

Issue 35

**PS**

1943 Edition

**THE  
PREVENTIV  
MAINTENANCE  
MONTHLY**





*Half-Wait*  
Lectures -

# "TAKE IT

Couple more feet brain get themselves banged up badly. What's their business, and all right by me, but I do object to their rolling over on *any* truck in the process. The paper I can live without, but the truck can't live here.

I hear of this happening every so often, and the only thing is that the drivers, if any, *don't* take back turns about the trucks not being safe. Claim they're too busy, sensible and down-right friendly. But when the accident is investigated, it always turns out that the driver was trying to wheel his truck around some tight curve at high speed just like it was the family jalopy.

Now, deceptively, a G.I. truck is not a family jalopy. It's a rugged, sturdy machine, designed and built to take 15 tons of freight wherever you need it, without waiting for a nice smooth road to be built first. Which means that your A20 truck has three times the ground clearance of your family car. And it's also three feet higher.

Then too, you start putting your head in, on the A20, on a level that is just one foot below the roof of your car - only to find it somewhere up to four feet away. Fair to say, is it any wonder that it's a little easier to turn the truck over?

But on the other hand, did you ever try to drive your family coupe through ten inches of mud? Or across a ten-foot ditch? The design people built that truck to do a difficult job, and it will.

Of course, if you head on a bridge like a family, it will trap you. But don't bother to look on your window and cry on my shoulder.

I figure it's just as important for a driver to know what his truck can't do as to know what it can, and the smart boys take their common-sense like.



# EASY...."



## IN THIS ISSUE

June 1962

140 pages

Published by the Department of the Army for Distribution to all organizational maintenance and supply personnel. Distribution is made through normal publication channels. Misstatements of fact, liability, shall remain the responsibility of the Publisher. Distribution Agency: National Technical Information Service, Springfield, Virginia.

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## KNOW YOUR TOOLS

It's not what you do—it's the way that you do it. Many a vehicle has landed on service lanes for jobs were bugged up 'cause somebody used the wrong tool.

To do justice to the sweat and blood you've put out while doing your preventive maintenance services, and to keep from scoring yourself more grief later on, get to know your tools. Know what they look like, where and when to use them and how to take care of them.

If you've been having trouble getting acquainted with your tools, here's what your TOOLS MT, Organizational Maintenance, (2nd Edition), Set No. 1 Common, Orl. Book No. 41-T-3028-840, and TOOLS MT, Organizational Maintenance, (2nd Edition), Supplemental No. 1 Orl. Book No. 41-T-3028-842, look like. Get to know them like you know the pain of your hand. For more info see Orl. M4, A7, section 1 and 2.

**TOOLS MT, Organizational Maintenance,  
(2nd Edition), Set No. 1 common,  
ORL 41-T-3028-840 F 5N 2190-743-8034**



**ORL 41-T-3028-840**, the previous, contained 29 to 75 6.46-1-127 to 6.46, 74 to 100 to 6.46-1-128 to 6.46.



**GAGES**, spindle comparators, external gages, or other adapted to all the work shop tools, and bring to all the engine tools.



**ORL 41-T-3028-842**

**ORL 41-T-3028-842**

**ORL 41-T-3028-842**

**ORL 41-T-3028-842**

**1421**, wrench, size 1/8", 1/4", 3/8", 1/2", 5/8", 3/4", 1", 1 1/4", 1 1/2", 1 3/4", 1 7/8", 2", 2 1/4", 2 1/2", 2 3/4", 3", 3 1/2", 4", 4 1/2", 5", 5 1/2", 6", 6 1/2", 7", 8", 9", 10", 11", 12", 14", 16", 18", 20", 22", 24", 27", 30", 32", 36", 40", 45", 48", 54", 60", 66", 72", 78", 84", 90", 96", 102", 108", 114", 120", 126", 132", 138", 144", 150", 156", 162", 168", 174", 180", 186", 192", 198", 204", 210", 216", 222", 228, 234, 240, 246, 252, 258, 264, 270, 276, 282, 288, 294, 300, 306, 312, 318, 324, 330, 336, 342, 348, 354, 360, 366, 372, 378, 384, 390, 396, 402, 408, 414, 420, 426, 432, 438, 444, 450, 456, 462, 468, 474, 480, 486, 492, 498, 504, 510, 516, 522, 528, 534, 540, 546, 552, 558, 564, 570, 576, 582, 588, 594, 600, 606, 612, 618, 624, 630, 636, 642, 648, 654, 660, 666, 672, 678, 684, 690, 696, 702, 708, 714, 720, 726, 732, 738, 744, 750, 756, 762, 768, 774, 780, 786, 792, 798, 804, 810, 816, 822, 828, 834, 840, 846, 852, 858, 864, 870, 876, 882, 888, 894, 900, 906, 912, 918, 924, 930, 936, 942, 948, 954, 960, 966, 972, 978, 984, 990, 996, 1000



**1422** 1/2" x 1/2" x 1/2"

**FR 100-100-001**

**1423**, ratchet, general purpose type, following 1/2" to 1" size 1" to 1 1/2", and 1 1/2" to 1 3/4" to 1 7/8"



**1424** 1/2" x 1/2" x 1/2"

**FR**

**1425**, hex die, size 1/4" to 1/2" only - 40%



**1426** 1/2" x 1/2" x 1/2"

**FR 100-100-101**

**1427**, ratchet, indicator oil seal pump set



**1428** 1/2" x 1/2" x 1/2"

**FR 100-100-102**

**1429**, wheel rolling, hex, universal



**1430** 1/2" x 1/2" x 1/2"

**FR 100-100-103**



**1431E**, guide, rolling oil line coupling, 1/4" to 1/2" diam. (Patent issue)



**1432** 1/2" x 1/2" x 1/2"

**FR**

**1433** 1/2" x 1/2" x 1/2"



**1434** 1/2" x 1/2" x 1/2"

**FR**

**1435** 1/2" x 1/2" x 1/2"



**1436** 1/2" x 1/2" x 1/2"

**FR**

**1437**, cutting, 1/2" diam. 1/4" dia.



**1438** 1/2" x 1/2" x 1/2"

**FR 100-100-104**

**1439**, air, rolling oil coupling, 1/2" to 1/4" diam. (Patent issue)



**1440** 1/2" x 1/2" x 1/2"

**FR 100-100-105**

# LUBRICATION

**34.** spring flexible grinding  
with 204 to light 2 1/2 to 3 in.

**Q80 11-3-31**

**for 11-31-31-31**

**Q80**, 1/2 in. air operated, high pressure, capacity 20-30 lb., complete with 204 to 208 to 20 fine size.



**Q80 404-400**

**for 404-400-1**

**Q80**, 1/2 in. hand operated, low pressure, capacity 20-30 lb., complete with 1-2 fine size.



**Q80 414-412**

**for 414-412-1**

**Q80**, 1/2 in. hand operated, high pressure, capacity 15-20 lb., complete with 204 to 208 to 20 fine size.



**Q80 414-414**

**for 414-414-1**

**Q80 414**



**Q80 414-414**

**for 414-414-1**

**Q80 414**, 1/2 in. air operated, capacity 1-2 lb. 204 to 208 1



**Q80 414-411**

**for 414-414-1**

**Q80 414**, 1/2 in. air operated, capacity 2-3 lb.



**Q80 414-410**

**for 414-414-1**

**Q80**, hand entry, known as grinder.



**Q80 11-3-30**

**for**

**Q80**, air forced, water cooled, capacity 1-2 lb.



**Q80 11-3-40**

**for**



**40078**, secondary circuit, fixed steel.



**400 12-A-0247-00**

PK 100 (100/100)

**4000**, extension, rubber covered, 2 conductors, stranded, 1/2 female plug at both ends, 1000 ft., 1/2, 1/2, 1/2 ft.



**40017-000**

PK 100 (100/100)

**40000**, single letters, 100 ft.



**400 410-011**

PK 100 (100/100)

**400**, light-duty, wiring cabinet, plug handle and lamp holder with rubber insulation, 1/2 x 1/2 x 1/2 ft., 1000 ft. (1000 ft.)



