

Issue 118

PS

1962 Series

THE PREVENTIVE MAINTENANCE MONTHLY

OF COURSE
I NOTICED THEM
LOOSE KNOBS AND
THE COCKEYED WIRING!
- BUT ELECTRONICS AIN'T
MY RESPONSIBILITY!
SO I DIDN'T REPORT IT.



SPECIAL FEATURE
AVIONICS
HOLLER FOR HELP!!
(SEE PAGE 29)

WILL EISNER

THE BIG CHANGE IN MAINTENANCE

OR

COMBAT EQUIPMENT WILL BE COMBAT-

READY

IT'S COMING... WITH—

OPERATION

ARM



DEDICATED
TO THE ART OF
MAINTENANCE



Get ready for the Big Change in Army combat equipment maintenance. It's shaping up to roll down the pike.

You know how it's been . . . maintenance too often played "second-fiddle" to other things . . . like training schedules, painting barracks, and the like. Equipment maintenance wasn't exactly neglected . . . it just didn't get the emphasis it needed.

But, it won't be like that when "Operation ARM" gets cracking.

Who says so? Well, the top bossman himself—the Army's Chief of Staff.

This big deal is called "Operation

ARM"—for Army Ready Materiel. It's getting set to go now.

The aim of "Operation ARM" is to make sure the equipment in your unit—and in every unit—will be ready to fight if and when it's needed . . . any time . . . anywhere.

What's happening?

Well, the people 'way up top side of the Army are making plans, issuing orders and making studies on maintenance like's never been done before . . . ever.

Here are a few examples of things being worked on where you likely will be seeing changes:

Maintenance Records System — You've already seen this as the Army's New Equipment Record and Procedures System in TM 38-750 and PS Issue 115.

Standards—It may be like Green, she's ready to fight; Amber, she's ready, but with some limitations; Red, she's just not ready to fight.

Maintenance Floats—Tanks, guns, trucks, etc. may be available for the fighting outfit to have while their own equipment is tied up with maintenance.

Training Floats—The high level guys are studying whether the Army should furnish equipment especially for training and maneuvers so your outfit's fighting equipment won't get worn out before it even gets close to a battlefield.

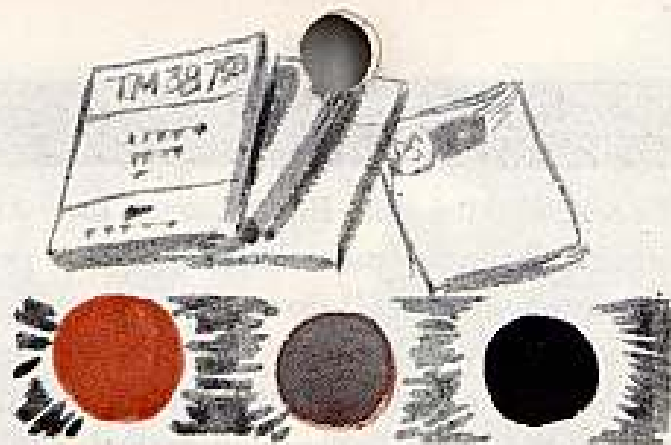
Manpower Authorization — TOE's being chewed over to make sure they give an outfit enough men to do the maintenance that has to be done to keep equipment ready for combat.

Funding—Ever had equipment dead-lined for repair parts because your outfit's 'consumer funds' were gone? No doubt there'll be changes so your maintenance will get the support it deserves.

Maintenance Training—This'll make sure there are enough men trained to get the maintenance work done. Army schools, as well as units, will be doing more training on maintenance.

Command Interest—Every commander—from platoon right up to the top—is going to be pushing this job of keeping equipment ready.

And there are more—It's all aimed to do one thing—to make sure every piece of Army Equipment is ready to go



into combat at any time and do the job it was designed to do.



"Operation ARM" will help keep your equipment ready to fight.

WHERE YOU ARE—In the months to come you'll likely be seeing some of the Army's specialists who'll be out trying, testing and studying some of the things you've read about on these pages. They'll be looking to you for help—you may have some ideas, questions or suggestions on ways to keep the Army's equipment ready. They figure that since you work with the equipment all the time you're the best man to talk to.

MEANWHILE — If you've got any ideas or suggestions you want to pass along right away, remember that Sgt. Half-Mast here at PS Magazine is ready and willing to toss your word along to the wheels who can do something about it. Send him a postcard or letter today.

And don't forget to see AR 11-14 (5 June 62) for the scoop on "Operation ARM."

YOU'LL SEE MORE DOPE ON OPERATION ARM IN LATER ISSUES OF PS MAGAZINE. WATCH FOR IT.



PS

THE PREVENTIVE MAINTENANCE MONTHLY

Issue No. 118 1962 Series

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PS wants your ideas and contributions, and is glad to answer your questions. Names and addresses are kept in confidence. Just write to:

Sgt Half-Mast,
PS Magazine,
Raritan Arsenal,
Metuchen, New Jersey.

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USING UNIT
SUPPLY BUSINESS ...



Have you seen AR 735-35 (16 Mar 62), "Supply Procedures for TOE Units, Organizations and Non-TOE Activities"?
It superseded AR 735-35 (29 Jan 58) and its Change 1 (13 Dec 60), and, Sections V, VI and VII, Chapter 3, of TM 9-2810 (Aug 58).
This AR shapes up established procedures and re-names and reorganizes some of your old supply standbys. It tosses out some old ways-and-means and gives you the go-ahead on other ways.



Briefly—Informal accountability and supply records, for organization and installation property, stay at organization (battalion, battle group, or non-TOE activity) level.
And, your unit (company, battery, troop, platoon, detachment, section, sub-activity or separate company) relays its needs to the organization or activity property book officer (PBO) by the fastest means possible, receives supplies on hand-receipt issue from the PBO, and assumes direct responsibility for the stuff it gets.
The PBO makes up and sends in the supply requests, and normally the supplies will come back directly to him. He records the supply transaction, rustles-up the hand-receipts, and yells for the user to come and get 'em.
(It's up to your organization or activity commander to decide to which level hand-receipt issue will be made by his PBO. Wherever practical, though, the AR says OK on hand-receipt issue down to the actual user.)
Separate companies, detachments and other units of an organization—when it's not possible to assign 'em to an organization for supply support—are authorized to set-up informal property records and operate as an organization property book officer.

● **DA Form 2064 "Document Register for Supply Actions"**—This old friend, with a new name and a changed face, continues to record supply action.

PBO's for TOE organizations keep a consolidated document register on a DA Form 2064 for organization and installation property.

PBO's for non-TOE activities will keep a document register on DA Form 2064 for all installation property.

The form's been revised and simplified some, and its lined columns allow plenty writing room. The top of the page has space for your organization's name and its organization supply code. The date the page is started goes in the "From" block, and the date of the last entry on the page goes in the "To" block. And each page is numbered in sequence. The ten lined columns are labeled to take:

Remarks—Stock number, name (noun) of item requested or turned-in on single-line item request, or remarks as needed on other supply documents.

Hand Receipt File No.—Number of Hand Receipt file for which item is requested if applicable.

Date of pasting.

Date action is completed.

DOCUMENT REGISTER FOR SUPPLY ACTIONS (AR 739-33)			ORGANIZATION/ACTIVITY	ORGANIZATION SUPPLY CODE	DATE (FROM, FROM, TO)		PAGE NO.	
DATE	DOCUMENT NO.	COMPT. TAGL. NO.	REMARKS	TECHNICAL SERVICE	QUANTITY REQUESTED	RECEIVED/TURNED IN	DATE COMPLETED	HAND RECEIPT FILE NO.
2 July 62	22		1040-542-0134 service tool kit, etc.	CML	1	1	12 JUL 62	1
5 July	2	14	5180-751-2415, Tool kit, Radio Manual	QPM	1	1	15 JUL	2
11 July	3	28	7360-161-2891 Table saw with tool kit	QPM	1	1	31 JUL	3
12 July	4	43	Control Number—Assigned by	QPM	2	1		2
16 July	5	31	accountable officer.	QPM		1	31 JUL	4
17 July	6	10	5180-754-0411 Tool kit, Arson	QPM	1	1	15 SEPT	6
18 July	7	16	TWO LIPSTICKS AND HURRY!	CML	2			
18 July	7							
18 July	7	42		QPM	1			

Quantity due-in — Noted in pencil.

Quantity Received or Turned-in—Partial receipts will be noted in pencil. Turn-ins will be recorded when receipt copy is received from the accountable officer.

Document Number—When items, covered by one supply document, are issued to more than one user, a separate line will be used for each user, but the same document number will be noted in column 2. Canceled document numbers will not be re-assigned.

Quantity Requested.

Technical Service—Agency responsible for item.

● **Document Number**—An identification number assigned to each document, from the document register (DA Form 2064). Document numbers will be assigned by the PBO, numerically beginning with No. 1 for the first document in each fiscal year.



● **Document File**—A file folder for all documents that back up property book entries. The documents will be filed in sequence by document serial number. The file's for all supporting papers, including reports of survey, statement of charges, inventory adjustments, turn-in of excess property, etc.



● **DA Form 2062 "Hand Receipt/Annex No."**—This hard working form remains as was. The PBO assigns a hand-receipt number to each property user, makes up duplicate file folders for each hand-receipt number (one file is for the PBO, and the duplicate goes to the hand-receipt holder). And it's up to the PBO to see that both files are kept up to date.

Also, a hand-receipt and its annexes get cross-referenced for easier checking.

● **DA Form 10-233 "Hand Receipt for Expendable and Non-Expendable Items"** — When authorized by the commander for whom the property book is maintained you can use this form as an interim hand-receipt. It's meant to help PBO's cut down on frequent postings to hand-receipt and hand-receipt annex files.

The form can be used between PBO's and their hand-receipt holders, and also to record property on temporary loan to an organization or an individual.

When it's used to make an issue, the PBO will fill out the form in duplicate. The original is signed by the user, and the PBO keeps it in the user's hand-receipt file. The duplicate copy is for the user's records.

And, hand-receipt annexes covering shortages or overages to sets, kits, chests and outfits will show the end item's applicable — 4 supply manual in the form's "catalog" block.

Hand-receipts for end items which have basic issue list items will note the Appendix III, Part I, of the item's multiple part TM. (Repair parts included in basic issue item lists, however, don't get recorded on hand-receipt annexes).



On a turn-in, the procedure is reversed. The user fills out the form in duplicate. He keeps the original copy, which is signed by the PBO, and files the duplicate copy in the user's hand-receipt file.

The form's "date of issue" block is changed to read "date of turn-in", the "issued by" block notes the user's hand-receipt number, and the "issued to" block names the PBO.

The signature and date lines are on the bottom of the form.



When DA Form 10-233 is used, the hand-receipt files get up-dated every six months. Also, before a joint inventory, when the PBO's notified there's to be a change in hand-receipt holders, after you adjust the hand-receipt files to cover the items on interim hand-receipts, you cross out the old 10-233's.

HAND RECEIPT FOR EXPENDABLE OR NON-EXPENDABLE ITEMS (FM 7023)		DATE OF ISSUE 5 FEB 62
ISSUED BY 5-4 Troop Support Unit	ISSUED TO NAME AND ORGANIZATION H/R #5	DATE RETURNED TO OR DATED FOR CANCELLATION 28 Feb 62
ITEMS LISTED ABOVE WERE RETURNED THIS DATE		QUANTITY
SIGNATURE OF ISSUER J. Wells, CWO		
DA FORM 10-233		

DA Form 10-233, Hand Receipt for Expendable and Non-Expendable Items. This short, easy to fill form may be authorized as an interim hand-receipt. It can be used for both issue and turn-ins.

● **DA Form 1150-1 "Request for Issue or Turn-in"** (and DD Form 1150c, its continuation sheet)—You can use the multiple-line item supply for expendable housekeeping items, stationery and office supplies, when there's no self-service-supply center. Also for individual and organizational clothing and equipment. For TOE and TA equipment of newly activated outfits, and for petroleum products and medical material.

The multiple-line item form was OK'd for use by organizations and activities by AR 711-16 (25 May 60), "Installation Stock Control and Supply Procedures".

An 1150-1 asks for the usual supply transaction info:

On a request, for example, the "From" block addresses the accountable officer, or other supply support activity, and the "To" block is for your requesting organization or activity. On a turn-in, of course, you reverse the names in these two blocks.

Block 3 takes "Accounting and Funding Data" when such info's needed. And when "End Items Identification" is important, it goes in block 4, and its a, b, c, and d sections.

And the wide column takes FSM, item description and remarks.

Then there are the unit of issue, quantity and supply action columns.

The unit price and total cost of columns provide space for S-8-c figures when such must be quoted.



Line items are numbered in sequence in the first column.

LINE NO.	REQUEST FOR ISSUE OR TURN-IN	UNIT OF ISSUE	QUANTITY	UNIT PRICE	TOTAL COST
1	FSN 4240-348-6093, M9M1, M4A1, M4A2, M4A3, M4A4, M4A5, M4A6, M4A7, M4A8, M4A9, M4A10, M4A11, M4A12, M4A13, M4A14, M4A15, M4A16, M4A17, M4A18, M4A19, M4A20, M4A21, M4A22, M4A23, M4A24, M4A25, M4A26, M4A27, M4A28, M4A29, M4A30, M4A31, M4A32, M4A33, M4A34, M4A35, M4A36, M4A37, M4A38, M4A39, M4A40, M4A41, M4A42, M4A43, M4A44, M4A45, M4A46, M4A47, M4A48, M4A49, M4A50, M4A51, M4A52, M4A53, M4A54, M4A55, M4A56, M4A57, M4A58, M4A59, M4A60, M4A61, M4A62, M4A63, M4A64, M4A65, M4A66, M4A67, M4A68, M4A69, M4A70, M4A71, M4A72, M4A73, M4A74, M4A75, M4A76, M4A77, M4A78, M4A79, M4A80, M4A81, M4A82, M4A83, M4A84, M4A85, M4A86, M4A87, M4A88, M4A89, M4A90, M4A91, M4A92, M4A93, M4A94, M4A95, M4A96, M4A97, M4A98, M4A99, M4A100		10	16.50	165.00
2	FSN 4240-368-6096, M4A1, M4A2, M4A3, M4A4, M4A5, M4A6, M4A7, M4A8, M4A9, M4A10, M4A11, M4A12, M4A13, M4A14, M4A15, M4A16, M4A17, M4A18, M4A19, M4A20, M4A21, M4A22, M4A23, M4A24, M4A25, M4A26, M4A27, M4A28, M4A29, M4A30, M4A31, M4A32, M4A33, M4A34, M4A35, M4A36, M4A37, M4A38, M4A39, M4A40, M4A41, M4A42, M4A43, M4A44, M4A45, M4A46, M4A47, M4A48, M4A49, M4A50, M4A51, M4A52, M4A53, M4A54, M4A55, M4A56, M4A57, M4A58, M4A59, M4A60, M4A61, M4A62, M4A63, M4A64, M4A65, M4A66, M4A67, M4A68, M4A69, M4A70, M4A71, M4A72, M4A73, M4A74, M4A75, M4A76, M4A77, M4A78, M4A79, M4A80, M4A81, M4A82, M4A83, M4A84, M4A85, M4A86, M4A87, M4A88, M4A89, M4A90, M4A91, M4A92, M4A93, M4A94, M4A95, M4A96, M4A97, M4A98, M4A99, M4A100		10	16.50	165.00

Block 5 is for the document number.

It's given a document number and gets recorded in the document register. The form's made up in four copies. Three copies go forward, and the PBO keeps copy number four in his suspense file. Supply'll return a shipping copy to the organization PBO. He records supply action info in the document register and property book, as needed, dumps the suspense copy. The shipping copy initialed and marked "posted", and dated, goes in the document file. A copy belongs to the finance and accounting section whenever installation property is involved, or any other time the transaction calls for cost code or work order info. There are X-sized blocks to mark the kind of action (issue or turn-in) the form is working on, also blocks for sheet number, total number of sheets, and date the items are needed.

Block 7 and 8 name "Priority" and "Voucher" as needed. On a transfer between PBO's for example, block 7 says "transfer", and the gaining PBO puts his document number in block 8.

On a request, the skinny "Code" column takes an "I" if the item's on initial request, and "R" if it's a replacement request. On a turn-in the code column gets an "S" for serviceable, or a "U" for unserviceable. The reason for the turn-in (PMT, report of survey statement of charges, excess, etc.) is explained in the description column.



The new 1546

Blocks on the bottom of the form take the date and the signature of the requesting officer.

AWRIGHT FOLKS... AS MY ASSISTANT PASSES AMONG YOU PLEASE EXAMINE THIS FORM CAREFULLY... HOLD IT UP TO THE LIGHT...

Each DD Form 1150c (continuation sheet) is numbered in sequence and the supply data is continued across the top of each sheet.

A line of X's, or slashes (////) flanking the words "lost item" or "and" can follow the last item listed.

DA Form 1546—Take a look at how it's changed.

The new DA Form 1546 "Request For Issue Or Turn-In", is a 5-copy, snap-out form with carbon inserts. Like the old form, the new 1546 will be initiated by the unit or activity PBO for single-line item requests or turn-ins. The new form isn't color-coded, tho—its five copies are white, and will be distributed like this:

- Copy 1—Accountable Officer's Copy.
- Copy 2—Shipping Copy, (comes back to requesting outfit).
- Copy 3—FM/P&A Copy, (The funding management copy).
- Copy 4—Due-out Copy.
- Copy 5—Suspense Copy (Stays in suspense file of requesting outfit until supply action is completed).

The form's 44 blocks will be filled-in as it travels through the supply channels. Blocks 1 through 19 (except 5 and 10) are for the requesting outfit. NOTE: Block 19 calls for a new kind of supply info called "Urgency of Need", which ties unit supply requests into the new priority of issue procedures set-up by AR 725-50. See PS page 14.

Blocks 5 and 10 and 20 through 44 are for use of the supply support activity. Also new: You strike out half of the form's title so it'll be easier to see which supply errand (Request or Turn-in) a form's working on.

Model of end item shown in block 6.

Name of supply support.

Publication (Type, number, year, page number of authorization—TOE, TA, TM, SM, etc., used for request. On turn-in block 9 will show FYIT, Statement of charges, Serviceable, etc.)

Control number filled in by accountable property officer).

Takes name of requesting organization or activity, block 3 takes their document number and block 4 their organization supply code.

Name and manufacturer of end item (on which a repair part will be used).

Serial number of item in block 6 (USA registration number of vehicles will be used). NOTE: Blocks 7 and 8 are only for repair parts to go on a specific item.

For substitute or stock number change info. (Filled by supply activity.)

Item description (Short description of item requested or turned-in.)

Cost detail account number (Assigned by supply activity.)

Unit of Issue (Pack, set, pair, each, roll.)

Quantity of item Requested.

Demand block (X'd to show kind of demand. Recurring or not.)

1. STOCK NUMBER <i>FSN 47201741-0334</i>		2. STOCK NO. CHANGE		3. ITEM DESCRIPTION <i>Hose Assembly, rubber, aircomp. Inlet & Outlet.</i>		4. DEMANDS Non-recurring <input checked="" type="checkbox"/> Recurring		5. COST DETAIL ACCOUNT NUMBER <i>2362</i>	
6. QUANTITY INDICATED HAS BEEN		7. APPROVED SIGNATURE AND DATE		8. RECEIVED		9. URGENCY OF NEED		10. URGENCY OF NEED	
11. QUANTITY		12. DATE		13. DATE		14. DATE		15. DATE	

1st R.C. Brindler
16 July 62

AD

FSN of item involved.

Check to show quantity on form has been received or turned-in. Also takes initials of authorized representative and date of action.

Signature of requesting supply officer (or his representative) and date of action.

Urgency of Need. Takes "urgency of need" letter designator which most clearly covers request. Urgency of Need Designators used are A, B, C, and D.



DESIGNATOR **A** MEANS:

1. Without the item(s) requesting outfit is strapped. It's unable to do its assigned operational missions or tasks (or will be unable to do so in the immediate future, for example, for training missions, METR (Minimum Quantity of Equipment Required for Training) must be maintained.
2. Emergency need for replacement of primary weapons, and equipment, or functional materiel needed to make emergency repairs to keep such equipment operational (like Blue Streak for operational deadline).

DESIGNATOR **B** MEANS:

1. Immediate need. Without item(s) operating punch of outfit is being impaired. Assigned mission and tasks can be done, but with decreased effectiveness and efficiency (Blue Streak for last out-of-bin, and repair and return to unit stock).
2. Materiel needed for emergency replacement or repairs to auxiliary equipment systems. Unit can operate only temporarily, as an effective unit. Or, materiel urgently needed. Lack of it will cause serious personnel hazard.

