergents, (2) in drying the cable--do not lay or hang it out in direct sunlight.

Take these instructions seriously for if the abnormal loss of recovery cable continues at the current rate stocks of replacement cable will soon be exhausted.



BELIEVE IT OR NOT

POLISHING PAD A HAZARD

Did your metal polish pad ever burst into flames? It might if it is "Nevr Dull," an impregnated wadding metal polish, FSN 7920-823-9818. Do not use it near a flame.

By Naval Material Command authority this polishing pad must now be considered flammable and stowed in paint and flammable liquid lockers. Action is being taken to specify a higher flash point for MIL-I-22590, under which the polish was procured, but meanwhile consider it a fire hazard.

Congratulations!

Congratulations are extended from the Facility to our new E-8 and E-9 minemen, a little late but none the less sincere.

Name	Promotion	Effective
Cobis, Julius R.	From MNCS to MNCM	1 Sep 70
Konieczka, Melvin	From MNCS to MNCM	1 Dec 70
Owen, Billy C.	From MNCS to MNCM	1 Dec 70
Henry, Paul M.	From MNC to MNCS	1 Sep 70
Siluk, Leonard M.	From MNC to MNCS	1 Sep 70
Duncan, Donald G.	From MNC to MNCS	1 Oct 70
Rousseau, Paul E.	From MNC to MNCS	1 Nov 70
Hildreth, Ernest	From MNCS to MNCM	1 Apr 71
Eck, F. A.	From MNC to MNCS	1 Dec 70
Stark, R. D.	From MNC to MNCS	1 Mar 71
Lee, L. E.	From MNC to MNCS	1 Mar 71
Martin, R.	From MNC to MNCS	1 Dec 70
Kruczyk, D.	From MNC to MNCS	1 May 71
Gotshall, B.	From MNC to MNCS	1 Apr 71

FOILED BY A SOLENOID

It was a good Mk 50 mine, all but:

The arming wires were still in the hydrostatic switch and extender.

The paddles that should have operated the parapack's release mechanism stayed put, and therefore so did the parachute.

It is another "lost" mine that was recovered when nobody was looking for it. Mine No. 29, planted in April 1969 from a P-3 aircraft in Buckner Bay, Okinawa, during CNAP 4-69, was recovered in March 1970 during an unrelated exercise in the same area.

The pencil points (top left) to the swivel still on the arming wires, a swivel that should have remained in the aircraft solenoid but did not.

The bottom picture shows the release mechanism still in place indicating that the E-rings had done their job only too well. The parachute was recovered still attached to the mine. At least one fin was torn from the parapack, no doubt due to wave action rolling the mine on the bottom.

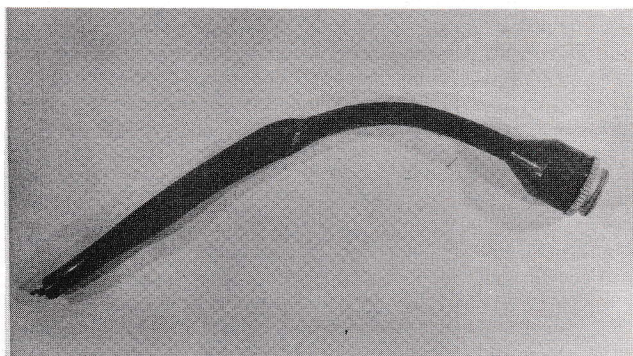
The mine case was encrusted with marine growth but on the inside the mine was clean and dry. The mine fire recorder was still running and had been ticking away faithfully for 335 days. In an operational test the mine fired the first time.

HOW COULD YOU LET IT HAPPEN AGAIN ?