**400 11-000-00-000**

PK 100 (100)

**40000**, bonded (to strap) by all conductors (insulated on the wire)



**400 11-0-000**

PK 100 (100/100)

**40000**, battery drilled steel, convertible type, cap 1 gal.



**400 12-A-000**

PK 100 (100/100)

**4000**, battery, voltage, cap 1 gal.



**400 11-000**

PK 100 (100/100)

**40000000**, battery, lead acid storage battery, 1/2, 1/2, 1/2 ft. (1000 ft.)



**400 11-01-00-00**

PK 100 (100)

**400**, metal, wire connection.



**400 11-01-00-00**

PK 100 (100/100)

**400**, wire, 100 ft., length 1/2, 1/2, 1/2 ft. (1000 ft.), 1/2, 1/2, 1/2 ft. (1000 ft.) (1000 ft.)



**400 11-01-00-000**

PK 100 (100)

**40000**, wire, galvanized, 1/2, 1/2, 1/2 ft. (1000 ft.)



**400 11-01-00-000**

PK 100 (100)

**4000** and **4000**, battery bonded.



**400 11-01-00-000**

PK 100 (100/100)

**1144** Folding pocket knife with light, combination lock, and 24 with replace battery operated.



**QTY 114-0000-000**

**PN 114-0000-000**

**1145** Single wire letterhead nibbed 2 1/2 to corner 3/4 in.



**QTY 11-7-079**

**PN 114-04-117**

**1146** Battery operated and small pen - corner eye.



**QTY 114-1900**

**PN 114-04-190**



**1147** Metal point, for drawing, non-conducting (See drawing 1)



**QTY 11-8-143**

**PN 114-04-143**

**1148** Heavy wire, 1/8 in.



**QTY 11-8-144**

**PN 114-04-144**

**1149** Steel point, with three shock, up to 1/2 to 1/4 in.



**QTY 118-1442-01**

**PN 118-1442-01**

**1150** 1/8 in. dia., 1/16 in. thick wire, ballpoint pen, 1 1/2 to 1 1/2 in. by 1/16 in., set of 20 1/16 in. dia.



**QTY 114-04-150**

**PN 114-04-150**

**1151** 1/8 in. dia., set of ballpoint pen point to diameter 1/2 in.



**QTY 114-04-151**

**PN 114-04-151**

**1152** 1/8 in. dia., set of ballpoint pen point to diameter 3/4 in.



**QTY 114-04-152**

**PN 114-04-152**

**1153** 1/8 in. dia., set of ballpoint pen point to diameter 1 in.



**QTY 11-4-153**

**PN 114-04-153**

**1154** 1/8 in. dia., set of ballpoint pen point to diameter 1 1/2 in.



**QTY 11-7-154**

**PN 114-04-154**

**1155** 1/8 in. dia., set of ballpoint pen point to diameter 1 3/4 in.



**QTY 11-7-155**

**PN 114-04-155**

**1156** 1/8 in. dia., set of ballpoint pen point to diameter 2 in.



**QTY 11-7-156**

**PN 114-04-156**

**1157** Steel wire, double in the air 11, 12, 13, 14, 15, 16, 17 and 18.



**QTY 118-1443-01**

**PN 118-1443-01**



**WHEEL**, spring, plastic, 1/2" dia. and 1/4" thick, 1000  
 (Part No. 1000)



**FIG. 10-402-100-100**

**FIG. 10-402-100**

**WHEEL**, hard, 1/2" dia. and 1/4" thick, 1000  
 (Part No. 1000)



**FIG. 10-402-100**

**FIG. 10-402-100**

**WHEEL**, 1/2" dia. and 1/4" thick, 1000  
 (Part No. 1000)



**FIG. 10-402-100**

**FIG. 10-402-100**

**WHEEL**, 1/2" dia. and 1/4" thick, 1000  
 (Part No. 1000)



**FIG. 10-402-100**

**FIG. 10-402-100**

**WHEEL**, 1/2" dia. and 1/4" thick, 1000  
 (Part No. 1000)



**FIG. 10-402-100-100**

**FIG. 10-402-100**

**WHEEL**, 1/2" dia. and 1/4" thick, 1000  
 (Part No. 1000)



**FIG. 10-402-100**

**FIG. 10-402-100**

**WHEEL**, 1/2" dia. and 1/4" thick, 1000  
 (Part No. 1000)



**FIG. 10-402-100**

**FIG. 10-402-100**

**WHEEL**, 1/2" dia. and 1/4" thick, 1000  
 (Part No. 1000)



**FIG. 10-402-100**

**FIG. 10-402-100**



## SOLDERING

**WHEEL**, 1/2" dia. and 1/4" thick, 1000  
 (Part No. 1000)



**FIG. 10-402-100-100**

**FIG. 10-402-100**

**WHEEL**, 1/2" dia. and 1/4" thick, 1000  
 (Part No. 1000)



**FIG. 10-402-100-100**

**FIG. 10-402-100**



## TIRES

**WHEEL**, 1/2" dia. and 1/4" thick, 1000  
 (Part No. 1000)



**FIG. 10-402-100-100**

**FIG.**

**WHEEL**, 1/2" dia. and 1/4" thick, 1000  
 (Part No. 1000)



**FIG. 10-402-100**

**FIG. 10-402-100**

**800**, file, round type, left  
24 in. (set of two)



**800 01-1771** **PA 01-01-01-1771**

**800**, file, rasps, right  
and left, 18 in.  
(set of two)



**800 01-2877** **PA 01-01-01-2877**

**800**, adjustable and ratchet  
nuts, hydraulic, 1/4 inch, size  
11 hex. (set of two)



**800 11-03149** **PA 11-01-01-03149**

**800**, belt, one, repair, size  
4 B.



**800 01-1111** **PA 01-01-01-1111**

**800**, file, probing



**800 11-0000** **PA 11-01-01-0000**

**800**, file, universal, hand type



**800 01-0-000** **PA 01-01-01-0000**

**800**, roller, operating, for  
handling the roller stand



**800 11-1111** **PA 11-01-01-1111**

**800**, roller, right, for stand



**800 11-0000** **PA 11-01-01-0000**

**800 0000**, roller, set, for



**800 01-0-111** **PA 01-01-01-1111**



**800**, wire, steel, pipe, size  
of stock, 1/2 x 1/2 in., left 1 B.  
of 1 B.



**800 01-0-175** **PA 01-01-01-0-175**

**800**, working, ground, size  
and pitch pipe, left 1 B.



**800 11-0-000** **PA 11-01-01-0-000**

**8000**, wrench, left, 12 in.,  
left set 1 B. 2 B.    
right set 1 B. 2 B.



**800 11-0000** **PA 11-01-01-0000**

**80000**, tool, 1, adjustable  
workbench top



**800 410-11** **PA 01-01-01-410-11**

**8000**, hubcap, brake roller  
for universal type, (set of 4)



**800 410-111** **PA 01-01-01-410-111**

**80000**, wrench, open, pipe  
type, 1/2 inch, 1 B. size