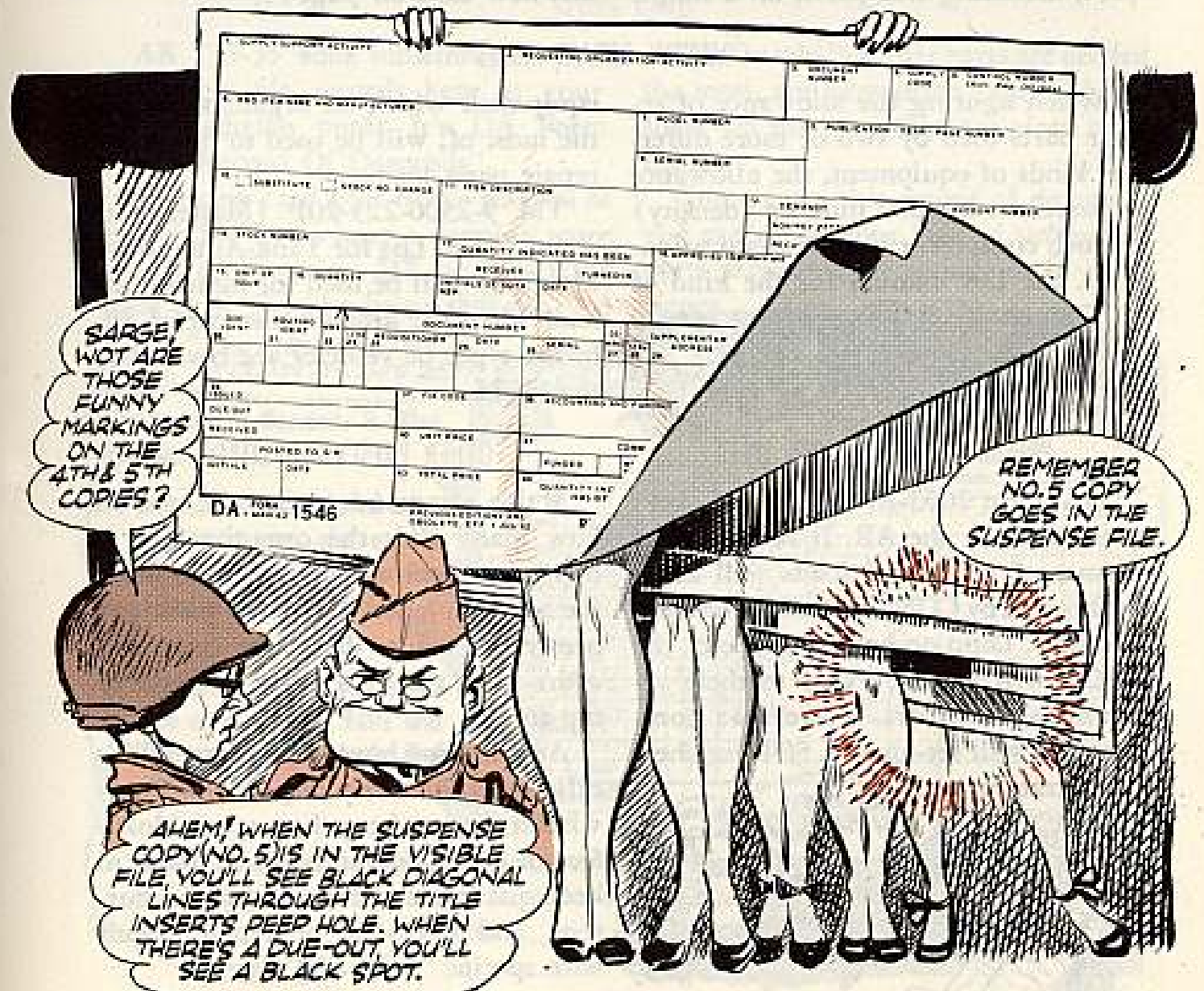
DESIGNATOR C MEANS:

1. Item needed for support of assigned mission and tasks . . . but it's MORE urgent than a routine replacement—like for POM (Preparation for Overseas Movement).
2. Materiel needed for emergency repairs or replacement of administrative support equipment or systems, but not essential to effective operations or safety of the activity.
3. Designator C is not for use on routine replacement requests.

DESIGNATOR D MEANS:

1. Request is for routine stock replacement, and for established initial allowances . . . not supported by a higher urgency of need designator.

A 1546 will be recorded in the PBO's document register DA Form 2064. Its suspense copy (No. 5) will go into the suspense file, and all other copies will go to the supply activity.



YOU ADJUST REPAIR PARTS

Organizations authorized to stock repair parts continue to set-up their prescribed load like it says in their equipment TM's, Part I (Operator's Manual) and Part II (Organizational Maintenance Manual), or like they're told in the 7- or 7 and 8 DA supply manuals (for their equipment which is not yet covered by the multiple part TM's).

(Note—Authorized stocks of repair parts can be revised, tho... 'cause you'll be keeping "usage" info on each part you stock.

You'll keep a running total of each part, including DX parts, on a simple



card—DA Form 2527, "Record of Demands." Then from this info you're authorized to revise your allowances every six review periods (180 days). See par 31, AR 735-35. See more about this new card on page 17.

COMMON REPAIR PARTS

When figuring the allowance of repair parts used by two or more different kinds of equipment, the allowance is based on the total number (density) of such equipment in the organization. And, the DA manual for the kind of

equipment which an organization has the most of, will be used to figure the repair parts load.

TM 9-2300-223-20P (Master Prescribed Load List for Tank-Automotive Materiel) will be used for figuring the load when the greatest number of different types of vehicles are covered in the MPLL.



PRESCRIBED LOAD LISTS (PLL)

DA Form 2063-R, the old PLL, isn't mentioned by the AR. It says that the format of prescribed loads will be as authorized by CONUS installation commanders. Ditto on how, when, etc., the PBO's will submit PLL's to their accountable officers. (Overseas commanders will set-up PLL SOP for their organizations).



OTHER PRESCRIBED LOADS

Major commanders give the nod on how many PL's the organizations in their commands must stock. And when the nod includes boxed or packaged prescribed loads, they'll be computed apart from the PL's set-up for operating stocks.

And keeping boxed or packaged PL's calls for a quarterly inspection. That's what it takes to keep those special loads free of damaged and obsolete items, to keep quantities and stock numbers current, and to rotate or replace items with specific "shelf life" dates.

REPAIR PARTS RECORDS

When an organization commander says your second echelon maintenance outfit can stock repair parts, you can make out your own supply forms. And you'll be required to set-up a document register using a separate series of document number.

You can use a visible file for your records (like visible file book, FSN 7520-634-2404, a Quartermaster item).

(Note: The AR says nix on visible file equipment for units who are assigned or attached to an organization for repair parts support).

On the title insert (DA Form 1543), for the visible file, you tell the whole story on each part, authorized: FSN, name, short description, and location of part. Also, the quantity authorized, which is noted in pencil.

The form's remarks space should tell no less than a part's use, if it's interchangeable, unit of issue, and the TM or SM used to compute the allowance.

And, you file the title inserts in stock number of alphabetical sequence . . . not grouped by tech service.

SCORE CARD

AR 735-35 adds something new to the visible file records kept by your second echelon outfit. It's DA Form 2527, "Record Of Demands".

The new card goes in the pockets of the visible file to keep a running score on all requests (by DX or 1546) for each part. The idea being that the card

will show which repair parts are needed the most, and how often (and it'll also show up the ones that are slow moving).

Then, from this record of demands, you can revise your load of authorized parts according to actual usage experience.

OK GIRLS, I'LL PUT IT DOWN ON THIS 2527.



The Record Of Demands is filled like this:

1. The stock number listed on a title insert goes also on the upper righthand corner of the record of demands card:

2. The date used on a 1546, or the date of a DA Form 2402 and the note "DX" goes in the first column.

3. The document numbers used on the 1546 goes in the second column.

4. The amount requested (or DX'd) is noted in the third column.

5. A running total of quantity demanded is tallied in the cumulative demands column.

2910-732-2543

RECORD OF DEMANDS FOR PARTS											
DATE	REQ. NO.	QTY. DEM.	QTY. AUTH.	DATE	REQ. NO.	QTY. DEM.	QTY. AUTH.	DATE	REQ. NO.	QTY. DEM.	QTY. AUTH.
2 JAN 62	201	3	2	12 APR	315	2	3				
11 JAN 62	211	1	4	20 APR	322	2	5				
18 JAN 62	218	1	5	27 APR	330	1	6				
26 JAN 62	225	2	7	2 MAY	337	1	1				
30 JAN 62	232	3	10	10 MAY	342	1	2				
7 FEB 62	239	1	2	18 MAY	351	4	4				
15 FEB 62	247	1	3	6 JUN	372	4	4				
27 FEB 62	267	1	4	14 JUN	377	2	6				
5 MAR 62	276	2	2	15 JUN	378	2	8				
10 MAR 62	289	1	3	22 JUN	405	1	9				
23 MAR 62	297	1	4								
30 MAR 62	297	1	7								
2 APR 62	300	1	1								
DA FORM 2527											

READING THE CARDS

You review the record of demand cards monthly, and draw a line under the last entry checked.

When you've got three or more demands within the last six review periods (180 days), the cumulative totals for those periods will be added up, and the total divided like this—

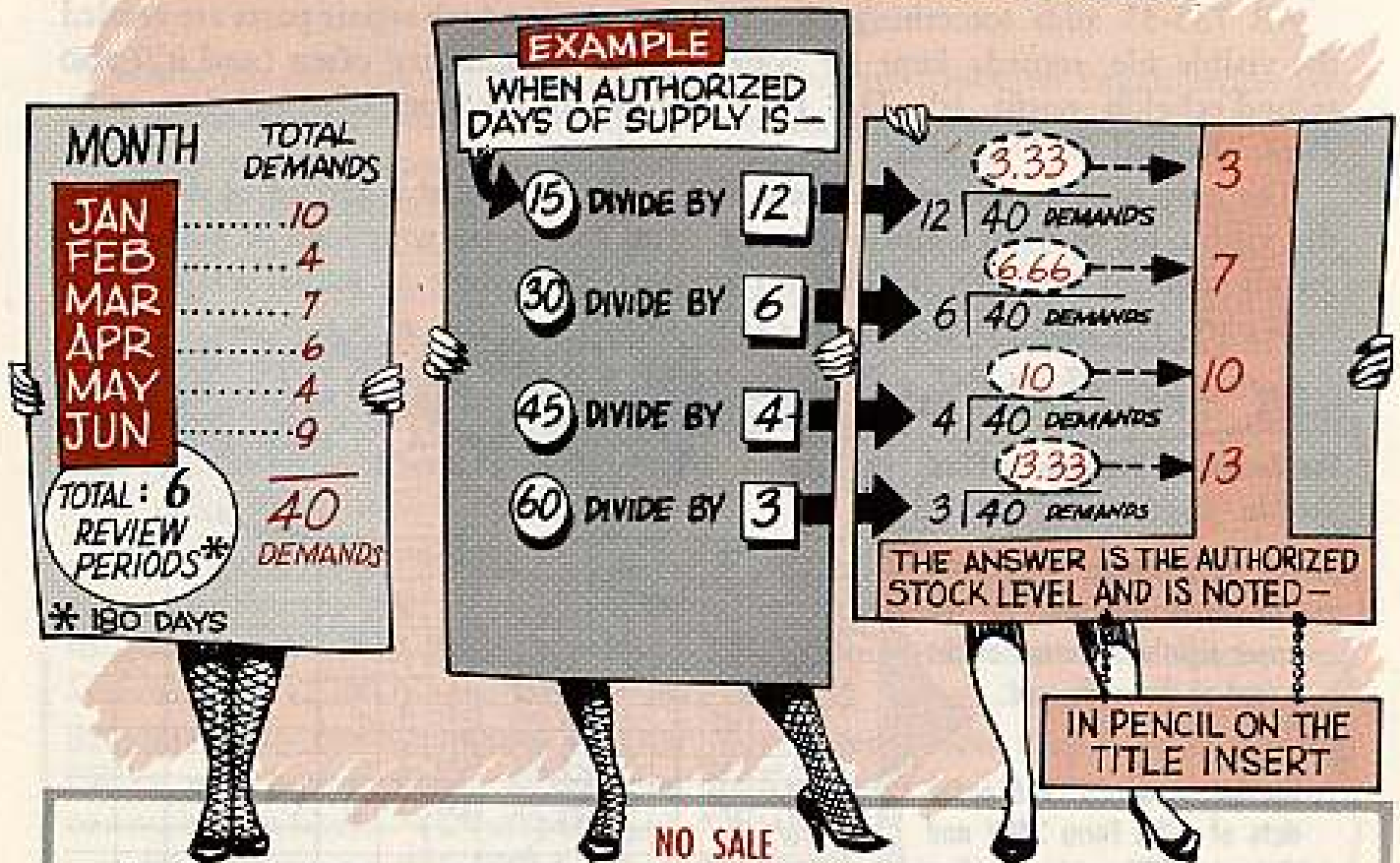
Divide the total by:
 12 to find 15 days of supply
 6 to find 30 days of supply
 4 to find 45 days of supply
 3 to find 60 days of supply

The figure this formula turns up is the new revised stock level, and goes in pencil in the "authorized stock level" space on the title insert.

(Fractions of .5 or higher, get rounded off to the next highest whole number. And below .5, the fraction is rounded off to the next lowest whole number.)

When the formula figuring turns up a goose-egg . . . the revised allowance is automatically 1.

Of course, any time your stock level changes, whatever stocks of an item are on hand (plus any due-in) get adjusted to fit the revised stock level.



On items which gather less than three demands during the last six review periods (180 days) it works this way:

1. Items coded combat-essential in -20P TM's (published after April 1961) will be kept in stock by TOE organizations in the amounts shown in the publications. These items will not be revised lower than the quantities shown in the publications.

2. Items from DA-20P TM's which were published before the combat-essential code was used will be turned-in as excess by non-TOE activities. TOE outfits, however, will keep a minimum of 1, of these items . . . regardless of demand facts.
3. Items turned-in as excess become "as required" items. Their title inserts and demand cards can stay in the visible file, however, and then when three or more demands are recorded (within the last six review periods) a new stock level can be figured out and the parts ordered for stock.
4. As always, of course, when repair parts become obsolete, or the end items they go with are no longer on hand, they get turned-in as excess immediately.

WHAT ELSE IS NEW ...?

Plenty!

AR 725-50 (Feb 62) "Department of the Army Requisitioning, Receipt, and Issue System", covers a brand new supply priority system.

You'll not likely have much to do with the AR, itself, but it'll be doing plenty for you. Maybe you've heard of the system. It's called:

MILSTRIP, which is short for "Military Standard Requisitioning and Issue Procedures", and
MIPS, which stands for "Material Issue Priority System".

In a nutshell: Requests and issues will be assigned priority codes depending on a unit's combat, or combat support mission, or urgency of need, at a particular time.

You'll be seeing other new supply words and codes on 1546's and other supply documents. For example:

F/AD—which means: Force Activity Designator
 IPD — which means: Issue Priority Designator
 UND — which means: Urgency of Need Designator

IS IT
 CLEAR NOW,
 FELLAS?

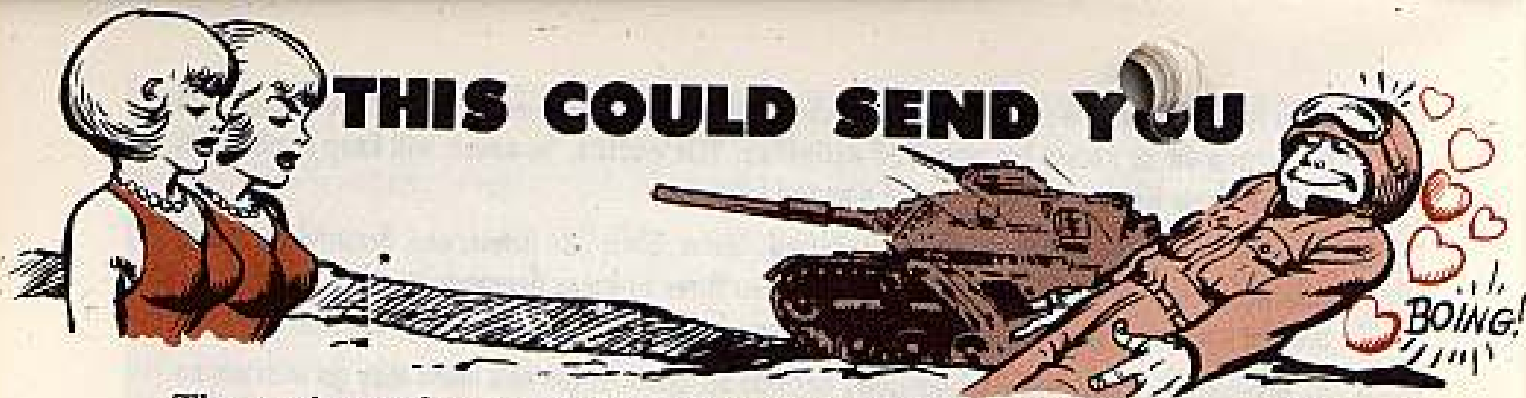
The Urgency of Need Designator (UND)—see para 19d(1)(s), AR 735-35, which will be assigned at unit or organization level, will be a major factor in establishing just how important that item's arrival is to you. So, you can bet the old man will bird-dog the use of UND codes on all supply requests.

Priority codes (which describe a

unit's job or specific need) will be added to these designator symbols, and presto, a 1546 will become sort of a souped-up Blue Streak requisition.

The secret is in the formula . . . which works like this—supply puts your F/AD and your UND together and comes up with your IPD.

THIS COULD SEND YOU



The engine and transmission lube pressure sending units on your M60 tank look like twins. You're in for trouble if you think they act alike, though.

The only way you can tell them apart is by the part number stamped on them. The part number is 8376928-120-AC for the engine oil lube pressure sending unit . . .

. . . and 8376-490-60-AC for the transmission sending unit.

ENGINE OIL PRESSURE SENDING UNIT

TRANSMISSION OIL PRESSURE SENDING UNIT

The numbers before the AC clue you in. The transmission lube pressure sending unit is calibrated for 60 PSI maximum pressure. The engine sending unit is calibrated for 120 PSI maximum pressure.

Any time an engine or transmission lube pressure sending unit gets replaced, be sure you've got the right one in the right place.

With the wrong type you naturally get wrong readings. This might make you think that an engine and transmission that are perfectly good should be replaced.

Don't trust the readings completely. If they seem wrong, check 'em out with the gage listed as FSN 6620-795-0330, item 7 page 176 of TM 9-2350-215-20P (Oct 60). The gage is more accurate. Don't ever replace an engine or transmission just on the say-so of a lube pressure sending unit. Always see if the gage comes up with the same information.

If you're not sure you have the right pressure sending unit, test it with an ohmmeter. The resistance of the engine and transmission sending units are the same but the operational pressures are different. Check against a known good unit.



TRANSMISSION		ENGINE	
Pressure (PSI)	Ohms	Pressure (PSI)	Ohms
0	0	0	0
30	15	60	15
60	30	120	30

To be sure your transmission oil pressure sending unit is on the ball make these tests:

1 Get the transmission oil warm but not hot (125° to 180°F is about right). Put the vehicle in motion. Now run it at high speed. Under these conditions lube pressures should be 40-60 PSI.



2 Now get the transmission oil hot (250° to 275°F) and run your vehicle in low range. Your gage should now read between 10 and 40 PSI.



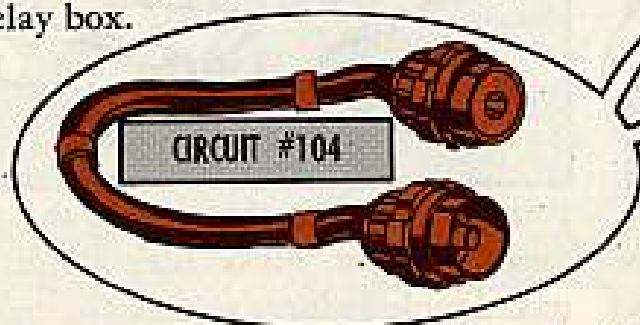
3 Stop the vehicle and set the brakes. With oil temperature at 200° to 280°F speed up the engine until your tach reading is steady at 1800. Now your gage should read between 10 and 40 PSI.

If your transmission oil pressure sending unit passes all these tests it should be OK.

M60 TANK CABLE

You're money ahead if you stop trouble before it starts—right?

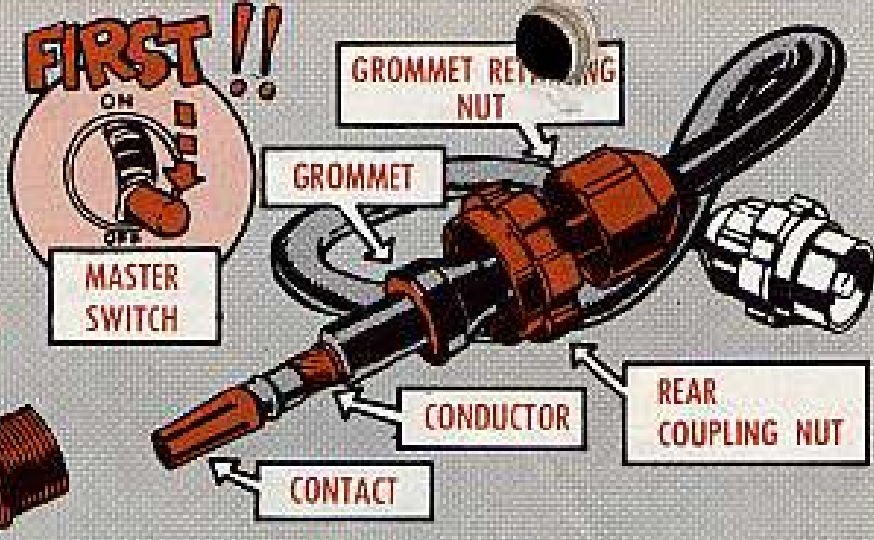
So keep the power traverse on your M60 tank from getting hexed. You do this by checking out Circuit 104 (Lead Assembly 10864133) which runs from the turret pump motor to the power relay box.



It's easy to find this circuit because "104" is stamped on a metal band around the cable. There is also a diagram of it in Fig 104 facing page 140 of your TM 9-2350-215-20 (Sep 60).

Here's the scoop . . . in some tanks Circuit 104 is short on solder at its two terminals—the male terminal which connects to the power relay box and the female terminal which connects to the turret pump motor.

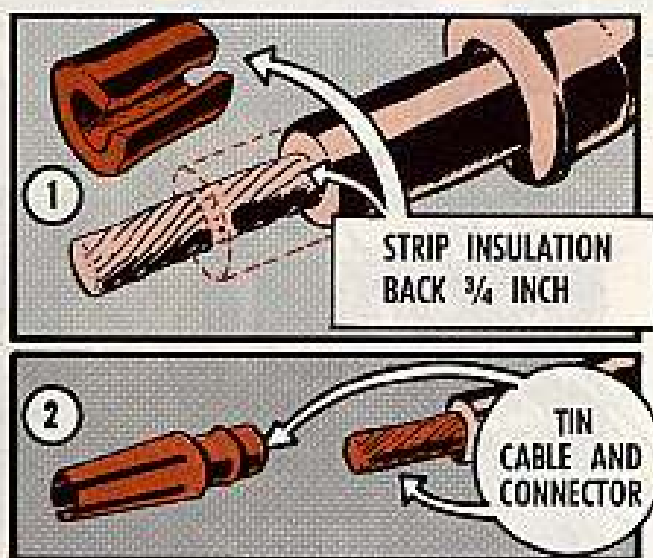
To find out if this circuit is OK, turn OFF the master switch. Now, at both ends of the cable, unscrew the grommet retaining nut and pry back the rubber grommet. Next remove the cable by unscrewing the coupling nuts.



