

Issue 82

PS

1959 Series

THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY



HEY, SARGE...HA, HA...REMEMBER THAT UER I WAS SUPPOSED TO SEND IN LAST SUMMER?...? WELL, GUESS WHAT...



# YOUR FUTURE EQUIPMENT

And How You Can Help Design It

The other day Sgt Half-Mast got a call from one of the top maintenance men in the Pentagon.

He asked old Half-Mast to stop by and talk about what you (each and every U.S. soldier) can do to help him and other designers and engineers plan new equipment of all kinds for our Army of the future—five, ten, twenty, even fifty years from now.

He and Half-Mast had a long chat, and they both allowed as how there were two main ways you could help:

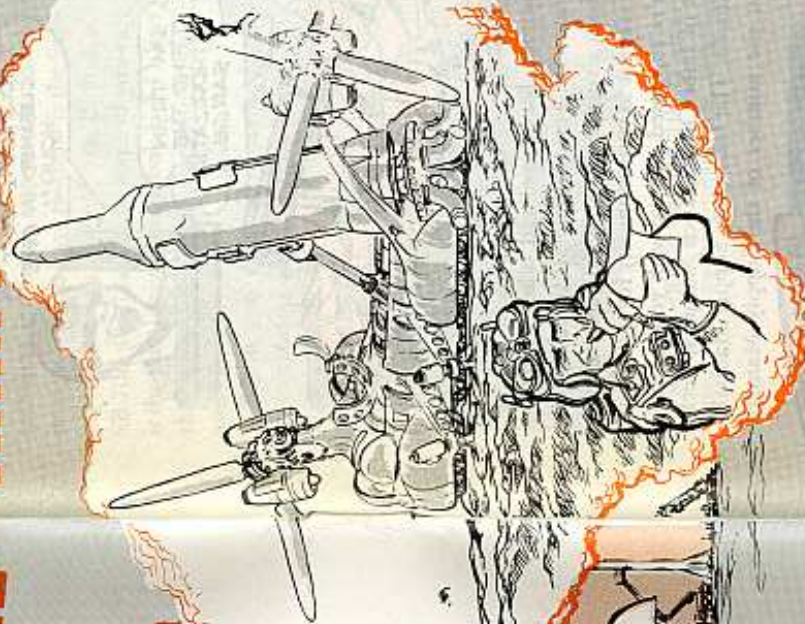
First, you can send in UER's (DA Form 468) on the equipment you now have. Tell the technical service people what is wrong with it, and especially what your ideas are on improving that equipment. AR 700-38 gives you the scoop on using DA Form 468.

Of course, you guys who've got electronic equipment listed in AR 700-39 use DD Forms 787 and 787-1, Electronic Failure Report—just like the AR says.

The designers and engineers who get your 468's, 787's and 787-1's really give 'em the once-over, 'cause they're always looking for ways to make Army equipment better.

Second, you can pass along in cards or letters to Sgt Half-Mast your ideas for improving the design of your equipment. (And don't worry—Half-Mast never tells anybody who wrote to him.) You can tell him, too, how equipment ought to be designed to make it easier and cheaper to maintain. Half-Mast will pass your ideas to the Army's design people, and when your idea's accepted, you get all the credit.

# ARMY



What the man in the Pentagon has in mind is equipment that:

- Has parts that are easier to get to for maintenance.
  - Needs maintenance less often.
  - Needs less time for maintenance.
  - Needs fewer repair parts.
  - Can be maintained by a soldier who may not be highly skilled or thoroughly trained.
  - Is more reliable in operation.
- Now—you are a design engineer... fire off with your ideas.

# PS

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Published by the Department of the Army for the information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limits of availability, older issues may be obtained direct from Preventive Maintenance Agency, Raritan Arsenal, Metuchen, New Jersey.

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PS wants your ideas and contributions, and is glad to answer your questions. Just write to: Sgt Half-Mast, PS, Raritan Arsenal, Metuchen, New Jersey. Names and addresses are kept in confidence.

**DISTRIBUTION:**  
in accordance with requirements  
submitted on DA Form 12.

# They're All There—



Ordering cleaning materials, lubes, common hardware, and other common stock you use every day would be an easy matter if you had 'em all listed in one big catalog and all you had to do was to fill out an order blank. 'Tain't that simple—you've got to know where to look, and what to use as your authority for ordering.

Your first step is to check the pubs you're supposed to have with your equipment. DA Pamphlet 310-4 gives you a list of Lube Orders, Tech Manuals, Tech Bulletins, MWO's and the -20P Tech Manuals. The Indexes to Supply Manuals for the different tech services will give you the number of the Supply Manual (SNL) you need for your equipment:

Signal—DA Pamphlet 310-21  
 Transportation—DA Pamphlet 310-22  
 Chemical—DA Pamphlet 310-23  
 Engineers—DA Pamphlet 310-25  
 Ordnance—DA Pamphlet 310-29  
 Quartermaster—DA Pamphlet 310-30



Your -20P manual or SNL will clue you about your cleaning materials and lubes, and they're your authority for asking for 'em.

But if it's necessary for you to use some items that aren't listed in those pubs, then you'd get 'em by justifying them under AR 725-5 (Sep 58), para 15h.

You'll find that many of the cleaning and lubing materials will have a Federal Stock Number listed, but for those items that don't, you'll have to find one.

# Somewhere

Your SNL or -20P tells you what technical service is responsible for the item, so all you have to know is the Supply Manual in which you'll find it. SB 708-401 (or maybe some of you call it the Cataloging Handbook H 2-1) lists the Federal Supply Classification Groups and Classes.

When you come to lubes and preservatives, you'll find that SB 38-5-3, "List of Standard Lubricants, Hydraulic Fluids, Liquid Fuels, and Preservative Material Used by the Army," is a big help. This SB's been sent to Battalion and Company level. There's also SM 10-1-C4-1, which gives you info on petroleum, petroleum-base products and related material (FSC Group 91).



And SB 38-100 (March 1959) gives you a rundown of the preservation, packing, and packing materials, supplies, and equipment used by the Army.

For a list of abrasives, adhesives, cleaners, preservatives, and related items for which the Ordnance Corps is responsible, check the following SM 9-1's: 6800, 5350, 8000, 9500, 5345 and 5305.



And if you want to get a rundown of hardware and abrasives, take a look at Group 53 of the different tech services. You'll find most of the screws, for example, in SM 9-1-5305-1 and SM 9-1-5305-2. SM 9-1-5306 lists bolts and SM 9-1-5307 gives you a rundown on studs.

If you're looking for a tech manual to give you info on cleaning, preserving, abrading, cementing, sealing, and lubing material, then you'll want to get hold of TM 9-1007.

# YOUR 464's

YOU MOVE OFF IN  
HIGH GEAR WITH  
THE HEADING. YOU  
CAN HANDLE THESE  
ITEMS AS EASY  
AS A PUSH-BUTTON  
DRIVE.



It's no secret, this is the DA Form that you use for recording and reporting all scheduled PM services and the results of IT's made on Engineer equipment.

With a 464 in one fist, a pencil in the other, your pubs under your arm . . . you're ready to handle your bi-weekly or bi-monthly PM or IT's on your equipment. All this time-saver needs is a good mechanic like yourself to take it in hand. It covers all your new B & C services. Its long-winded title is "Work Sheet for Preventive Maintenance and Technical Inspection of Engineer Equipment."

**1.** You get the info for the nomenclature, make, and model right from the ID plates and from the engine on the rig. The equipment's serial number should also be put at the upper right hand corner of pages 2 and 3. This'll identify these pages with the equipment on page 1.

**2.** This is the same date that's shown on the PM roster, DA Form 460.

**3.** Put in the hour meter reading or number of miles registered on the odometer. Never leave this one blank because the people scheduling maintenance periods on the DA Form 460 need this info. If the hour-meter is out of whack or the equipment doesn't have one—you have to estimate the hours that it's been in operation. Your Operational Log—like the one shown in TM 5-505—will give you the dope on this.

## HEADING

# THE ANSWER

**4.** You get this info from the ID plates on the engine block. The first line is for the primary unit and the one beneath it is for the secondary unit. If you've got more than two engines, you need another page 1, Form 464.

**5.** The scoop on an attachment like a PCU, dozer blade or a winch is read right off the ID plate on the attachment.

**6.** Change the block to read Bi-Weekly or Bi-Monthly. Make sure the number of the service checks with the one that's listed on the PM Roster. If you're doing a bi-weekly (B service), you number it B1, B2, or B3 . . . that is, the 1st, 2nd, or 3rd bi-weekly since the last bi-monthly or C service. If it's a bi-monthly, show which one it is . . . C1, C2, C3, C4, C5, or C6. On the C4 service you cover the semi-annual items listed on your LO . . . and a C6 will tip you off it's time to pull your annual services—likewise according to the LO.

**7.** This is used only as an easy identifying number for the equipment. Since a lot of Engineer items don't get USA numbers, you'll use the pool number in some cases. If you've got a USA number and a pool number on the same piece of equipment, use the USA number as required on the DA Form 460. This'll tie your Form 464 in with the PM Roster and make it easier all the way around.

**8.** HERE YOU LINE OUT THE SYMBOLS THAT DON'T APPLY AS A PRECEDENCE FOR A BI-MONTHLY SERVICE. **1** CROSS OUT THE AND **5** AND CHECK OFF THE COLUMN UNDER **C**



**SYMBOLS**

C - CLEAN  
 T - TIGHTEN  
 A - ADJUST  
 L - SPECIAL LUBRICATION  
 S - SERVICE  
 TI - TECHNICAL INSPECTION  
 M - MONTHLY - 1  
 W - WEEKLY - 1

**9.** The symbols are used to show what service must be pulled on each item printed on the 464. These symbols show you the minimum service to be done. If your TM, LO, or TB tells you to do more, then, of course, you'll do as the directive pub says. When you complete the required services, you circle and initial the symbol. Same goes if another mechanic performs the services, he'll circle and initial the symbol. Circling the symbol shows that the required services have been done on that item and which mechanic did the work.

**10.** The legend for marking offers no problem. It's used to show the condition of each item at the time of the PM service or TI and what action's been taken. There are two type legends... primary... and secondary. The primary legend shows you the condition of each item and the secondary legend helps to explain it further.

**LEGEND FOR MARKING**

NA - NOT APPLICABLE  
 M - MISSING  
 ✓ - SATISFACTORY  
 X - ADJUSTMENT REQUIRED  
 XX - REPAIRS REQUIRED  
 XXX - REPLACEMENT REQUIRED  
 D - IMMEDIATE DEADLINE  
 O - DEFECT CORRECTED  
 U - PREVIOUSLY REPORTED DEFECT UNCORRECTED

**PRIMARY LEGEND:**

✓ - SATISFACTORY  
 X - ADJUSTMENT REQUIRED  
 XX - REPAIRS REQUIRED  
 XXX - REPLACEMENT REQUIRED

YOU PUT THESE SYMBOLS IN THE APPLICABLE BLOCK OF THE INSPECTION COLUMN!



**SECONDARY LEGEND:**

D - IMMEDIATE DEADLINE  
 M - MISSING  
 U - PREVIOUSLY REPORTED

You enter these secondary symbols on the same line with the primary symbols... in the block that's not being used for the PM or TI. As a frinstance—during your bi-monthly service you find that Item 5, Publications, needs replacing. So you put an XXX in the bi-monthly column in the Item 5 inspection block, like this:

TO EXPLAIN THAT THE PUBLICATION IS MISSING INSTEAD OF UNSERVICEABLE, YOU PUT AN M NEXT TO THE INSPECTION BLOCK, SO:

PRIMARY UNIT					
	XXX	M	5. PUBLICATIONS	SA	
	PM			TB'S	

You use the D and U the same way. If the deficiency is bad enough to deadline your rig, you put a D in the block next to the symbol that describes the deficiency. Same goes if a previously reported deficiency was not corrected. You use the U like this:

PRIMARY ENGINE	ENGINES OR POWER UNITS (Continued)	
X		
XXX	43 TANK, CAP AND VALVE	43A
XX	44 FUEL LINES	44A

When X, XX, XXX are put down to show a deficiency, you use the remarks section on page 6 to pinpoint the deficiency, and you include whatever instructions are necessary.



You use the NA when a section of your 464 applies to your equipment and certain items within that section do not. The NA goes in the block next to these items. On whole sections which don't apply, you don't need the NA.

### GETTING DOWN TO BUSINESS

First off, you'll need all the pubs that go with your rig... TM's, TB's, LO's, and MWO's. If you're going to requisition parts, too, then you'll also need your ENG's 7, 8, & 9. If the equipment rates a multi-part type manual, then you'll also want the -10, -20 and -20P manuals. (DA Pamphlet 310-4 has all the scoop on the tech pubs that you'll need, while DA Pamphlet 310-25 has the info on the ENG's and SM's.)



If you don't find the publications for your equipment in either of the pamphlets, you'll use the manufacturer's manuals and repair parts listing. You can get them through Engineer parts channels. When requisitioning these pubs you have

to list the make, model, serial number, stock number, and all the other info on the item and its component parts. The ID plates will clue you there.

You can see that using the pubs is like following route markers along a four-lane highway. You use the symbols and the legend for marking your progress the same as you would on a map. This way you don't bypass any of the items.

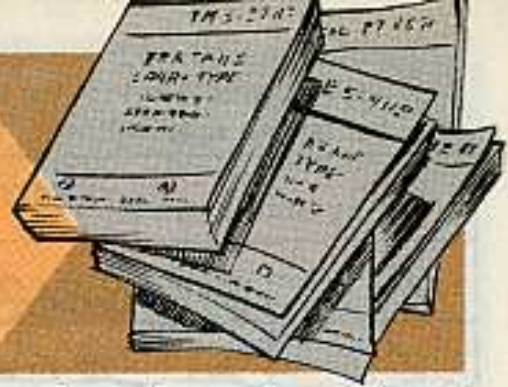
Okay, then . . . let's say you're going to pull your bi-monthly PM on a D8 tractor. First dig out the previous 464 and the current DD 110's from your files. They'll tip you off as to what shape the equipment's in. You copy all the deficiencies that haven't been corrected from the forms in the current work file—or suspense file. You mark them with a U. These are the items to get after first when you go into action.