**800 000-0000-00** **PA 01-01-01-000-00**

**0281**, 1/2 in. x 1/2 in. x 1/2 in. (3/8 in. x 3/8 in. x 3/8 in.)



**028** 4-1-2025

**PN 100-100-000**

**0282**, 1/2 in. x 1/2 in. x 1/2 in. (3/8 in. x 3/8 in. x 3/8 in.)



**028** 4-1-2040

**PN 100-100-000**

**0283**, 1/2 in. x 1/2 in. x 1/2 in. (3/8 in. x 3/8 in. x 3/8 in.)



**028** 4-1-2040-000

**PN 100-100-000**

**0284**, 1/2 in. x 1/2 in.



**028** 4-1-2040

**PN 100-100-000**

**0285**, 1/2 in. x 1/2 in. x 1/2 in.



**028** 4-1-2040

**PN 100-100-000**

**0286**, 1/2 in. x 1/2 in. x 1/2 in.



**028** 4-1-2040

**PN 100-100-000**

**0287**, 1/2 in. x 1/2 in. x 1/2 in.



**028** 4-1-2040

**PN 100-100-000**

**0288**, 1/2 in. x 1/2 in. x 1/2 in.



**028** 4-1-2040

**PN 100-100-000**

**0289**, 1/2 in. x 1/2 in. x 1/2 in.



**028** 4-1-2040

**PN 100-100-000**

**0290**, 1/2 in. x 1/2 in. x 1/2 in.



**028** 4-1-2040-000

**PN 100-100-000**

**0291**, 1/2 in. x 1/2 in. x 1/2 in.



**028** 4-1-2040-000

**PN 100-100-000**

**0292**, 1/2 in. x 1/2 in. x 1/2 in.



**028** 4-1-2040

**PN 100-100-000**

**0293**, 1/2 in. x 1/2 in. x 1/2 in.



**028** 4-1-2040

**PN 100-100-000**

**0294**, 1/2 in. x 1/2 in. x 1/2 in.



**028** 4-1-2040

**PN 100-100-000**

**0295**, 1/2 in. x 1/2 in. x 1/2 in.



**028** 4-1-2040

**PN 100-100-000**

**0296**, 1/2 in. x 1/2 in. x 1/2 in.



**028** 4-1-2040

**PN 100-100-000**

**0297**, 1/2 in. x 1/2 in. x 1/2 in.



**028** 4-1-2040

**PN 100-100-000**

**0298**, 1/2 in. x 1/2 in. x 1/2 in.



**028** 4-1-2040-000

**PN 100-100-000**

**0299**, 1/2 in. x 1/2 in. x 1/2 in.



**028** 4-1-2040

**PN 100-100-000**

**02000**, manual work  
**02000** (Pencil Sharpener)  
 per set (100 sets)



**020 41-0-000**

Per 100 (200 P-10)

**02001**, manual, left or right  
 set, 12 inch long



**020 41-0-001**

Per 100 (200 P-1)

**02002**, mechanical, cord  
 pair, 18 1/2 in.



**020 41-0-002**

Per 100 (200 P-2)

**02003**, 16, 18, 20, 22 inch and  
 24, 26, 28, 30 inch and 32  
 inch, height of dimensions 1 in.



**020 41-0-003**

Per

**02004**, 16, 18, 20, 22 inch and  
 24, 26, 28, 30 inch and 32  
 inch, height of dimensions 1 in.



**020 41-0-004**

Per

**02005**, 16, 18, 20, 22 inch and  
 24, 26, 28, 30 inch and 32  
 inch, height of dimensions 1 in.



**020 41-0-005**

Per

**020**, Spring, steel binding clip  
 100, 100 and 100 (100) 100,  
 100, 100, 100, 100, 100  
 and 100 in size.



**020 41-0-006**

Per 100 (200 P-6)

**02006**, 100, 100 inch, 100  
 inch, capacity 1 lb.



**020 41-0-006**

Per 100 (200 P-6)

**02007**, Hydraulic brake handle,  
 complete with connection  
 (100 in size)



**020 41-0-007**

Per 100 (200 P-7)

**02008**, 100, 100 inch, 100  
 inch, 100 inch, 100 inch,  
 100 inch, 100 inch, 100 inch  
 and 100 inch, 100 inch



**020 41-0-008**

Per 100 (200 P-8)

**02009**, 100, 100 inch and  
 100 inch, 100 inch, 100 inch  
 and 100 inch



**020 41-0-009**

Per 100 (200 P-9)

**02010**, 100, 100 inch and  
 100 inch, 100 inch, 100 inch  
 and 100 inch



**020 41-0-010**

Per

**02011**, 100, 100 inch, 100  
 inch, 100 inch, 100 inch  
 and 100 inch



**020 41-0-011**

Per 100 (200 P-11)

**WORK 100**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 101**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 102**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 103**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 104**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 105**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 106**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 107**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 108**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 109**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 110**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 111**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 112**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.

**WORK 113**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 114**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.

**WORK 115**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 116**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.

**WORK 117**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 118**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.

**WORK 119**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 120**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.

**WORK 121**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WORK 122**, long, straight, long  
shank, size of range 1/2" and 1/4"  
in.



**WIKON 81**, portable, 100-  
 W, 120 V AC, 12 post amp,  
 auto stop on 2 A overload  
 or low.



**ORD 41-W-2115**

**PH 1-800-375-8984**

**WIKON 4 50**, wheel power drilled, 400 W, 120  
 V AC, 10 post amp, 200 20" tire handle.

**ORD 41-W-2220-15**

**PH 1-800-375-8984**

**TOOL 575**, Organizational Maintenance  
 (Tool Release), Set No. 1, Supplemental  
 401-7-20 20-850

## ELECTRICAL



**AMPRO 30**, battery, 1000  
 wattage, 120, 120V.



**ORD 12-4-1120**

**PH 800-375-8984**

**CLAMM** and **TOOL**, 4 post  
 plug, compatible with original  
 60-65 type 4 post plug, for  
 operation on 12 volt storage  
 battery.



**ORD 48-C-1000**

**PH 800-375-8984**

**WIKON 81**, portable, 100-  
 W, 120 V AC, 12 post amp,  
 auto stop on 2 A overload  
 or low.



**ORD 17-C-2100**

**PH**

**TRC**, battery with 4 post  
 receptacle, rubber covered, 2  
 casters, 60, 12, 200, 12 V  
 AC, (formerly 17-C-1880).



**ORD 17-C-2000/16-200**

**PH 1-800-375**

**TRC**, 120, portable, 1000-  
 watt, 120 V AC, 120 V.



**ORD 40-0-141**

**PH**

**CHRYSLER 40**, portable,  
 positive direct, 1000 wattage,  
 2 1/2" x 10 1/2" x 1 1/2",  
 1000-wattage, 120 V  
 (100-100).



**ORD 17-01-20 100-100**

**PH 1-800-375**

**TRC**, 120, portable, 1000-  
 watt, 120 V AC, 120 V,  
 1 1/2" x 10 1/2" x 1 1/2"



**ORD 40-0-124-0**

**PH 1-800-375-8984**

**FUC**, attachment, 120 V AC,  
 12, 100-watt light.



**ORD 17-011-200-000**

**PH 1-800-375-8984**

**FR6** attachment, single or dual.



**Q60 12-270-200-000**

**FR6 270-200-000**

**FR704**, fuel tank and fuel  
inlet.



**Q60 17-0-000**

**FR7**

**FR8000 001**, engine, etc., 8  
cylinder engine, water-cooled.



**Q60 18-0-001**

**FR8**

**FR913**, fuel delivery control.



**Q60 17-001-00**

**FR9001 001-00**

**FR7**, gear pump gear, right  
hand, drive type, 1 1/2" dia.  
(see FR1000 001)



**Q60 19-0-000**

**FR9002 000-000**

**FR44**, blades, control pump  
oil blades, collection 2 to  
30 in. 1 in. apart, cast spring  
type, right and left hand.