Now look over the solder joint. The insulation should be stripped back for enough to leave about 1/8 inch of the conductor exposed. If you can see a smooth, shining, fillet of solder between the end of the contact and the exposed conductor and you can't pull the contact and the conductor apart with an easy pull, your cable is probably OK. Otherwise, better play safe and resolder it.

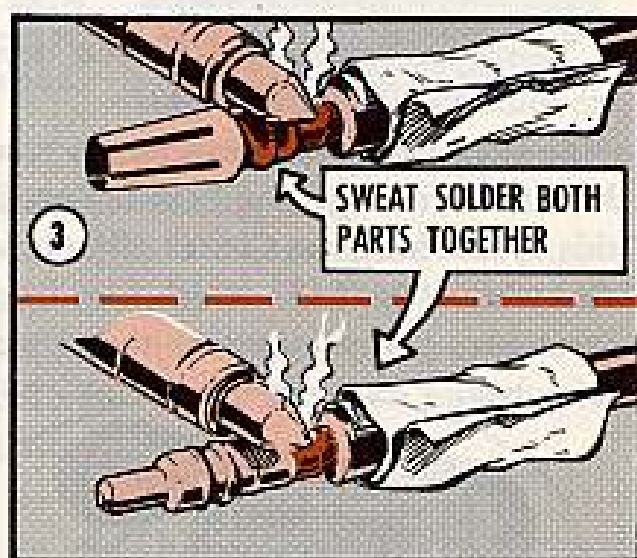
These terminals have to be stuck to the ends of the cable with *beaucoup* of solder . . . good and solid.

If you're a fast draw with a soldering iron and you've got the will and the skill, you can do the job yourself. Otherwise, have your support unit do it. Just be sure it gets done right.



Remove the circuit from the tank. Then unscrew the nuts from both ends of the cable and sweat off the terminals. (A wet rag or some asbestos will keep the rubber from burning.) It'll be a lot easier and you'll do a better job if you strip the insulation back 3/4 inch before you start.

Tin the cable and connector with



rosin core solder then sweat the two parts together. Make sure all of the naked cable ends are soldered to the terminals . . . not just a small portion. You need a firm and solid connection. After it cools put everything back in place.

Now you've got a paid up policy for easy turret traversing—which means life insurance for the whole tank crew.

Connie Rodd's

"SHORT 'N SWEET DEPT"

JUST WHEN DOES THIS OVERHEATING OCCUR, AND WHERE?

Differential difficulties?

Having trouble with the controlled differential overheating in your M113 PC?

Could be the quick disconnect coupling at your oil lines adapter is the cause.

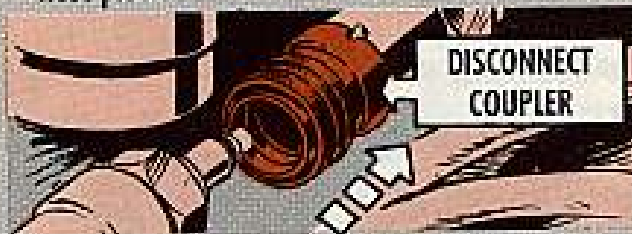
If this is installed wrong the oil flow from the differential oil pump will be partly cut off. When this happens the differential overheats—but natch!

Check the clearance between the nose piece hex nut and the knurled part of the coupling body. They have to be within $\frac{1}{16}$ inch of each other.

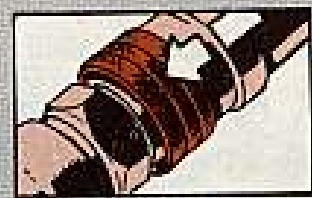


TO GET 'EM THAT WAY, THIS IS WHAT YOU DO:

- 1 First disconnect the coupler assembly from the nose piece.



- 2 Get the pin and the groove of the coupler lined up and push the coupler over the nose piece.



- 3 Force the coupler far enough on so that when you let go of the knurled part of the body, it will return to within $\frac{1}{16}$ -in of the nose piece hex nut.



- 4 Without changing that $\frac{1}{16}$ -in clearance, turn the knurled part counterclockwise so the groove and the pin don't line up any more.



If your differential still overheats, check it out according to the troubleshooting chart in your TM 9-2300-224-20 (Dec. 61).

It's just the grind

You've noticed that the interrupted threads on the breechblock and vent bushings in some of your M40-series 106 recoilless rifles look like a horde of metal lice have been chomping on 'em for a month of Sundays?



Well... spare the DDT. The new "slant cut" look is a result of grinding metal from the entering edges of the breechblock and vent bushings to call a halt to breechblock interference.

How-so-ever, the grinding operation

is strictly a third echelon job.

So, if you've got a breechblock that takes two men and a mule to close, ask your support unit to take a look-see—could be your 106 needs a little shave.

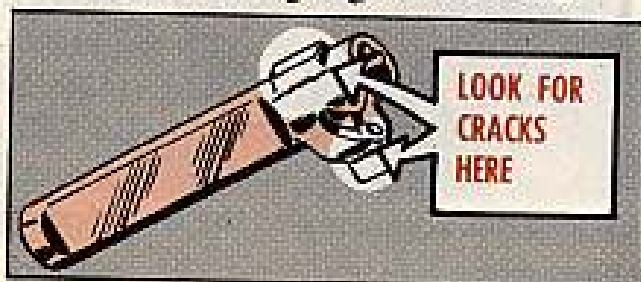
Going, going, gone

Three accessories for the .45-cal pistol are about to join the ranks of the Dodo bird—like, man, they're on the way out. The items about to bid farewell to the supply system are the brass can, FSN 1005-556-4158; the hand oiler, FSN 4930-580-8538 and the

M1912 pistol cleaning kit, FSN 1005-713-2889. They've been placed on the "stock exhaust" list—which means when the stock on hand goes, that's it... there ain't no more. And nothing will replace the three items.



Before you even get close to squeezing the trigger on your carbine, take a long look at the locking lugs on the bolt.



If you think a crack is making its way between the lugs and the body of the bolt, head for your armorer pronto. He'll send the carbine, bolt and all, back to your support unit if he spots a crack, or just thinks one is starting to show up.

Light switch switcheroo

There has been a switch in the standard military light switch. Headlight switch FSN 5930-307-8856 is a new item of issue that is replacing Headlight switch FSN 2590-338-3547.

The new switch is issue equipment on some of the latest tanks and trucks.

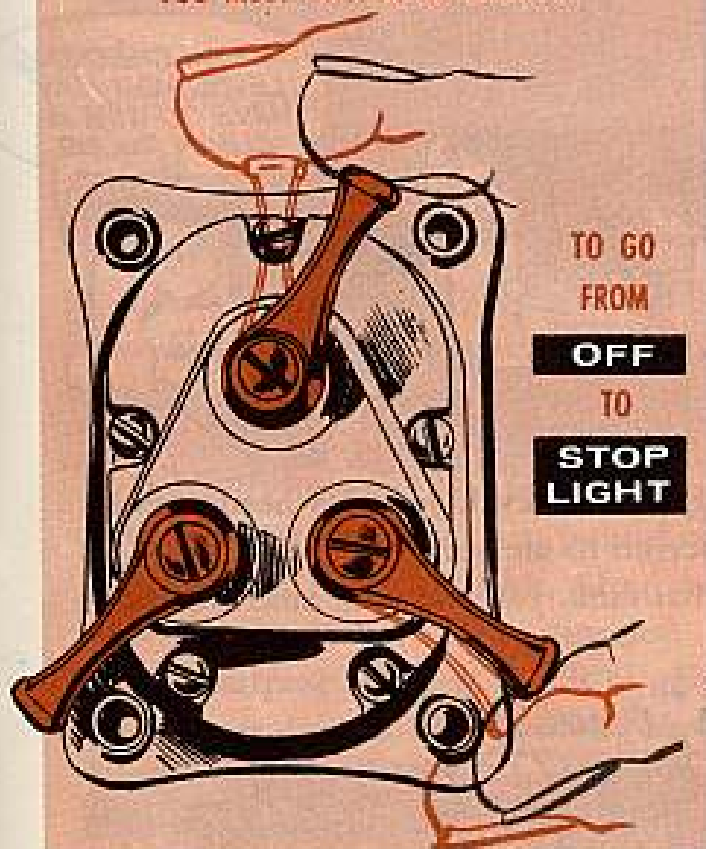
Now here is the part that's different . . . the new switch comes in two varieties, both of which go by FSN 5930-307-8856.

The two varieties look alike and both have to be unlocked to go to STOP LIGHT.

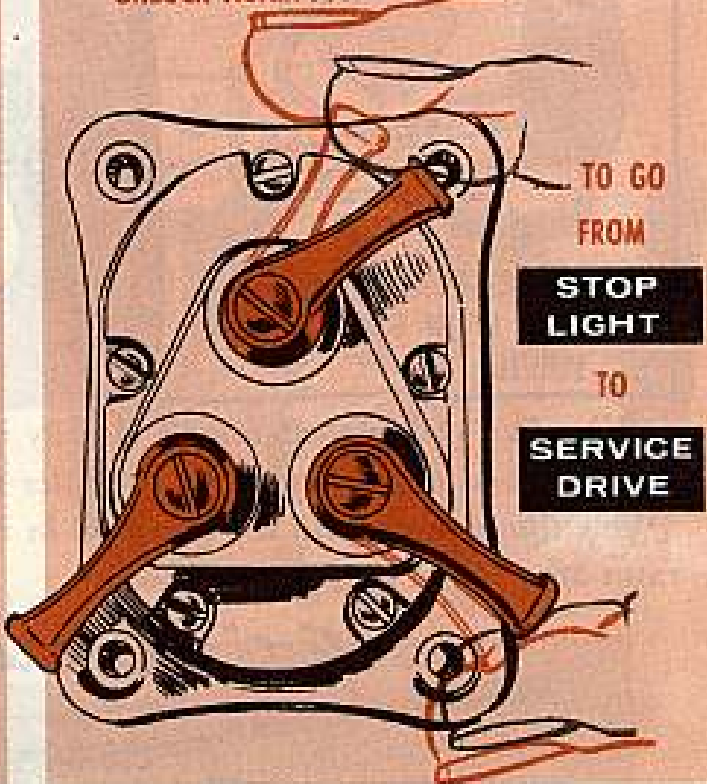
But there's one difference . . . One variety has a locking gismo between STOP LIGHT and SERVICE DRIVE so you can't get from one to 'tuther without first lifting up on the mechanical lock. The other variety doesn't have this feature, and you go between STOP LIGHT and SERVICE DRIVE in either direction by just moving the top lever.

That is the only way the two varieties differ. Either will do the job as long as you know how to work it.

YOU MUST UNLOCK ON BOTH . . .



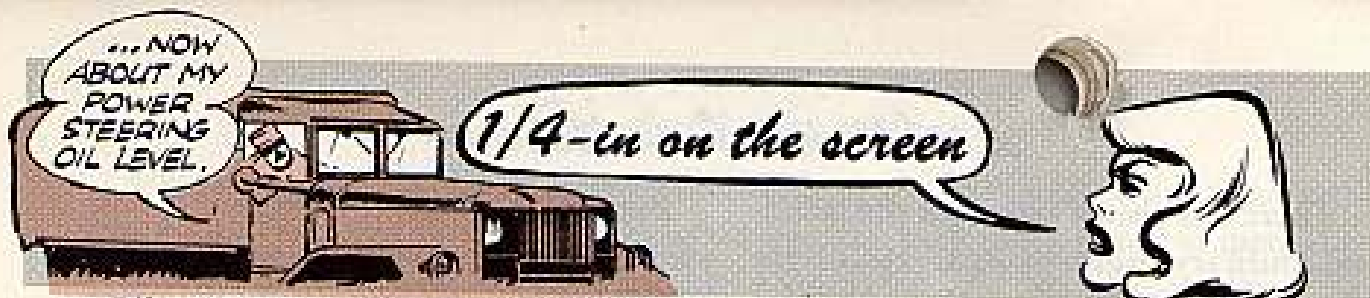
ON MOST, BUT NOT ON ALL YOU MUST UNLOCK AGAIN . . .



M60 tank warning

Do you go through a lot of extra sweat to turn on the turret blower in your M60 tank before you fire the main gun or the machine guns? Well, cut it out. 'Taint necessary. In fact,

MWO 9-2350-215-20/6 (Feb 62) says to remove the warning plate that told you to do it. This plate is in the right-hand part of the cupola above the vision block, near the cupola nameplate.

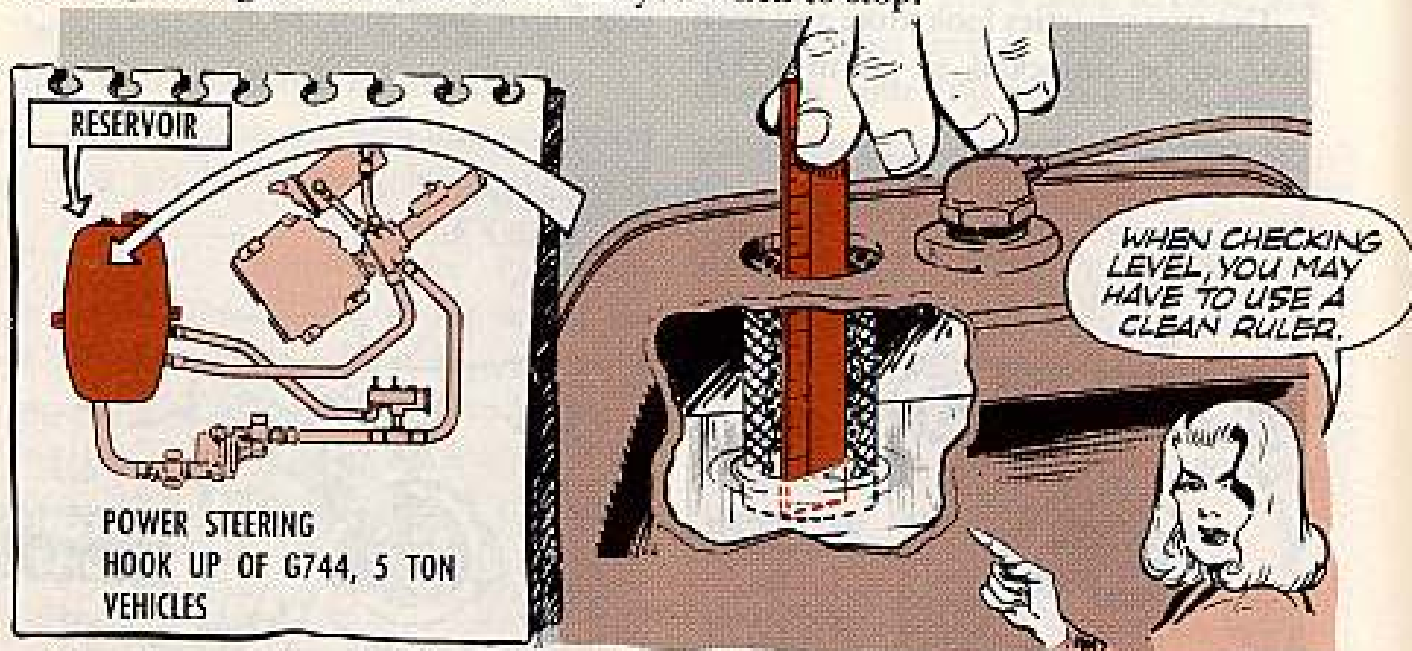


Like LO 9-8028 (15 Aug 57) says, you keep your power-steering hydraulic reservoir on G744-series 5-ton vehicles only three-fourths full.

That's right, just $\frac{3}{4}$ full. But how do you measure to make sure you've got the tank only $\frac{3}{4}$ full?

First, its capacity, like it says in Para 243b(2) in TM 9-8028 (Jun 55), is $8\frac{1}{2}$ quarts, but here's a better guide.

The oil level is right when its just $\frac{1}{4}$ inch above the bottom of the filler screen. And a shade less is better'n too much. Before oil reaches this level when you're pouring, a look inside will tell you when to stop.



But when you're checking oil already up to this level, you may need to poke the clean end of a ruler inside the filler screen to measure it.

One thing sure—with too much oil in that tank, you and your steering apparatus are in for a mess o' trouble.

Got "bufferitis" troubles?

Word has drifted in that some guys are having more than their share of problems getting the oil buffer assembly back into the oil buffer body on the 50-cal. M2 machine gun.

Mixed body buffers and tubes just might be the trouble.



Could be that the last time the weapon was checked out by support somebody pulled a rock and joined a new type tube with an old style buffer.



It can happen.

And getting this mixed up combo back into the buffer body group is enough to make Dracula bite his own veins—not to mention the damage this mismatch can do to the buffer guides and receiver.

The new type tube has no locking serrations, so the lock won't fully seat in the old style buffer body. When this

happens, the spring action of the lock forces the buffer body up and the guide lugs don't line up with the matching slots on the receiver—making reassembly a rough job and paving the way for real headaches.

So-o-o, if "bufferitis" is giving you



fits, ship the machine gun back to support and ask 'em to check out this possible trouble spot.



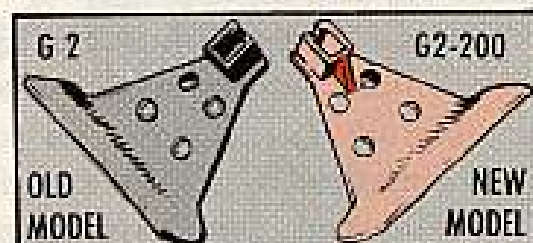
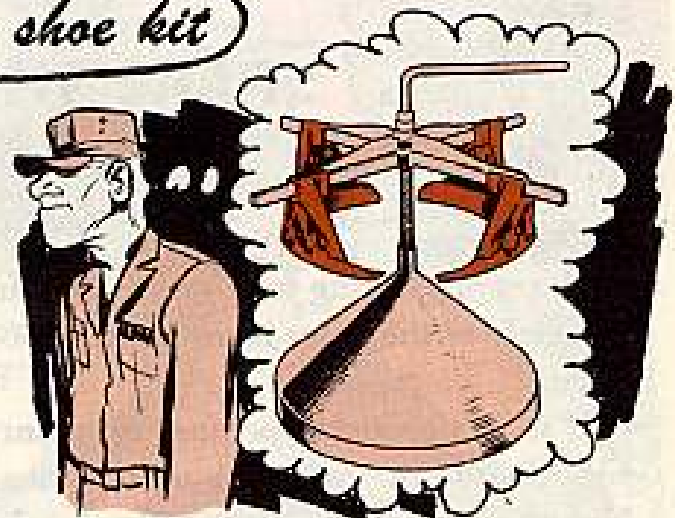
Get your shoe kit

Better not dilly-dally in asking for shoe kits to modify your pneumatic tire demounter (Lee Engineering Presto Model G-1), FSN 4910-683-9362.

You only have one year from the date MWO 9-4910-407-10/1 was published (15 Dec 61) to get your kit. After the year's up the MWO will be canceled.

The purpose of the MWO is to give you a more durable bead breaking shoe for your Model G-1 tire demounters so they won't break under severe use.

All you have to do is to remove the four old bead breaking shoes (marked G2) from the tire demounter and install the four new bead breaking shoes (marked G2-200). It's not a big job to do, in fact, you should be able to do it in 20 minutes.



Don't forget to put the following on your requisition: "PARTS TO BE SUPPLIED ON A NO CHARGE BASIS." That no charge basis doesn't apply to replacing unserviceable G2-200 shoes.

SHINE ON

WHAT'S THE BEST
CALL FROM OUTER
SPACE? BEAT IT
BUB-I'M TESTING.

Dear Windy Windsock,

SM 55-4-4220-S02 (19 Oct 61) lists all the parts for our Mark II vest life preserver — except one! We've been paging through supply manuals, without success, trying to figure out what type lamp (bulb) you use in the distress light, FSN 6230-255-0166, and which tech service has it. Can you help?

Dear Sergeant E. W. F.,

Sgt E. W. F.

Rest your eyeballs over a short brew. The lamp is a 1.3 volt, 0.10 ampere, G-3½ miniature screw base type with a tungsten filament in it. It's a General Electric number 131 and it costs about 17 cents apiece . . . usually comes in boxes of 10 with a net price tag of \$1.02.

The Bulb's an Engineer responsibility and—you've probably guessed it by now—you get it through local purchase.

'Course for battery replacement in your light you use Signal's standard flashlight BA 30, FSN 6135-120-1020—listed in the same SM.

That's right—the bulb is 1.3 volts and the battery is 1.5 volts—but don't get shook. The combo works fine after resistance and voltage-drop come into play.

Windy Windsock

SPARE THE BRUSH



Has spot painting your vessel got you reachin' for the paint brush a little too often?

If so, it's probably because the paint you're using isn't standing up to Dame Nature's appetite for it.

But there's a rust arresting paint compound around that'll stand up to salt water corrosion . . . cut down on your paint maintenance for real! It's authorized in Transportation Corps maintenance letter "Austerity Painting for Vessels in Storage," (18 Nov 59). But don't let the word "Storage" throw you—this paint's OK to use on active vessels too.

You can requisition it by running your peepers over Federal Supply Catalog C5-1-SL (1 May 61), for Rust Arresting Coating: Spec MIL-R-10036.

Here's what you can order:

FSN	Unit of Issue	Cost
8030-174-3242 (Eng)	55 gal. drum	\$77.00
8030-231-2344 (Eng)	5 gal. drum	8.00
8030-231-2349 (Eng)	1 gal. can	2.20

One thing though—this paint is just for touch-up or spotting above the water line of your vessel. So you don't want to go overboard by ordering more than you need.