CENTRAL		ENGINE	ENGINE OR POWER UNIT	STARTING ENGINE	PRIMARY ENGINE	ENGINE POWER UNIT
1	1. ENGINE OPERATING	✓	114 CYLINDER HEAD, WATER PUMP, WATTLER, BATTERY WIRE - DERRILL, 1940	✓	✓	11 FUEL, CAR AND OIL LINES, WASH, WIPER
1A	1A. OPERATING	NA	115 VALVE MECHANISM - COVER, WIPER, 116 WATER PUMP, PUMP AND STEERING CLEARANCE (SEE REMARKS)	NA	✓	11 FUEL LINE
	5-3040B 4 DEC 53 S-1234-1 5-9957 21 JUL 52	NA	117 COMPRESSION TEST - P/N T. 1 or method type pressure only	NA	NA	11 WATER, BLENDER
1B	1B. FUEL SYSTEM	NA	118 INJECTORS, SEE OTHERS. LINES, 119 SPRAY	✓	NA	11 BATTERY, LIGHTS, WIPER (SEE 114)
	5-3040B 5-3068-1 3040 S-1234-1 5-9957-1 5-9957	NA	120 OIL PUMPS, OIL COOLER, LINES, 121	NA	✓	11 OIL LINES
	5-9957	NA	122 WATER PUMP, PUMP, SPRING, LINES, 123 WIPER, WIPER	NA	NA	11 GENERATOR, WIPER AND WIPER
	5-9957	NA	124 WIPER AND PULLEY	NA	✓	11 DISTRIBUTOR OR WIPER, PULLEY, WIPER
	5-9957	NA	125 OIL PUMP BELLOWS, BELLOWS, VALVE, 126	NA	✓	11 COIL, WIPER, EN
	5-9957	NA	127 GOVERNOR AND LINKAGE, 128	✓	✓	11 VOLTAGE REGULATOR
	5-9957	NA	129 OVERHEAT GOVERNORS	NA	✓	11 LIGHTS - ENGINE
	5-9957	NA	130 WIPER, WIPER BRUSH, LINES, 131	NA	NA	11 WIPER
	5-9957	NA	132 WATER AND TRANSMISSION, 133	✓	✓	11 WATER, TRANSMISSION, WIPER
	5-9957	NA	134 WIPER, WIPER AND WIPER - LINES, 135	NA	✓	11 WATER, TRANSMISSION, WIPER
	5-9957	NA	136 CARBURETOR AND LINKAGE	✓	✓	11 WATER, TRANSMISSION, WIPER
	5-9957	NA	137 FUEL FILTER	✓	✓	11 WATER, TRANSMISSION, WIPER
	5-9957	NA	138 AIR CLEANER AND AIRCLE WIPER	✓	✓	11 WATER, TRANSMISSION, WIPER

Now move right down the first column taking care of each item as you go. You'll see that on the first page, there're two items on each line—like Item 1 and 1A. That's to handle a primary and secondary unit—like the diesel engine and the starting engine on the D8.

On the publications or manufacturer's manuals, list all the ones that apply to this equipment. The TM, LO, and TB's should be on the equipment. One set of these pubs for each piece of equipment. If not, check them as missing. But, if they've been requisitioned, enter the requisition number and the date in the remarks section.



The ENG supply manual, MWO's and SB's need not be on the equipment itself, but they should be in the equipment pool administrative section. One set of these pubs is enough for all the Cat D8's you have. The distribution formula in the pubs doesn't give you enough to put a supply manual, MWO or SB in every rig.

You also list all the MWO's that apply and their dates. Then check to see if the modifications have been made. Your DA Form 478, should be marked to show which ones have been applied to your equipment. Mark the ones not done with an XX, or XXX, to show repair or replacement is required.

TRACTOR		WHEELED (NO CHARTER)	TRACTOR (Continued)
✓	18 LIGHTS, MIRRORS, SWITCHES - (Mounting), CONNECTION	✓	4 24 SYSTEMS OR TRAVEL CLUTCHES
NA	19 STEERING BEAM ASSEMBLY (M)	✓	4 25 SERVICE BRAKE
✓	19 REGULATOR, SAFETY VALVE, CHECK VALVE	✓	4 26 EMERGENCY BRAKE, BRAKE LOCK
NA	20 PUMPS AND DRIVES - (Incl. oil, water, air, mounting)	✓	4 27 STEERING OR TRAVEL BRAKE (M)
NA	21 VALVES, CYLINDERS, JACKS - Gaskets, seals, packing, levers, links	✓	28 Gears and axles - (Crown, gears, and seals, levers)
✓	21 LEVERS, PIVOTS, LINKAGE, CABLES	✓	29 BEARINGS AND SHAFTS - Gaskets and seals
NA	22 UNIVERSAL JOINTS, BALL JOINTS (M)	✓	30 Final Drive - (Housing, gears, oil and seals, levers, oil level)
✓	22 GEAR HOUSING, CASES - Gaskets, seals, levers	NA	31 DRIVE SHAFTS AND SHAFTS (M)
NA	23 BEARS AND PINIONS	✓	32 CUTTING EDGE AND BITS
NA	24 BEARINGS AND SHAFTS	✓	33 POWER TAKE-OFF UNIT
NA	25 POWER CONTROL UNITS - (Dial, solenoid, clutches, levers, other pin)	✓	34 WELDES AND CONNECTIONS
✓	26 DRUMS, ANCHORS, CABLES	NA	35 RELIEF VALVE, SAFETY VALVE (Compressor) (M)
NA	27 TIE RODS, LINKAGE, BOOTS AND SEALS (M)	NA	36 VALVES - (Incl. discharge) (Compressor) (M)
✓	28 BOOSTER, STEERING ASSEMBLY	NA	37 AIRDRUMS (Compressor) (M)
NA	29 HYDRAULIC TANK	NA	38 CYLINDER HEAD, GASKETS (Compressor) (M)
✓	29 WASH, COILS	NA	39 LAMPS, CLOCKS, LIGHTS
NA	30 TIE RODS (Refer to page 5) (M)	NA	40 HOSES AND PIPES (Compressor) (M)
✓	31 TIE RODS, PARTS, HOSE	✓	41 AIR CLEANERS (Compressor) (M)
✓	32 FRAME - (Crank, axle, steering)	✓	42 Leaks, connections and mounting
NA	33 FRONT HILL ASSEMBLY, WHEELS - (M) Bearings, mounting	✓	43 "A" FRAME OR FORK
NA	34 REAR HILL ASSEMBLY, WHEELS - (M) Bearings, mounting	✓	44 WELD BEAMS - (Flaw, length, pipe, local)
✓	35 SHOCKS, EQUALIZERS, STABILIZERS - (Shock, leveling, mounting)	✓	45 LIFT ARM
✓	36 TRACK ASSEMBLY - (Flats, links, ID) Bearings - (M)	✓	46 LIFT MECHANISM AND FRAME ASSEMBLY
✓	37 IDLERS, ROLLERS - (Springs, bushings, bearings, seals, shaft, mounting)	✓	47 HYDRAULIC LINES AND CYLINDERS
✓	38 TRACK TENSION (M)		
✓	39 FRAMES AND BEAMS		
✓	40 TRANSMISSION, TRANSFER CASE Gaskets, seals, levers, oil level		
✓	41 DRIVE, OPERATOR, DRIVE BELTS		

WITH PAGE ONE COMPLETED, SKIP TO PAGE 3, COLUMNS 1 AND 2 COVER THE ITEMS FOR YOUR TRACTOR, CHECK 'EM OFF AS YOU GO DOWN THE LINE.







## BI-WEEKLY, BI-MONTHLY SERVICES

When the operator or mechanic has taken all the action he can—like testing, repairing, servicing—he signs his Form 464.

MAN HOURS EXPENDED (Inspection) <b>3</b>	MAN HOURS EXPENDED (Repair) <b>2</b>	REPAIRS BY HIGHER ECHELON ON JOB ORDER REQUEST NO. <b>58-H-2</b>
OPERATOR (Name, grade or title) <b>Orrest Smith, Sp3</b>		
REPAIRS REQUESTED		
DATE <b>24 APR 58</b>	INITIALS <b>J. D.</b>	DATE <b>27 APR 58</b>

ON ENTERED MEMBER <b>1</b>	OUT OF SERVICE TIME	MECHANIC OR INSPECTOR (Name, grade or title and organization) <b>Al Brown, Sgt.</b>	
SUPERVISING OFFICER (Name, grade or title and organization)			
EQUIPMENT FORWARDED <b>8</b>		EQUIPMENT RETURNED	
INITIALS <b>AB</b>	DATE	INITIALS	DATE

The section chief or maintenance supervisor then checks it to see that all the work has been done and the items circled and initialed. He also enters the total time that the equipment was out of service.

The 464 is now ready to be signed by the supervising officer. The officer's signature on the Form 464 shows that the work is complete.

**THE FORM MUST BE REVIEWED AND SIGNED BY THE SUPERVISING OFFICER WHEN ALL REPAIR ACTION HAS BEEN COMPLETED. REPAIR ACTION MEANS ACTUAL REPAIRS PERFORMED, A REQUEST SUBMITTED FOR REPAIR PARTS, OR OTHER MATERIAL THROUGH THE APPROPRIATE SUPPORTING SERVICE.**



## TECHNICAL INSPECTIONS

When a technical inspection has been performed on an item of equipment . . . by a command inspection . . . spot check inspection . . . or field maintenance—the completed Form 464 is kept on file in the Organizational Equipment File until another technical inspection has been completed on the equipment. Then the old TI is destroyed and the latest one filed in its place. The supervising officer signs the 464 to certify to its accuracy.



## MAN HOURS

The spaces to show the man-hours spent servicing and inspecting the equipment is part of the face-lifting job done on the 464. The block for man hours expended means just that.

AT THE ORGANIZATIONAL LEVEL THIS INCLUDES TIME SPENT IN BI-WEEKLY AND BI-MONTHLY INSPECTIONS.

MAN HOURS EXPENDED (Inspection)	MAN HOURS EXPENDED
3	8
(Name and Grade or Title)	
Robert Smith, Sp3	
REPAIRS REQUESTED	
24 APR 58	INITIALS J. K.

Other inspection time—technical inspections, command inspections, serviceability inspections—go in this block.

The time spent pulling PM on services required by a bi-monthly, bi-weekly or TI goes into the block reading MAN HOURS EXPENDED (Repairs). This includes time spent adjusting, cleaning, tightening, lubing—but not inspection time.

IF A JOB TAKES TWO MEN FOUR HOURS, THEN YOU SHOW EIGHT MAN HOURS IN THE BLOCK FOR MAN HOURS EXPENDED FOR **REPAIRS**.

MAN HOURS EXPENDED (Repair)	RE OF
8	
Sp3	
REPAIRS REQUESTED	
INITIALS J. D.	OF

**OUT-OF-SERVICE** time is the total time that the equipment is out of service for inspection and repairs. This also includes the time it was sidelined waiting for parts or higher echelon work... plus the time that it takes your outfit or your support unit to make the repairs.

HIGHER ECHELON ENTERED REQUEST NUMBER 4-21	OUT OF SERVICE TIME	MECHANIC AL
		SUPERVISING OFFICER (Name, Grade)
EQUIPMENT FORWARDED		
NO 58	INITIALS	AB



THE NUMBER THAT'S GIVEN TO A JOB ORDER REQUEST BY THE SUPPORTING FIELD MAINTENANCE OUTFIT GOES INTO THE SPACE FOR REPAIRS BY HIGHER ECHELON ENTERED ON JOB ORDER REQUEST NUMBER.

### SPECIAL EQUIPMENT

With special equipment that doesn't apply to any of the sections, you fill out the heading and left hand column on page 1 of your 464 and the other two columns if the equipment has an engine. Then, flip the sheet to the **SPECIAL EQUIPMENT** section on page 6.

PRIMARY UNIT	GENERAL	SECONDARY UNIT
AB 1	1. BEFORE OPERATION SPECS	AB 1
AB 1	2. LUBRICATION	AB 1
	DIALO 5-3040A DATE 25 NOV 53	
	DIALO 5-1234-1 DATE	
	5-9987 DATE 24 OCT 56	
AB 1	3. TOOLS AND EQUIPMENT	NA
✓	4. FIRE EXTINGUISHER - See 464 3M.15	NA

Here's the way you'd write-up a weekly service on a Koehring Mud Jack, Model 50-2A. A lot of time can be saved by mimeographing this info on the 464.



YOU USE THE SYMBOL AND LEGEND FOR MARKING AND FILLING OUT THE INFO ON PAGE 6 THE SAME AS FOR ANY EQUIPMENT.

First, you fill out the heading on page 1. With rigs like the Koehring Mud Jack, you follow your pubs and check off all the items on page 1 that apply. Now you jump over to page 6 to the **SPECIAL EQUIPMENT** section, write in the items and check 'em off as you do your PM.

M C W B	SPECIAL EQUIPMENT
✓	60- MUD PUMP
✓	64- GEAR HOUSING CASINGS
✓	65- GEARS & PINIONS
✓	66- BEARINGS & SHAFTS
✓	76- TIRES
✓	78- REAR WHEELS
✓	79- FRONT WHEELS
✓	80- FRAME
✓	81- FRONT AXLE ASSY
✓	82- REAR AXLE ASSY
✓	83- SPRINGS
✓	181- MIXER





