PS

THE PREVENTIVE MAINTENANCE MONTHLY

Issue 38 1955 Series

NEEDED: MECHANICS

(Not Parts-Changers)

HELP WANTED

MECHANICS...

The returns are coming in from field maintenance shops and rebuild depots. They show that lots and lots of the parts pulled off vehicles and sent back for rebuild are perfectly good for service.

Which means, o' course, that some guys use their toolboxes instead of their heads. Practically anybody can learn to swap parts. What makes the difference between a mechanic and a flubdub is knowing what parts to swap, and why they need to be swapped.

Your unit has available the simple testing equipment that can tell you where you've got trouble in your vehicles—compression gage, vacuum gage, low voltage circuit-tester, tachometer and so on. These instruments are not hard to use, and believe it or not, it's quicker and easier to test a truck and replace only what needs replacing than it is to take all the parts off and put new ones on.

So be doggone sure, that any time you replace a part you can prove, by test, that it needs replacing. Do that and you move from the parts-changers class to Mechanic.

MECHANICS
Good salary. 5 day, 40 hour week. Numerous benefits.

MECHANIC-ENGINEER
Tool operator; lathe; milling. Ability supervise

PS MAGAZINE

Issue No. 38 — 1955 Series

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IN THIS ISSUE

FEATURE ARTICLES

DEPARTMENTS

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

The printing of PS Magazine, the PREVENTIVE MAINTENANCE MONTHLY, is approved by the Director, Bureau of the Budget (4 Aug. 53), and is distributed as follows: DISTRIBUTION: ACTIVE ARMY: Gen Staff, DA (1) except C1 (2); SS, DA (1); Tec Svc, DA (5) except COFENGR (75), COFORD (275); Admin & Tec Svc Bd (5); Hq COMARC (10); US Maj Comd (5); OS Base Comd (3); NOM (5); Armies (50); Corps (3); Div (2) except Armd Div (100), Tng Div (50); Brig (3); Regt/Gp (3); Bn (5); Co (10) except Cml Co (8), Med Co (8), QM Co (8); Ft & Cp (6); Gen & Br Svc Sch (5) except Engr Sch (100), Ord Sch (25); USMA (25); Joint Sch (5); Specialist Sch (5); PMST (3) except PMST Ord ROTC Units (25); Gen Depots (5); Sup Svc, Gen Depots (3); Depots (5); Hosp (3); RTC (100); POE (3); OS Sup Agencies (2); PG (5); Arsenals (25); DB (25); Instl Main Sta (3); Div Engr (2); Dist Engr (20). NG: State AG Special List. USAR: Mil Dist Special List. For explanation of abbreviations used see SR 320-50-1.

NO MIXERS, NO CHASERS—

JUST STRAIGHT BORE-CLEANER

It's a sad, sad story, but it seems some Joes have been diluting their rifle-bore cleaner with water when they get a little short on the stuff. Which just don't make good sense or good maintenance.

Bore-cleaner is the best solution around for cleaning powder deposits and such from rifle bores. That's what it was cooked up for. But in addition to that, it's also a pretty good rust inhibitor and preservative just by itself. A light coating of bore-cleaner left in the barrel after it's cleaned will protect your piece up to 72 hours under normal conditions. It's really good stuff.

But, when you mix water with it, you completely destroy its preservative qualities and greatly reduce its value as a cleaner.

When water's added, you've gotta dry the barrel like mad and then add preservative oil. As long as you're gonna do that, you may as well use hot, soapy water. It'll do a better job than diluted bore-cleaner.

So you just don't gain anything by adding water to your cleaner. You're actually losing ground. Go ahead and use up all your bore-cleaner as it is and then switch to hot, soapy water.

Better still, try to keep a good supply of bore-cleaner on hand all the time. It's new name is Cleaning compound, solvent: rifle-bore cleaner (CR) (Jan-C-372.) Stock Numbers are:

ORD STOCK NUMBER	FEDERAL STOCK NUMBER
51-C-1313-392 (2-oz can)	6850-224-6656
51-C-1313-396 (6-oz container)	6850-224-6657
51-C-1313-400 (qt can)	6850-224-6658
51-C-1313-405 (gal can)	6850-224-6663

WATER CAN DO YA' DIRT

So you've been cleaning the bore of your BAR with warm, soapy water, huh? Good deal. Fine. Gung Ho. There's nothing like warm, soapy water for the job **when you can't get bore-cleaner.**

But there's just one thing you've got to watch. Don't let any of that water drip down into the buffer group of your BAR. It'll cause all kinds of corrosion and corruption.

But there's a neat way of getting around it. It's all a matter of angle. When using water to clean with, don't stand your BAR straight up and down. The water that's squeezed outta the patch drips right down into the buffer and rate-reducing group, leaving you wide open for rust.

Let the BAR rest on the toe of the butt plate and hold it at an angle about 45 degrees from the floor or ground. This lets the water drip out through the receiver and you can wipe it all away.

Speaking of the buffer group, better take a look at yours right away. It's a good ideal to disassemble and clean it at least once a week, 'specially if you're around sand or salt water.

HOW'RE YOU

Dear Half-Mast,
I assume that the numbers on the wiring in our trucks identify the circuits, same as in our tanks. Am I right? Where can I get a complete list of these numbers?
Sgt H.R.M.