JOE'S
DOPE

THE
LITTLE
EXTRA

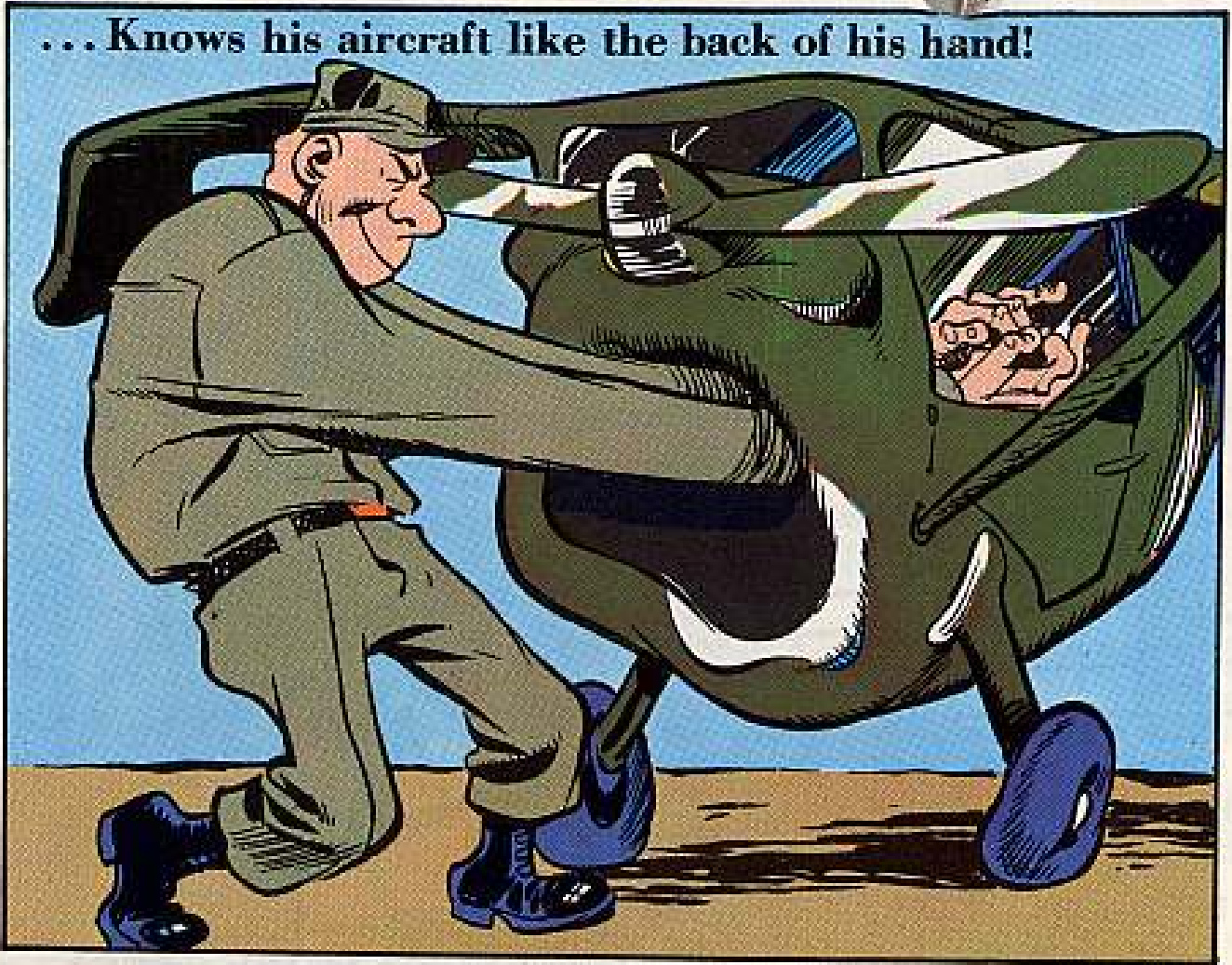
WHAT A MAN
IS
MY HARRY.



AS AN AIRCRAFT
MECHANIC...HE'S
THE BEST!

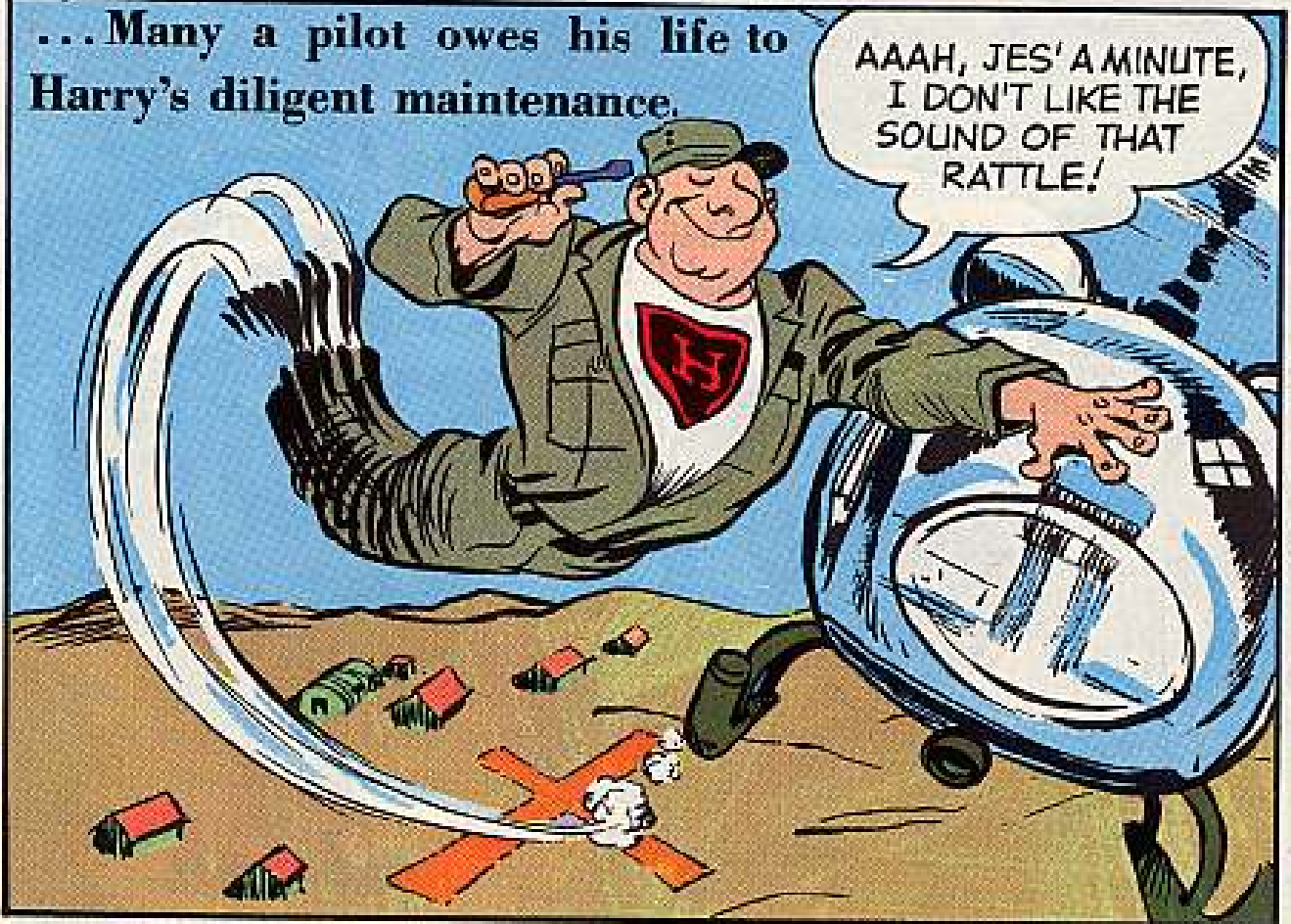


... Knows his aircraft like the back of his hand!



... Many a pilot owes his life to Harry's diligent maintenance.

AAAH, JES' A MINUTE,
I DON'T LIKE THE
SOUND OF THAT
RATTLE!



Pilots consider themselves lucky to draw Harry for their crew chief.

RIGHT!

LOUTENANT!
PLEASE TRY FULL
RICH AGAIN, I
HEAR A
PECULIAR
NOISE.

Then... the other day.

Y'KNOW, AL, I REALLY KNOW MY BUSINESS AROUND PLANES... BUT I CAN'T GET USED TO THESE FANCY ELECTRONIC GADGETS. YOU AVIONICS REPAIR BOYS WORK WONDERS WITH 'EM... AND I BREAK OUT INNA SWEAT JUST BEIN' AROUND 'EM!

YEAH,
HARRY, SOME OF 'EM GIVE US FITS, TOO. WE COUNT ON YOUR BOYS TO LOOK 'EM OVER... JUST AS LONG AS YOU KNOW WHERE TO STOP!

WADDAYA MEAN!!
I TELL YA, WE STEER CLEAR OF THEM THINGS!

YEAH,
SOMEBODY
OVER THERE'S
BEEN TINKERING.
LOOK 'EM OVER
AND CALL US,
BUT TELL 'EM
TO KEEP
THEIR
COTTON-
PICKIN'
PAWS
OUTTA MY
BLACK
BOXES!

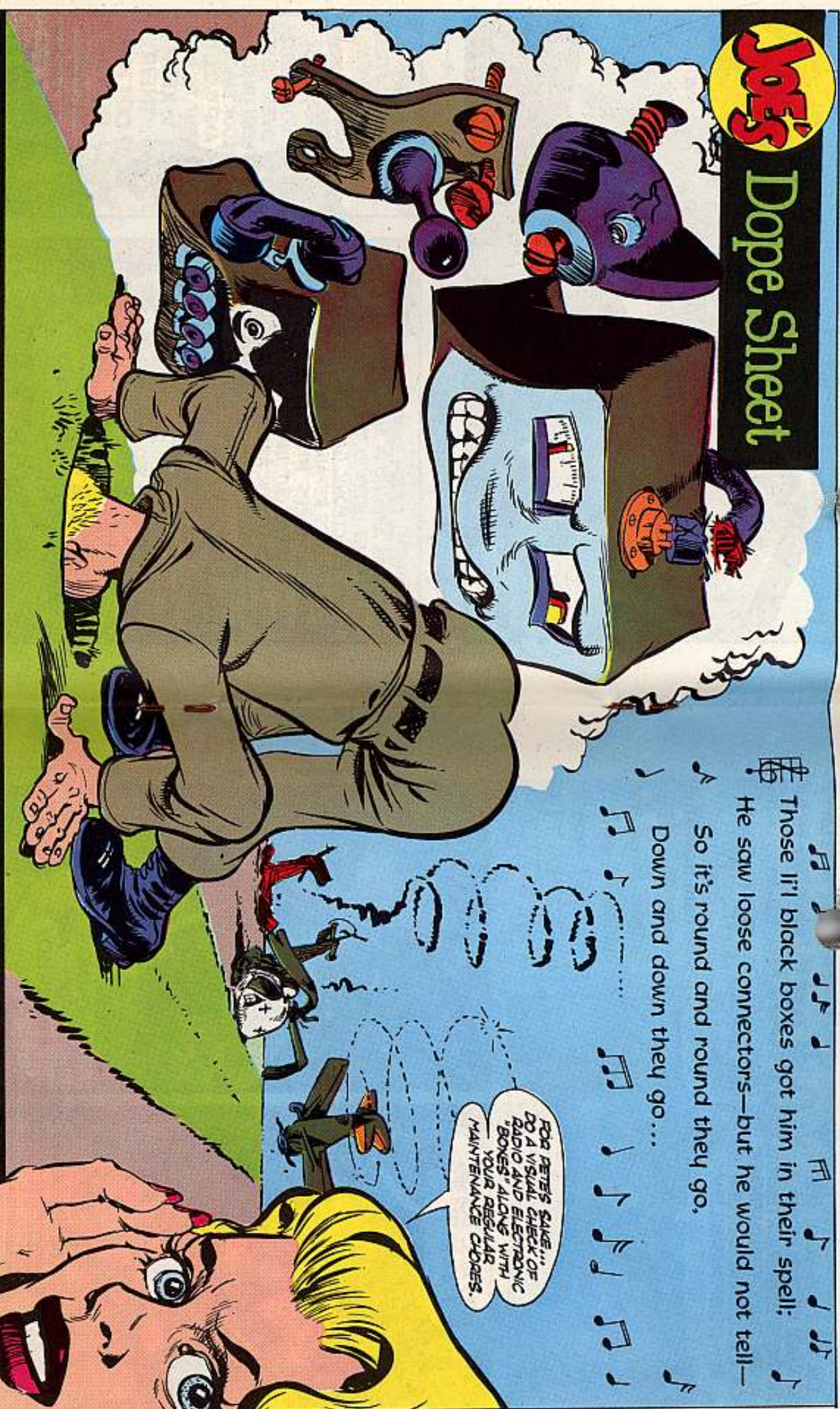
Joe's

Dope Sheet

♯ Those li'l black boxes got him in their spell;
He saw loose connectors—but he would not tell—

♪ So it's round and round they go,
♪ Down and down they go...

FOR PETER'S SAKE...
DO A VISUAL CHECK OF
RADIO AND ELECTRONIC
"BONES" ALONG WITH
YOUR REGULAR
MAINTENANCE CHECKS.



WE HAVE THE WORLD'S BEST EQUIPMENT

*Take care
of it*

IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.



I'M TELLING YOU, WE COUNT ON YOU FOR A LOOK-SEE, AND EXTERNAL WORK BUT... THE **INSIDES** OF ELECTRONIC STUFF IS MY RESPONSIBILITY!

OH KAY!

OKAY... IF THAT'S THE WAY IT'S GONNA BE...!
OKAY...

...w, my Harry ain't one to be pushy... why fight with his buddies... "From now on," he says, "I'm gonna mind my own business... You want I should lay off?? Okay!! I'll lay off, but good!"



YOU ALL DONE, HARRY??

POINNG!



YEAH, ALL THE THINGS I CAN FIX-- ARE FINISHED!

Well, yesterday poor Harry gets the worst layin' out he ever got....

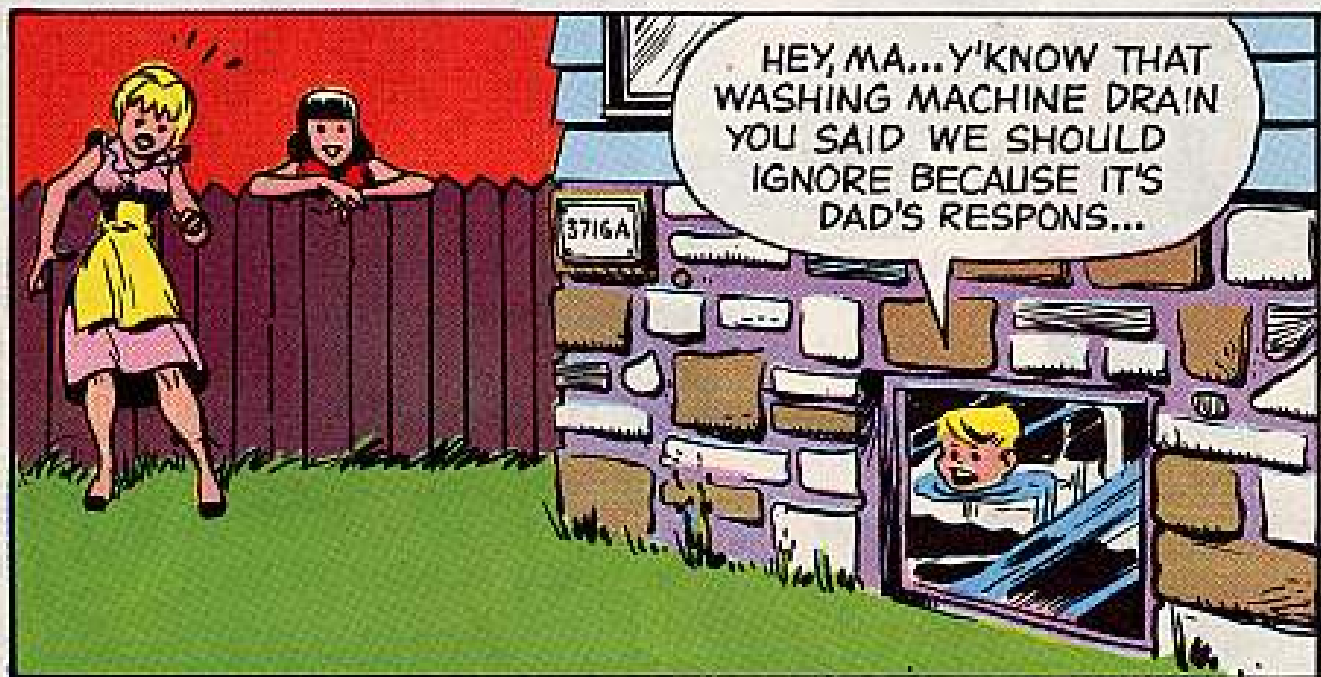


SO, WHAT DO YOU WANT FROM ME!?



VISUALLY INSPECT FOR...

-  **RADIO CONTROL PANELS, FOR LOOSE KNOBS AND SWITCHES**
-  **TIGHTNESS OF ELECTRICAL CONNECTIONS**
-  **SECURE LOCK-WIRING ON MOUNTS**
-  **CHECK SHOCK ABSORBING QUALITIES OF MOUNTS**
-  **FRAYED CABLES AND WIRING**
LOOSE TERMINALS
-  **NO BINDING IN INDICATORS**



PC LIFE PRESERVERS

**QUESTION
AND
ANSWER
DEPARTMENT**

THEY COME WITH...

THEY COME WITHOUT...



Dear Half-Mast,

Our outfit drew some M113 PC's but there were no life jackets in the on equipment material. We wuz robbed!

SFC J. B. B.

Dear Sergeant J. B. B.,

No, you wuzzent! Life jackets don't come with the OEM... but you can requisition them from your outfit's transportation officer.

If you're in an Infantry division your TOE authorizes 2,211 Life Preservers; the Armored division has 5,922.

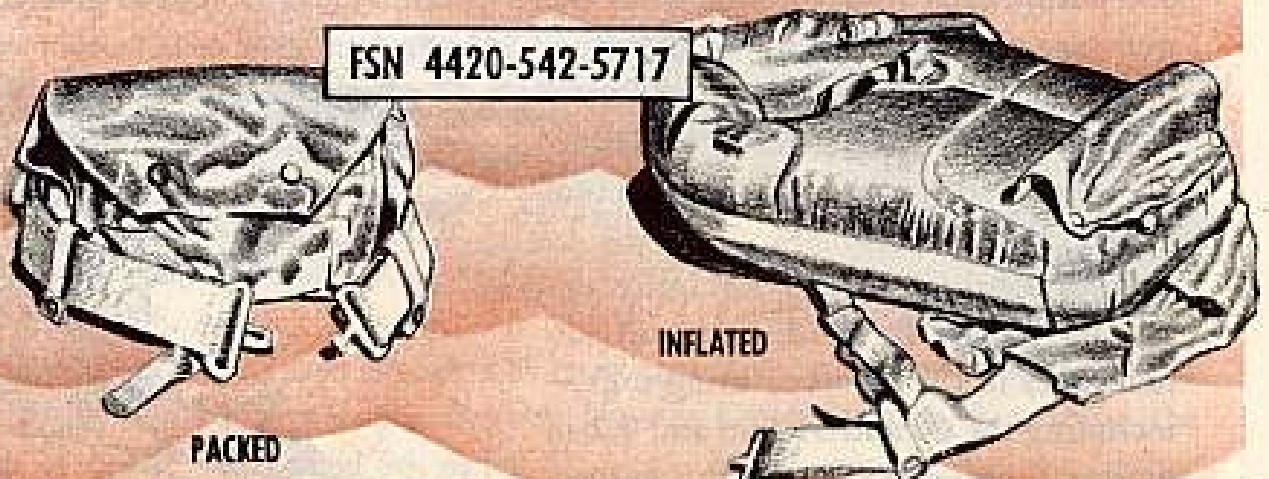
They're intended for crew members and passengers in PC's.

Your outfit's transportation officer

releases them for use with the PC's that go into operations where your CO decides life preservers are needed.

You get Life Preserver, Yoke Inflatable, under FSN 4220-542-5717 until present stocks are exhausted. After that Life Preserver, Oral Inflation, trapped air, adult, 26½ inches high will be issued. Its FSN is 4220-783-6609.

If you have the M59 or M84, the same thing applies.



GUN TUBE INSPECTION BUZZES



Dear Half-Mast,

Last week I was reamed, blued and tattooed by an IG inspector because the gun tubes of our 106-mm recoilless rifles hadn't been inspected by Ordnance within 90 days before our annual firing.

After climbing up one side of me and down the other—he laid it out in no uncertain terms that the next time he hit our post he wanted to see the inspection dates in our weapons' records.

You can be sure the weapons will be inspected and the dates will be entered in record the next time—even if I have to haul the 106's to Ordnance by mule train. But what I'd like to know is, where's this inspection program spelled out and does it apply only to the 106 or to all gun tubes?

Sgt T. G. S.

Dear Sergeant T. G. S.

TM 9-1000-202-35, Evaluation of Cannon Tubes, (May 59) is the bible on the inspection of gun tubes.

It spells out that Ordnance personnel will inspect gun tubes in the hands of using units—like so:

Within 90 days prior to initial firing and within each 90-day period when the guns are used for continuous or recurring fire.

Or within 90 days prior to initial firing when used for semi-annual, annual or irregular periods.

Another thing, and it's mighty important, so pass the word along—all cannon tubes in the hands of using units—including the 60 and 81-mm and 4.2-in mortar tubes—come under this inspection program.

And—as you found out the hard way—if a record has to be kept for the weapon, the inspection has to be noted in it.

So, the next time your unit's got a fire mission coming up . . . make sure you get the message to your Ordnance support outfit in time for it to send an inspection team around to give your weapons a final checkout.