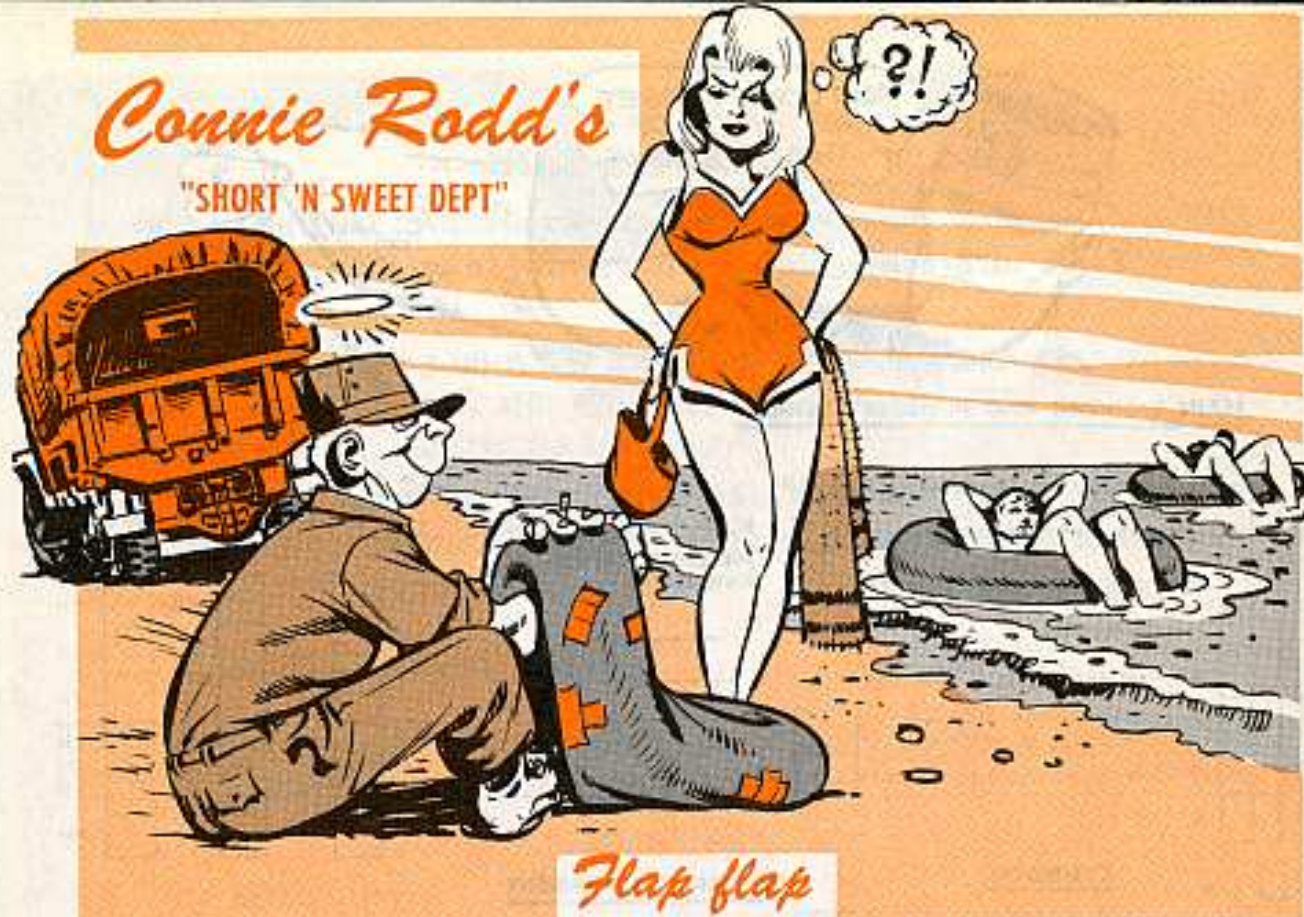
**MAIN CYLINDER AND PLUNGER ASSEMBLY**

<p>CKWB A</p> <p>35 TOP BEARING, RING ASSEMBLY— Gland, packing, and ring; pressure plate wiper packing.</p> <p>36 PLATE, PLATFORM CLAMP ASSEMBLY.</p> <p>37 MAIN PLUNGER.</p> <p>38 PIPING AND VALVES.</p> <p>39</p> <p>40</p> <p>41</p>	<p>CKWB 1 1</p> <p>42 HOSES, PIPING AND FITTINGS.</p> <p>43 PRESSURE BALANCING GATE VALVES.</p> <p>1 2</p> <p>44</p> <p>45</p>	<p>CKWB A A</p> <p>46 LIMIT SWITCHES AND CAMS.</p> <p>1 18</p> <p>2 18</p> <p>3 18</p> <p>4 18</p> <p>5 18</p> <p>6 18</p> <p>7 18</p> <p>8 18</p> <p>9 18</p> <p>10 18</p> <p>11 18</p> <p>12 18</p> <p>13 18</p> <p>14 18</p> <p>15 18</p> <p>16 18</p> <p>17 18</p> <p>18 18</p>
<p>CKWB</p> <p>47 LOCKING BAR CYLINDERS.</p> <p>1 2 3 4</p>	<p><b>CYLINDERS</b></p> <p>48 HOSES, PIPING AND FITTINGS</p> <p>49 DOOR CYLINDERS.</p> <p>1 1</p> <p>1 2 3 4</p>	<p><b>ELECTRICAL EQUIPMENT</b></p> <p>50 SERVICING WIRING AND SWITCHES.</p> <p>51 CONTROL RELAY CABINETS.</p> <p>52 MOTOR STARTER CABINET.</p> <p>1 2</p>
<p>CKWB</p> <p>48 FLOW CONTROL VALVES.</p> <p>1 2 3 4</p>	<p>53 ELECTRIC MOTORS.</p> <p>54 MASTER AND ELEVATOR CONTROL STATIONS.</p> <p>55</p> <p>56</p>	<p><b>TESTS</b></p> <p>57 MASTER CONTROL STATION TEST.</p> <p>58 ELEVATOR CONTROL STATION TEST.</p> <p>59 CONSOLE CONTROL STATION TEST.</p>

OPERATOR:		MECHANIC OR INSPECTOR (Grade or Title)			
REPAIRS BY HIGHER ECHELON ON JOB ORDER NUMBER:		SUPERVISING OFFICER (Grade or Title):			
REPAIRS REQUESTED		EQUIPMENT FORWARDED		EQUIPMENT RETURNED	
DATE:	INITIALS:	DATE:	INITIALS:	DATE:	INITIALS:
REMARKS OR RECOMMENDATIONS:					

## Connie Rodd's

"SHORT 'N SWEET DEPT"



### Flap flap

To save yourself from running into a flap about flaps any time you replace a tire on your vehicle, keep a grip on the old flap until you're sure there's one with the replacement tire.

If you get a new tire, odds are you'll get a flap. If you get a re-cap tire—no flap. And an old flap's better'n no flap a'tall.

This doesn't mean to hoard 'em. If you get a flap with that replacement tire, loosen up your grip on the old one and give the next guy a break.

### The three R's

Does your outfit use Ordnance electronic test equipment? Then it's up to you to contact your support unit any time the equipment needs repairing, recalibrating or replacing.

And you can be pretty sure you get a good calibration job 'cause your support unit won't check your equipment if 90 days have gone by since their own testing gear was given the old once over.



## "Time" mated

Do you have one of the new M37B1, 3/4-ton cargo trucks, purchased under Contracts DA-20-018-15711 and DA-20-018-17307?

Try hookin' the M-101, 3/4-ton trailer's lunette up to the B1's pintle . . .



... when the pintle's in the 12 o'clock position and you're in for a surprise... just can't be done.



But by merely moving the pintle to either the 10 o'clock or 2 o'clock positions,



they'll hook up like the antlers on a coupla fightin' stag deer... even with a loaded trailer there's no sweat.

If the trailer is loaded and you've put the lunette eye over the lower jaw of the pintle, just raise up on the lunette slightly and the upper jaw can be swung down right easy. Once joined, the pintle'll automatically swing back to the 12 o'clock position.

## When it hits the fan

Tiny cracks around the rotor base hub of the oil cooler fans are danger signs for your M48A2 tanks and M51 heavy recovery vehicles.

To help spot these cracks, get yourself a copy of TB 9-278 (7 Apr 59) . . . it tells how you can find hard-to-see flaws and cracks by using a commercial dye check process. Eyeball all engines under serial number 2486—they're the engines that have the suspicious-acting fan rotors.

You'll want to change the fan rotor right quick, or sooner, if metal fatigue shows. Otherwise you're in for a rippin' time. There is a new fan rotor—FSN 2930-679-5742. But it won't be available until the present supply of fan rotors FSN 2930-294-0255 is used up. So you want to make darn sure your current oil cooler fans have been dye checked according to the info in the tech bulletin.





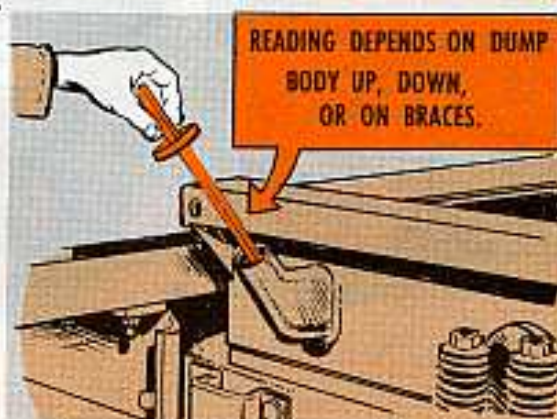
## Watch those ups 'n' downs



Ups 'n' downs can throw you when you're checking the oil level in the hydraulic reservoir on your M51, 5-ton dump trucks.

Note 14 in LO 9-8028 (15 Aug 57) says the reservoir oil level should be at the third mark from the top of the gage with the dump body down in traveling position.

When the dump body's all the way up, your reservoir oil level's at the first notch from the bottom of the gage. But Fig 114 in TM 9-8028 (13 Jun 55) says the oil level should be at the third notch from the top o' the gage with the dump body up on safety braces.



Sure sounds all mixed up. But that's the right info, and here's why:



**1.** With the dump body down, the oil's not under pressure—so it drains into the reservoir from the hydraulic lines. This is when you read the level at the **third notch from the top of the gage.**

**2.** Putting the control lever into **POWER-UP** and raising the dump body puts hydraulic pressure in the lines, taking oil outa the reservoir. This is when you read the level at the **first marker from the bottom of the gage.**

**3.** But when the body's raised and resting on the safety braces with the control lever in **POWER-DOWN** . . . the pressure's outa the lines and the oil drains back into the reservoir. This is when you read the level at the **third mark from the top of the gage** . . . same as you would when the body's in the down position.

## ARMY AIRCRAFT



### COMEDY OF ERRORS

Believe it, this one happened: First, an L-19 got off with the oil filler cap not properly secured. The pilot saw the oil streaming out of the cowl and made a safe landing before any loss of oil pressure took place.

Good deal!

The ship was inspected, the engine cleaned off, oil checked and filled, and the plane resumed flying.

But, there was a hidden joker. The heater ducts were well soaked with oil. Nothing came of this for some time, until a different pilot had the ship up on a cold day. Naturally, he pulled on some heat, naturally the oil soaked ducts filled the cockpit with smoke and stink, and just as naturally the pilot, suddenly choked with smoke, pulled the "auf wiedersehen knob" and left, shouting "Fare thee well, Annabell" as he went.

Of course, he should have tried turning off the heater valve, like Section IV of his—1 says. But he got rattled and did the first thing that popped into his noggin.

Still, the price of new heater ducts and installation would have saved one Bird Dog, complete.

Wherefore, please to examine your heater ducts any time you have oil spillage or leakage from any cause. If they are soaked in oil, replace 'em.

# BE YOUR

# OWN INSPECTOR

Here are your points to check out on your Periodic Inspections. For further details, naturally, you see your dash 6 Handbook.



**PILOT'S AND COPILOT'S SEATS:**  
Broken, cracked dirty, loose.

**SAFETY BELTS AND SHOULDER HARNESS:** Metal parts bent, damaged or corroded. Straps dirty, frayed, cut. Latching parts loose, binding. Not weight-tested in last 12 months.



**CONTROL STICKS, LEVERS AND PEDALS:** Lost motion, binding, worn, cracked, loose.



**RADIO COMPONENTS:** Not securely mounted.

**FLIGHT CONTROLS:** Incorrect movement with respect to cockpit controls.

**THROTTLE OVERRIDE:** Not operational.



**INSTRUMENTS:** Specified limit, operating range and slippage marks obliterated. Pressure indicating instruments or connections leaking. Compass liquid leaking, air bubbles.

## COCKPIT:

**GREENHOUSE:** Cockpit enclosure cracked, crazed, loose. Snap vents binding, cracked, loose. Emergency releases not functional, not or improperly safetied. Tape antenna loose. Scoops, fairing, panels and doors cracked, worn, corroded, bent.

**WIRING:** Deteriorated, chafed, not properly supported, evidence of overheating.



SO WHO'S FLYING THE SIOUX?

**CABIN HEAT SYSTEM:** Ducts crushed, broken, loose, controls binding.

## SKIDS:

**GROUND HANDLING WHEELS:** Extension mechanism damaged. Tires damaged, worn, pressure not right. (50 to 60 PSI).

**FRICITION LOCKS OR HYDRAULIC SERVOS:** Do not have positive operation.

**SHIELDING:** Frayed, crimped, corroded, damaged. Connector plugs corroded, cracked, overheated, loose. Terminal strips, connections and bonding jumpers damaged, loose, corroded. Plastic tubing damaged, loose, draining improperly.

**FIRST AID KIT:** Seal broken, date of last inspection or serviceable tag missing.



**CONTROL CABLES:** Kinked, frayed. Turnbuckles not safetied. Pulleys worn, cracked. Bearings damaged, binding. Fairleads loose, out of line, binding. Inertia reel cables frayed. Control handles do not operate freely. Locks do not hold.

**CROSS TUBES, SKID GEAR, SKID SHOES AND ATTACHING FITTINGS:** Cracked, bent, corroded, worn, loose. (Look through the cross tubes, if you can't see through them, they're bent too far on the D, E, and G models).



## AIRFRAME: (Engine Section)

**HYDRAULIC RESERVOIR:** Cracked, leaking, improper fluid level, corroded, not secure. Vent filter leaking, corroded, not secure. Hydraulic filter leaking, corroded, not secure. Hydraulic lines, hose and fittings, leaking, chafed, damaged, not secure.



**SUPPORT BRACKETS:** Cracked, corroded, not secure.



**ACTUATING CYLINDERS:** Do not operate freely, leak, binding, corrosion.

**BUSHINGS:** Cracked, worn, corroded.



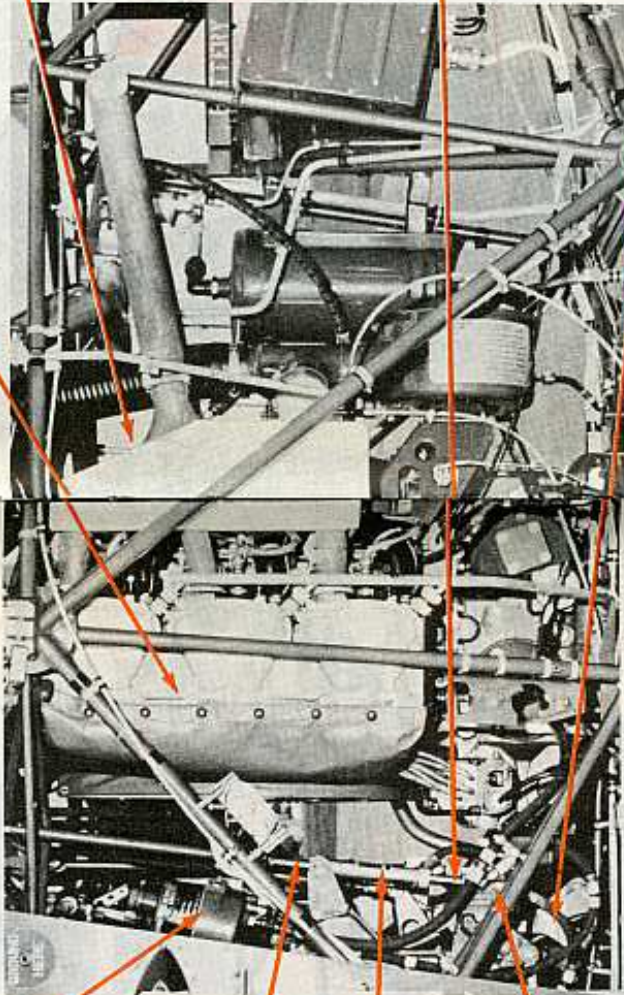
**REVERSE CURRENT RELAY, VOLTAGE REGULATOR, JUNCTION BOXES, TERMINAL STRIPS AND GENERATOR:** Not securely attached. Electrical connections not clean and tight. Boxes and tubing not clean and well drained. Shock mounts deteriorated. Bonding bad. Generator blast tube not secure and sound.



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## ENGINE AND TRANSMISSION

Leaks, loose or missing nuts, bolts, studs or clamps. Anything improperly saftied. Crankcase breather and line not clear and secure. Line chafed. Any vent and drain line not free. Any connection and anchorages not secure.



**METAL DECALS:** Not legible, loose.

**HYDRAULIC BOOST SYSTEM CONTROL VALVE:** Doesn't operate, leaks, not secure.

**ACTUATING ROD:** Doesn't operate, not secure.

**PUSH-PULL TUBES AND BELL CRANKS:** Cracked, corroded, loose.



## MAIN ROTOR BLADES:

**BLADE LEADING EDGES AND TRIM TABS:** Cracked, damaged, loose.

**BLADE ROOTS:** Deteriorated, sealing damaged, plates warped, corroded, fittings loose.



**BLADE PROTECTIVE COATING:** Cracked, peeling. Area between outboard end of face plates and inboard edge of fiberglass coating, wood cracked, coating cracked, peeling.



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## ENGINE MOUNT ASSEMBLY:

**ENGINE MOUNTS:** Cracked (check welded areas very carefully), corroded, out of line, loose. Lord mounts cracked, out of line.



**ENGINE CONTROLS (BELL CRANKS, CONNECTING RODS, CABLES, PULLEYS, TURNBUCKLES, GUIDES, FAIRLEADS AND LINKS):**

Worn, cracked, out of line, improperly adjusted.



**ENGINE COOLING:** Fan loose, blades cracked, damaged, out of line. Belts too loose, too tight, cracked, frayed, dirty, oily or greasy. Pulleys out of line, worn. Fan shroud not OK. External mounting ring loose, properly indexed to fan support, improperly seated.



**IGNITION HARNESS:** Loose, brackets cracked, conduits damaged by chafing or overheating, terminals not tight, spark plugs loose, elbows not OK, leakage.