**Q60 21-0-000**

**FR9003 000-000**

**FR5**, gear pump, drive head,  
1 1/2" dia.



**Q60 20-0-000**

**FR9004 000-000**

**FR24 001**, bearing assembly,  
etc., gear type, cast steel gear  
right rotation, three shaft  
balls and two legs, in cast  
iron.



**Q60 21-0-000-00**

**FR9005 000-000**

**FR 24 001**, bearings, gear,  
etc., cast iron, gear and gear  
shaft 1/2 in. dia., complete in  
iron.



**FR9006**, body, right belt-cum-  
draw cutting, left 18 in. cut,  
right opposite 17 1/2 in. belt and  
1/4 in. cut.



**Q60 40-0-000**

**FR9007 000-000**

**Q60 17-0-000-00**

**FR9008 000-000**

**FW01** gear, wire, eye 10 to 11 in. dia., 10 in. teeth, one gear with screw-pin at joint, eye 2 to 4 in. wide, 1 1/2 in. thick.



Q60-10-P010

FW

**FW02** gear, wire, one gear, eye 10 to 11 in. dia., 10 in. teeth.



Q60-10-P011

FW 1 1/2-10-10-10

**FW03** gear, wire, one gear, eye 10 to 11 in. dia., 10 in. teeth.



Q60-10-P012

FW

**FW04** steering gear, wire, one gear.



Q60-10-P013

FW

**FW05** steering wheel, wire, one.



Q60-10-P014

FW 1 1/2-10-10-10

**FW06** wheel, wire, complete.



Q60-10-P015

FW 1 1/2-10-10-10

**FW07** handle, eye, steel, with 10 in. length 10 in.



Q60-11-P010

FW 1 1/2-10-10-10

**FW08** handle, eye, steel, with 10 in. length 10 in.



Q60-11-P011

FW 1 1/2-10-10-10

**FW09** gear, eye, steel, with 10 in. length 10 in.



Q60-11-P012

FW 1 1/2-10-10-10

**FW10** gear, eye, steel, with 10 in. length 10 in.



Q60-11-P013

FW 1 1/2-10-10-10

**FW11** gear, eye, steel, with 10 in. length 10 in.



Q60-11-P014

FW 1 1/2-10-10-10

**FW12** handle, eye, steel, with 10 in. length 10 in.



Q60-11-P015

FW 1 1/2-10-10-10

**FW13** handle, eye, steel, with 10 in. length 10 in.



Q60-11-P016

FW 1 1/2-10-10-10





## *Turn...skull!*

Till didn't even need an air valve, hence why he the "block" method of adjusting track tension on your late M48 and M57 (Hemphill-covered) tanks with the tension idler wheel.

The quick-track tension-top idler is because of track-way described in TB 5-1180-1 (11 May 62) is not suitable for use. Hence that difference in size, shape and position of left and right suspension items there is all-sufficient enough to throw off a track.



**QUICK METHOD'S OUT**

The left tension idler arm is at least four inches longer than the right. Also, the track road wheel on the left side is set further forward on the hull—which lets the track hit the tensioner at a different angle. Add these variations to the half-inch tolerance given to the TB, and you end up with a four-inch difference in the tension of your right-left tracks.



So for now-stick to the tried-and-true block method in the TB. And take another peek at that "Track Tightening Tip" on page 743 of PS 46-65.



## Official track tool

This track adjusting tool is PS Magazine #17 is now official. You don't have to make it from spare parts any longer. Tank yards can pick it up under Ord Part No. 8986307.



It's listed as **FIXTURE, ADJ., Track Tension, Adjusting**. Here's the way it's applied:



You can also put it on the **WALKER**.

## Correct those studs

Could be the carrier assembly attaching studs on your G10-series vehicles (2-172mm, tank, LORV) are trying to mount out of the axle housing. Which ain't no good. To correct this backwards movement, do this on all three side carriers:



1. Insert stud into hole in axle housing.



2. Tighten nut on stud.  
3. Tighten nut on stud.  
4. Tighten nut on stud.



3. Adjust track on the stud.



4. Adjust track on the stud.  
5. Adjust track on the stud.  
6. Adjust track on the stud.

7. Adjust track on the stud on the stud.



8. Adjust track on the stud on the stud.  
9. Adjust track on the stud on the stud.  
10. Adjust track on the stud on the stud.  
11. Adjust track on the stud on the stud.

You'll get an **MTRD** on this pretty soon.

## *Boots, boots, boots*

Some steering-knuckle boots on the M44 series 2-1/2-ton models have been going on too long before their time. They're there to keep grease, mud and other contaminants out of the highly-polished surface of the steering knuckle and frame-side bearing.



When grease, dirt and mud get on the boots and you let it take, the boots'll wear to cracks and cause all sorts of boot-ops. They've got to be checked off. So, roll up your sleeves and get down on it. A little shoe work now will pay off big later.

## *Improved shock fluid*

The hydraulic shocks now used on all Medium vehicles are filled with a low-compression eye fluid, and are built strong enough to be successfully operated in temperatures as low as -47°.



So you needn't worry about draining and filling these with glycerolene base oil or spring them up out of the way when your operating temperature is extremely low temperatures.

This design'll be covered in later editions of TM's 9-2810 and TM 9-1599. In the meantime, if you've got any questions on the subject . . . write up: **Mail Man.**



Linkage screws,  
too, on these...

# CD-850 BRAKES ON YOUR M46, M46A1 AND M47 TANKS

For a good brake adjustment on your medium tank CD-850 transmission y'all'll have the brake control linkage in shape. Here's how to shape it up.



REMOVE SHOCK SPRING

REMOVE SHOCK SPRING FROM SHOCK SPRING BUSHING

REMOVE SHOCK SPRING FROM SWAYBAR BUSHING

**5** LASH THE CABLES TO THE  
HORN BLOCKS—APPLY ONE TO  
EACH CORNER OF



**WORK TIP**

**DRIVE THE CABLES INTO THE**

**WOODEN BARS**

**TO GET THEM TO**

**STAY TIGHT.**

**DRIVE A WOODEN**

**DRIVE BLOCK INTO A**

**6** PULL CABLES THROUGH END OF BAR... DRILL  
IT TIGHTLY AGAIN. NOTE: THIS IS ALL  
THE BLOCK. DRILL IN BARS—APPLY ONE AND  
DRILL IT INTO CORNER OF BAR.



**7** IF YOU WANT TO USE CABLES OF 1/2 IN. DIA.,  
DRILL ONE OR TWO HOLES INTO BAR WITH  
1/2" DIA. DRILL BIT. THIS SHOULD BE  
DRILLED OUT TO THE CORNER OF THE BAR.



**8** WITH BARS FROM COUNTRY'S CORNER...  
DRILL ONE OR TWO HOLES INTO BAR AND  
DRILL THROUGH THE BAR WITH 1/2" DIA. DRILL  
BIT. THIS WILL BE CORNER.



**9** LASH THE  
CABLE TO THE  
DRIVE BLOCK.



A little attention to design before adjusting tension will help make your job  
easy—in any place.

Carole Soyars  
When you're towing—

## DON'T JACK-KNIFE, JACK— SLOW DOWN...GET BACK!



Don't bowing about some scary accidents in ATV towing popularity. Don't know whether to run or cry—or both.

They're caused by random, reckless or thoughtless use of the ATV's rearward-facing stabilized lights or reverse tanks at excess speeds.



# JOE DOPE

## HOW TO CARRY A LOAD

Oh, they tell of a mighty railroad man, a woodman, pioneer . . .  
But here the role of a leader' man, his exploits and career.  
There are many kinds of cargo  
and many ways to stack  
But none that equal Payload Joe,  
the cargo-loader' folk.