M14 MASK CARE

Dear Half-Mast,

I'd like some information about the M14 type mask used in tanks and combat vehicles. How do I clean the hose? Also the lip mike? And where is it stored when not in use?

Li. M. C.

Dear Lieutenant M. C.,

The hose of the M14 type mask should be cleaned by brushing with a soft bristle brush. (Liquid cleaner in any form should not be used).

Clean the lip mike by wiping that part of the mike which extends from the nosecup pocket with a soft damp cloth (not wet) or with a soft dry cloth. Do not remove the mike from the nosecup pocket, and do not get the mike wet.

TM 3-4240-221-15 gives info on fitting and care of your M14 type mask.

Never store your mask in the tank. When the mask is not in use, it should



be stored in a cool, dry place and hung by the shoulder strap of the carrier or the D-ring to which the shoulder strap is snapped.

Half-Mast

AVGAS, ALAS!



Dear Connie,

The manual on my M447 semitrailer shop van, TM 9-2330-238-14, says we're to use JP-4, DF-A or DF-1 fuel in our Hunter UH-68 Heater. Would it do any damage to the heater if we used 86 octane Avgas, or higher, if we temporarily run out of the recommended fuel?

SP/5 E. A. M.



Dear Specialist E. A. M.,

Gasoline is OK, like it says in your TM (par 21c), but any gas that rates over 91 octane is considered too rich a diet for the Hunter UH-68 heater. You're on the safe side with your basic red 86, or 80-87 Avgas in this heater, but any higher grade of Avgas could damage the unit.

Connie

THE EASY WAY



Dear Half-Mast,

I'm the operations sergeant of a combat engineer company with a TOE authorizing six 3.5-in rocket launchers. According to FM 23-32 seven rockets are carried by each rocket team.

This amounts to a lotta weight to lug and it's a little on the clumsy side. Is there an ammo bag or something available to me before I wear my loaders down to a nub?

Dear Sergeant L. C.,

There're three ammo carrying outfits in the system—and if you place your order right away you might be able to save your loaders before they wear away to nothing.

The first — now a limited standard item — is the old faithful M2 ammunition bag, FSN 8465-261-6929. It's made of cotton duck and goes over your head, something like a sleeveless sweater. Just in case your memory needs a little jogging—here's what it looks like.



Next comes the M2A1 ammunition carrying bag, FSN 8465-261-4998, also a limited standard item. It's made of cot-

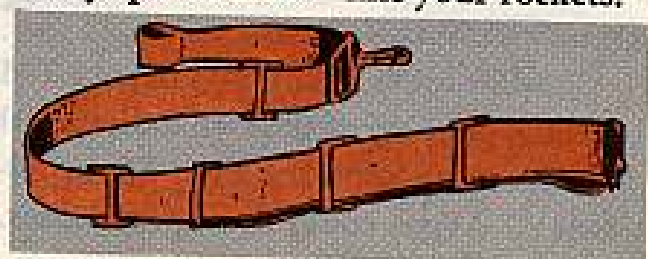
Sgt. L. C.

ton duck, comes with a carrying strap and looks like so.

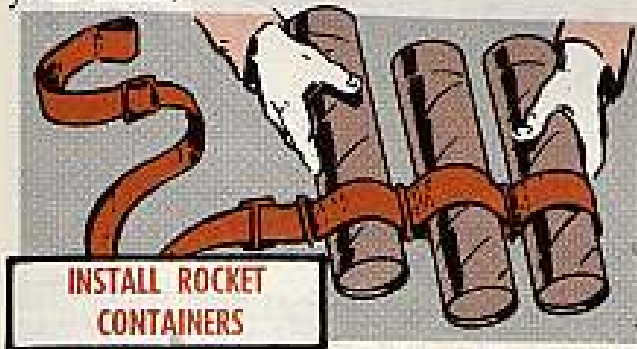


However, this bag is on the way out and is not available for issue from supply depots.

Finally, there's the new standard item called the universal load carrying sling, FSN 8465-753-3257. It's a web strap about six feet long that can be used to carry special loads—like your rockets.



Here's what it looks like and how you load and carry the rockets on your back.



FM 21-15 "Care and Use of Individual Clothing and Equipment" (Aug 61) gives you the complete story on this baby.

All three are QM items. If they're not listed in your TOE or TA 21—and your CO goes along with your need to have

one—follow the setup outlined in AR 725-5 as your authority to draw it from supply.

Your local supply people will give you whatever one they have on hand.

CV BOOT MOUNTING

Half-Mast

Dear Half-Mast,



There are several different opinions on the best way to mount the CV boots on our M35 2½-ton cargo trucks.

Some of us think the word "TOP" on the boot does not apply to the right wheel because, if you mount it that way, the zipper won't be under the brush protector.

Another group is all for putting the TOP to the top on both the left and right sides.

What is the correct way to do it?

"TOP" IT'S MARKED, AND "TOP" IT MEANS.

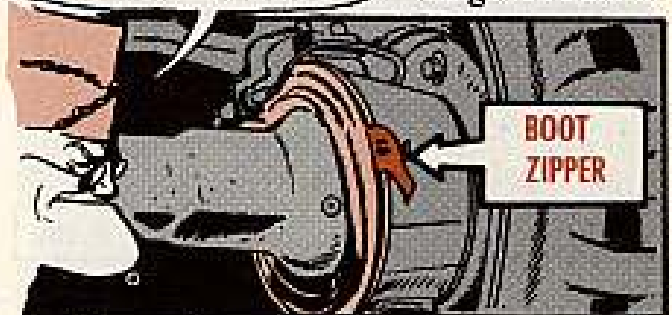
MSgt D. H. M.

Dear Sergeant D. H. M.,

Left or right, day or night, the TOP is always the top, Sarge.

When you put the CV boots on your G742-series vehicles, the part marked TOP goes to the top on both the left and right sides.

You put them on this way because the boots are made a little bigger at the top where you need the most room. The boot zipper on the left wheel will face forward and on the right it will face toward the rear.

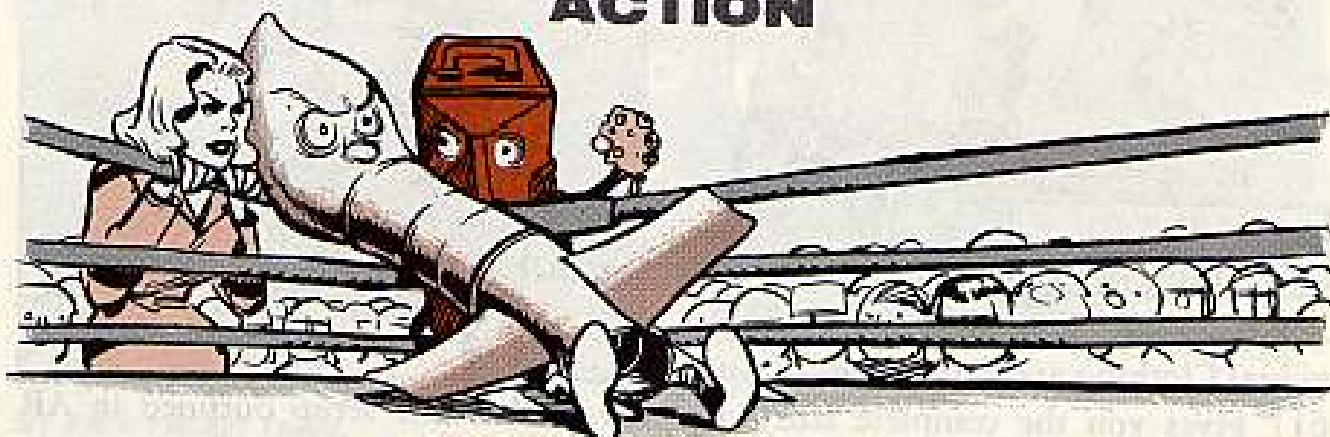


Regardless, the TOP is always at the top. This is spelled out in Change 8 (Nov 61) to TM 9-8022 (Dec 54). In Para 269 page 4 of this Change it says—

"With word TOP on boot alined with steering knuckle upper sleeve . . ."

Half-Mast

A LIGHTWEIGHT CHAMP READY FOR ACTION



Further proof that big things still come in small packages—is this tool kit for your Honest John rocket.

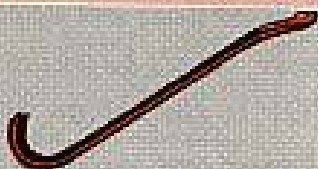
The tool box, loaded to the gunwales, weighs in at a little better than 50 pounds . . . but it's 50 pounds of mighty important tools to get and keep your Honest John combat-ready.

Here it is:

Just like SM 9-4-5180-A04, but with pictures yet, what you missile mechanics should have in:

TOOL SET, ROCKET: ORGANIZATIONAL MAINTENANCE AND ASSEMBLY, 762-MM, FSN 5180-034-8470 (ORD).

BAR, WRECKING: 3/4-in dia stk 30-in lg overall.



FSN 5120-293-0665

QM

BRUSH, PAINT: oval, 1 1/8-in dia x 1 1/8-in thk, 2 7/8-in exposed lg syn fil, w/chisel edge.



FSN 8020-297-6657

ENG

BRUSH, WIRE, SCRATCH: S wire, curved hdl, rocker rect face, 1 1/8-in to 1 1/4-in lg clear of block, four rows w, 18 rows lg, 6-in to 6 1/4-in lg, brush part, 14-in lg overall.



FSN 7920-291-5815

QM

HAMMER, HAND: car-penter's nailing, curved claw, plain neck, 16-oz hd wt.



FSN 5120-223-9124

QM



SOCKET, WRENCH ADAPTMENT SET, SOCKET HEAD SCREW: 13 pc metal box.



FSN 5180-322-6094

1 set QM

FSN	Description	Hex Square Size	Drive
5120-596-0934	Socket	1/8	1/4
5120-596-0940	Socket	5/32	1/4
5120-596-0938	Socket	3/16	1/4
5120-596-0939	Socket	7/32	1/4
5120-243-1673	Socket	1/4	3/8
5120-529-2562	Socket	5/16	3/8
5120-243-1675	Socket	3/8	1/2
5120-243-1676	Socket	1/2	1/2
5120-390-7796	Socket	5/8	1/2
5120-390-7797	Socket	3/4	1/2

5120-221-7960 Handle, 5 1/16-in long flex head, 1/4 sq drive.



5120-240-5396 Handle, 8 1/2-in long flex head, 3/8 sq drive.



5120-221-7958 Handle, 12 3/16-in long flex head, 1/2 sq drive.



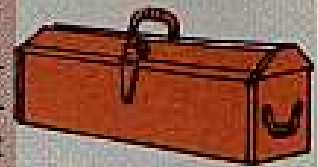
TAP, THREAD CUTTING: carb-S, hand type taper style, squared stght shk, dia of shk smaller than root dia of thd, 0.275 in w across flats, rht, 1 3/32-20 NF, four stght flutes 1/2 in lg, 3 3/8-in lg overall.



FSN 5136-199-7094

QM

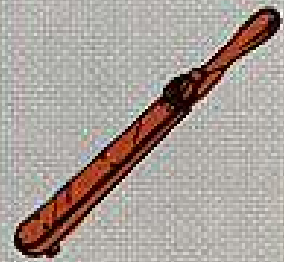
TOOL BOX, PORTABLE: S, silver dentone fin, 32-in lg x 8 1/4-in w x 9 1/4-in h overall, 1kg facilities incl nonintegral lock, two additional hdl, w/o saw & spirit level fittings, w/o sq opng.



FSN 5140-816-1791

QM

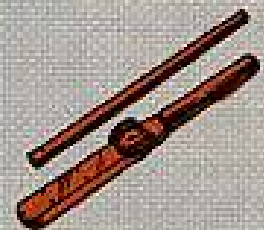
WRENCH, TORQUE: rigid frame end drive style, w/rtc adpt w/visual dial indicating torq mech, 1/2-in male sq-drive, 175 ft-lb cap, w/case.



FSN 5120-640-6364

QM

WRENCH, TORQUE: rigid frame end drive style, w/visual dial indicating torq mech, 3/4-in male sq-drive 600 ft-lb cap, w/case.



FSN 5120-221-7963

QM

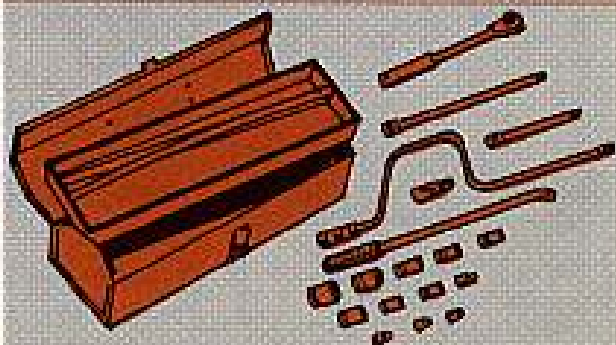
WRENCH, TAP AND REAMER, ADJUSTABLE: stght hdl type, no. 8 to 5/8-in bolt tap holding cap, 11-in lg overall.



FSN 5120-423-1633

QM

WRENCH SET, SOCKET: 1/2-in sq-drive 12 pt with case 22-in lg, 4-in high, 7 3/4-in wide, 3/16-in to 1-in opngs, three hdl, 18 pc in box.



FSN 5120-289-8665

1 Set QM

SOCKET, SOCKET WRENCH

FSN	Opng. Inches	
5120-189-7924	$\frac{3}{16}$	QM
5120-237-0924	$\frac{1}{2}$	QM
5120-189-7932	$\frac{5}{16}$	QM
5120-239-0019	$\frac{19}{32}$	QM
5120-189-7946	$\frac{5}{8}$	QM
5120-235-5870	$\frac{11}{16}$	QM
5120-189-7985	$\frac{3}{4}$	QM
5120-189-7915	$\frac{25}{32}$	QM
5120-189-7933	$\frac{13}{16}$	QM
5120-189-7934	$\frac{7}{8}$	QM
5120-189-7935	$\frac{15}{16}$	QM
5120-189-7927	1	QM

SOCKET WRENCH EXTENSION

FSN	Lg. Inches	
5120-243-7326	5	QM
5120-227-8074	10	QM

SOCKET WRENCH HANDLE

FSN	Type	Lg. Inches	
5120-230-6364	Brace	18	QM
5120-221-7958	Hinged	$12\frac{1}{16}$	QM
5120-230-6385	Ratchet	$9\frac{1}{2}$	QM

UNIVERSAL JOINT SOCKET WRENCH

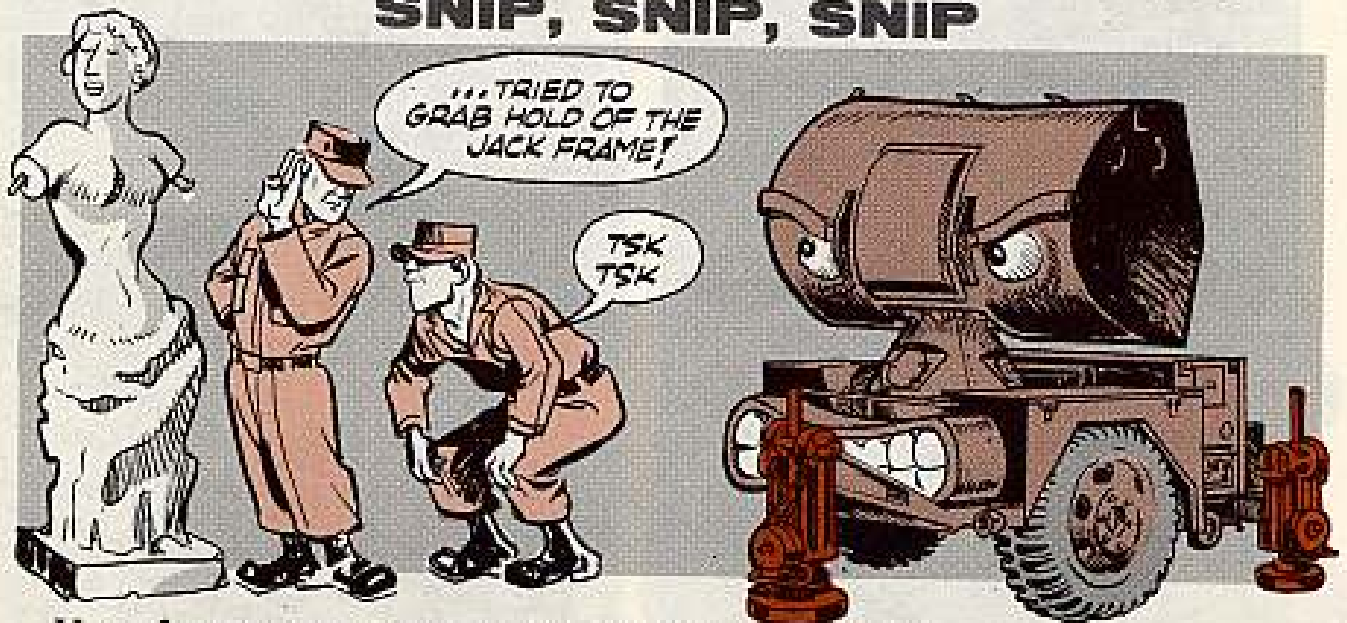
FSN			
5120-289-7971	Sq-drive	$\frac{1}{2}$	QM

FOLD THOSE LEGS

You know what these guys're doing? That's right... they're moving their Hawk assault fire command console—but the wrong way. You don't drag the console unless you're fixing to bust the three legs. Be kind to the console by folding the legs out of the way before you move it. And then use four guys—one at each corner—to move it.



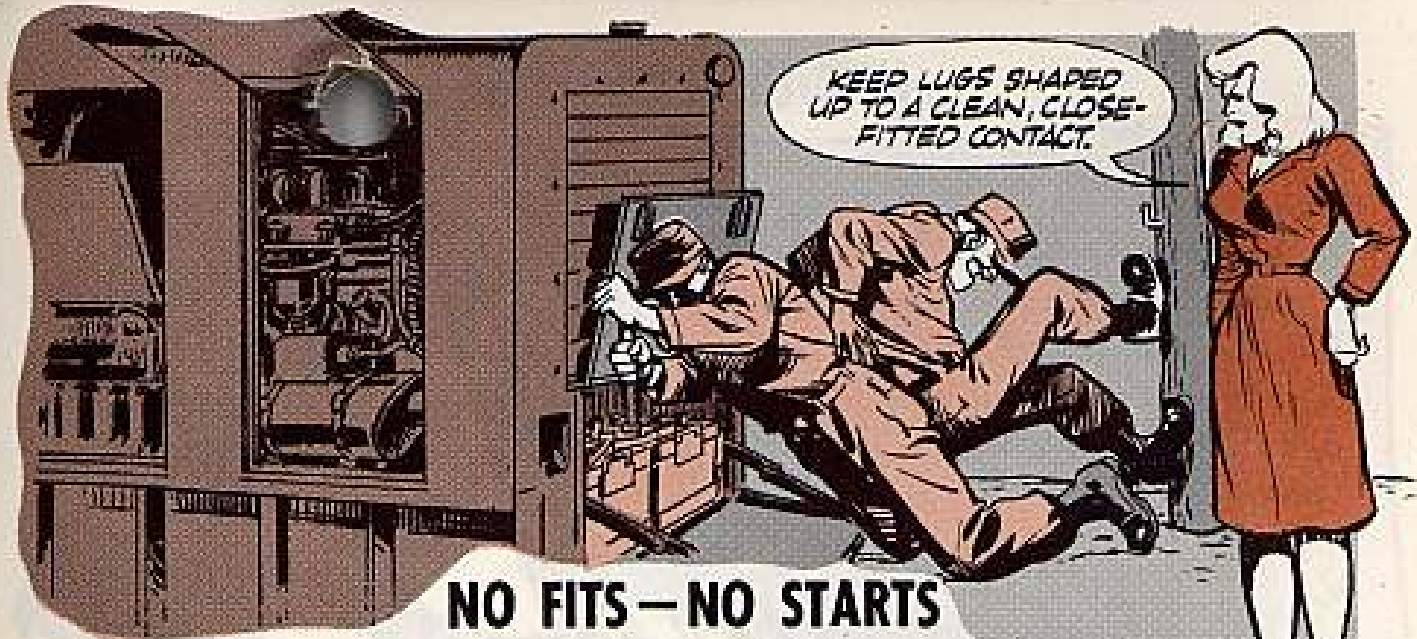
SNIP, SNIP, SNIP



Your fingers come in mighty handy for lots of things.

So... when you go to move your Hawk CW radars around, don't grab hold of the jack frame. The frame could make like a pair of scissors.

Play it smart... use the handle.

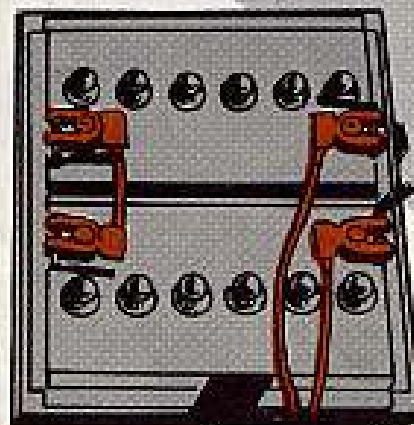


Those quick disconnect clamp-type battery lugs that come with some kinds of Engineer equipment are handy dandy —as long as you keep 'em shaped up to a clean, close-fitted contact.

But let those connections get corroded, dirty, or loose and trouble bobs up all over.

The battery posts melt or scorch. The battery gets overdrawn and undercharged. The solenoid and starter don't answer the the phone. Your rig is going nowhere.