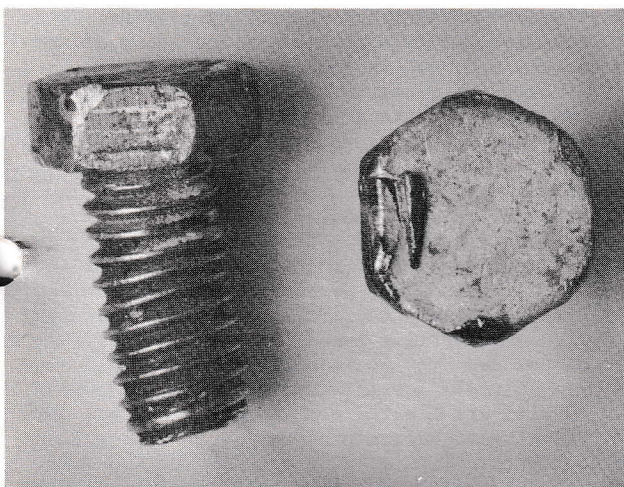
WHEN IT COMES to mistreated mine material here are some horrible examples that needlessly fill salvage dumps with dollars. This is a pictorial sequence that supplements those photos that appeared on page 7 of Troubleshooter 3-69. These pictures represent what can and did happen in the course of assembling Mk 25 and Mk 52/55 mines but the examples could just as well serve as a lesson for those assembling any mine.

Admittedly there is room for Murphy's Law to operate in the course of mine assembly but there is no reason to accept its operation as inevitable. These graphic examples of how not to do it should drive home the point that sloppy workmanship has no place in a mine assembly shop.

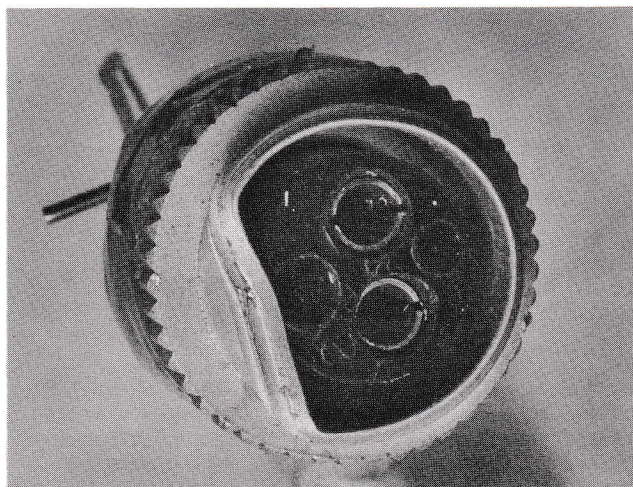
The photos here, we hope, represent exceptions but just the same they should never happen.



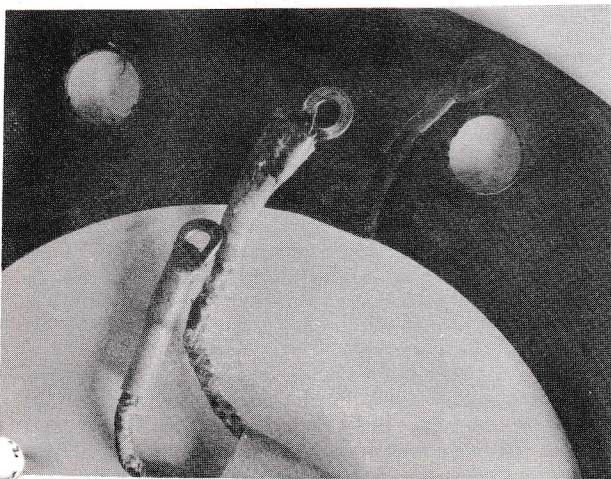
Cables are still being pinched when caught where they shouldn't be, when the instrument rack Mk 3 is installed, in spite of specific instructions in OP 2608 that should prevent it. If the conductor is not severed here it would be when the mine hit the water.



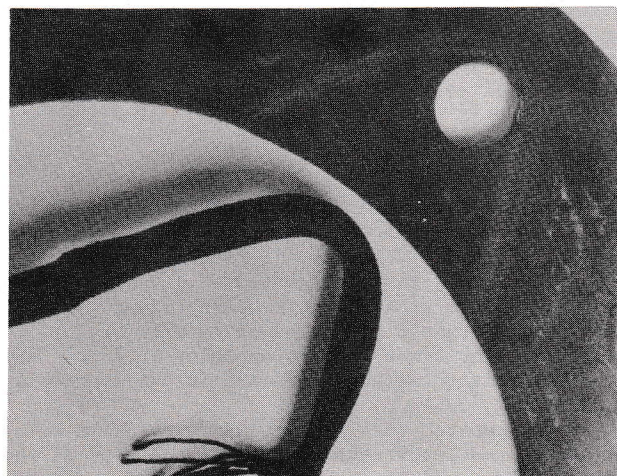
To find a cap screw in this shape is astonishing but the real mystery is how did someone find a tool to remove it? Perhaps the clue is in the scars on the hex head. With the evidence of cap screws like this anyone would wonder how the inside of the mine looks—and will it work?