In '33 he sought to switch  
From leader' to a driver' track . . .

WELL, JOE, a driver' job to  
pursue began as the railroad  
lines closed . . . and he found  
how to transfer  
his loadings!



Be piled in low,  
be piled in high,  
be loaded like  
freight.

Use it to be smart  
to catch the breath,  
until the job  
was done.



A single line could  
animate  
wheels to power  
on track.

And found it up  
at each to give  
a second man  
would think.



WHEELS OVERLOADS  
AND... MORE... MORE...  
AND... MORE... MORE...  
AND... MORE... MORE...  
AND... MORE... MORE...



A. W. MAXIMUM

THE MAXIMUM  
AUTHORIZED LOAD  
IS ZERO FOR  
THE OVERLOAD

WHY NOT  
A FEW MORE  
TO GET BY?

A BOUND  
ESTIMATE  
IS BETTER  
THAN  
NONE...



WHY NOT... MORE... MORE...  
AND... MORE... MORE...  
AND... MORE... MORE...  
AND... MORE... MORE...  
AND... MORE... MORE...



WHEELS LOADING ALL ON ONE SIDE...



OVERLOADS THE SET  
OF THIS AND... MORE...  
CAN WE... MORE...  
WHEELS... MORE...  
ON THE... MORE...

WHEELS ARE... MORE...  
WHEELS ARE... MORE...



**DISTRIBUTE**  
FRONT... MORE...  
FRONT... MORE...  
LOADS... MORE...  
WHEELS... MORE...

DIVIDE WEIGHT BETWEEN AXLES

FRONT  
MID-  
OR  
REAR





## LOAD DOESN'T MEAN YOUR TRUCK HAS TO BE FULL



NUMBER OF ITEMS



NUMBER OF ITEMS



WEIGHT OF YOUR LOAD

THESE BOXES WOULD BE HEAVY LOADS & WOULD BE TYPICAL FOR TRUCKS SUBJECT TO CERTAIN LOAD LIMITATIONS & CONDITIONS.

WEIGHT CANNOT EXCEED TRAILER GWT

NOTCH ON STEER KNUCKLE SHOWS APPROXIMATE POSITION OF SPRING UNDER FULL LOAD

I WISH I HAD A TRUCK THAT COULD PULL A TRUCK...

WELL, WITH APPROXIMATELY EQUAL WEIGHTS, YOU CAN PULL ONE WITH THE OTHER EASILY.



LOAD CENTER

Place your load



FORWARD

Unbalanced loads may wear steering system



IN THE REAR...

Unbalanced loads may rock steering column

TO GET THE MOST WEIGHT OF THE FULL LOAD, ALWAYS PLACE IT EQUALLY DISTRIBUTED ON THE AXLES & ALWAYS BALANCE IT THROUGHOUT THE TRAILER BED.

## THE WEIGHT OF YOUR CARGO CORRECTLY

IF LOAD IS CONCENTRATED ...

... BUT LOAD

IF LOAD CAN BE SPREAD



BEAR ON CENTER, WEIGHT BEARS ON REAR AXLE



ON GENERAL PURPOSE

Forward

5000 lb max. 5000 lb max. 5000 lb max.



THE WEIGHT BEARS A HEAVY LOAD ON CENTER, BUT THE WEIGHT BEARS ON REAR AXLE. THIS IS UNBALANCED. THE WEIGHT BEARS ON REAR AXLE, BUT THE WEIGHT BEARS ON REAR AXLE.



# Dope Sheet



*Will Eisner*

WE HAVE THE WORLD'S BEST EO

**A**s a foot-soldier, he shouldn't know'd  
That a vehicle has a "right" load.  
You can load just so much  
And it takes the right touch—  
Check your FM<sup>®</sup> before y'r full stowed.



© 1965-67

**EQUIPMENT... Take care of it**

BY WILL DUNN

And when he got it all the ground he sure could spread his weight around.



ANY WEIGHT PUT ABOVE SHOULD BE DISTRIBUTED OVER A LARGE AREA.

NEVER SQUARE 'EM OVER EACH OTHER



USE CORAL TUBE WITH BRACK OR DOWEL



STACK FRAGILE TO BEG SHOTS

ALWAYS TACKLE AND STAY!

The soldier looks to work smart... Payload too could give 'em on.



ARE YOU ASKING FOR TROUBLE?

YOUR LOAD SHOULD BEY BOUNDED

**USE THE RIGHT TRUCK FOR THE JOB**

FOR HEAVY LOADS USE FULL SCALE OR BENCH BARREL TRUCK



FULLY FOUR WHEEL DRIVE SHOT END ... 100% LOAD BEARING

10' MAX 12 INCHES SQUARE

**USE A VEHICLE THAT IS BUILT FOR YOUR JOB.**

FOR CRANE OR MACHINERY, EQUIPMENT CAPABLE OF BEING RAISED



FOR GRAVEL OR SAND



LOADING TRUCK

## BOTTOM... LIGHTER ON TOP

OVERLAP  
THE TO HEAVIER  
BOTTOM



SPACE THE BINS TOGETHER  
SACKS OR BOXES  
SEPARATE, ONLY  
FOR DANGER  
OF FRACTURE

USE EXTRA CARE WITH  
PERISHABLE, OR ARE SUBSTANCES  
OCCUR DURING...  
EXACT WEIGHT

ALL OR PARTS  
ALL CONTAINERS  
DOESN'T

**SEND THEM TO  
REMOVE LOAD**

NEVER EXHAUST  
LOADING TIME &  
BALANCE LOAD



The maximum  
weight to go...  
by the way  
was strong as you.



IF NOT BOUND BOWS, SAW TAPES OVER CARGO  
WITH TWO BOUND BOWS



START THE  
BOWS AT  
FRONT OF  
CARGO BOX  
AND LAKE  
IN SAME  
PLACES

**TRAINING PERSONNEL . . . IT'S EARLY FEB, THAT MEANS PROTECTION FROM THE WEATHER AND PROPER VENTILATION.**



**TRAINING PERSONNEL AND PROTECTIVE WEAR.**



**TRAINING PERSONNEL AND PROTECTIVE WEAR.**



**IT'S UP TO THE DRIVER TO MAKE SURE THE LOAD IS PROTECTED AND PROPER VENTILATION IS MAINTAINED THROUGHOUT THE ENTIRE JOURNEY.**

PERSONNEL SHOULD BE PROTECTED FROM WEATHER, BUT ONLY JUST AT TIMES THAT THERE IS PROPER VENTILATION (EVEN IN A CLOSED VEHICLE, EXPOSED TO THE DANGERS OF CARBON MONOXIDE GAS FROM ENGIN).



**WE'VE GOT TO MAKE SURE WE'VE GOT IT ONLY!**

*Oh, somewhere fighter' men rejoice  
A weekend off, Alas,  
For Joe sat on a trigger and  
Full Ball upon the gun.*



**WE'VE GOT TO MAKE SURE WE'VE GOT IT ONLY!**

**IT'S THE DRIVER'S RESPONSIBILITY**

- ... TO DELIVER CARGO SAFELY AND PROMPTLY
- ... TO MAKE SURE THE LOAD IS RIGHT FOR THE VEHICLE
- ... TO WATCH THAT THE LOAD IS BUILT UP RIGHT, DISTRIBUTED CORRECTLY, INTERLOCKED, SHIFTHOOK AND PROTECTED.



### BLACK MAGIC

Dear Half-Mast,

I don't remember quite often and don't even realize the same one, but nobody seems to have an answer for it.

I have always been taught not to sit a battery on concrete floor because it'll cause the battery to discharge.



What is it in concrete that takes the charge out of a battery?

Yrs J. L. H.