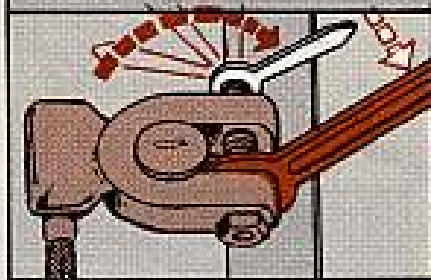
Now that's a revolting development nobody can easily explain, so here's how to keep it from happening to you—



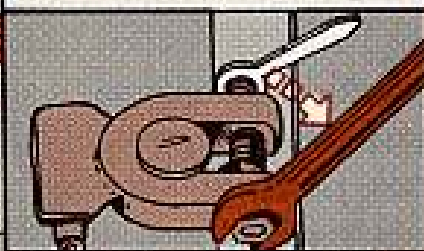
1. Like it says in all operator's manuals under "Battery", you keep all battery posts and connecting lugs clean and free from corrosion.
2. With the clamp-type lug, the tension that holds it connected with the battery post isn't as tight as with the standard lug. So you test it more often.

If you can budge it by hand, it needs tightening.

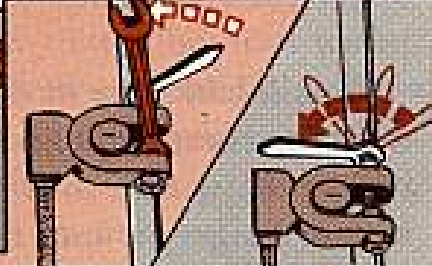
First lift the lug handle, then loosen the inside lock nut.



Now take up on the outside bushing nut until you get a good friction fit on the battery post.



Then tighten the inside locking nut, and close the connection by pulling down the lug handle.



And finally, top it off with a coat of protective grease like you would with the standard lug.

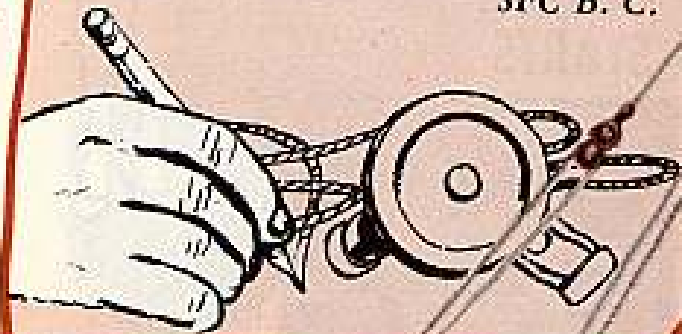


LINE UP A TAG LINE

Dear Sgt Dozer,

Our TOE 55-117D says we rate clamshells for our 10, 20, and 40-ton crane. But, there're no taglines listed and you can't operate without them. Why don't we rate the taglines and how do we go about getting them?

SFC B. C.



Dear Sergeant B. C.,

Agree with you—you can't operate your clamshell without a tagline. They should have been included in the TOE.

However, you can requisition them through your regular Engineer supply channels like it says in AR 725-5 (with changes 1 through 5), para. 15.1, a, (1), (b). You can justify your requisition on the basis that the TOE is incorrect and that the taglines are required for training or mission purposes.

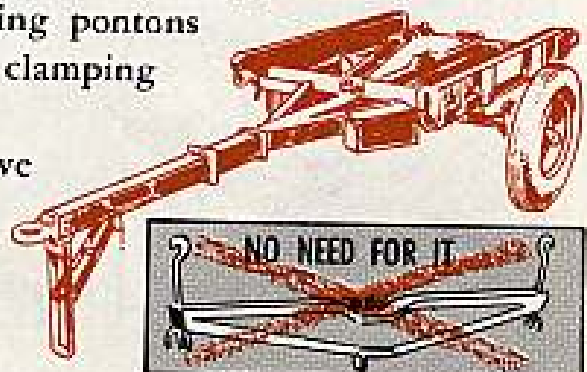
Sgt Dozer



THE BEAM'S OFF

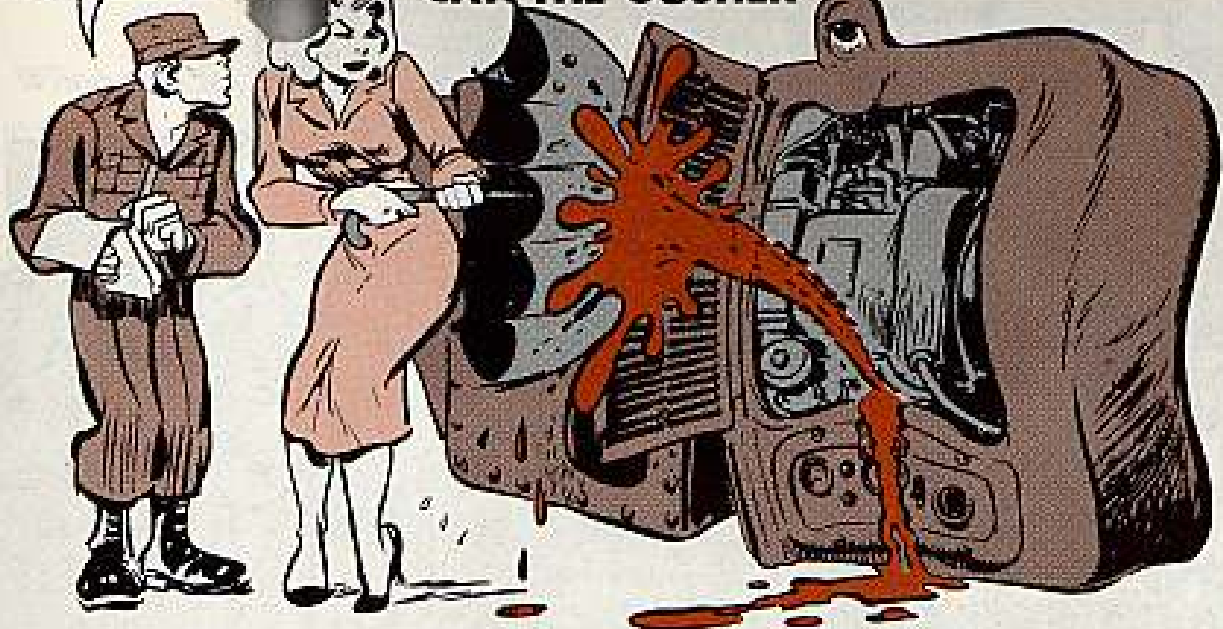
No need to be shook if the two-wheel, 2½-ton, pole type trailers you've been issued for transporting pontons didn't come equipped with a special boat clamping beam.

Awhile back some model trailers had to have the special beam to hold down the old-type ponton boats. But, since these pontons are no longer in use, there's no reason for needing the beam.

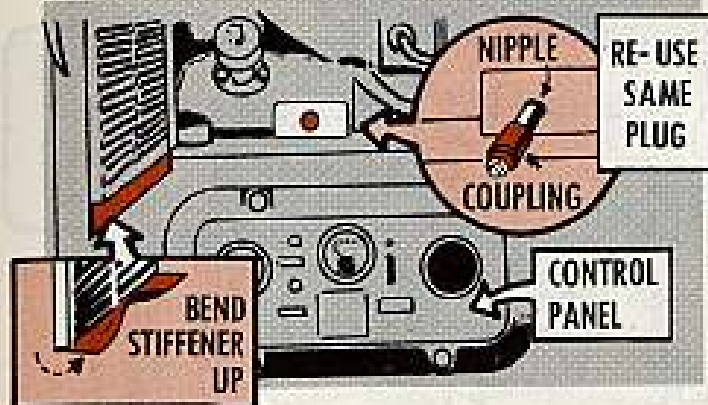


I GOT A FIX.

CAP THE GUSHER



Draining the engine crankcase on the Thermo-King refrigeration units, Model K-10, K-10B can be a mighty messy job.



The drain plug is located about three inches back from the side of the control panel, flush with the floor of the compartment.

Once you pull the drain plug, you've got an oil gusher spilling into, over, and down the front of the control panel—damaging both panel and instruments.

This'll tempt a guy to keep putting off draining the crankcase until next PM time.

You can cap this gusher and keep it under control by putting a pipe extension on the drain with no sweat.

HERE'S ALL YOU NEED:

- 1— $\frac{3}{8}$ -in galvanized steel nipple, 2 $\frac{1}{2}$ -in long, 18 NPT external thread, FSN 4730-196-1490 (Eng).
- 1— $\frac{3}{8}$ -in galvanized malleable iron coupling, 18 NPT internal thread, FSN 4730-187-7611 (Eng).

Just screw the nipple into the drain hole and put the coupling on the other end. Then, re-using the same drain plug, screw it into the coupling.

Bend the stiffener lip on the bottom of the unit door so it'll clear the drain plug extension and you'll be able to latch the door.

If you need help, let your support people lend a hand.

Come drain time a guy can stick a can or funnel in position . . . and the job's as good as done without a drip, drop, or dribble slopping up the unit, panel, or instruments.

A CONDITIONED MOVEMENT

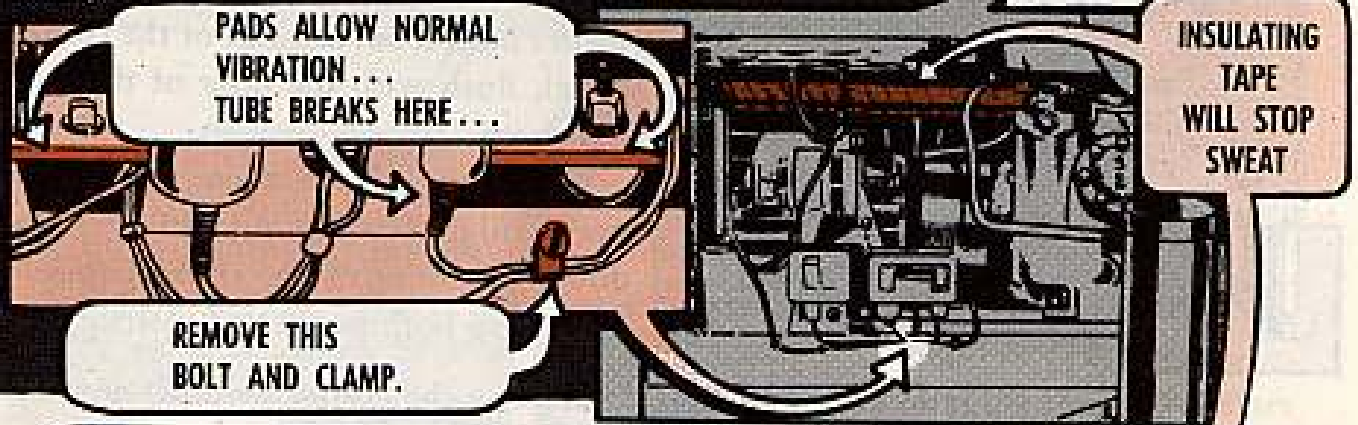
There's a lot to be said for free movement—especially in your Ellis and Watts Model A60 air conditioner.

The unit is mounted on rubber pads which allow normal vibration when it's operating.

However, since the capillary tube is clamped to the frame to prevent any movement at all, the vibration of the compressor causes the tube to break at a point between the pressure switch and the high pressure line.

A little planned movement is the answer.

No sweat to giving the capillary tube its freedom. Just remove the bolt and clamp holding it in check—let the tube move with the rest of the unit.



THE BIG DRIP

It's not the heat... it's the humidity.

Doesn't make any never mind what makes the uninsulated compressor suction line sweat on some of your Ellis & Watts Model A60 air conditioners.

The fact of the matter is—the line sweats... and drips.

Since this line runs right over the compressor motor, the condensate drips through the open motor stator and causes motor failure.

Now, there's no reason for this to happen.

You can keep this nude line from sweating by wrapping it with some 1/4-in x 2-in thermo-insulating tape. The tape comes in 15-ft rolls and you can requisition it through your regular supply channels under FSN 5640-618-7984 (Eng), or you can get it through local purchase.

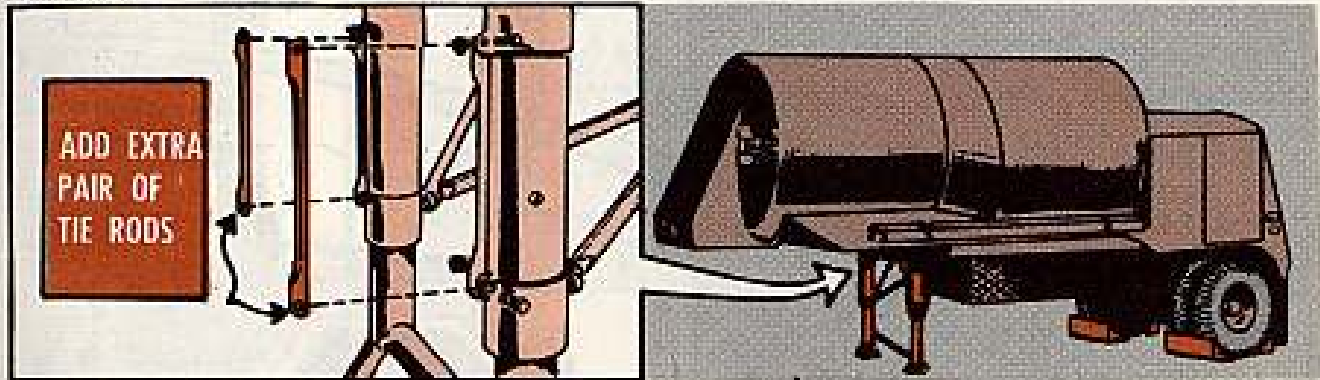
The line is easy to wrap and you've got enough on each roll to insulate a couple of A60 units and still have some left over.

TWO-POINT LANDING

When you let down the landing jacks of a Cambridge 217-30 lox tank, this is one time to make haste slowly.

The landing rig on this tank has to support a big share of the 18-ton gross weight. So you can't be too careful about setting it down solid and level, like they tell you in the TM.

Best time to fit and try the footing is before the tractor uncouples and takes distance.



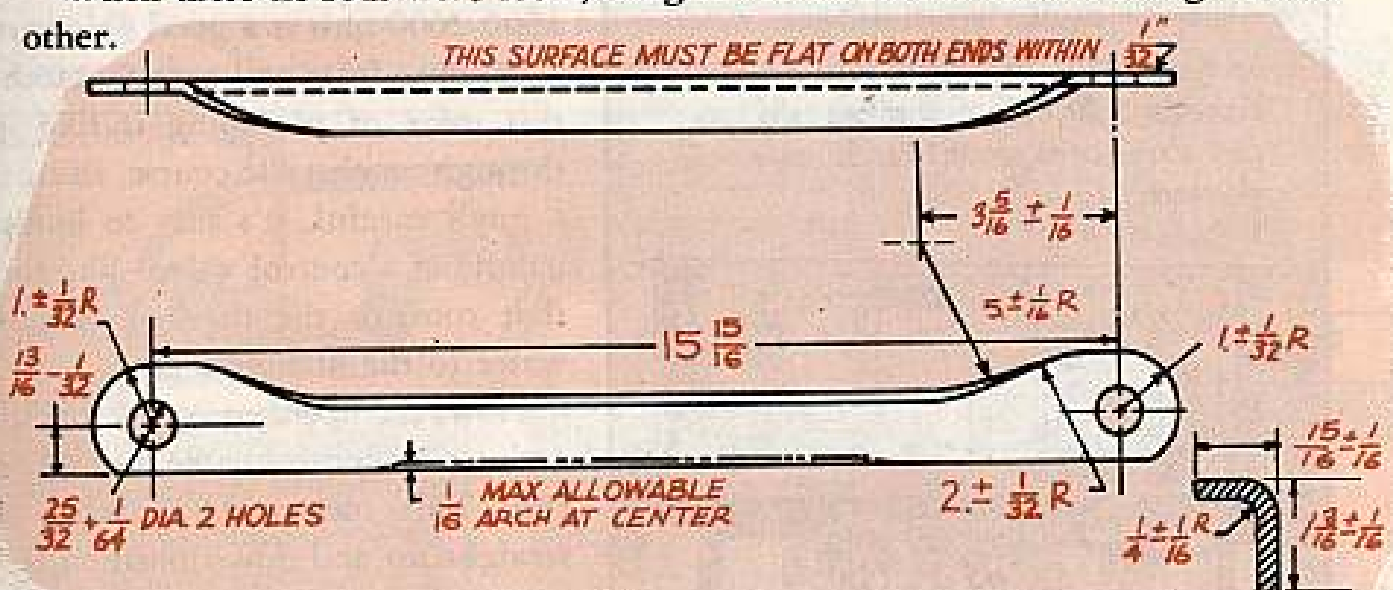
First, you chock the wheels. Then if the footing is soft—or daylight shows below either jack—hold everything while you level up a foundation of good solid blocking.

Now you crank the jacks down. E-A-S-Y does it!

Those gears and legs and re-inforcing rods are fitted to each other like the linkage on a racing car. It takes careful handling to keep 'em lined up like that.

At Q service, too, it takes a tool test to make sure no part of the landing linkage is losing its grip—specially the tie rods that run from the gear housing to the upper leg collar.

When these tie rods wear loose, the gears stand off and start chewing on each other.



Before that happens, better see your support people about fabricating an extra pair of tie rods. Fastened to the outside lugs on the housing and collar, they'll bring those gears back to work.



WATER WAGON

SHAPE-UP

Before you hit the road again with one of those big van-type Met-Pro water purifiers, here're some problems you can nip in the bud—before they blossom into thubarb in the field.

Max mix whether your Met-Pro is Model 3000-2700, or Model 1500-2600, chances are your rig has one or more of these problems.

PULL THE AIR DEFLECTOR PLATE

Some Met-Pro purifiers came out with an air deflector plate on the opening of the diatomite filter air release valve.

TAKE IT OFF
AND LEAVE IT OFF

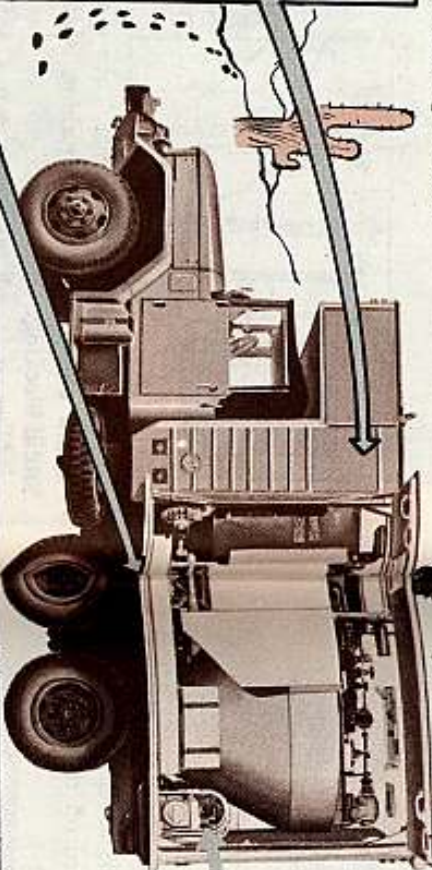
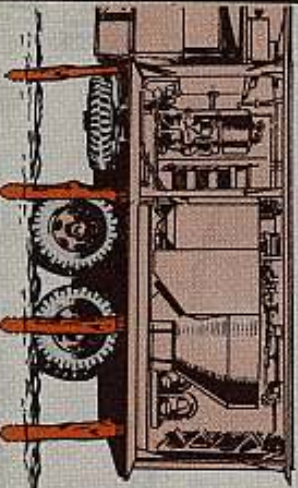


This plate blocks air flow from the release valve—chokes it off so much you can't do a good backwashing job on the filter.

SHORE UP THE FLOOR-A-DOOR

That lower door on the left side of the van—that opens like a platform—is not built for heavy traffic, like training sessions. Specially on the long Model 3000-2700, you can cure it in by holding class on that platform.

So you want to take along some blocking timber, and shore the door with a solid support when you're about to train apprentice plumbers.



NOTHING
DOIN' HERE
"BUZ"

INCH IT OVER

There're a lot of times when a couple of inches can make all the difference in the world.

Work space on your Met-Pro Model 1500-2600 unit is a good *f* r i n s t a n c e .

Moving from one area to another in this maze of plumbing is like going through an obstacle course. Even when a guy's careful, it's easy to bump the handle of a control valve—like the one that controls the flow of coagulated water to the filter pump.

Now, the operator opens this quick-acting gate control valve during a filter run. This means the handle's in a straight up and down position. It also means that the handle can be accidentally kicked closed when a guy attempts to step over it on his way through the van.

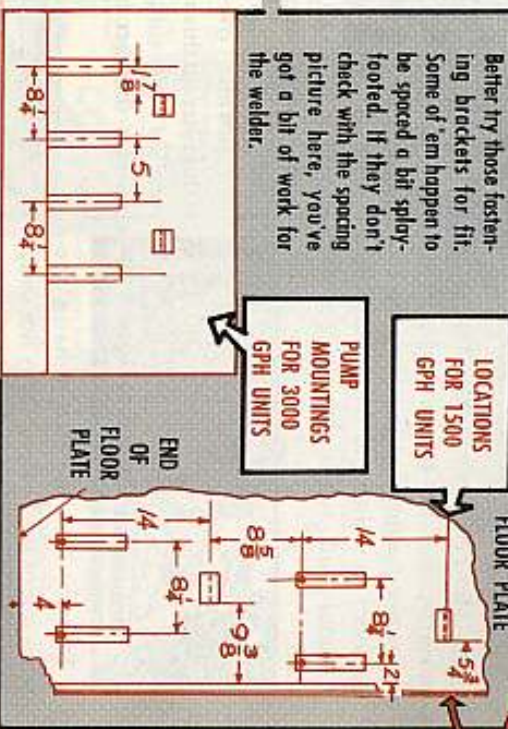
SCREW WATER PUMPS FOR TRAVEL

On both Met-Pro models, you'll find fastening brackets in the floor of the van for holding the raw water pumps steady on the road. Unless you secure those pumps by the frame, they can rock 'n roll around the tail of the van like a pair of mad mules.

Better try those fastening brackets for fit. Some of 'em happen to be spoked a bit splay-footed. If they don't check with the spacing picture here, you've got a bit of work for the welder.