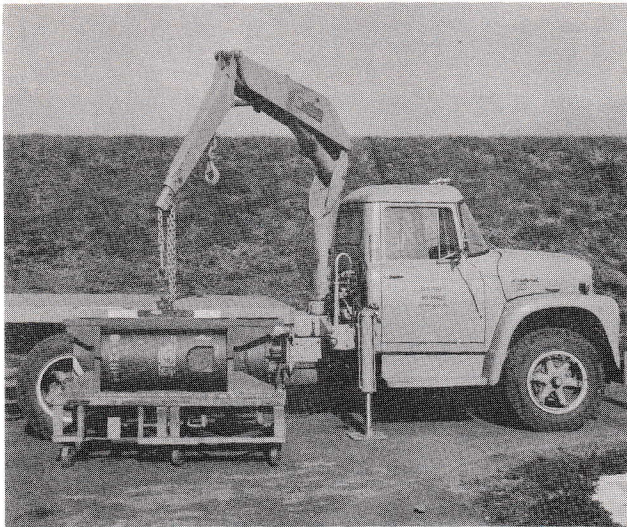
We can't tell you what happened to cause this P-3 connector to take this shape but we do know that it will never connect cable to explosive fitting on an arming device again. Besides that we have lost the price of an 1800 series instrument cable to the tune of some \$130.



These patterns are interesting but they have no place on extender well gaskets, but they will appear every time cables are not tucked in the extender well with care. They make an impression that no mineman



should let happen whether he is a supervisor or assemblyman. To coin a phrase—"a mine is only as good as it is leakproof"—so worry about those critical case openings.



View of HIAB Speedloader mounted on platform truck showing location of hydraulic controls and with outrigger in down position.

TEST FOR NEW TRUCKS A MUST

ALL MINES:

DIRECTIVE

Mine activities that have replaced their MJ-2 bomb service trucks with the new HIAB hydraulic crane mounted on a 1600 CVW and 2400 CVW stake or platform truck should be aware that stability and crane loading test procedures must be accomplished before the equipment is used for handling explosive ordnance. This is a requirement by the Naval Facilities Engineering Command. What agency will perform the tests depends on local conditions. Generally speaking it will be a public works function. You, the user, cannot test or certify your own equipment.

The Naval Facilities Engineering Command has determined that, within its capacity, the HIAB hydraulic Crane, Model 173, has the necessary safety features to handle explosive ordnance. Specifically, it has an overload device that prevents lifting beyond its capacity at any radius. In addition, it has a provision that if there is a loss of power, the lifting operations are automatically stopped. There is a provision that allows release of the load, under control, manually. Mine personnel operating these cranes must become familiar with these safety provisions before taking over the controls. Read the manual!

What the tests determine is truck stability under load and with outriggers down. This is fixed by the pressure setting on the main relief valve. This setting should not be tampered with by the operator. The crane's rated capacity in pounds is then established at this pressure for various working radii.

It is required that trucks and crane units be inspected and load-tested quarterly. A copy of the results of each capacity test will be forwarded by the testing agency to the Engineering Command (Code FAC-1034).

MISSING SIMULATOR CHARTS

MK 52/55-2, 3, 5, 6:

DIRECTIVE

Look out for missing search-coil simulator charts in Test Sets Mk 264 Mods 0 and 1. These are calibration charts for the Search-Coil Simulator and every Mk 264 started out life with one of these charts in its cable storage compartment, serialized to match the serial number of the simulator. Now some sets are missing their charts due, no doubt, to their being confused with test-set operating instructions which have been removed from test sets as obsolete. These charts are not a part of operating instructions and should not be removed.