Dear Mr. J. L. H.,

Not a thing in the world but superstition. Mark magic and hex signs. There's no reason in the world why sitting a battery on a concrete floor will take the charge out of it.



However, the guys who taught you never to do it had a good point. You won't lose the battery, but you may hurt the floor. Battery acid is not good for concrete.

I think this old superstition began because guys would leave a battery on the floor for months or a year, and when they went back to it, it was dead. They concluded the fact that it would have been just as dead if they had moved it in a bank vault or taken it to bed with them. A battery that has ever been filled and charged can't be neglected. You gotta keep checking it, and recharge it when the gassing goes below 1.98 (or 2.07 if I).



One other thing may have helped push this idea along—a guy who runs a floppy shop, with hamsters ticking around all over the floor is also likely to be the sort of guy who doesn't keep those hamsters clean and dry. A dirty wet hammy will leak current through the acid cells on the top and discharge quicker than a clean dry one, no matter where you keep it.

*Half-Mast*

### CAN'T HARDLY GET THEM

Dear Half-Mast,

What are we going to do for lubrication orders for tanks, pick-ups, and other commercial type vehicles of 1950 plus GM? Manufacturers? It's damn a lot of tanks, 1/2-ton pickups and 3-1/2-ton trucks and every time we have a command inspection we get gipped for not having a lubrication order.

Ph L. A. D.



Dear Ph L. A. D.,

Can't we hear you're supposed to have lube orders when they haven't been published.

You're supposed to use the manufacturer's manual that comes with each vehicle. Lubrication instructions are found in it. If your manual is missing, suggest you get another from your publications section.

You'll also have to take a gander at TR-Ord 578 under the right lube classification, because manufacturers' names and grades don't always agree with standard Army lube symbols.

*Half-Mast*

### THE MASHING-POOP CASE

Dear Half-Mast,

I've searched and I've scrounged, but where is all the poop on the M35, H-70s, A-1, front-line ambulances? There just doesn't seem to be anything on it. Clear me, please.

Cpl M. E. L.

Dear Cpl M. E. L.,

Here's the whole case laid out in the open. The publications for the M35A1 Jeep and the H70 ambulances are the same. With the exception of the body and other minor differences, the two vehicles are the same. You'll see these differences in Ord 8-500, G-718, dated May 1954.

TM 9-8044, the lube for the M35A1, is also being revised. It'll probably be out within a month or two—and it'll also give you the poop on the M170. I remember will be TM 9-8044.

*Half-Mast*





Half-Mast says:



## YOU'RE BEING PROTECTED

Dear Half-Mast,

I think I got a few-oh-ya's. I'm a company mechanic and, if I do say so myself, I know my job. Now, according to the O&T's, I can't make a lot of parts I can replace or rebuild myself. These parts include windshield-wiper motors, windshield assemblies, tail pipes and radiators.

Everyone is always harping about preventive maintenance and yet we can't get simple parts any kind you change in a few minutes. Just what gives?

SFC P. M.

Dear SFC P. M.,

When now, then. You're going off half-cocked without taking a careful look at the situation. You got to remember one thing: There's always a reason for everything—especially in an outfit as big as the Army. Let's look at this thing in the right light.

We all know that such things as windshield-wiper motors, tail pipes, radiators and a lot of other parts the O&T's don't list seldom go on the black. These're parts which are usually good for the life of the vehicle. So, what's the sense of loading you down with parts which're only going to be replaced once

in a blue moon. If you do that, you'll have thousands and thousands of parts on your supply trucks, in your supply rooms—and you wouldn't be able to see the parts you need 'cause of the stuff piled around that's seldom—if ever—used.

When your vehicle goes back to field and depot maintenance level for overhaul, it's gone over with a fine-tooth comb. If the people at this level think these parts need to be replaced or if you recommend it, they replace them. This way you're being protected from a flood of parts which your own unit's supply system couldn't handle.

Let's take a look at another angle. Suppose you got a practically new truck with a bad but easily replaced part which the O&T says you can't get at organization level. What do you do? Just speak to your Ordnance support unit and they'll get it for you in a jiffy or they may get the job done for you.

That's all there is to it. The part's there for you—it's just one more above your organization.

This heavy piece works with more time to perform its main job—lighting.

Half-Mast  
1954

## ARMAMENT

# YOUR M2A2 CARRIAGE

May be all busted — to give it a close look  
before it busts you in.

Let him do his job, man, and let's get down to legal work and house building for a moment. That is, if your M2 — at all — he will not it appears to be mounted on an M2A2 carriage.

If it isn't, ... well, why are you hanging around a mine's anyway?

First thing you wanna do is take a fast peek at the serial number of your carriage. If it's numbered R319 then 0508, or 0800 then 1291, you may be got trouble looking with the drawbar assembly on the right track. Some of these drawbar bushing bearings won't all they're supposed to be and the bushings have been getting a hard time.

A simple way of checking 'em is by peepin' up and down on the drawbar. If your carriage has seen much action, chances are the bushings will move on the bearings. Which means you've got a busted-up assembly. Call Ordinance.



If your carriage has one of the serial numbers listed, better have Ordinance



look over the drawbar assembly just to make sure everything's on the up-and-up. Ordinance may have to remove some of the bushings to check the bearings. If more than a square inch of either the front or rear bushing bearing is not machined, the carriage is unserviceable.

Your Ordinance support unit will report all defective carriages by the numbers to the Ordinance Weapons Command, Fort Belvoir, Illinois.

## JUST A COUPLE POINTS



Heard the clanking mechanism of a 120-ton rock-bit gun gives out with a bang the other day that sounded like a baby tripping. Man, what a real good gurgle.



Some good-intentioned and half-bred flooding PL from the side cover tubes will be just about drowned the whole mechanism. Hence, instead, tho. No petroleum will that these are just oil-can points. The only thing special here is a squirt or two of oil every week to keep the gear and bearings going around smoothly.

Same thing applies to the side-cover tubes on the circulating mechanism, too.

A couple squirts with the oil can and you've got it. Electric and vacuum while you're getting the oil in.



But the other parts of these mechanisms need the full treatment, so follow the LO right down the line. The next revision of LO 3-588 will give you the dope on the oil-can points.



## OUTSWIPE HAND EXTENSION

Also heard about a few Joe the Miller days. Seems he keeps to remove the outswipe-handles from the hydraulic ramplatching mechanism of his Mystrawper. And when they occurred the gun-wagoner! Knocked the extension right out of their mechanism. And Joe went to the bottom of the line.

A good way to keep this from happening is to keep those handles in your hand at all times when they're being used. When you move your hand, you gotta move the handles, too.

In fact, if you just think of those handles as being extensions of the hands instead of extensions of the rubber, you'll always remember to move 'em before you operate.



## SLICKING'S MO JUM

The outriggers on your wheel gun are not meant to bear the weight of the gun and mount. They're there to keep the mount from making like a saddle when bumps and bawling all over the place during operation.

When lowering the mount, make sure the lower plate is solidly on the ground level ground, not just bearing all the weight. Clear away all rocks, logs, stumps and bumps in the ground before you let 'em down so the outriggers won't get short-stopped and have to carry a load. If they do, they'll either



break or bend upward. And the next time you wobble your treaty old mount, you'll get the backing of your life... and even Davey Crockett couldn't hit the broad side of a bull from a backing place like that.



Well, for anything it has something to do with shooting. Anyway, when you give it a bump or a bump or a bump with the trigger, you get a wobbly change—both low and up. Now that you've got it, how to page 18 to see what it's all about.



## WANNA MAKE A LITTLE TIME ON FOUR .50 CAL MACHINE GUN?

The .50-cal machine gunner's captain has pretty big to do the art of handicrafting, when with a detail and all to do for you. Besides, are you making out with the timing?