LOCATIONS
FOR 1500
GPH UNITS

PUMP
MOUNTINGS
FOR 3000
GPH UNITS

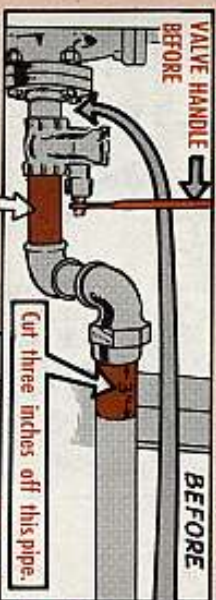


This is ungood—specially if the valve stays closed while the filter pump's operating. Running dry will ruin the seals, damage other parts of the pump, and leave you raising a thirst.

To put the odds in your favor, move the valve closer to the frame of the sludge concentrator tank—this'll keep the handle out of the way and all you'll have to hurdle is the pipe.

HERE'S HOW

Replace this pipe nipple between the valve and the filter pump with a length of pipe just long enough to complete the coupling. Just cut the right length from steel pipe, FSM 4710-278-5411.



Replace the present pipe nipple with pipe nipple four inches long FSM 4730-196-1533, Coupling, pipe, slip joint, 1/2-in pipe size.

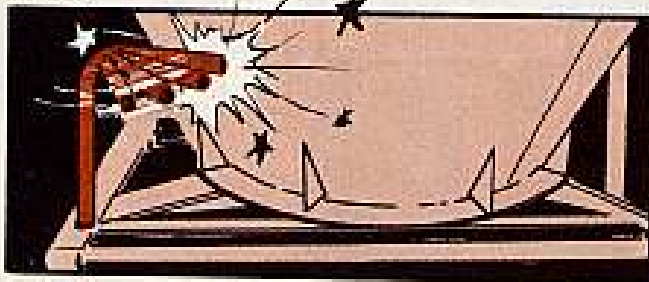
The steel pipe and nipple are available through regular Engineer parts supply channels.

Once reassembled, as above, you'll have no kicks coming.

RACK 'EM UP



On Met-Pro Model 600-2500 water purifiers, the front carrying handles of the water purification unit base have a tendency to swing and whang into the Erdlator tank when the rig hits the road.

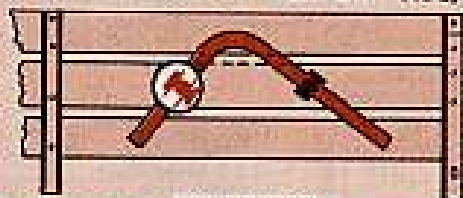


Before those handles whang the whey out of the Erdlator, why not strap 'em up on the trailer racks while you're on travel?

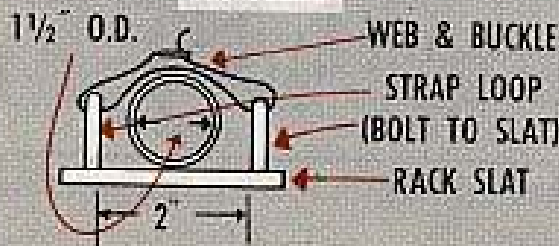
First you get four straps, FSN 5340-506-1515, and eight strap holders, FSN 5340-032-2707, from your Ordnance supply source. Then you bolt the strap holders at the necessary angle on your trailer racks.

CARRYING HANDLE
(SECURE OTHER HANDLE
ON L.H. SIDE)

FRONT RACK



SEE DETAIL



Now you're all set to stow those handles where they can't whang the Erdlator.

Meanwhile, over at the diatomite water filter on this same Met-Pro model, there's a fairly simple fix to replace any brackets that get busted off the housing.

REPLACE
BROKEN
BRACKET

You hack a new bracket out of 1/4-in thick aluminum angle 1 1/4 x 1 3/4 stock.

THEN YOU BOLT THE
LONG SIDE TO THE
FILTER HOUSING FLANGE

AND WELD THE SHORT
SIDE TO THE TUBULAR
FILTER FRAME...
WELD AT RIGHT AND LEFT.

THIS FIX COULD LAST
LONGER THAN THE
BAULN-PACKIN' PURIFIER.



A selected list of recent publications of interest to Organizational Maintenance Personnel. This is a list compiled from recent Adjutant General's Distribution Center Bulletin. For complete details see DA Form 310-4 with latest changes.

TECHNICAL MANUALS

TM 1-H37-5 Apr H-37 (Mojave) Preparation for Shipment.
 TM 1-1H-19A-4-20P May H-19 (Chickasaw).
 TM 1-1H-23A-4-30P May H-23 (Raven).
 TM 1-1H-34-4-20P May H-34 (Cherokee).
 TM 1-1H-37A-4-20P May H-37 (Mojave).
 TM 1-1L-30A-4-20P May L-20 (Beaver).
 TM 1-1U-1A-4-20P May U1 (Oiler).
 TM 1-2E-8985-4 May Parts List.
 TM 3-21D May Fallout Prediction.
 TM 3-4240-232-12 May Mask, Gas, Ammunition, M12.
 TM 5-244 May Multiplex Mapping.
 TM 5-4120-202-12 May Corp/La Crosse/Redstone/Nike air cond/heaters.
 TM 5-4310-214-10, C4 May Nike air compressors.
 TM 5-4920-209-15 May Nike/Corp/Redstone/La Crosse/Hawk Heat-Air Cond Equip.
 TM 5-4940-201-20P Apr Nike/Redstone/Corps air comp.
 TM 5-6115-261-10 Jun Hawk/Nike Power Gen.
 TM 5-6115-314-20 May Hawk/Nike Power gen.
 TM 9-1100-200-12 May Hermal John XM86.
 TM 9-1190-230-15 May Nike/Herc Maint.
 TM 9-1190-230-25P May Nike/Herc.
 TM 9-1400-500-12/2 May Hawk System.
 TM 9-1430-350-20/9 Apr Nike/Herc ground con equip.
 TM 9-1430-250-20P/4/2 May Nike/Herc ground con equip.
 TM 9-1430-250-20P/9 Apr Nike/Herc ground con equip.
 TM 9-1430-400-20P/2/2 May La Crosse Ground Handling Equip.
 TM 9-1430-501-20P/1 Apr Hawk ground con equip.
 TM 9-1430-503-20P/1 Apr Hawk ground con equip.
 TM 9-1430-503-20P/1 May Hawk ground con equip.
 TM 9-1430-505-20P/1 May Hawk ground con equip.
 TM 9-1440-300-20P/1 May Hawk ground handling equip.
 TM 9-1550-200-10 May Target Missiles.
 TM 9-4935-401-14/1 May La Crosse test equip.
 TM 9-4935-402-12 May La Crosse test equip.
 TM 11-6125-207-20P May.
 TM 11-6125-215-12P May PU-475.

TM 9-4935-403-14/6 Apr La Crosse test equip.
 TM 9-4935-404-14/1 Apr La Crosse test equip.
 TM 9-4935-404-14/3 May La Crosse test equip.
 TM 9-4935-404-14/10 May La Crosse test equip.
 TM 9-4935-405-14/4 May La Crosse test equip.
 TM 9-4935-405-14/6 Apr La Crosse test equip.
 TM 9-4935-412-12 Apr La Crosse test equip.
 TM 9-4935-500-20P/1 Apr Hawk test equip.
 TM 10-5110-201-12 May Drawn, Collapsible, Liquid Fuel, 500-Gal Cap.
 TM 11-1290-200-20P Apr Flash Ranging Set AN/GTC-1.
 TM 11-1520-201-20P May.
 TM 11-2230-200-15P Apr Track, V-18A/MTQ.
 TM 11-4920-208-14 May.
 TM 11-5410-205-12P May Shelters, 3-12x/G & 5-11x/G.
 TM 11-5805-214-20P May Multiplexor Set AN/TC-13.
 TM 11-5805-226-25P May Repeater, Telephone AN/MCC-2.
 TM 11-5805-230-12 Apr Repeater-Major Group, Telegraph AN/FOA-4.
 TM 11-5820-292-20P Apr AN/PRC-6A, 10A.
 TM 11-5820-333-25P May Radio Receiving Set AN/WK-3.
 TM 11-5820-430-20P May Speech Amplifier BC-614-E, BC-614-H & BC-614-I.
 TM 11-5821-204-12 May.
 TM 11-5821-204-20P May.
 TM 11-5821-229-12 May.
 TM 11-5830-340-20P May Intercommunication Set AN/VRC-1(V).
 TM 11-5840-244-20P May Target Missiles.
 TM 11-5841-216-10 May.
 TM 11-5841-216-20P May.
 TM 11-5841-216-24 May.
 TM 11-5841-257-20P May.
 TM 11-5895-208-20 Apr Interrogator Set AN/TX-27.
 TM 11-5915-201-23 May.
 TM 11-5965-234-12P May Header, Electrical H-758/AIC & H-750/AIC.
 TM 11-5985-200-12 May.
 TM 11-5993-212-12 May.
 TM 11-5995-223-20P Apr Panel, Patching SP-375/MSC.
 TM 11-5995-281-12P Apr Operations Central AN/F5Q-3.
 TM 11-5965-242-12 May Headset, Microphone H-103/D.
 TM 11-5985-200-20P May.
 TM 11-5985-207-15P May Antenna, AT-433/QR.
 TM 11-6415-204-12 Apr.
 TM 11-6615-218-12P May.

TM 11-6623-299-20P May Target Missiles test equip.
 TM 11-6625-498-12 May Test Set, Radio Frequency Power AN/USM-161.
 TM 11-6625-501-14 May.
 TM 11-6740-241-25P May Editor, Motion Picture Film ES-21(2).
 TM 11-6760-214-12 Mar.
 TM 11-7490-202-20P Apr Recorder-Reproducer Set, Sound AN/FNQ-3.
 TM 55-1510-202-20P Apr L-19 (Bird-dog).
 TM 55-1510-204-10 Apr AO-1 (Mohawk).
 TM 55-1510-204-20P May AO-1 (Mohawk).
 TM 55-1520-202-20 May H-34 (Cherokee).
 TM 55-1520-203-10 May H-37 (Mojave).
 TM 55-1550-200-20P May Drone USD-1.
 TM 55-2220-210-20P May Railway Car, Guard 56%, In No. G13 thru G 19-Domestic.
 TM 5-3895-220-20P Apr Distributor, Biluminous Material, (Standard Steel Works Inc. Model 424-56-CE61) and (Seaman-Gunnison Model 424-56-CE61).
 TM 5-4110-201-25P Apr Ice Making Plant, Skid-Mtd., Reco Model.
 TM 55-6930-200-20 May.

LUBRICATION ORDERS

LO 5-2410-204-20-4 May Tractor, Full Tracked, Caterpillar Mod D-8.
 LO 5-2431-201-20 May Welding Machine, Arc, Gen, 300 Amp DC Arc Skid Mtd.
 LO 5-3825-209-15 May Sweeper, Rotary, (Mars Industries Inc Model MF35W).

MODIFICATION WORK ORDERS

MWO 9-1430-502-20/20 May hawk ground con equip.
 MWO 9-4935-500-20/14 May Hawk test equip.
 MWO 55-1510-204-20/1 May AO-1 (Mohawk) Second Fire Extinguisher.

MISCELLANEOUS

ORD 7 SNL Y-4, Sec 4 May Nike ground con equip.
 ORD 7 SNL Y-8 May Nike ground Handling set equip.
 ORD 7 SNL Y-17 May Nike/Ajax ground handling equip.
 ORD 7 SNL Y-19, Sec 2 May Nike/Ajax test equip.
 TB AVN 23-5-1 May LR Digest
 TB AVN 23-65 May Cond Components Hist Data.
 TB ENG 366 May Storage, Inspection, Repair Instructions for Canvas, Rubber.
 TB 9-342 May Nike test equip.
 TB 55-1510-202-20/1 Apr L-19 (Bird Dog).
 TB 55-1520-207-20/4 Apr HU-1 (Iroquois).
 TB 55-1520-208-20/3 Apr HU-1 (Iroquois).

WHAT PACKAGE



Those nickel-cadmium batteries showing up in the latest aircraft—and other equipment—are just 'bout the best package of power for an electrical system that's come along since the original lead-acid battery.

They can:

Be charged in a short time;

Keep a steady voltage even when being discharged at high rates;

Stay idle in any state of charge for an indefinite time—and keep a full charge when stored for a long time;

Be charged and discharged any number of times—and even be reverse-charged without damage.

In short, they can very well outlast the equipment they're used in.

And if a cell does go on you, it can be replaced all by its lonesome without chucking the whole works.



By now it should be mighty plain up the first and most important point that these babies must be something about these new batteries:

special—and plenty expensive. They are special and they are expensive—ranging from \$400 to \$1000 as compared to around \$10 to \$50 for the lead-acid type.

They're so special, as a matter of fact, that you shouldn't even speak of them and the lead-acid type in the same breath.

These nickel-cadmium batteries contain potassium hydroxide and distilled water. Chemically speaking, this is just about the exact opposite of an acid. And as you know, your lead-acid batteries use sulphuric acid. Which brings

OF POWER



"HOSPITAL" CLEAN

Now, the ordinary battery shop is anything but the cleanest place around. So, it's a good idea to set up a second battery shop, including separate tools, just for these nickel-cads. Then, any traces of acid picked up by your hands or tools, or from the battery charging bench won't contaminate your new pride and joy.

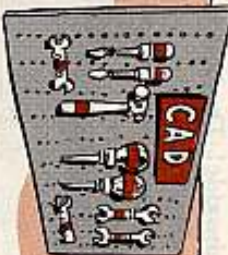
If this seems like going overboard a little bit, just remember one thing. The saving of just one expensive nickel-clad from acid contamination will go a long way toward paying for the extra precautions.



IT'S IMPOSSIBLE TO SET UP SEPARATE BATTERY SHOPS, HERE'S THE VERY LEAST YOU CAN DO:



Set up separate bench facilities at opposite ends of the room. Mark each area clearly and keep everybody briefed on the importance of keeping everything separate. A casual visitor could flub you up royally if he happened to switch tools accidentally. The nickel-cad area should be "hospital" clean.



Use separate and widely-spaced tool racks for each type battery.

Color-code the racks and all tools to help you keep everything separated. Some units color-code the racks and tools—including syringes—red for the acid batteries and blue for the nickel-cadmium.



Course, if you have a shortage of tools, you'll have to use them on both types. But be absolutely sure you wash and rinse them with plenty of clean, hot water after they're used on either type. 61 soap plus a good rinsing should do the trick.



The hydroxide used in the nickel-cads will give your tools a very slippery, soapy feel. A lot of washing will get rid of the stuff, but to speed up the cleaning, try this:



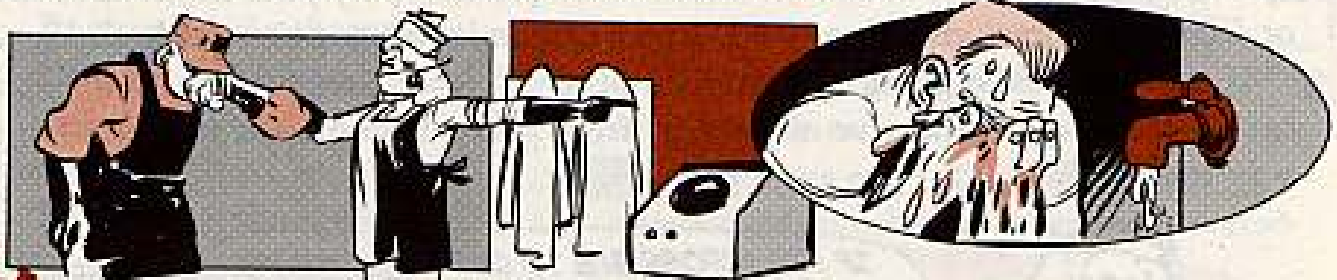
Dip the tool or item into a mild solution of vinegar. Then rinse it in warm water until you can't smell the vinegar any longer.

WEAR PROTECTIVE CLOTHES

'Course when it comes to working around any batteries you want to take the usual safety measures, like wearing rubber gloves, an apron and face shield. And for a good reason.

The potassium hydroxide is very cor-

rosive. So if you spill it on your clothes or skin you want to flood the area pronto, with cold water or a boric acid solution. A check with the medics is also in order, especially if the solution hits your eyes.



Usually you won't have to be concerned with spilling the electrolyte, since your batteries should be filled when you get them. But when any cell loses more than one ounce of electrolyte, you'll need more electrolyte.

You use the liquid electrolyte, FSN 6810-543-4041, right out of the container it comes in, with nothing added.

But if you should happen to get the electrolyte (potassium hydroxide, reagent grade, specific gravity 1.305 ± 0.005) in solid pellet form, then you turn it into liquid by using distilled water. And that means distilled water—not any of that corner service station stuff.

When the potassium hydroxide and distilled water are mixed to produce your electrolyte, you get a terrific heat build-up. So when you mix the solution, always add the potassium hydroxide into the water very slowly and let it dissolve.

Never pour the water into the potassium hydroxide! The heat build-up may be so sudden it'll throw the electrolyte right back at you!

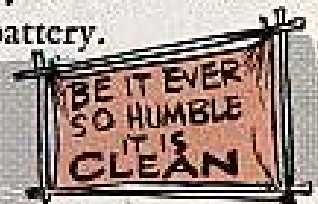
Any bottle or container of electrolyte should be clearly labeled—and color-coded to match the rest of the materials you use with the battery.

WANTED—A CLEAN HOME

When you replace an acid-type battery, say in an aircraft, with a nickel-cadmium, you've got some things to do

first.

The battery compartment has to be clean, dry and free of all traces of acid



from the old battery. The area should be painted with an alkali-resisting varnish to be on the safe side. Varnish, Spec TT-V-119, FSN 8010-597-7856 will do the trick. This number gets you one gallon.

The pad in the sump jar of the air-

craft should be saturated with a 3 per cent (by weight) solution of boric acid and water before the battery vent system is connected. To prevent any possible return flow to the top of the battery — like during acrobatics — pour any remaining liquid out of the jar.

BRUSH ME

Once the new battery is connected into the bird's electrical system it doesn't need all the attention your old lead-acid type did.

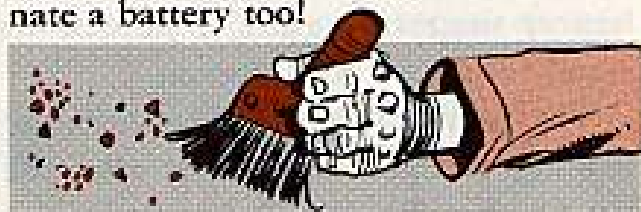
For example, this baby can't get damaged by freezing so you don't have to lug it out of an aircraft to a warm spot to have it hold the charge. It'll even take a charge at -65 degrees F. Takes a little longer but she'll charge! If you have to charge her at -40 degrees or so, loosen or remove the vent plugs. The rubber "pop valve" may stiffen and not release when it's this cold.



All she generally needs is the once over with a stiff fiber brush (not wire) on the case and cell tops. Should you happen to get an overcharge, gassing and bubbling of the electrolyte through the vents may give you a white film of potassium carbonate. Just brush it off.

One thing though—be sure the vent plugs are closed before you make with

the big brush action. Dirt can contaminate a battery too!



No paint or anti-corrosion compound is needed on the outside of the battery either. It's not allowed, for that matter.

And no capacity tests are needed. The only true indication of the state of charge is the amount of current the battery draws when it's connected to a constant potential charging bus — the



higher the state of charge, the less current she draws.

In other words, you can't determine the charge by a voltage check or by a specific gravity check of the electrolyte. The electrolyte is not changed by the chemical reaction which takes place in the battery... it's the same whether the battery is charged or discharged.



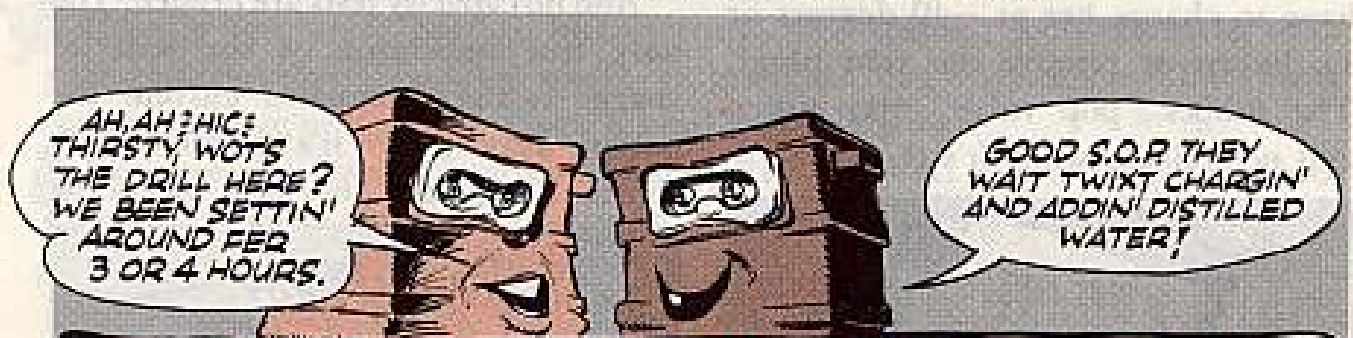
The level check on your nickel-cadmium battery is usually made at the battery shop during major inspections—and for a very good reason.

The only way you get an accurate reading of the fluid level is after the battery has been cycled (discharged and charged).

So the battery wants to be charged first and left to settle three or four hours before you decide to add distilled water

to bring the electrolyte up to the proper level. If more than an ounce has been lost, add electrolyte.

You can use a hydrometer or syringe to put the distilled water in with... just enough to cover the top of the plates, if you please! Then re-cycle the battery solution to mix in the water and prevent it from freezing during cold weather operations.



CAD BATTS ON THIS TABLE ONLY

CHARGE IN RIGHT DIRECTION

When it comes to overcharging, over-discharging or charging in the wrong direction, this baby can take it... without permanent damage.

Still, this piece of equipment isn't bought in a five and ten so it deserves the standard charging procedure spelled out in TM 11-6140-203-12 (2 Sep 60). This is your operator and organizational maintenance manual for nickel-

cadmium batteries and the charging poop is in Section IV, paragraphs 4-11 through 4-21.