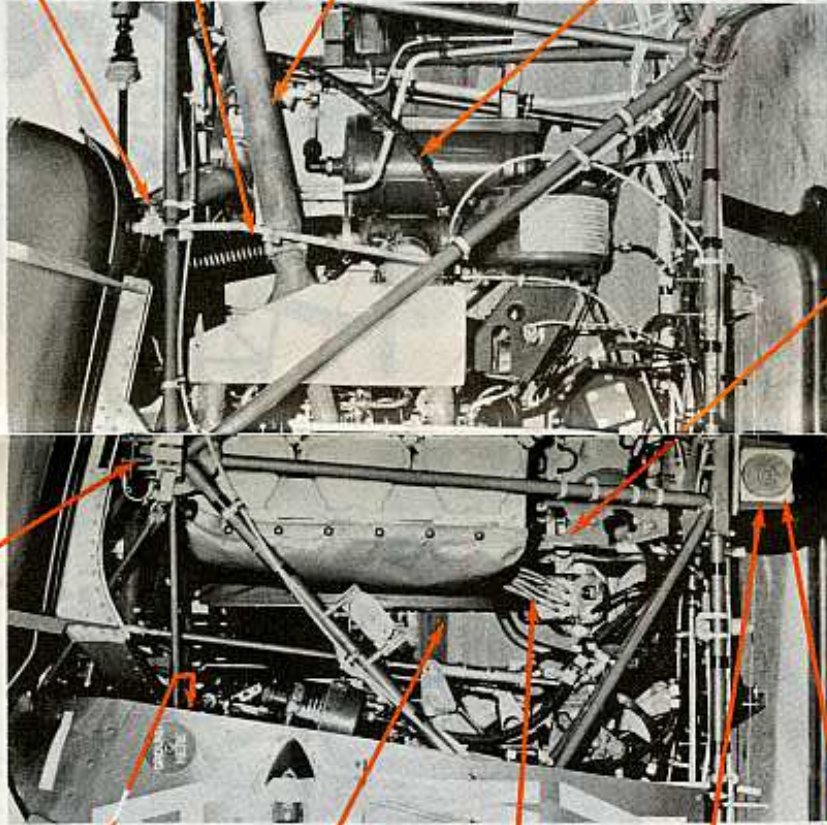


**LOWER LORD MOUNTS (FORE AND AFT, LATERAL):** Cracked, rubber deteriorated.

**ENGINE SPRAG SYSTEM:** Tubes and links distorted, loose, out of adjustment.



**CONTROL CABLES:** Kinked, frayed. Turnbuckles not adjusted. Pulleys worn, cracked. Bearings damaged, binding. Fairleads loose, out of line, binding. Inertia reel cables frayed. Control handles do not operate freely. Locks do not hold.



**FUEL SYSTEM:** Leaks, damaged, corroded, loose. Controls binding. Transmitter covers improperly adjusted. Connector plugs loose, corroded. Drain valves leaking. Tank support brackets and fire shields damaged, cracked, corroded, loose. Tank straps and pads out of line, corroded, loose. Turnbuckles loose. Safety wires missing.

**AIR DUCTS (INSIDE AND OUT):** Cracked, loose or missing clamps, bolts, rivets, screws or junk in openings. Ducts loose, flex tubing cracked, not clean, deteriorated. Carburetor air filter not clean, damaged, properly oiled (TM 1-1H-13C-2).



**EXHAUST SYSTEM:** Cracked, burned, loose. Manifold stud nuts missing, loose. (Torque 160-180 inch-pounds). Shroud cracked, chafed, burned, hot spots, clamps loose. Slip joints leaking excessively.



**OIL SYSTEM:** Leaks. Tubing: Dented, cracked, chafed. Hose connections cracked, cut. Hose clamps loose. Oil cooler damaged or clogged core, leaks, loose. Oil temperature regulator leaks.



**CYLINDERS:** Fins damaged. Hold down nuts loose. Air baffles loose, chafing. Push rod housings cracked, severely dented, leaking. Rocker boxes cracked, damaged. Covers loose, leaking.



**ENGINE ACCESSORIES:** Loose, damaged, chafed, deteriorated. Mounting brackets or clamps loose, cracked. Wires chafed.



**SAFETY CABLES:** Frayed, loose, out of adjustment. (Tighten so pin will slip in, then loosen 6 1/2 turns.)



## TAIL BOOM:

**TAIL ROTOR SHAFTS:** Damaged, any indications of a crack, scratched or blimished over 0.0002 inch deep, corroded. Bearing supports cracked. Caps loose. Bearings loose (inner race on the sleeve, outer race in the housing), rough (more than 0.005 inch side play). Fore-and-aft floating couplings worn, damaged, and binding grease-locked. Dust covers and grease retainers damaged, deteriorated, loose. Universal joints cracked, too much play (0.020 inch Max.), corroded. Sprckets (on C and D models) worn.



**BATTERY:** Cells low on electrolyte. Specific gravity low, high. Drains and vents clogged. Connectors and leads loose, corroded. Support structure loose, corroded, paint chipping. Cover and quick disconnect loose.

**SYNCHRONIZED ELEVATOR, FORWARD CONTROL SUPPORT IDLER BRACKET, TORQUE ROD AND LEVER ASSEMBLY:** Cracked, corroded, loose, binding.



## ELECTRICAL WIRING:

**ALL WIRING:** Damaged, chafed, deteriorated, loose, clamps not OK.



**FUSELAGE AND TAIL BOOM STRUCTURE TUBING AND FITTINGS:** Cracked, bent, distorted, corroded, paint peeling or chipping. Rust or corrosion on underside of lower center section members (check by pinging with light-weight hammer). Cracked or deteriorated seats.



**VENTRAL FIN:** Cracked. Fabric or aluminum deteriorated. Tubing damaged, loose. Drain holes clogged.



## TAIL ROTOR:

**TAIL ROTOR ASSEMBLY:** Yoke and blade grips cracked, binding, loose, pitch change head binding, out of line, worn, improperly stiffed.



**GUARD:** Cracked, dented, out of line, improper clearance from blades, corroded, loose.



**BLADES:** Distorted, out of line, any lifting or loosening. Check  $\frac{3}{32}$ -inch radius, flanges of leading edge at forward edge of reinforcement plates and engine root area for cracks. Metal blades scratched, bonding loose.

**CUP WASHERS:** Improper clearance. (0.002 to 0.004 inch for H-13G).

**GEAR BOX:** Cracked, damaged, leaking, loose.



**GEAR BOX SHAFT:** Loose, any end play, backlash in gear, rough bearings. Shaft rotor attachment bolt hole elongated, cracked. Pitch change rod threads worn. Sirk bearings loose.



**TAIL BOOM EXTENSION HOUSING:** Cracked, dented, scratched. Yoke and flange cracked, scratched or dented. Boom extension brace bolt holes elongated. Tail rotor vibration isolators loose, cracked at attachment to tail boom, cracked at all. Tail boom extension bearing does not have radial play.



**TAIL ROTOR AND SYNCHRONIZED ELEVATOR CABLES:** Loose, frayed, improperly stiffed, corroded. Pulleys and fairleads loose, binding, improper tension (T.R. 12-15 pounds, Stabilizer 24-30 pounds).



## MAST AND CONTROLS:

**STABILIZER BAR:** Incorrect movement, cracked, improperly saftied, loose.

**MAIN ROTOR HEAD:** Worn, damaged, corroded, improperly saftied, binding.

**STABILIZER BAR DAMPERS:** Leaking, loose, improper timing.

**SWASHPLATE:** Endplay excessive (0.012 inch max). Check for security by pressing on swashplate support, no appreciable looseness,  $\frac{1}{32}$  inch max.



**FLIGHT CONTROLS:** Push-pull tubes, drum assemblies, bellcranks and connecting levers bent, cracked, worn, improperly saftied, loose. Bearings binding, damaged. Brackets cracked, out of line, loose.

**VERTICAL LINKS:** Bent, cracked, loose, binding.

**FORE-AND-AFT LATERAL SWASHPLATE CONTROL LEVER:** Cracked adjacent to bolt holes. (Use dye penetrant or 10 power glass.) Torque bolts more than finger tight.

## ROTOR HUB ASSEMBLY:

**STATIC STOP:** Permanent set, or other evidence of hard contact from gimbal rings.

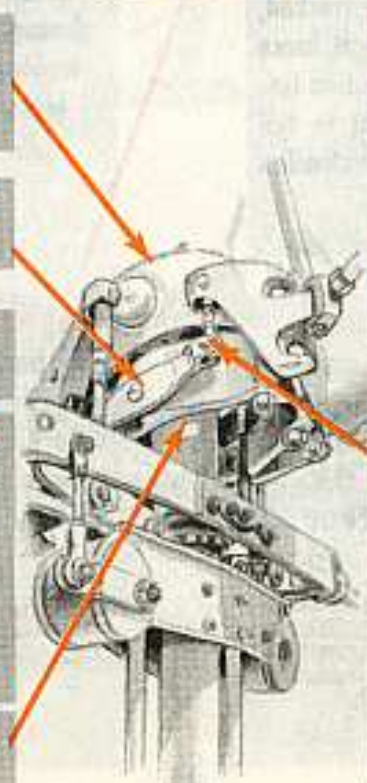
**ROTOR HUB ASSEMBLY SUPPORT:** Damaged, loose.

**BLADE GRIPS:** Cracked, binding, loose.

**DRAG BRACE ATTACHING BOLTS AND JAM NUTS:** Cracked, damaged, loose.



**EQUALIZER BEAMS AND LINKS:** Bent, cracked, damaged, loose.



**RETAINING NUT:** Damaged, loose, tang lockwasher in bad condition, incorrect torque.

**GIMBAL RING AND YOKE:** Binding, surfaces damaged, loose.

**DYNAMIC STOP CABLES:** Bad condition, not operational. Safety wire loop not intact.



**JOE'S  
DOPE**

**SONG  
OF THE  
UNSUNG FORM**  
DA FORM 468 (UER)

WONDERFUL!

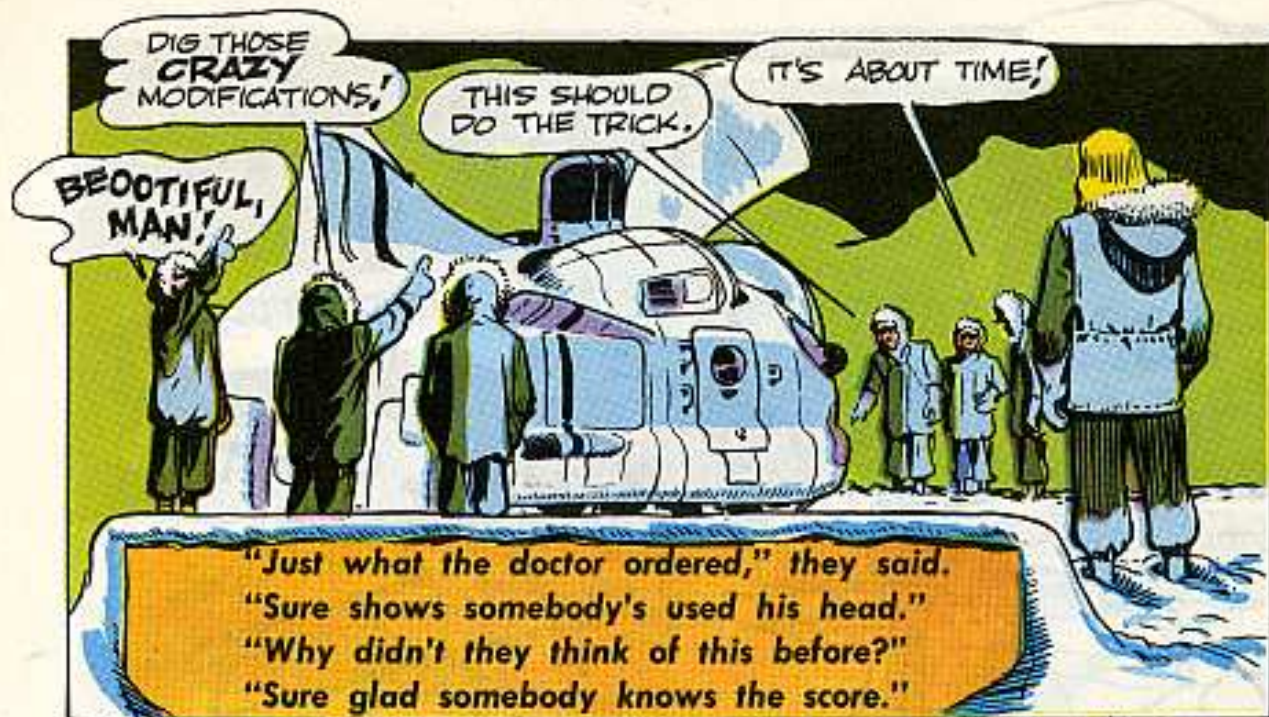
GREAT!

SWELL  
FIX!



Now . . . some of the boys were beating their gums  
About improvement on the new "AI's"  
They'd just received to replace the old,  
Which're hard to start when the wind gets cold.

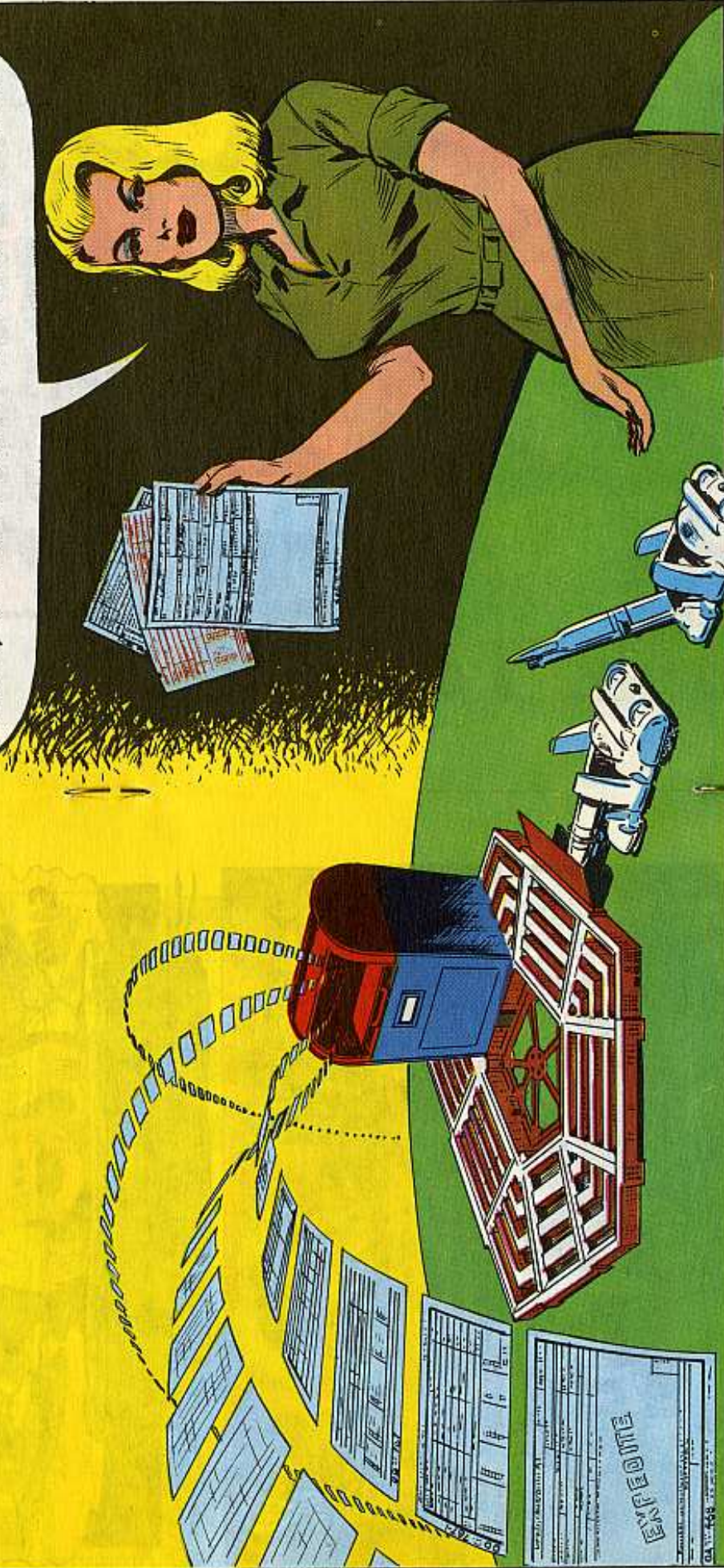






# JOE'S Dope Sheet

These forms pack a whole lot of weight  
In keeping equipment first-rate.  
If they speak loud and clear  
The design boys will hear,  
And you won't have too little, too late!