The purpose of the Search-Coil Simulator is to simulate a ship's magnetic signature when testing the Firing Mechanism Mk 20. Each simulator has its own electrical characteristics and for this reason a search-coil simulator chart is required for each simulator to insure that a firing mechanism will receive the same signal when being tested. These charts are therefore not interchangeable, and must be identified with the simulator.

Without this chart the 264 test set is useless and should be turned in to the nearest depot and another set requisitioned to replace it. Test sets will be returned to NWS Yorktown, NAD Hawthorne or NAD Oahu where a new chart will be prepared, identified by the serial number of the simulator it matches. To supplement the caution in OP 2567, which supplied operation instructions for the test set, label the charts **DO NOT REMOVE FROM TEST SET** printed boldly on adhesive backed tape. When the depots are preparing a new chart follow instructions in WS5067 and drawing 1260831. WS5067 replaced drawing 1191471 for this purpose in October 1969.

Depots are alerted not to issue any Test Sets Mk 264 without determining that a correctly identified search-coil simulator calibration chart is present in the cable stowage well and issued with it.

SECURING CABLE MARKERS

Cables used with the Mk 1 Checkout Group are identified with pieces of wraparound plastic sleeving marked with CC numbers. These markers have a tendency to slide to one end or the other of the cable and become lodged under the insulation of the jack or connector making them difficult to read. One way to correct this annoying situation is this:

- ▶ Obtain a small quantity of acetone and an eyedropper. (Used in small quantities acetone is not a hazard as long as it is recognized as highly flammable and is treated as such.)
- ▶ Move the cable marker to the center of the cable and hold with overlapping edges upward.
- ▶ Apply a drop of acetone so that it will run under the overlap and soften the plastic.
- ▶ Pinch sleeving tightly between forefinger and thumb. Pinch at both ends of sleeving for even pressure and wait until plastic rehardens.

Now the sleeving should be around the cable, tight enough to prevent movement, and stay that way.

Do You do this Job Right?

EASE UP ON THE MUSCLE

MINES MK 25-2/27/36-3/49-2:

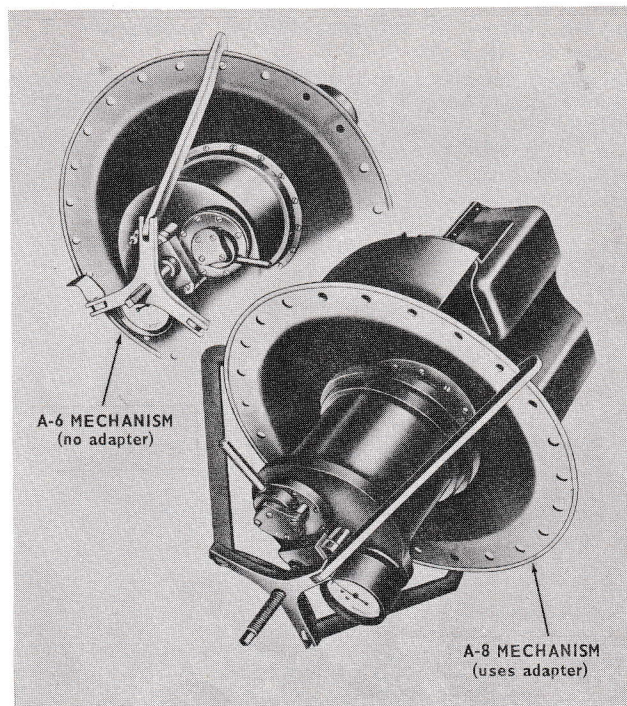
DIRECTIVE

Back in Troubleshooter 4-60 it was reported that the Test Set Mk 66 Mod 0 clamps were breaking while testing A-6/A-8 firing mechanisms. The solution was to beef-up the spider arms for a Mod 1 version of the test set.