To charge, you can use either the constant potential or the constant current method. Your best bet is the constant potential 'cause you can't overcharge the battery. The constant current charge is only an emergency method to use when you don't have the equipment for the potential method.

But before you shoot the juice to the battery there're some safety pointers you want to keep in mind.

When a vented nickel-cadmium battery is charged to its full capacity, hydrogen and oxygen gases escape through the vented battery plugs that're left on during charging. A mixture of about four per cent of these fumes can be ignited by a direct short. A wrench dropped across the terminals of the battery may be all that's needed to make the electrolyte boil up a storm and give you an explosion.

A sealed battery, charged for long periods at a high rate or discharged at an abnormal rate, or shorted, can give you the same results—the big BOOM!



DO IT-SAFELY

BUT IF YOU FOLLOW THESE SAFETY POINTS THAT APPLY TO THE CHARGING OF ALL BATTERIES, PLUS ANY DIRECTIONS SUPPLIED WITH YOUR CHARGER THERE'S NO SWEAT!

1. Always charge, and if possible, discharge batteries in a well ventilated area to prevent a collection of explosive gases.

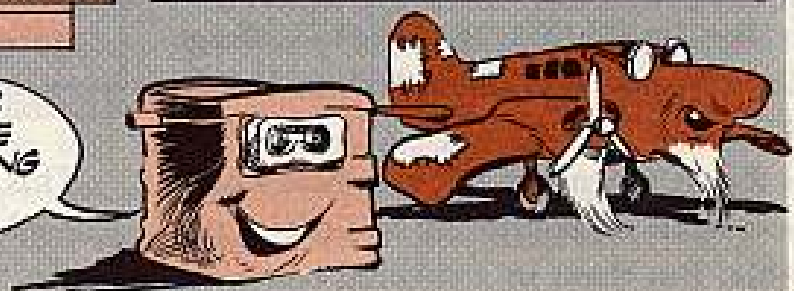
4. Use only tools that have the least amount of metal showing, which will also guard against sparks.

2. Be sure all terminal connections to the battery are tight to guard against sparks.

3. No smoking in the battery room ... could set off lingering fumes.

5. After the battery is charged, move it as far as possible from the charging area ... after all that package of power is just burstin' with energy that could be sparked into life.

SO...WITH A LITTLE KINDNESS ALL ALONG THE LINE I CAN LIVE UP TO MY BILLING OF OUTLASTING THE EQUIPMENT I'M INSTALLED IN!

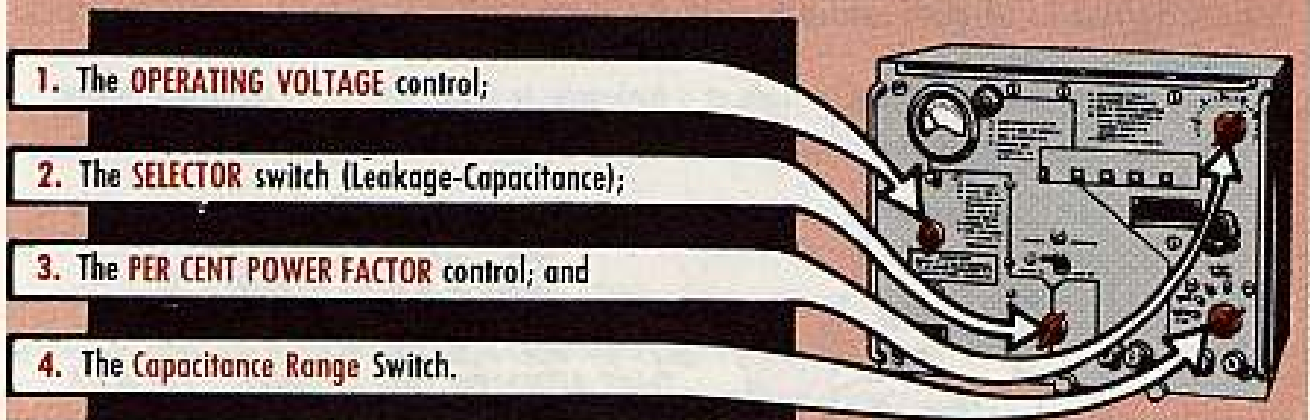


BETTER BE SAFE THAN BETA



If you have an Analyzer ZM-3A/U, this is what you've gotta do (the sooner the better):

Take some masking tape and cover the painted portion of these knobs:



These four knobs have luminous paint which is a little more radioactive than it should be. It also tends to flake off easily—so it can stick to your hands, get carried around, swallowed, etc.

The radiation is mostly Beta particles, and it comes from the paint in the grooves on the pointer ends of the knobs. So handle the knobs by the handle ends when you're putting on the tape.

Soon's you get this done, fire off a requisition for replacement knobs.

For the OPERATING VOLTAGE, PER CENT POWER FACTOR and Capacitance Range knobs, you'll need Knob, FSN 5355-648-7637.

For the SELECTOR switch (Leakage-Capacitance) get Knob, FSN 5355-668-9152.

Now, when you remove these knobs, you want to handle 'em as little as possible. Put them in a covered container.

In fact, you'd better bring your Safety Officer in on the deal, along with your local SOP on such matters. AR-755-380 (10 Apr 62) gives you the word on disposing of radioactive material.

One other thing. It just could be there're some replacement knobs around with this radioactive paint. The FSN's for them are:

- 5355-503-1731
- 5355-503-1733
- 5355-538-6068
- 5355-667-9207

IF YOU FIND ANY OF THESE, HANDLE AND DISPOSE OF 'EM JUST THE WAY YOU DO THOSE FROM YOUR ANALYZER.



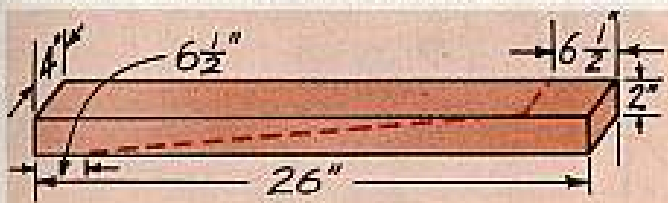
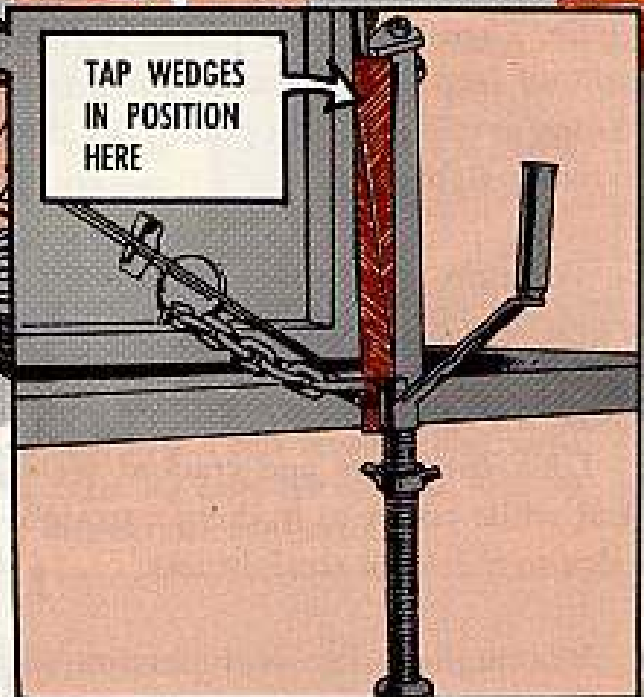
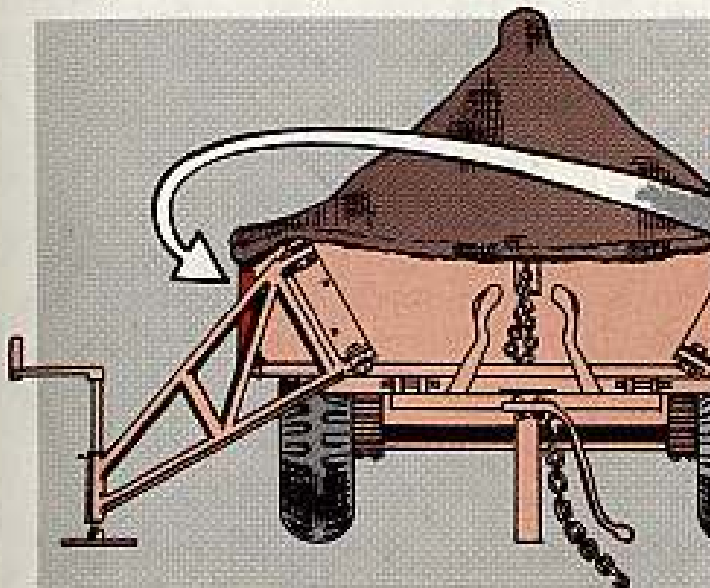
This applies only to the ZM-3A/U. The ZM-3/U does not have radioactive knobs.

A BORTA JACK LEG FIX...

If you've been nursing a wind measuring set AN/MMQ-1 (), you've probably noticed something mighty peculiar. No matter how screwed up you get the front leveling jacks, the situation is far from normal.

In other words, the front jack pads have a way of creeping toward the rear, so that the jack arms end up rest-

ing against the front of the trailer. This puts a lot of stress and strain on the jacks and trusses—and could cause 'em to let you down suddenly in a very unpleasant manner. Not to mention the trouble you have trying to cross-level the windset with the jacks perched at an angle.



Here's a little tip that'll help make things more stable until a more permanent fix come along. You need two sections of 2x4 about 26 inches long each.

Starting at a point about 6 1/2 inches from one end, saw a diagonal cut across the 4-in side down to about 6 1/2 inches from the other end. Do both sections this way to give you four wedges.

Now, when you're setting up and leveling the unit, position the jacks so they're up forward and as vertical as possible—with the chains attached.

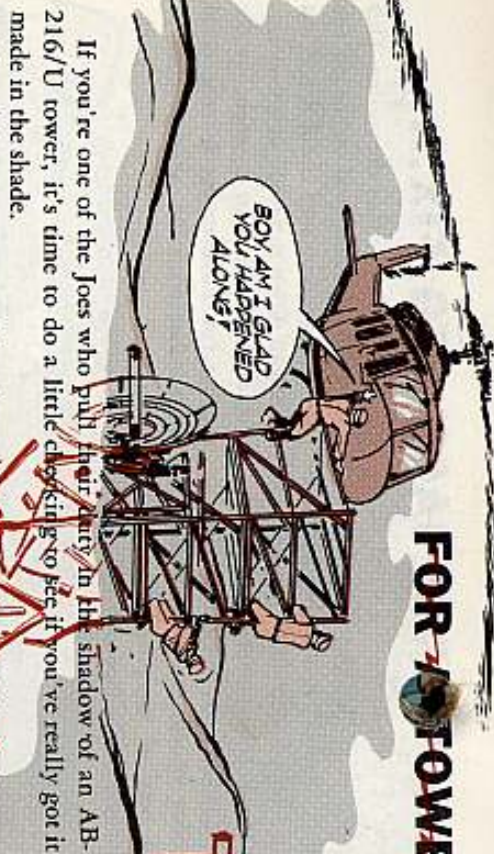
If the jacks start drifting backward when you crank 'em, slip two wedges in on each side, between the trailer body and the jack arms. By tapping on the end of the wedges which extend below the trailer body you can keep the wedges in tight and stop the jacks from moving backward.

You should be able to drive the wedges together so that you end up with a 2x4 brace for each jack arm ... which will help keep the jacks perpendicular and at the same time take the slack out of the chains.

The wedges should keep the legs from moving backward and the chains should keep 'em from moving forward. You may have to trim the wedges a bit in order to get a tight fit and still allow you to keep the chains fastened.

FOR POWER OF STRENGTH

BOY AM I GLAD YOU HADNED ALONG!



If you're one of the Joes who pull their duty in the shadow of an AB-216/U tower, it's time to do a little checking to see if you've really got it made in the shade.

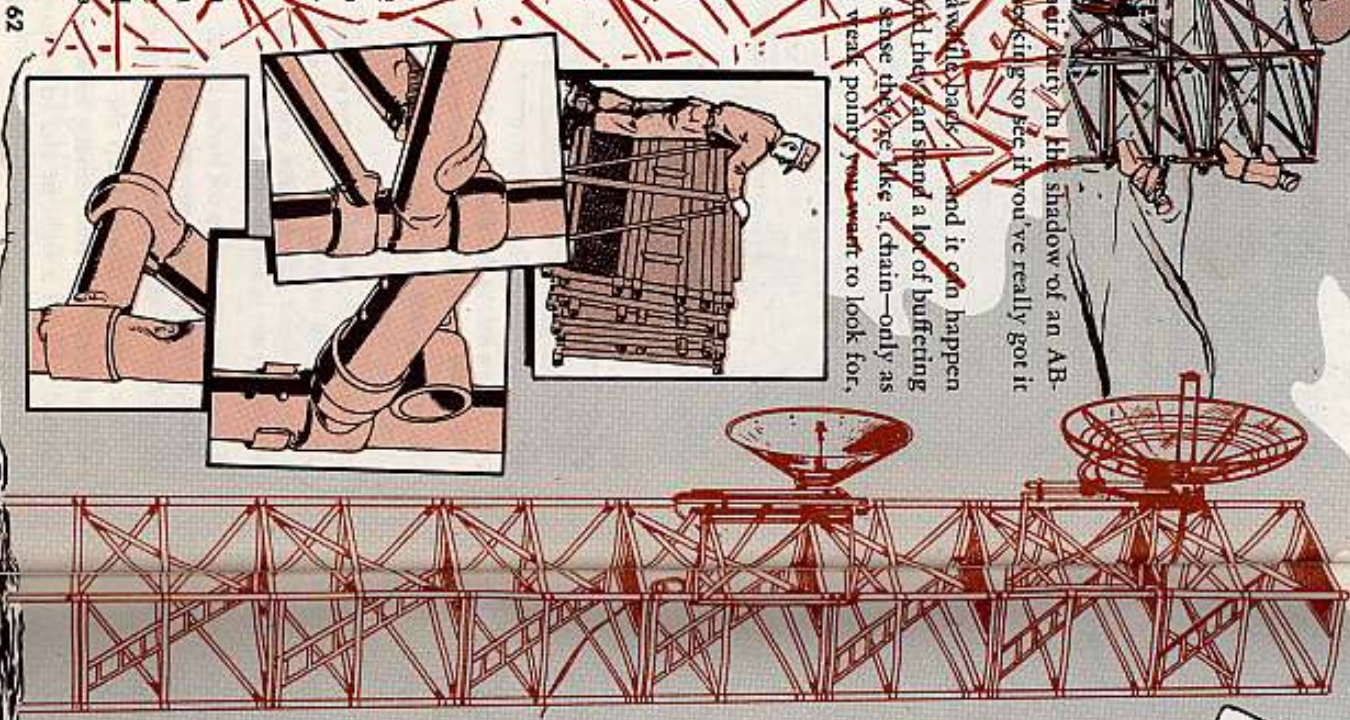
One of 'em came crumpling down a week or so ago, and it can happen again. These towers are plenty rugged, and they can stand a lot of buffeting around from the elements. But in one sense they're like a chain—only as strong as their weakest points. It's those weak points you want to look for, starting right now.

To begin with, you want to eyeball every tower section, including those you aren't using at the moment, and those stored away.

Look for dents and cracked welds. And while you're at it, carry a straight-edge to check for straightness.

You oughta assemble the sections and try out various combinations to make sure the interchangeable sections will really interchange. If they don't mate with ease, put 'em aside. Trying to force a mating is a surefire way of setting yourself up for a downfall.

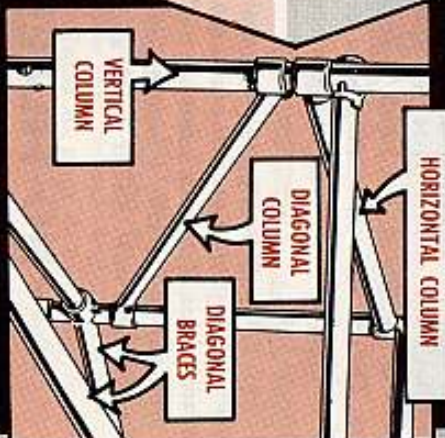
You should lay aside every section that has a cracked weld, a deep dent or obvious kink . . . or any other damage that would sap its strength under load and stress. Requisition new sections to take their place.



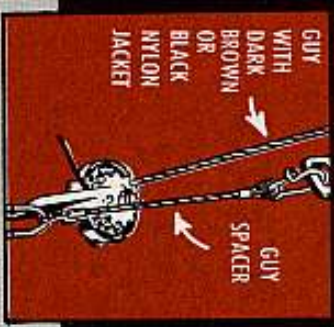
IF YOU REALLY NEED TO USE SOME OF THESE OLD SECTIONS, BEFORE YOU GET NEW ONES, MAKE YOUR SELECTIONS THIS WAY:

Use only the sections that have no damage to the vertical columns and a minimum of damage (dents only) to the horizontal or diagonal columns. Never use a section that has any defects in the vertical columns.

Use sections with dented horizontal or diagonal braces for the top six sections only . . . and then only if the dents are less than one inch in diameter.



And, while you're at it, scrop all guys that don't have a dark brown or black nylon jacket and order new ones. But keep the stainless steel guy spacers.



Now, as you pulled this flying inspection, you probably found little damage that could be traced back to flying ducks, or other birds of a feather. But maybe a lot of damage that can be traced back to ungentle handling during erection, dismantling, loading and unloading, huh? Ah, so.

Just pass the word to all hands in no uncertain terms that any rough handling of these tower components will not be looked upon kindly. Any careless or rough handling is just like a kick in the shins for you . . . with a lot more serious results.

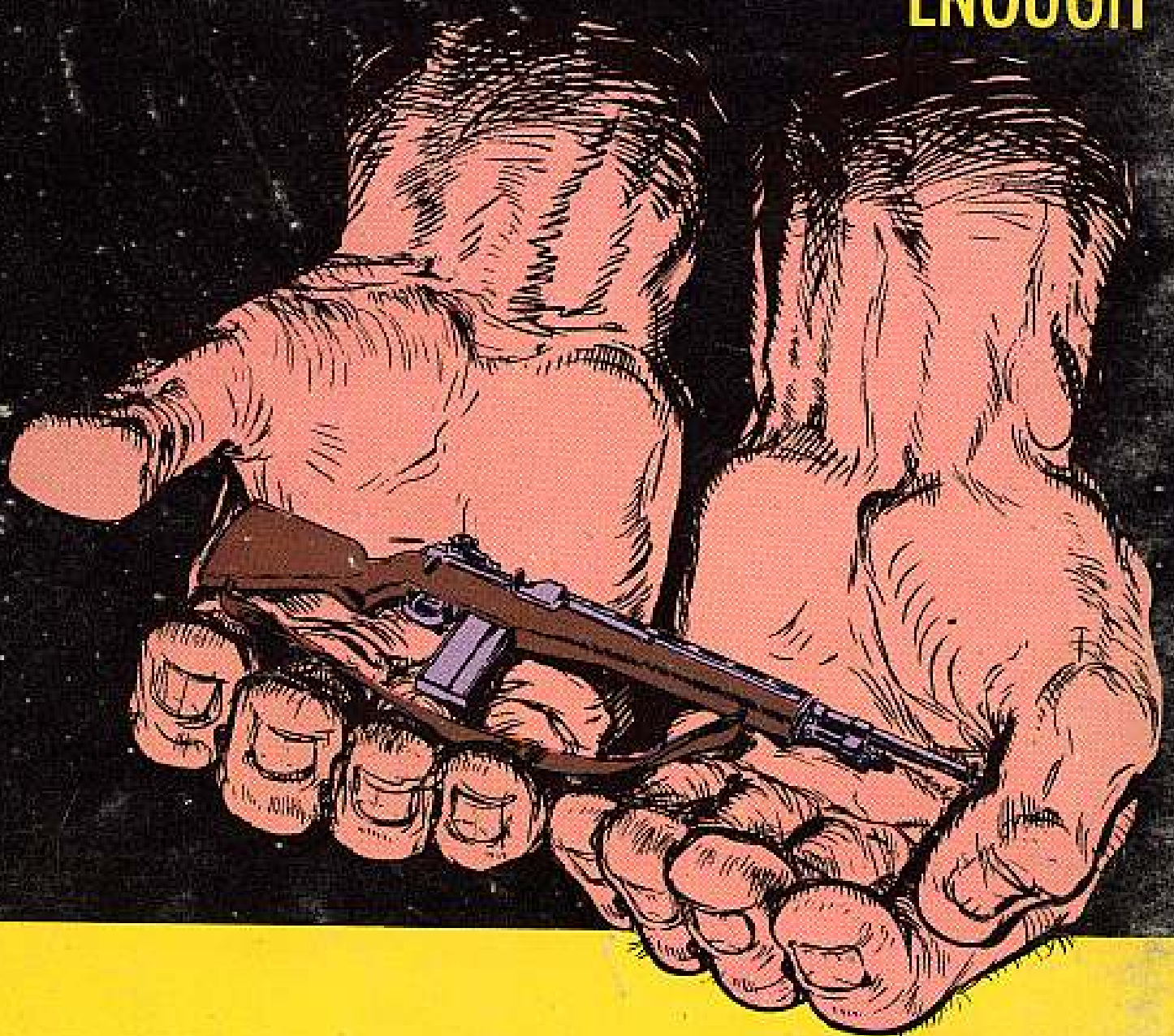
Lashing the sections together just right is one of the best things you can do when you're transporting the tower. This keeps 'em from banging around and getting beat up.

Just one more point. Make sure a tag line is used on the hoist line hook . . . whether it's loaded or empty. A little whack from that hook can undo right fast a lot of sweat and effort.

WHEN
YOU

CARE

ENOUGH



YOU GET THE VERY BEST

**Clean*

**Adjust*

**Repair*

**Equipment*

Improvement

Recommendation

(DA Form 2407)