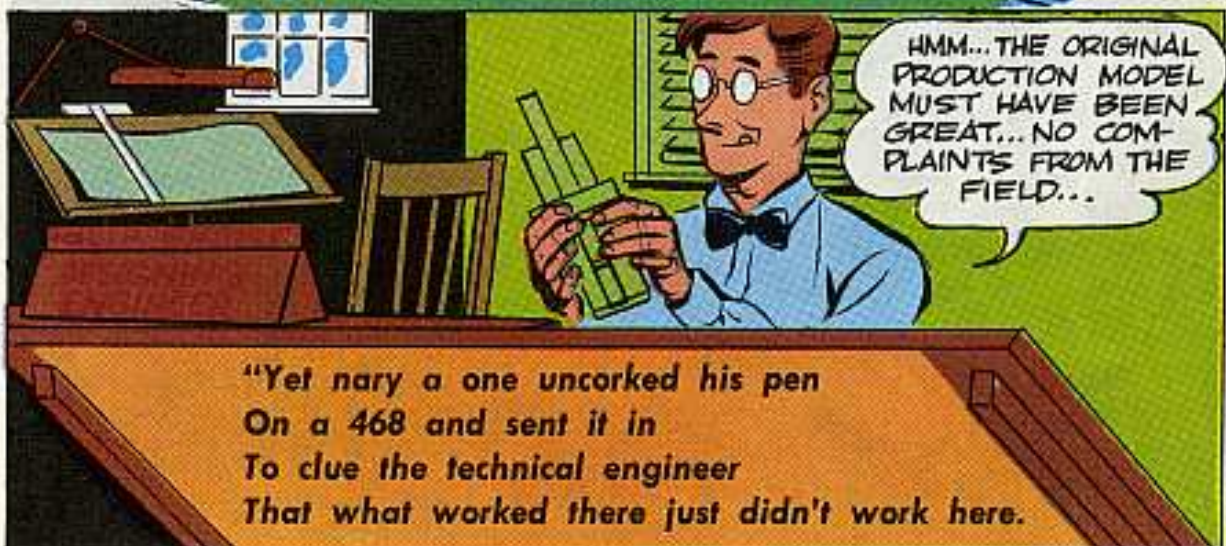
WE HAVE THE WORLD'S BEST EQUIPMENT ... *Take care of it*



"I've heard you men swear loud and clear  
About the trouble you've been having here,  
Making cold-weather changes on the throttle  
Of that superseded, exhausted model.



"And then there were other faults you found—  
The starting procedure was far from sound;  
The de-icing attachment was ineffective;  
And some of the parts were real defective.



"Yet nary a one uncorked his pen  
On a 468 and sent it in  
To clue the technical engineer  
That what worked there just didn't work here.



HEY, SARGE! WILLYA GIT A REPAIR CREW OUT HERE QUICK? THAT @:~!!@~! THING WON'T START!

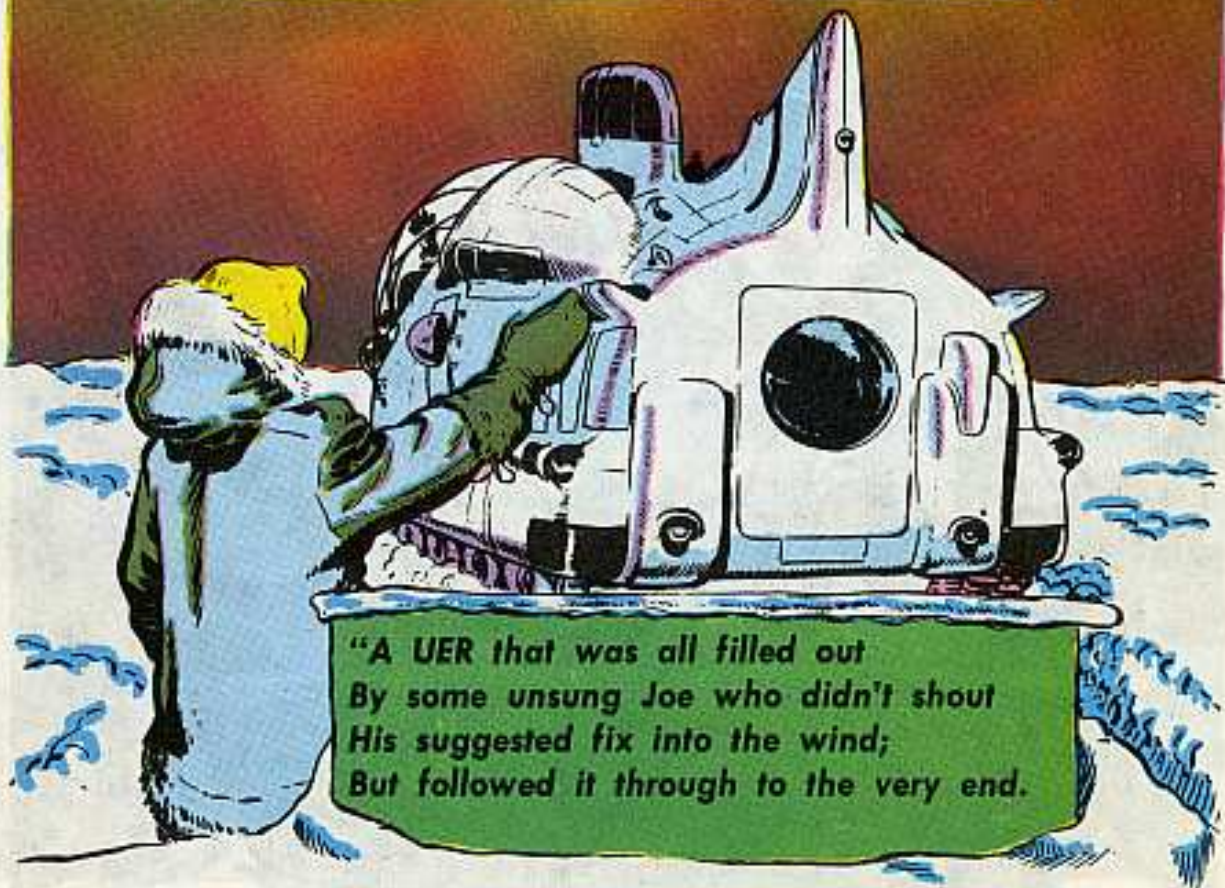
DON'T THOSE BRAINS BACK HOME KNOW HOW T'MAKE A GOOD VEHICLE FOR A CHANGE?

OK, OK. MUMBLE, MUMBLE. THOSE JERKS BACK IN TH' STATES!

"You swore, you cussed, you humped your backs,  
But never did once write down the facts—  
I know this air is thin and clear,  
But your voice won't carry to there from here.



"But, now you men are gay... you see?  
Your new "A1" is trouble-free.  
But it's more than luck—much more by far—  
Behind it all was a UER.



# QUESTION AND ANSWER DEPARTMENT



I WAS JUST TRYIN' TO DO A NEAT PAINT JOB SARGE.

## DON'T COAT 'EM

Dear Connie,

Our unit has a number of 5-gal water cans that need re-coating on the inside. TB QM 32 and para 138 of TM 10-270 say to use a glossy non-toxic, non-poisonous paint, preferably light cream or ivory in color.

What paint do we use?

Capt. P. R. C.



Dear Captain P.R.C.,

You won't need any, Captain. The word's just come through that painting the inside of 5-gal water cans is not authorized. TB QM 32 and para 138 of TM 10-270 are being rescinded.

Keep using the ones that have just minor scratches and pinpoint rust spots. They're OK. But, get rid of the ones that have larger areas. Turn in the ones that're no good. Just mark 'em unserviceable and non-repairable.

## AND ONE FOR EACH SPARE

Dear Half-Mast,

How many Part II's of the Weapon's Record Book should I have for the twin 40-mm guns and the two spare barrels for the M42 SPV?

SFC R.D.Y.

Dear SFC R.D.Y.,

Four!

You're supposed to have a Part II with each barrel—spare or otherwise.

Half-Mast.

## TANK TRACK TROUBLES

Dear Half-Mast,

We got troubles because our M48 tank tracks are badly worn. In fact, there is less than  $\frac{1}{4}$  inch of rubber left on the chevron and, in most cases, just  $\frac{1}{2}$  inch left. Our pins are breaking in many places and in several instances the track pins have ripped out of their housing due to metal fatigue.

I maintain that at this time we should replace the complete track—not just individual blocks. I also say that track replacement of individual blocks in a badly worn track will cause strain on the suspension system—due to the uneven wear of the blocks. What's your opinion about this?

Pvt J. D. K.

Dear Private J. D. K.,

The key to this problem of replacing individual blocks in a badly worn track can be summed up in the new track TM 9-2630-200-14 (Aug 58). Paragraph f on page 39 of this TM says:

"REPLACE STRETCHED LINKS WHICH CHANGE THE PITCH OF THE TRACK BY MORE THAN  $\frac{1}{16}$  -IN."

It's a good piece of advice and so's this from the following paragraph which says that distorted blocks should be replaced if the rest of the track warrants it. It fits in with exactly what you say.





It wouldn't be as serious in a cross-country operation . . . if you had to keep going.



There's one way to avoid this. When changing tracks, the serviceable blocks from the old track should be kept to replace unserviceable blocks in other worn, but usable tracks.

You hit it on the head with the track pins, too. According to tests made by Ordnance, the track pins are failing because of metal fatigue. These failures increase as the track operation mileage increases . . . especially after the odometer hits 1500 miles.

These problems, along with a lot of other maintenance headaches, can be solved by applying common sense. And it sure looks like you got a lot of that stuff in your outfit.

*Half-Mast*



Dear Half-Mast,

Here's a question I need an answer to—is the dispatcher's signature needed on DA Form 2145, Tracked Vehicle and Equipment Operational Record? If so, where does it go?

Sgt E. S. O.

Dear Sgt E. S. O.,

TM 9-2810 doesn't require DA Form 2145 to be signed by the dispatcher.

But if your local commander feels it should be signed, then he will probably set up a local SOP. He could divide the DATE block and have the dispatcher sign in the lower half of it.

*Half-Mast*

# MAINTENANCE FORMS



Dear Half-Mast,

Would like for you to set me straight on a few points in TM 9-2810 (1 Aug 58).

Paragraph 15 d states that related operational records will be filed for 60 days (two months) by the dispatcher then destroyed. Are these records DD Form 110 and DA Form 2145? Or just DD Form 110?

Paragraph 16 looks like it is for wheeled vehicles only (DD Form 110), and paragraph 17 looks like it is for tracked vehicles only (DA Form 2145). If so, what about paragraph 17 b (2)? Is the sixth line in that paragraph a misprint DD Form 110—shouldn't it be DA Form 2145?

What about paragraph 17 b (4)? Is there a maintenance section that can be destroyed, or is this a misprint?

CWO E.T.L.

Dear Mr. E.T.L.,

Here are the answers to those questions.

That paragraph 15d doesn't apply to either the DD Form 110 or DA Form 2145. It applies only to the dispatcher's Form 9-75. Disposition of the related operational records (DD Form 110 and DA Form 2145) is covered by paragraphs 16b(4) (c) and 17b(4).

That's an error in paragraph 17 b (2). It should say DA Form 2145.



That paragraph on page 32 is a little confusing since there's no separate maintenance section on the DA Form 2145. The dispatcher sends the whole form to the maintenance section after he's taken the info he needs from it. And the unit maintenance section will record the deficiencies in the current work file.

## TURN ABOUT'S ENOUGH PLAY



You having trouble keeping your 4000-lb, 144-in Service Caster S4024 fork-lift in radiator hoses and fan belts?

Know what you mean! Soon as you adjust and tighten the belt by lowering the generator, the belt starts chewing on the hose. Right?

Chances are someone has installed the hose backward.



1. Drain the radiator.

2. Loosen the clamps holding the hose.



3. Loosen the generator.



4. Turn the hose around; connect the longer straight section to the engine water pump and the other end to the radiator.



5. Put back the hose. (First, though, coat the hose end with Cement, Gasket, liquid type, Mil Spec C-10523 (Ord) FSN 8040-245-7031 (pint).



6. Re-tighten fan belt and fill up the radiator.

You'll gain about  $\frac{3}{8}$ ths of an inch on this deal—enough to let the fan and the hose get along together.

ON YOUR 3/4-TON TRUCK

BE YOUR OWN

INSPECTOR



Here's a Be-Your-Own-Inspector Guide for your G741-series 3/4-ton truck. When using this guide, keep these in mind:

There are deficiencies—and then again, there are deficiencies. You'll be able to know which are more serious if you remember what AR 750-8, Appendix III says. It defines a major deficiency as

“... one which would cause the item to be unsafe to operate, cause the item to function improperly, cause the item not to operate, or cause further damage if continued in operation.”

On the other hand, the AR says a minor deficiency is

“... any other deficiency which will not cause immediate or subsequent breakdown, nor jeopardize the safe operation of the item...”

And, what's important, you, the driver, are responsible for recognizing deficiencies and doing something about 'em, regardless of what echelon of maintenance the repair work is in.

In other words, if you find something that makes your truck unsafe to operate or which can lead to real bad damage, you know it's a major deficiency and it's up

42

to you to get it fixed before you take the truck on the road. Maybe your second echelon mechanic can do the job, or maybe the truck has to go back to your support outfit, but you're the one who says, "This truck needs fixin'."

As long as a deficiency doesn't hurt the operation of your vehicle, doesn't make the vehicle unsafe to run and doesn't cut down on its performance, it can be fixed when time and the situation allow. You're covered on this sort of thing when you report it on your trip ticket.

Watch that spit-and-polish replacement. If a part'll keep operating efficiently although it looks beat up, keep it on your truck. Parts cost money, and money is something which everybody likes to save, including Uncle Sam.

Your outfit's motor park is the best place to make these checks, so you'll be near your unit's mechanic in case you need help or in case he wants to go over the vehicle with you.

If you've got a wash rack, it'll come in handy for checking the underside of your vehicle.

The real serious deficiencies are in heavy type.

Most of these deficiencies are things which the driver should recognize and take care of himself. Those items marked (\*) are deficiencies the second echelon mechanic can handle.