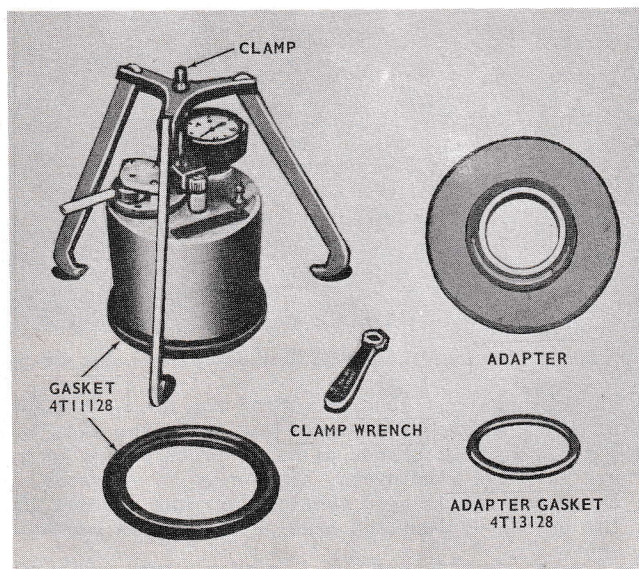
Now, believe it or not, comes Rudmines reporting bent tail cover flanges as the result of A-6 testing. The tail cover for mines Mk 27 and 36-3 (assembled with the A-8 firing mechanism) apparently is made of sterner stuff to withstand excessive clamp pull but it is possible these can be bent too if enough muscle is used.

The answer to all this is to ease up on the torque, which is to say don't take too many turns with the clamp assembly wrench when preparing to test the A-6 or A-8 firing mechanism. If you get a leak after following instructions in OP 2567 PART 1 VOL 1 Change 2 the fault no doubt lies in the gasket(s) not the lack of pressure exerted on them by the clamps.

To elaborate and augment instructions now in OP 2567 follow these steps in preparation for A-6/A-8 testing:



TEST SET MK 66 INSTALLED



TEST SET MK 66 MOD 1
with clamp wrench, replacement gaskets

► Examine gaskets that come with the test set to be sure they are clean. Stretch slightly and look for cuts, cracks or gouges. (If you can't find good ones among the spares, replacements are the test pot gasket 4T11128, and the adapter gasket 4T13128.

► Clean mating surfaces.

► Position test pot (A-6) or test pot and adapter (A-8) centered within circle formed by diaphragm protection plate screws with clamp hooks between bolt holes on tail cover as shown here.

► Tighten clamping device until test pot just bears on gasket and then follow by $2\frac{1}{2}$ turns more on screw with clamp assembly wrench.

This should do it, but if a leak shows up give the screw another turn but not more than a total of three turns. Now any leak means bad gaskets or poor seating so start over using new gaskets.

The Editor

MINES, MINEMEN & MEMORABILIA

HISTORICAL SERIES No. 4

MINES AGAINST THE U-BOAT

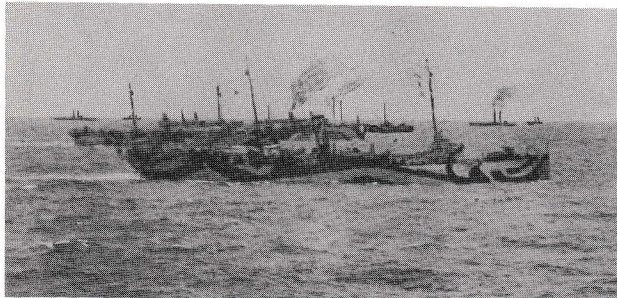
PART II: After the Victory

The Yankee Squadron had made its 13th excursion and laid more than 56,000 mines when the Armistice of November 11, 1918 was signed. But its work was not done for unused mines had to be carried back to the United States, so two weeks passed before orders came for home.

The public of that day knew little of what the Mine Force accomplished, as witness Captain Belknap's words in his book, *The Yankee Mining Squadron*.

"The press made occasional brief reference to the effectiveness of the North Sea barrier but, compared to other operations, ours received scant mention.

"Like other forces coming home, we wished to come into New York, for a touch of the limelight after being so long in obscurity. With mines on board, we could not expect a welcome anywhere, and at New York bare permission was doubtful--especially so



The "Yankee Squadron" in mine-laying formation

soon after the Perth Amboy explosions. We sailed with destination announced as New York, but orders soon came to steer for Hampton Roads instead."