Timing, y'know, is getting the firing pin to release at just the right time when the revolving parts return to battery. It's something that should be checked each time the headspace is adjusted and any other time the piece isn't putting out just right. It's also something that's done by your company armorer, or under his supervision.



And here does poor timing affect your gun? Well, if the firing pin is releasing too soon (early timing), the gun will fire and recoil before the cartridge is far enough forward to grab the next cartridge from the belt. The gun will fire only two rounds—the round you chambered by charging the gun, and the round in the belt which was engaged

by the extractor when the first round was chambered. After that—dead silence.



To keep this in mind, if your gun stops firing after only two rounds, the timing is probably off. See your unit armorer.

On the other hand, if the firing pin is releasing too late (late timing), the barrel extension will hang into the transition block when the revolving parts go back into battery. The gun may fire all right, but it'll play hob with the barrel extension and transition block. If your gun's hanging back into battery too hard, the timing is most likely on the block.



Course, improper headspace could cause the same things. But you always adjust the headspace before attempting to adjust the timing. You can't get accurate timing with incorrect headspace.

All right, all right, you say. How do we go about adjusting the timing?

Well, there's no point in telling you here. It's all taken care of in TM 9-221 and FM 21-45. So turn us to our list and make with the gage.

### WHO'S RIGHT?

Have you got a new M1 rifle, or a rebuilt one with a new stock? Then here this.

If the trigger-guard fits tightly right or won't close at all, it's a good idea to let your Ordnance support table it and regulate wood-down a little. If you have a light trigger-guard, you might heat up a stock, rollers, trigger-guard legs or safety lip.

The stocks are supposed to be lined up with the trigger-guard cover to run approximately 20 degrees from the locked position without locking.



And another thing—don't go around wrapping stocks with your knuckles. These stocks are lined on the rifle at time-of-rebuild—us, let Ordnance do the wrapping.

### ONE'S NO GOOD

Dear Half-Mast,

Get a couple questions for you on the M1 .30 cal. machine gun. If you can turn the barrel while the gun's in battery, is the barrel unserviceable? If not is a barrel unserviceable also in some situations?

L. C. M. R., Jr.

Dear L. C. M. R., Jr.,

Any time you can turn the barrel while the gun's in battery, something's wrong—and dangerous.

Could be the barrel situations are worn down too-much, losing the barrel turn. Or it could be you're just suffering from a lack of oil on the locking spring. The locking-springs you're supposed to use have two oil oilers, one on each side. The old type only has one.



If these oilers are worn round they'll not positively lock the barrel.

If the situations or the oilers worn on the barrel will turn, or if you don't get a good "click" when you're adjusting headspace, turn the barrel in.

*Half-Mast*

## WATCH SPRING SPRINGS?

Those ratchet springs on your M1 and M1A1 submachine guns have a nasty habit of losing their tension and leaving the barrel open. So you gotta watch 'em all the time.

When they fail to lock the barrel in place, you're liable to lose the

spring by bending 'em up slightly toward the barrel. But take the barrel out first.

Unless if the ratchet on the face of the ratchet spring are so worn down that they won't bite the barrel collar, turn your piece in for a new one. Some thing goes if the ratchet on the bottom of the ratchet spring are loose.



1. Pull the barrel out.



2. Pull the ratchet spring out of the gun.



3. Pull the ratchet spring out of the gun.



4. Pull the ratchet spring out of the gun.

## WHAT'DIT ANSWER

You're right, man! It's not a paperweight for the sake. It's a breechblock like in your T-14s and M1s. And the reason it's staying you is the fact right now is simply this:

Don't lose the breechblock on another round until you've marked its serial number with the number on the vent bushing. The breechblock and the vent bushing were marked at the time of assembly and got the same placenumber. They gotta go together, just like Anna 'n' Andy. So stop right now and check the numbers on both places.

If they're not the same, hold everything and call for Ordnance. Don't even mark the breechblock until you get a matched pair. You'll feel up the threads.

Remember, too, when your weapon needs a new breech block or vent bushing, it's gotta get both at the same time. So watch it, will you?



Match numbers  
both places!









WHICH IS RIGHT?

Sold to me, you're on the ball. You're helping me do things easier for everybody.

Dear Sgt. Davis,

According to paragraph 203 of TM 1-581, we're supposed to record accomplishments of all modifications made on the 478 Jacket File. That's all well and good, but a couple of MWO's (ENG 1807 and ENG 399-1) say otherwise. Paragraph 16 reads like this:

"Extent required and when it is not. None required."

And in paragraph 14 it says that recording of the modification is not required.

One authority tells us to record the modification and the other one tells us not to. Which one's right and why? It sure is confusing.

Sgt J. P.

Dear Sgt. J. P.,

You're quite an eagle eye, old man. I couldn't believe you saw how when I got hold of the MWO's and looked it up, you were right. No matter what the MWO says, the work's gotta be recorded on the 478 Jacket File. A check with the Office, Chief of Engineers, revealed that all Engineers MWO's published in the future won't have that "optional" bit of information.

Sgt. Dwyer

"BUDDY SEAT"

Dear Sgt. Davis,

We've come up with a new good plan for training tractor operators. You see, during training you now sit adjacent to each machine, so we mounted a "Buddy Seat" on the right side of the tractor. The student can sit there and watch the instructor or his partner operate with complete safety. Fig. 1 shows a D-7 with the "Buddy Seat" attached.



You can shape the seat frame from 1-in. steel stock drawn from the salvage yard. Then the seat is electric welded

to 1/4-in. steel plates that have holes drilled in them to match the holes in the arm rest and the side of the tractor. The arms are drilled on and can be removed at any time.

CHUCK F. B.

Dear CHUCK F. B.,

We're always glad to hear practical training ideas. After all, training and sound preventive maintenance go hand in hand. You're on the right track (everybody is, too). Why not put the "Buddy Seat" on the left instead of the right side of the tractor. Then, when the machine

is running the machine, the instructor can sit in the seat and be near the engine clutch and the brake in case of an emergency.

Here's another suggestion, too: You can buy a 1/2-in. piece of metal 3-1/2 inches high and a foot long to the running board in front of the "Buddy Seat." This'll give whoever's riding in the seat a "steering" or brake handle against if the tractor lurches forward.

May, (Dusty)

Clear Up Your

## OIL-BATH AIR-CLEANERS

You get to work that's dirty or grim and heavy on dust, rock and high winds know that these conditions can really play hell with the air and fuel systems on your engines. A heavy machine's already clogged up with the 400-cycle generators at some of the AAA sites in dusty areas.

You get these troubles quick when you forget to keep your oil-bath air-cleaners clean, and they start "fillin' up with mud. This mud gets too to blow right quick, and takes the rock in the combustion chamber, especially around the valve guides. Then you've got much valve-in, damage to moving parts, excessive oil consumption, and a sick engine that'll hafta go in the shop for a good long time.

Taking good care of that oil-bath cleaner is the easiest piece of mainte-

nance that you'll find on your generator—and it pays off big. LO's 5-1072 and 5-1156 tell you it's dismountable and clean the entire unit every week, and you'll be way ahead in the long run to follow them to the letter. At some really tough sites, you'll need to clean the air-cleaner several times a week.

This gritty thing that takes in the engine has to get in through the air and fuel systems. Check 'em carefully, keep the dirt inside, and your generator'll keep on purring like an oily-co-drinkin' cream out of a silver spoon.



## GIVE 'EM THE BOOT!



Misadventures in through-the-gear shift levers on some Engineer equipment has been damaging the transmission. You can clean this headache by installing boots or shields on the gearshift levers. Some equipment had this protective covering installed by the manufacturer, but there are other items that will keep their transmissions exposed to Off Main Weather.