43

**SPOTLIGHT**—(On M43 ambulance & V4) telephone maintenance truck)—*Not working*, lens cracked, clouded, contains water, obstructed with paint.

**WINDOW GLASS**—*Broken*. Dangerously cracked. Clouded enough to block driver's vision.

**NATIONAL & UNIT MARKINGS**—Missing, incorrect, not legible. (AR 746-2300-1 has all the correct dope on this.)

**DOORS**—Won't open and close properly, hinges loose, broken, missing. Door stops missing, broken, won't stop door in two positions. Weather stripping loose, worn, cracked, missing, shredded. Windows won't work.

**RUNNING BOARDS**—Bent, mounting bolts loose.

**FUEL CANS, BRACKET & NOZZLE**—(Normally only the bracket is present.) Mounting bolts loose, strap worn, trayed, mildewed, missing.

CHECK ALL BOLTS FOR TIGHTNESS.

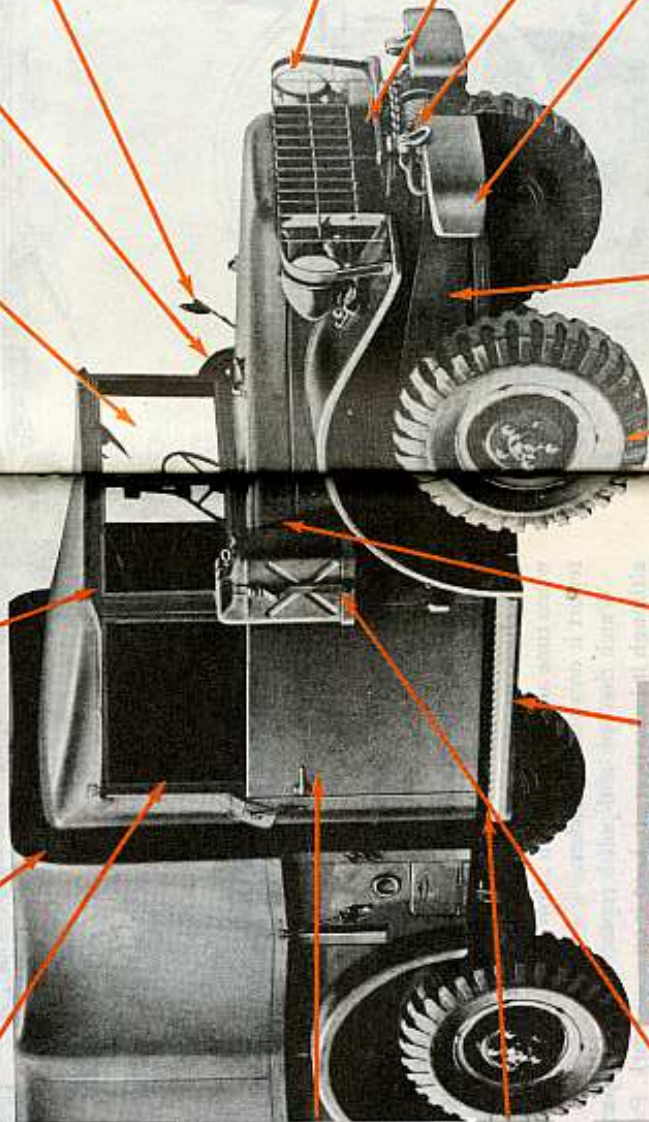


## OUTSIDE OF VEHICLE (FRONT)

**CANVAS, BOWS & STRAPS**—Tom, broken, dirty, missing.

**WINDSHIELD WIPERS**—Blades missing, arms broken, dead or hardened rubber. (With wiper on, blade shouldn't hit weather stripping on either side of windshield.)

**WINDSHIELD**—Cracked on driver's side, clouded enough to block driver's vision. Weather stripping around windshield cracked, torn, coming loose.



**CAB & BODY BOLTS & MOUNTINGS**—Missing, loose, broken.

**HOOD**—Hinges and fasteners missing, broken, worn, bent, loose, rusted, not lubricated (should be a thin coat of oil). Hood loose, squeaks when opened, dented, out of alignment. Safety fastener catch won't work, missing, broken.



**FRAME**—Bent, cracked, side rails and cross members loose.

**WHEELS**—Tires cut, blistered. Lug nuts missing, loose. Axle flange nuts missing, loose. Rims bent. Two axle puller screws missing, broken, bent. Valve caps missing. Incorrect pressure (Tire pressure should be 40 PSI for cross country or highway driving; 15 PSI in mud, sand, snow.) Tube or brake fluid leaking (not a seep).

**SPARE WHEEL LOCKING STUD & NUT**—(On M43 ambulance only)—Missing, loose, cracked.

**MIRRORS**—Missing, broken, clouded enough to block rear-view vision. Can't be adjusted for movement in every direction.



**SLAVE RECEPTACLE**—Contacts burned beyond use.



**HEADLIGHTS & BLACKOUT LIGHTS**—Not working, lenses cracked, clouded, dirty, contain water, obstructed with paint, blackout shield missing, not in place.

**GRILLE & BRUSHGUARD**—Bent, loose.

**LIFTING SHACKLES**—Missing, bent, stuck, cotter pin missing, loose, won't swivel.

**BUMPERS, FENDERS & SPLASH GUARDS**—Bent, loose, cracked, rusty, missing bolts.

**GENERAL VEHICLE APPEARANCE**—Dirty, rust spots, body dents. Split seams (welds must be intact).



**REAR WINDOW**—Fogged enough to hamper vision, ripped.



**WINDSHIELD WIPER CONTROL**—Missing, won't work. Hold-down fasteners bent, broken, bolts loose. Seals cracked. Flexible hose cracked.



**CAB**



**WINDSHIELD LOCK**—Missing, rusty, won't work.

**CAB TARP**—Ropes frayed, canvas torn.



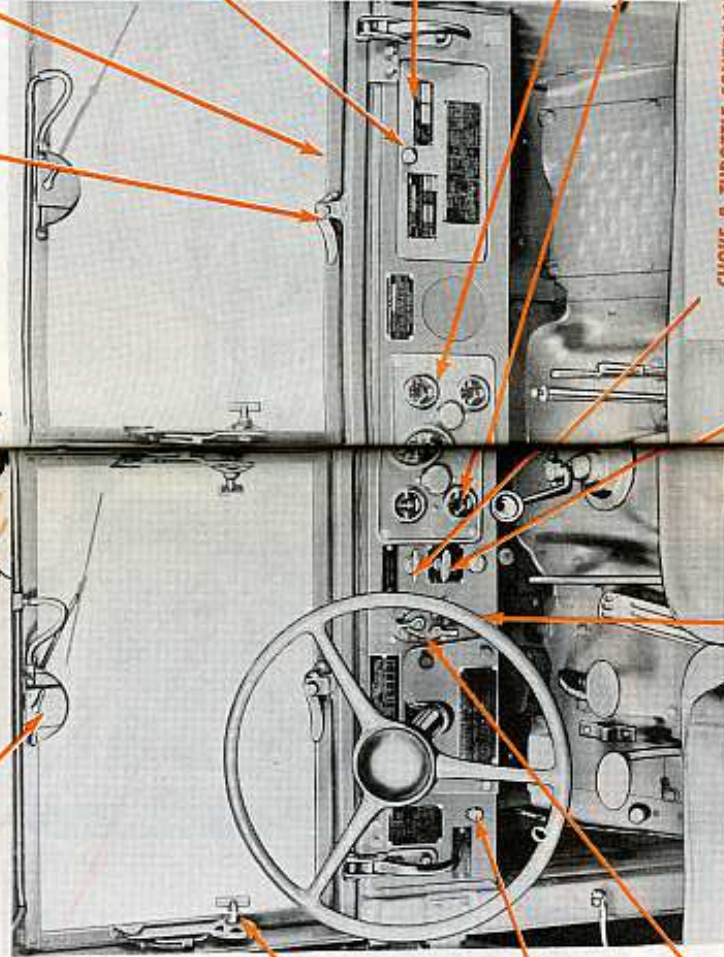
**WINDSHIELD ADJUSTING ARM**—Broken, bent, missing, won't work.



**ENGINE PRIMER**—Won't work. (Needed only in cold weather.)



**LIGHT SWITCHES**—Broken, won't work.



**IGNITION SWITCH**—Loose, broken.



**CHOKE & THROTTLE CONTROLS**—Missing, loose, won't work.



**FORDING VALVE HANDLE**—Broken, does not operate.



**WINDSHIELD CHANNELS**—Rusty, loose, welds cracked, broken. Retaining fasteners missing, loose, broken, bent.



**GLOVE COMPARTMENT**—Loose, latch broken, falls open, leaks water, dirty. **FORMS & PUBLICATIONS** (LO, TM, DD Form 518, SF 91)—Missing, unreadable, incorrect publications, DD Form 518 not filled out. Flywheel housing drain plug missing (for fording).



**DATA & CAUTION PLATES**—Not readable, missing, painted over.

**INSTRUMENTS**—Not working, lenses broken, cracked, clouded.



**WATER TEMPERATURE GAGE**—Lens cracked, dirty, clouded. Doesn't work right (temperature should read between 160°F and 180°F when engine's warmed up).



**STEERING WHEEL**—Bent, cracked, mounting loose in cab or frame, excessive play.



**HORN BUTTON**—Won't work, loose.



**POWER TAKEOFF SHIFT LEVER**—Stuck, loose, bent.



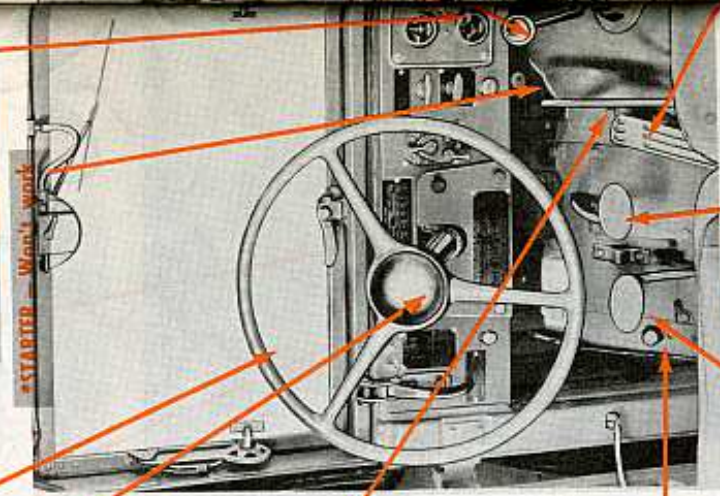
**DIMMER SWITCH**—Broken, loose, delay between high and low beam, light on dash won't work.



**DRIVER'S SEAT REGULATOR LEVER**—Won't work.



**HEADLIGHT HIGH BEAM INDICATOR LIGHT**—Missing, with upper beam lights on doesn't work. Obscured with paint.

**BRAKE PEDAL**—Spongy, grabs, improper adjustment (travel should be between 3/4 to 1 inch).



**CLUTCH**—Improper free play (should travel free 1 inch) grabs, chatters, slips, parts missing, loose.



**TRANSMISSION GEARSHIFT LEVER**—Stuck, loose, bent, knob missing, boot torn.



**ACCELERATOR PEDAL**—Sticks, loose, boot missing or torn.



**COWL VENT HANDLE**—Broken, loose.



**PARKING BRAKE**—Won't work, loose, broken.  
\*Not adjusted right.



**TRANSFER SHIFT CONTROL LEVER**—Stuck, loose, bent, knob missing. (Check while driving.)



**TRANSFER DECLUATCH CONTROL LEVER**—Stuck, loose, bent, knob missing. (Check while driving.)



**DOORS**—Gaskets and seals frayed, cracked, missing. Plates missing, loose.



**FLOORBOARDS**—Bent, loose, bolts missing.



**SEATS**—Cushions torn, missing, seat regulator knob bent, broken, springs missing, channels loose, hinge plates loose.



**MASTER CYLINDER**—Leaks, improper level (brake fluid should be 3/4 inch below top of filter plug opening).



## UNDERNEATH VEHICLE

**FUEL TANK** — Leaking, loose, bent, dented. Gas level too high (must be at least 2 inches below top of tank). Outside of tank dirty, rusted needs paint. **Fuel strainer missing**, chain missing, loose, broken. Drain cock leaking. Support straps rusted through, loose. Filler pipe vent hose & hose clamps missing, loose, rusty. 20 GAL PER MIN stencil missing.

**\*DIFFERENTIAL** — Leaky plug (check for looseness). Improper lube level (use same procedure for checking as on transmission). Bolts loose, vents plugged, gasket leaks.

**\*GEAR CASE AIR VENTS** — Stuck, clogged, loose.

**HYDRAULIC LINES & BRACKETS** — Pinched.

**\*SHOCK ABSORBERS** — Bushings worn, cut, damaged. Housing bent. Cotter pin missing. Bracket loose.

**\*SPRINGS, U-BOLTS, CLIPS, SHACKLES** — Broken leaves. Rebound clips, U-bolts missing, loose. Rubber bump plates missing. Shackle mounting bracket rivets broken (cracked paint around rivets is a sign of broken rivets).



**\*BRAKE LINES & HOSE CONNECTIONS** — Lines leaking, twisted, kinked, connections loose.

**\*EMERGENCY BRAKE LINING** — Loose, worn, linkage loose.



**\*CROSS BRACES** — Bent, loose.



**\*TRANSMISSION LINKAGE** — Bent, broken.

**\*ENGINE & TRANSFER CASE MOUNTINGS** — Bent, loose.

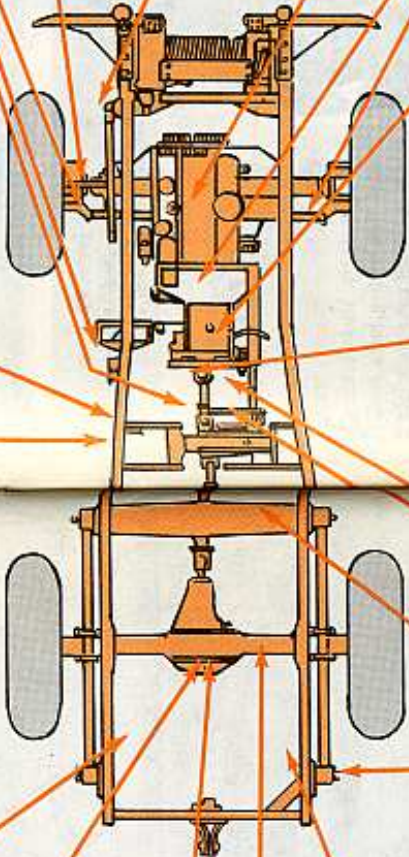


**TRANSFER CASE** — Linkage loose, mounting brackets loose, improper oil level, leaks.



**MUFFLER & CLAMPS** — cracked, burned out, clamps worn, loose, missing.

**TAIL PIPE** — Clogged (with mud), collapsed, cracked, dented. Clamps missing, loose.



**\*DRIVE SHAFTS & UNIVERSAL JOINTS** — Bolts or shafts loose. U-joints loose, not lubed. Excessive play in spline shaft.



**\*TRANSMISSION** — Leaky Drain plug (check for looseness). Improper lube level. (When lube's cold, stick in a clean finger up to the first joint—the tip should just be touching the lube. When lube's hot, should be at plug level.) Mounting bolts missing, loose.