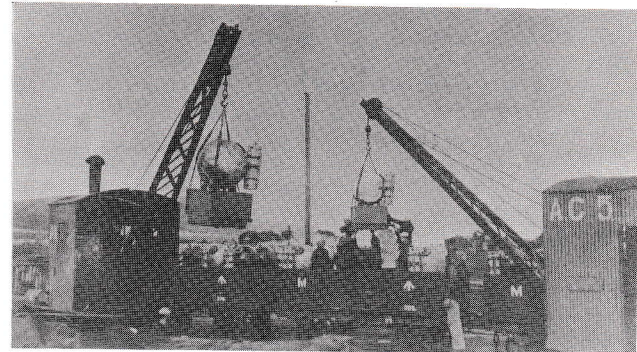
For the professionals it was another story*. Although the Mine Force was not represented at the surrender of the German fleet, the squadron passed through Scapa Flow, on its way home, to see the surrendered ships. Again in Captain Belknap's words:

"As our long, single column approached the British squadrons lying at anchor, on guard, a signal invited us to steer between their lines, and as we wound in between the battleships and battle cruisers, their crews were assembled on deck They cheered each passing minelayer, our crews running from side to side to make response, the bands playing the national airs.

"Then silence was ordered, as we neared the Germans' anchorage. First came the destroyers, to the left, moored in pairs with a few British destroyers at their head, and then, on the west side of Cava Island, the large ships came into view.

"We had nearly passed them all, when the British trawlers on the opposite side, holding the net across Hoy Sound--had been holding it in fair weather and foul, for three long years--seeing our flag and knowing what our work had been, broke out in long and loud blasts of their whistles--having crews too small for an audible cheer. The SAN FRANCISCO responded with the usual three blasts, which the ships following repeated in succession, but one of them blew her siren instead, and that started them all again."

It was a fearful din, and how this must have struck the British ships, on the other side of Cava was indicated by a signal from the Admiral of the First Battle Squadron (UK), Admiral Madden: "For your hilarious Mining Squadron, a speedy trip home

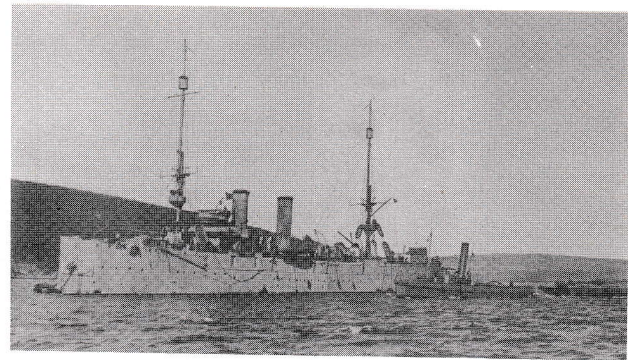


Offloading mines into barges at Inverness, Scotland

and have much regret in parting with such a brave bunch."

The Squadron Flagship SAN FRANCISCO, with two other squadron ships arrived in Hampton Roads 3 January 1919. Once more the squadron was complete except for the BALTIMORE absent on experimental duty. In due course the last mine was safely discharged, a record of more than 60,000 mines handled without mishap.

The underwater mine at last had come into its own. Not only due to the exploit of the Mine Force, the front line, but also those who, faced with an enormous logistic task, mass produced and delivered a new mine to that front line. In this effort Bureau



Squadron Flagship SAN FRANCISCO receiving mine barges alongside

of Ordnance built and assembled the mines, the Bureau of Yards and Docks designed and built the mine loading plants, the Bureau of Ships procured the mine carriers and minelayers, the Bureau of Personnel developed and managed special training schools and the Bureau of Supplies handled the entire business end.

* *The Secretary of the Navy's annual report characterized the Northern Barrage as "the outstanding anti-submarine offensive project of the year," and elsewhere "a truly wonderful work, the story of it "one of the thrilling contributions of what the navy men did in the war." Admiral Benson, Chief of Naval Operations, our highest professional authority, considered the achievement of the Mine Force one of the most successful efforts of the whole war by any of the forces engaged.*