You can solve this problem real easy in most cases. You see, there's a boot already available in the spare parts supply system. Most boats can be protected by the gear-shift-lever boot made by International Harvester for their TD9, TD14 and TD28 crawler type tractors. That's code 571, Part No. 246091.



Fig 1 shows how the boot works on the Rough Model Tip-Way sweeper. Fig 2 has the boot in place on the Barber-Greene Model 87A asphalt finisher.

A couple of other items of Engineer equipment needing the protective boot are the Litchfield M-M asphalt pump and the La Tourette Wheelhoe-type Tractor.



Besides, the boot can be modified to fit transmissions that are similar, but have larger shift-lever housings than others. The big end of the boot can be made larger by whacking off a section of the skirt, or bell. This'll give it a proper fit over the larger housing.



In Fig 3 you can see the boot after the lower end of the skirt has been cut off. And in Fig 4 you can see it installed on

the gear shift's levers of the Barber-Cotman Model 44C clacking machine.



Any kind of an ordinary hose clamp will do to secure the lever in place—but here are examples that're available in the Engineer Supply System. For a clamp up to 1 inch, you can use the one under Engineer Stock No. 15-2140-040-100. And if you need a clamp bigger'n 1 inch, the stock number for that one is 15-2140-090-500.

That's all the steps you need, so the rest is up to you. The sooner you get the levers on those gear shift's levers, the safer your transmission'll be.



#### WENT IT A THROAT?

Some clutch adjustments wouldn't be tripping up levers and there are some models equipped with the Lip-Ball

way clutch. Making the right kind of adjustment can save a lot of fits, but the wrong kind can only make matters worse. Too many guys are making pedal and linkage adjustments.

The best bet is to make the clutch adjustment on the clutch plate. You can do this by removing the necessary number of shims to allow for the wear. One shim from each end'll generally do the job.



And when you're making these adjustments, follow the instruction manual for the right way to do the job and the clearances needed. You can't go wrong that way. If you find that linkage adjustment has been changed from the factory setting, you might have to reset it—but not before making the adjustments on the clutch plate.

So here 'tis in a nutshell.

When you adjust the clutch, make the adjustment on the clutch plate by removing the necessary number of shims. You may have to see linkage adjustment as a last resort, but only after all the other have been removed.

# DANGER



## WATCH THOSE POWER LINES

It's tough to have to point a back picker, but there's been an increase lately in fatal accidents resulting from crane booms hitting electric power lines.

It just takes one big willful boom against a hot line to send the sparks flying—you'll never know what hit you.

There's an NRCO on the way that should help things. It'll get in step in the early days' routine the operators get to operate close to power lines unless the job is moved off. The official NRCO's read like this:

**"THIS EQUIPMENT SHALL NOT BE OPERATED IN A POSITION WHERE ANY PART OF THE MACHINE, SUSPENDED LOADS OR LINES CAN BE BRIDGE'S CLOSER THAN 10 FEET OF ENERGIZED WIRES UNLESS THE CURRENT HAS BEEN SHUT OFF AND POSITIVE MEANS TAKEN TO PROTECT THE LINE FROM BEING ENERGIZED."**

So here's what you do—tell the NRCO across your shop the while and get busy in the safe of your crane as a safety reminder.

So it goes. It's better than the increase.



## THE **Book** ROUND-UP



Here are some more Engineer jobs you might want to add to your pile.

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## CONTRIBUTIONS



### CUTTING IT SHORTER

Dear Editor,

Before we use TB-2419-11, which is a die to keep the head safety catch on the key-cards from jamming back into the cabinet case, we had a fix of our own.



Leaving the catch behind to the head we took a hacksaw and cut about 3/8 inch off the back part of the catch. It will leave enough back so it'll keep the head from blowing up but not enough back so that it fits on the top head guard and slides back into the case.

Our method, along with the TB method, works better for us. Once we fix it, it stays fixed. With only the pressing method as used in the TB, it has to be refixed before too long.

CYRIL E. THAYER  
Merrill Printing Board, Md.



*Old Man—If your firm jobs are having head' catch trouble this same TB will take care of it. If the TB alone doesn't do the trick, don't stop reading in a TBK and tell Shalman about it.*

### HEAT SYSTEM WARMUP

Dear Editor,

In two-weather the PSA tubes (Old Book No. PH2-7330711) on the railer and computer cabinets of the M11 system don't work properly. I have found this to be a good way of getting 'em started off on a real cold day if they aren't glowing constantly.



Hi Robert Schaefer  
& Ivy, JOHN A&A

*(Ed Note—Dave, good idea. It's the removal of the head and the flipping of the pin in the hole that does it. But treat 'em gentle.)*

### LET FOR 1/2-1000

Dear Ed, Ivy,

We've been drilling a 1/2-in. hole in each frame member in the pick-up type holder of our administrative 1/2-in. crank. Now we don't have to replace these floor boards as often because the water can't stand in the crack and rot them.

Ed E. H. H.

*(Ed Note—Good idea—in 1/2-in. crank frame members (instructions for drilling 1/2-in. diam. holes through the floor of the 1/2-in. crank frame is being prepared for publication.)*

### ONE WAY—

Dear Ed, Ivy,

Figured out a way to tick a problem. Haven't been able to keep track of my PE magazines. If they go down through regulars without being liberated, they seemed to disappear in the company. (Somebody must have some illusions in their maintenance — has not where I come from.)



So here's what we've come up with—a PE loading library for the crank and link maintenance workers. We keep some copies on file in the supply room, with the parts men giving 'em out on MR's. Now they're where they're needed when they're needed—in the hands of our mechanics and drivers.

At Top Babine  
Shepherd National Guard

*(Ed Note—Sounds like a good way to make sure PE gets used by those who need another's what it's for.)*



## Carrie Todd's BRIEFS

### Switch switch

Don't go assuming that all CD-850 transmitters and covers are interchangeable. They're not. The CD-850-4 or -4A covers work right with -4B transmitters. Likewise, -4B covers are better for -4 and -4A boxes. Other applications may be switched—but only in emergency. You might take another look over at the article on antennas in *PA* No. 28, Page 7.

### It takes two

If you've been pulling hair trying to get a stock number for the new 2-inch-bore-what-cylinder on your 3-liter-out rear wheels—pull no more, you'll get it under Owl Stock No. 0244-8330646.

### Plungers up to date?

Take a look-see at the firing plungers on your 90-mm ord-ord gun (M1 series) to see if it's up-to-date. The only plungers to be used on these guns are place-ordered A24828-1 and A7387411. Plunger A25008 is not to be used, so look for that number on your plunger. Some of 'em are floating around and you may have one.

### Baggie eye-shield

Some otherwise gung-ho heroes may have been known to lose the eye-shield from their reflecting sight 'cause they didn't keep an eye on it when they were moving the powder round. These riders don't get out easy to lose, so watch 'em, will you?

### Here's one you need

Like it says in *PA* Owl 443 (18 Jan '64), you'd need two vacuum gauges for flexible-carbon-hat adjustments on these 40-1790 engines. Can you wonder why to get the second gauge—wonder no more. The new Owl is M4 27, Item 2 (21 Jan '65) provides two vacuum gauges (M-G-585) for each fuel injection Test Set No. 2. Contact (41-7-1538-455).

### See the battery repair

Some with have been wondering what the authority for not repairing 20-M and 27-M batteries is. Well, all they have to do is wait for a change to *PA* Owl 443 which you'll see before long. It'll say that the only things that can be rebuilt on those batteries are the terminal posts.

*An Ounce of*  
**PREVENTIVE MAINTENANCE = A TON OF REPAIRS**



**ARE YOU IN BALANCE?**