**BRAKE MASTER CYLINDER** — Loose, leaking.



**STEERING GEAR FILL & LEVEL** — Leaks. \*Improper lube level.



**\*FRONT AXLE HOUSING (CV JOINTS)** — (Gotta be lubed as outlined in Note 6 of LO 9-8030.) Rusty, badly scored, flange bolts loose, turning stop bolt weld broken, leaks, dirty breather vents.

**\*STEERING IDLER ARM** — Loose, bent, not lubed.



**ENGINE OIL PAN** — Dented, leaky gasket, leaky plug (check for looseness). Bolts loose.



**FLYWHEEL HOUSING** — Drain plug in (in only for fording). Not in map compartment.



**\*TIE ROD ENDS** — Bent, loose, worn.



## COMPARTMENT

ELIGIBLE 30

**CRANKCASE OIL** — Level too low (should be no lower than one quart below top full mark). Too high (should be no higher than 1/8 inch above top full mark). **Cap missing.** Cap gasket damaged, missing. Stick's baffle missing.

**ENGINE MOUNTING** — Bolts missing, loose.

**\*REGULATOR** — Loose electrical connections, regulator mounting loose, seals broken.

**\*STARTER** — Bolts loose, cables & linkage loose.

**\*IGNITION WIRING** — Cracked, shield broken open; plug threads crossed.

**UNUSUAL ENGINE NOISES** — If you hear any unusual engine noises, report 'em to your organizational mechanic.

**\*CYLINDER HEAD** — Cracked. Compression or water leaks. (A hissing sound is the tipoff.)

**OIL FILTER & BRACKET** — Filter leaks, dirty, loose. Retaining chain and cap missing, broken.

**BREATHER** — Loose, bent.

**\*GENERATOR** — Loose electrical connections, generator mounting loose, bracket broken.

**\*ENGINE WATER TEMPERATURE SENDING UNIT** — Loose, rusty, mounting brackets missing, loose electrical connection.

**\*DISTRIBUTOR ASSEMBLY** — Loose electrical connections (should be finger tight only), mounting loose, dirty. Cap cracked, breaker points pitted.

## ENGINE

**\*FORDING VALVES\*** — Free adjustment — should travel through full arc.

**\*CARBURETOR** — Engine idling too fast or too slow. Air cleaner loose, oil level low (must be up to level mark), more than 1/8 inch dirt, parts missing, gasket missing. Linkage sticking. Vent lines & hoses cracked, bent, loose, **leaking**, holes, clogged.

**\*SPARK PLUGS** — Loose, dirty, porcelain cracked, burned; gaskets crushed; electrodes burned, eroded.

**WATER PUMP** — Not lubed.

**\*MANIFOLDS** — Cracked, loose, leaking gaskets. Studs broken, missing. Nuts missing, loose. Manifold heat control valve stuck fast.

**FAN BELT** — Cracked, dangerously frayed or shredded, oily, greasy. Incorrect adjustment (should be 1/2-in deflection).

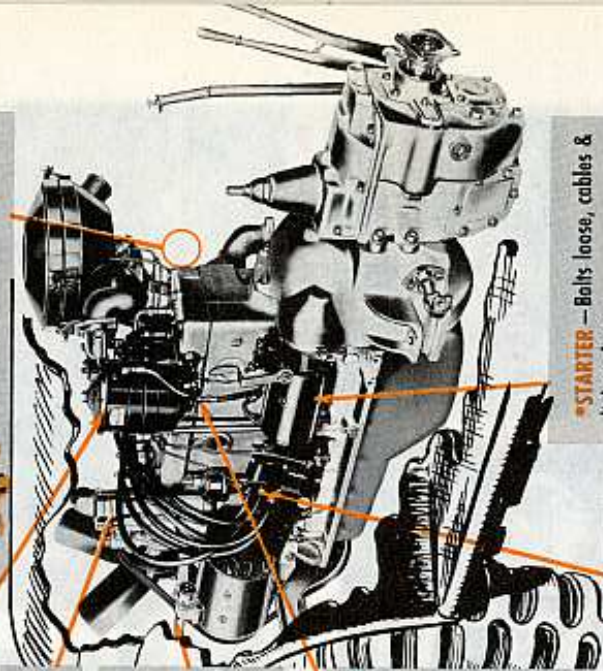
**FUEL PUMP** — Broken, loose, leaks. Primer handle missing, broken.

**CRANKCASE VENT LINE** — Loose, broken, pinched.

**RADIATOR** — COOLING SYSTEM HOSES, CLAMPS — Coolant below proper level (should be within 2 1/4 inches below top of filler neck). Water rusty, dirty. Shrouding loose. Brackets loose. **Radiator leaking.** Cap gasket missing. Fins dirty, bent, lotta bugs, leaves. Hoses worn, torn, collapsed. Clamps missing, broken, loose.

**CHOKE** — Won't work, wire broken, bracket broken, screw missing.

**RADIATOR-TO-ENGINE-SUP-PORT RODS** — Missing, loose, rusted.

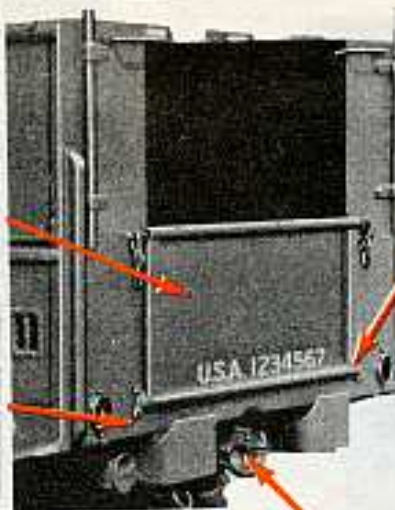


## OUTSIDE OF VEHICLE (REAR)

**PIONEER BRACKETS** — Missing, bent, loose; straps missing, mildewed, worn, torn.

**TAILGATE** — Bent, chains missing or broken; chain guard missing; retaining hook bent so tailgate won't open.

**REAR LIGHTS** — Not working, lenses cracked, broken, discolored, covered with paint.



**TARP HOOKS** — Missing, bent, rusty.

**REFLECTORS** — Missing, cracked, broken, dirty, discolored.

**BUMPERETTES** — Bent, loose, broken.

**TRAILER COUPLING RECEPTACLE** — Full of dirt, damaged, loose, cover bent, missing.

**PINTLE & LIFTING SHACKLES** — Missing, loose, not lubed, can't be opened, lock pin not attached with chain, pintle spring broken.

## IF YOU'VE GOT A WINCH

**\*WINCH PROP SHAFT SHEAR PIN** — Broken, rusty, not lubed (should be coated with GAA semi-annually), missing.

**WINCH WORM CASE** — Lube level not at level plug.

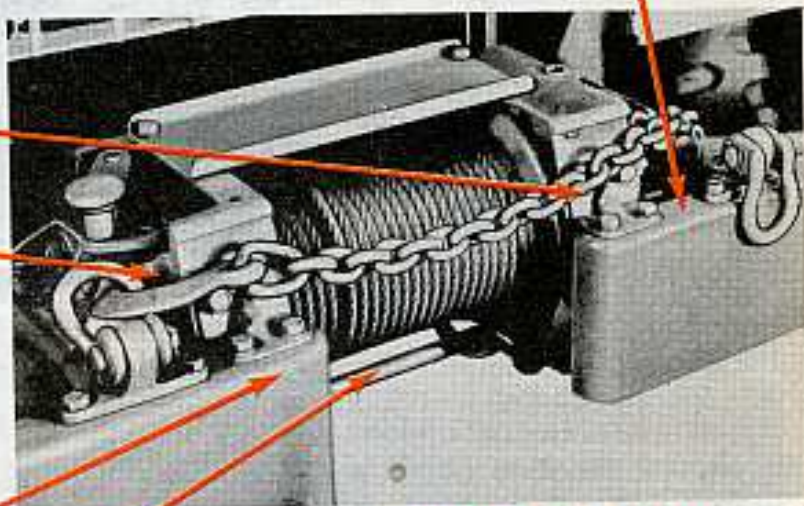
**CLUTCH SHIFTER HANDLE** — Doesn't operate freely, bent, broken, rusty.

**THIMBLE & CLAMPS** — Worn, damaged.

**WINCH BUMPER BRACKET BOLTS** — Loose.

**CABLE** — Dirty, rusty, worn, shredding, not lubed, loose on drum, kinked.

**CHAIN** — Rusty, dirty, hook hanging over bumper (must be anchored.) Damaged links, damaged hook.



**WINCH DRIVE SHAFT** — Dry (should be lubed), dirty.

**WINCH FRAME BRACKET BOLTS** — Loose.

## CARGO COMPARTMENT

**SPARE WHEEL** —Missing, incorrect tire pressure, tread worn, brackets missing.

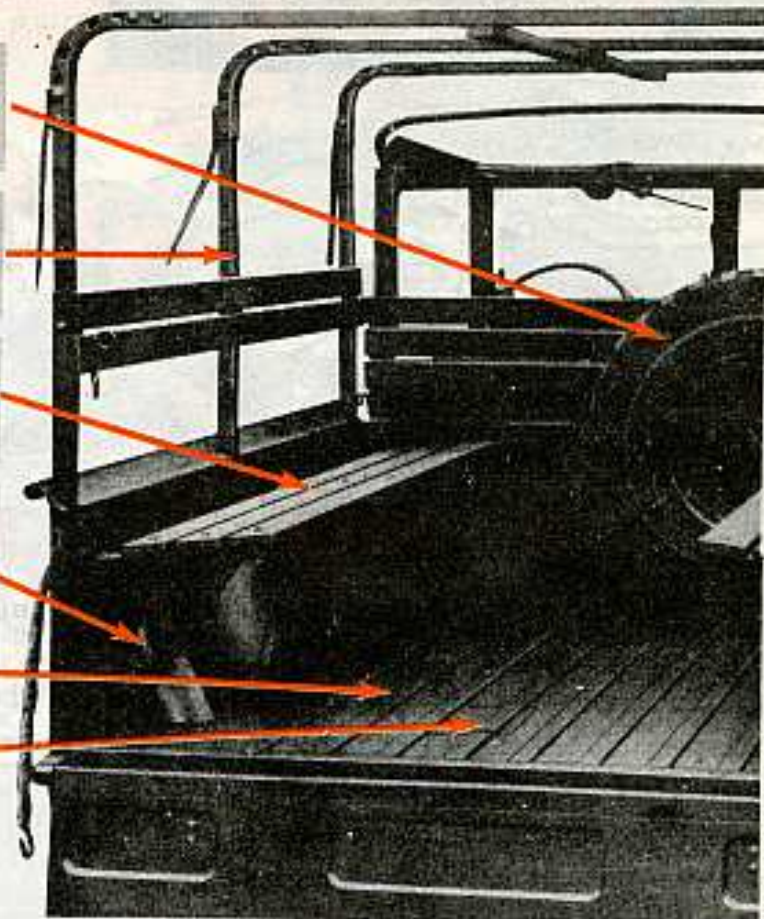
**SIDE RACKS** —Missing, bent, wood rotted, tie down hooks and cargo bolts broken, missing, bent, loose.

**SEATS** —Broken, rotted, brackets missing or bent, cotter pins missing, bracket retaining pins missing.

**COVER PLATE OVER FUEL TANK FILTER** —Missing, loose.

**FLOOR PLATES** —Missing, bent, damaged.

**COVER PLATE ON FILLER NECK OF GAS TANK** —Missing, bent, loose.

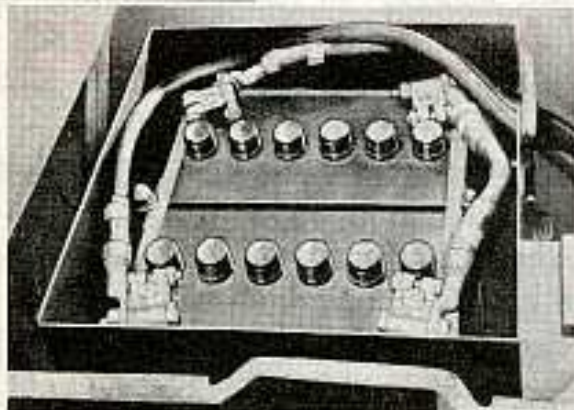


## BATTERY COMPARTMENT

**BATTERY CONNECTIONS** —Loose, corroded, insulation broken, frayed. Ground cable hits battery cover.

**BATTERY COMPARTMENT** —Rusted, corroded, trashy.

**\*BATTERIES**—Vent caps missing or clogged. Specific gravity below 1.220 at 80° F (check it with the hydrometer from your unit's second echelon tool kit). Case cracked, dirty, corroded, loose in carrier. (Water level should be  $\frac{3}{8}$  inch below top of cell, or covering plates.)



**COVER**—Hold down bolts and nuts missing, rusted, corroded. Cover loose, rusted, corroded. Battery cover latch and support rod missing, broken, bent.



## TAP, TAP, TAP

That's the way they go—those moisture-proofing covers on the mouthpiece and earpiece of the Perk 6 (AN/PRC-6).

A guy gets restless, impatient, just plain bored out there waiting for the next message. So he makes like the "doodler" in a phone booth. He starts tapping—only instead of using the wall of a booth he picks on the moisture-proofing covers on the receiver and transmitter of his handie-talkie.

And those covers can't take that kind of punishment. They'll end up holey as all that, their moisture-proofing days finished for good. And the next fording operation or wet weather could drown the set and maybe wash out a mission.

'Stead of tappin', then, try thinking about Connie to help the clock go around. Better still, a touch of preventive maintenance on that PRC-6 while you're waiting will keep everything on tap and ready to go.



## TO PLUG OR NOT TO PLUG

That's the question, sometimes.

Whether it's better to leave the radio's connecting cables plugged in—or whether to unplug 'em.

This question usually rolls around when a Jeep or  $\frac{3}{4}$ -ton or even a deuce-and-a-half mounting radio equipment goes back for repair or limited storage.

Corrosion is the problem. Does a plug get corroded quicker by being disconnected—or left in position? Well, it's the old story. A little of both.

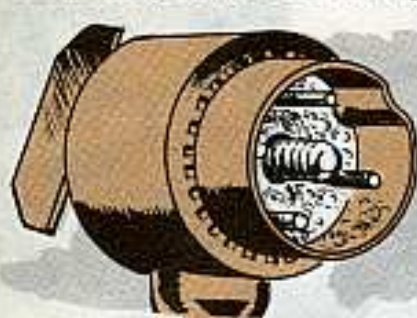
For instance: When you unplug a plug, you're exposing it to what some people call "external water sources." Which could include just about any way that a plug could get wet. So why not leave it plugged in?



There's trouble brewing if you do that, too. Even though you hear talk about



"sealed units" and "waterproof connections," there's still the fact that nothing is completely sealed or waterproof. Or, for that matter, moisture proof.



WHEN  
IT  
CORRODES ...

Because even small changes in temperature cause metal to "breathe," and that breathing produces small amounts of moisture. And the more that moisture builds up, the closer you're getting to corroded metal on the inside of your connector.

On top of that, there's always the chance of an electrolytic action goin' on inside a plugged-in plug. That'll lead to arcing and damage next time the radio is switched on.

So figure on a policy of "periodic inspection" of all plugs at all times under just about all conditions. Once a week is good. 'Cause if your plugs are left unhooked, you're risking exposure to those "external water sources." And if they're left hooked up, watch the electrolysis and "breathing".

Corrosion fades away mighty fast after a few brisk strokes with sandpaper or a few minutes work with a burnishing tool. That quick maintenance will brighten your plugs and keep the current flowing smoothly.

... CLEAN  
IT  
UP



## PM FOR

When the words start flyin' around as fast as the bullets, it's comforting to know that your field switchboard is "hitting on all 12" and getting the message to the right man at the right time.

Rugged and ready as the SB-22/PT portable field switchboard is, it still needs the preventive maintenance touch that usually means the difference between success or failure.

**CAPTIVE SCREWS**—loose, too tight.



**DESIGNATION STRIP**—dirty, multi-lated.



**STRAPS**—mildewed, torn, frayed.



**PUSH-TO-TALK SWITCH**—fails to make contact in either position; intermittent contact.



**SIGNAL LIGHTS**—fail to operate.



**HEADBAND**—bent, dirty, cracked, mildewed.



**JACKS**—tension weak, not holding.



## AN SB

And a successful SB can be kept that way with a quick "be-your-own-inspector" treatment that carries a message that can be heard five-by-five anywhere, any time.

The items in heavy type on the check list are major deficiencies. Let your repairman know about 'em quick.

**TRAFFIC DIAGRAM**—difficult or impossible to read.



**CASES**—scratched, bent, broken.

**COVER LATCHES**—bent, loose, fail to make tight connection.



**BATTERIES**—leaking, bulging, corroded.



**GASKET**—cut, hardened.



**CORDS**—cut, frayed, spliced.



**PLUGS**—dirty, bent.

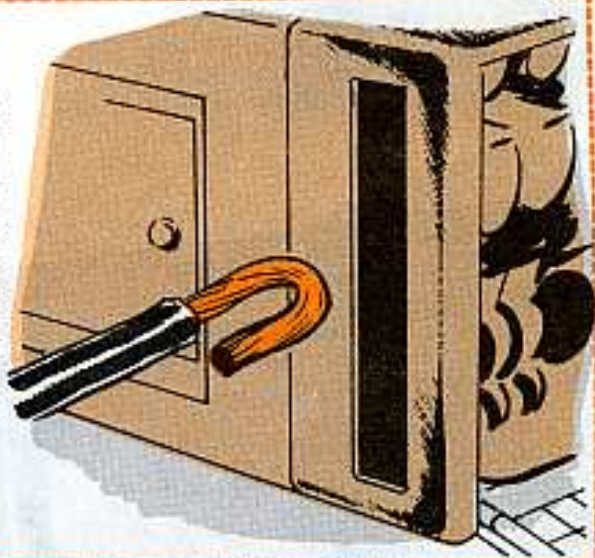


FOR A PERSONAL TOUCH TO YOUR HANDY CHECK-OFF, THERE'RE A FEW EASY "EXTRAS" THAT SOMETIMES DON'T SHOW UP ON THE USUAL CHECK LIST (DA 11-246, 1 MAY 57). BUT THEY'RE MIGHTY GOOD TO KNOW. GOOD FOR THAT SB-22/PT, TOO.

**1.** Never lay the switchboard on the cold, wet ground. Give it a little protection from the weather by putting it on a poncho or piece of canvas. And leave enough left over so's you can fold it over the switchboard when the rain or snow starts fallin'.



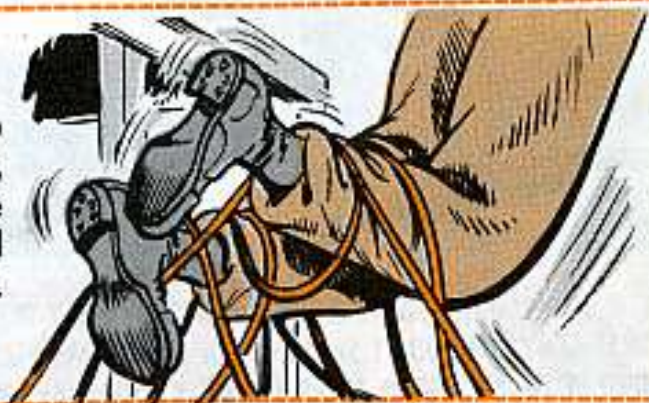
**2.** When you're getting ready to connect up a new line, make a small loop at the end of the wire just before sliding it through the heavy rubber gasket opening at the side of your board. If you jab wires through that gasket head-on, they'll eventually tear, cut and generally mutilate it—even though it's thick, tough rubber. A loop will make it easy to slide the wire through—with no complaints from the gasket.



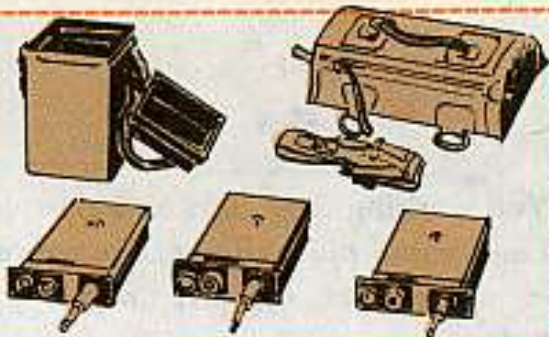
**3.** And speaking about loops, if your lines are coming in from overhead there's a good chance you and the switchboard are in for the steady drip treatment next time the weather turns wef. Easily fixed, though, by putting a rain loop in the wire before you connect it to the board.



**4.** One other word about those lines. Keep 'em covered. They'll get kicked, tripped over, caught on and generally cursed unless they're out of the way as far as possible and protected from the foot traffic around the switchboard.



5. And when you're ready to move out, look around and make sure your Accessory Kits MX-230/PT and MX-230A/PT are ready to go. You'll want to be sure they're packing all the running spares, too, and that those spares are in good condition. You won't have time to do anything about it later on.



## THE BIGGEST LITTLE TOOL KIT



Two for TE (33).

Two tools plus a pouch—that's the lineup for one of the handiest tool kits in this man's Army . . . the TE-33.

But sometimes the wrong pliers'll get slipped into the kit when they're made up. Leave us look at the TE-33 (FSN 5180-408-1859):

### **KNIFE, POCKET (TL-29):**

cutting blade  $2\frac{3}{8}$  in min to  $2\frac{9}{16}$  in max length; w/screwdriver and wire scraper. FSN 7340-240-5943 (QM)



### **PLIERS (TL-13-A):**

lineman's; sidecutting w/wire skinner; 6 in lg. FSN 5120-247-2063 (QM)



### **POUCH CS-34:**

leather w/flap; belt fastening type. FSN 5140-498-8898 (SIG)



The TE-33 is Signal Corps issue, but the knife and pliers are QM. So if you need the whole set—call Signal. If you need only one tool—call QM.



You working these days on a teletypewriter rig?

Fine, 'cause preventive maintenance on an AN/FGC-20 (or just about any teletypewriter set, for that matter) is just about as simple as the equipment is complex.

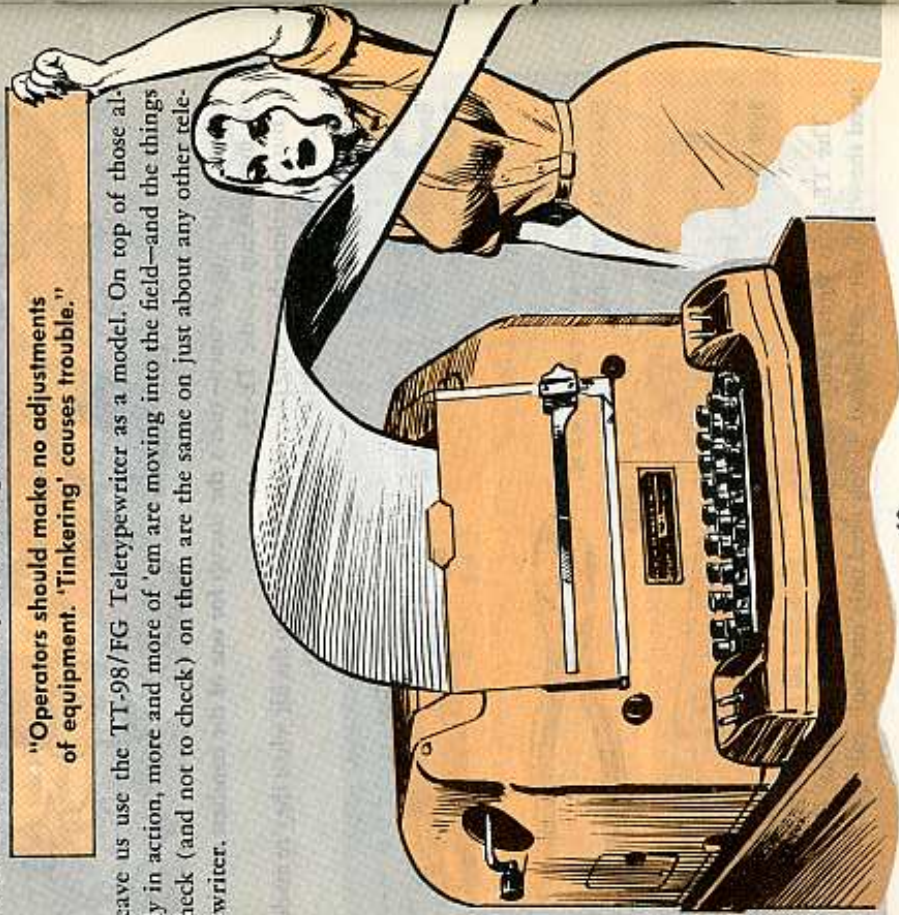
A hand or two... a clean cloth... a watchful eye... and a few minutes of your time. That's all a sharp operator needs to keep the messages moving. No special tools. No fancy test equipment.

As a matter of fact, the whole idea of good operator maintenance on teletype equipment is to keep HANDS OFF. Except for a few very important checks.

There's a sort of golden rule for teletype assemblies—as far as the operator is concerned. A little formal, maybe, but simple:

**"Operators should make no adjustments of equipment. 'Tinkering' causes trouble."**

Leave us use the TT-98/FG Teletypewriter as a model. On top of those already in action, more and more of 'em are moving into the field—and the things to check (and not to check) on them are the same on just about any other teletypewriter.



KNMN  
PP RUECLC  
DE RUEGHL 102  
P 051802Z  
PAPER

ALWAYS HAVE A GOOD SUPPLY ON HAND, OF COURSE. AND WHEN THE RED STRIPE STARTS TO SHOW, SHUT DOWN AS SOON AS THE PRESENT INCOMING MESSAGE IS FINISHED. ALWAYS KEEP AN EYE PEELED ON THE ROLL TO BE SURE THE PAPER IS FEEDING IN AND OUT RIGHT. THAT STUFF CAN FOUL UP MIGHTY FAST. AND WHEN YOU OPEN UP THE DUST COVER WINDOW, PULL BACK THE COPY HOLDER AT JUST ABOUT THE SAME TIME. THE HOLDER ACTS AS A PROP FOR THE WINDOW WHEN THE WINDOW IS OPEN. JUST AS SOON AS THE NEW ROLL IS IN PLACE AND READY —CLOSE THE WINDOW AND KEEP 'ER CLOSED.

DA GRNC  
BT

KNMN  
PP RUECLC  
DE RUEGHL 103  
P 051807Z  
RIBBON

JUST AS SOON AS THE RIBBON SHOWS SIGNS OF FADING, DON'T WASTE TIME. REPLACE IT. GET A FRESH ONE IN THERE. CENTER THE CARRIAGE...HAND-WIND THE RIBBON ONTO ONE SPOOL...LIFT THE WHOLE WORKS OUT. WHEN THE NEW RIBBON IS HOOKED UP AND THE SPOOLS ARE BACK IN PLACE, TIGHTEN THE RIBBON BY TURNING ONE SPOOL WITH ONE HAND WHILE HOLDING THE OTHER SPOOL WITH YOUR SPARE HITT. AND SORT OF STAND BY FOR A FEW MINUTES AFTER THE MACHINE STARTS UP AGAIN TO BE SURE THE RIBBON IS FEEDING OK AND THE SPOOLS REVERSE. IF YOUR RIBBON EVER GETS STUCK OR JAMMED DUE TO WEAR, NO NEED TO WASTE TIME "TINKERING" WITH IT...REPLACE IT.

DA GRNC  
BT

KNMN  
PP RUECLC  
DE RUEGHL 104  
P 051812Z  
FUSES

IF ONE BLOWS, NATURALLY YOU REPLACE IT. IF THE REPLACEMENT BLOWS SOON AFTER, DON'T REPLACE IT. SHUT DOWN THE MACHINE AND CALL FOR A REPAIRMAN. 'CAUSE TWO BLOWN FUSES IN A SHORT TIME IS A SURE CLUE TO SECOND, THIRD, OR MAYBE HIGHER ECHELON TROUBLE.

DA GRNC  
BT

About the only other time a good operator wants to open up the cover is maybe if the motor is running too fast or slow. And only a senior operator, at that, should open up. He'll use a tuning fork rated at 180 VPS to check its synchronization. Whenever possible, though, call a repairman for this chore. Or switch to a stand-by machine. In any event, that motor speed should be checked once a week...for 3,600 RPM.

When it comes to filling out DA Form 252, you'll be interested only in the "short form" approach. That is, all you're going to be looking at are the first three items of the daily checks, and item 6 of the weeklies. And that's all.

**LIKE IT SHOWS YOU ON THE NEXT PAGE**



# Connie Rodd's BRIEFS

I BEEN ON THIS POST  
3 YEARS—DIDN'T SEE MORE'N  
ONE OR TWO GUYS A YEAR...  
THEN ONE DAY THIS CONNIE  
RODD GETS ASSIGNED  
HERE AND...



## *Water tank cleanout*

Could be that you've been having trouble with your 1½-ton water tank trailer. You turn on the water and it comes out looking like—well not clean. Then the tank needs an inside refinishing job. There's an MWO 9-2330-213-50/2 (23 Mar 59) that spells out how your support unit can do the job on the M106's, M106A1's, M107's and M107A1's. So turn your trailer in to them if it needs refinishing . . . don't try doing it yourself.

## *Another handy pub, bub*

Another pub handy to have around is SB 38-100 (March 1959). It gives you a list of most of the preservation, packaging and packing materials used by the Army. You'll find the FSN's, the tech services responsible, and what the items are used for.

## *Shelter scoop*

The latest info on CBR shelters is in TM 3-4240-203 (21 Nov 58), which covers installation, operation and maintenance of accessory equipment for protective shelters. It includes poop on the filters, antiblast closure, air pressure regulator and deflector, contaminated clothing chute, and the anti-backdraft valves that help keep you in the pink.

## *Sioux skids*

Just in case you Sioux (H-13 H's) maintenance people haven't got the word, TSMC teletype 05-01064 (13 May 59) authorizes the use of 5/16-in bolts in your skid gear to replace those pesky rivets which loosen up after hard landings. It's a field maintenance job, so see your local support.

## *Chickasaw (7-19)*

### *Hose Kink*

The battery overflow hose on your Chickasaw Choppers kinking? Bobtailing this hose 3/8 of an inch, from an overall height of 5 7/8 inches to 5 1/2 inches will make it fit nicely from the battery box to the sump jar, without kinking.

## *Needed no more*

Doesn't pay to keep an extra piece of equipment around . . . like the telescope eyepiece cover, FSN 1240-620-6810, for your M56 90-mm SP Scorpion. It's the one listed on page 136 of TM 9-2350-213-10. The telescope cover assembly, FSN 1240-620-6811, gives enough protection without the eyepiece cover. So why not turn in that cover as excess.

# *Would You Stake Your Life on the Condition of Your Equipment?*

# HOW'S YOUR "FITCAL"



- FEEL
- INSPECT
- TIGHTEN
- CORRECT
- ADJUST
- LUBE