The Old Sarge gives you a run-down on the electrical circuit

Wire Number	Circuit Description
1	Generator Field Circuit
2	Generator Armature Circuit
3	Generator Ground Circuit
4	Generator regulator to Ammeter or shunt
5	Ammeter or shunt to starter terminal block or battery connected
6	Battery to starter
7	Battery ground including master switch if in this circuit
8	Shunt to ammeter positive
9	Shunt to ammeter negative
10	Ammeter or shunt to instrument panel circuit breakers
11	Ignition switch feed or magneto ground (L.H.)
12	Ignition switch to ignition coil or booster switch to booster coil
13	Magneto ground (R.H.)
14	Starter switch circuit (including feed) to relay or solenoid
15	Main light switch feed
16	Light switch (HT) to service headlamp or dimmer switch
17	Dimmer switch to upper beam
18	Dimmer switch to lower beam
19	Light switch (BOD) to blackout driving lamp, including resistor
20	Light switch (BHT) to blackout marker lamps
21	Light switch (HT) to service tail lamp
22	Light switch (S) to service stop lamp

AT NUMBERS?

Dear Sgt H. R. M.,

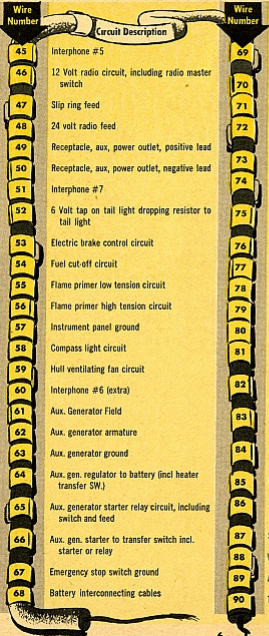
Right you are, the numbers on the wires on any military equipment identify the circuit. And these numbers are always the same, f'rinstance No. 1 circuit is the generator field circuit wherever you find it, No. 2 is the armature lead, no matter what Ordnance equipment you find it in, except the M4 tank and vehicles built upon the M4 chassis.

But, if you want to cut out and keep the list, here it is. You might find it handy when working with your equipment.

Half-Mast

numbers you find in your Army Ordnance equipment

Wire Number	Circuit Description
23	Light switch (BS) to blackout stop lamp
24	Light switch (BHT) to blackout tail lamps
25	Horn switch (including feed) to horn or horn relay
26	Horn relay feed and horn relay to horn
27	Instruments feed (instruments with polarity)
28	Fuel gage to sending unit, or left upper tank gage to selector switch
29	Fuel selector switch to right upper tank
30	Fuel selector switch to left lower tank
31	Fuel selector switch to right lower tank
32	Oil level sending unit to gage or selector switch
33	Water and oil temperature gage to sending unit
34	Low engine oil pressure warning light circuit, including feed
35	High water temperature warning light circuit, including feed
36	Oil pressure gage to sending unit
37	Outlet socket
38	Dome lamp circuit, including breaker and switch
39	Map light circuit
40	Instrument light circuit
41	Interphone #1
42	Interphone #2
43	Interphone #3
44	Interphone #4


Wire Number
Circuit Description
45 Interphone #5
46 12 Volt radio circuit, including radio master switch
47 Slip ring feed
48 24 volt radio feed
49 Receptacle, aux, power outlet, positive lead
50 Receptacle, aux, power outlet, negative lead
51 Interphone #7
52 6 Volt tap on tail light dropping resistor to tail light
53 Electric brake control circuit
54 Fuel cut-off circuit
55 Flame primer low tension circuit
56 Flame primer high tension circuit
57 Instrument panel ground
58 Compass light circuit
59 Hull ventilating fan circuit
60 Interphone #6 (extra)
61 Aux. Generator Field
62 Aux. generator armature
63 Aux. generator ground
64 Aux. gen. regulator to battery (incl heater transfer SW.)
65 Aux. generator starter relay circuit, including switch and feed
66 Aux. gen. starter to transfer switch incl. starter or relay
67 Emergency stop switch ground
68 Battery interconnecting cables
Wire Number
Circuit Description
69 Resistor to ground terminal on trailer coupling
70 Regulator ground (L.H.)
71 Windshield wiper circuit
72 Low transmission oil pressure indicator circuit, with feed (L.H.)
73 Radio terminal box to ground
74 Starter solenoid circuit (actuating) including switch or relay
75 Stop switch circuit (SW to SS on main light switch)
76 Fuel pump control feed
77 Fuel pump switch to fuel pump left
78 Fuel pump switch to fuel pump right
79 Fuel tank ground
80 Ignition coil to distributor
81 Battery to starting motor terminal block, including master switch
82 Starter motor terminal block to starter motor left
83 Main Light switch (TT) to tail light connection on trailer receptacle
84 Main light switch (SS) to stoplight connection on trailer receptacle
85 Low air pressure indicator light
86 Ground on series parallel SW, to ammeter, incl. circ. BR.
87 Spotlight circuit for trucks and wreckers
88 Winch torque limited control
89 Automatic choke
90 Trailer receptacle to ground

Wire Number	Circuit Description
91	Headlamp to ground
92	Parking lamp to ground
93	Starter relay grounding circuit
94	Starter relay aux. grounding circuit
95	Tail lamp to ground
96	Speedometer sending unit feed
97	Tachometer sending unit feed
98	Interphone #8
99	Interphone #9
100	Turret Feed
101	Impulse relay feed (L terminal on impulse relay)
102	Large cal. gun firing solenoid to impulse relay (S terminal)
103	Small cal. gun firing solenoid to firing switch
104	Traverse motor feed
105	Recoil circuit on gyro control, through recoil switch
106	Gyro control (#3 on an connector) to motor stabilizer control, yellow post
107	Gyro control (#1 on an connector) to motor stabilizer control, green post
108	Stiffness circuit including disengage switch
109	Gyro stab. SW. feed. incl. circ. BR. & SW. to gyro motor or anti-backlash SW
110	Gun firing and lights, circuit breaker feed
111	Gun firing SW, feed from circ. BR. (incl. safety SW)
112	Gun, firing safety switch indicator light
113	Firing SW. to large gun firing sol. or impulse relay (F term)

Wire Number	Circuit Description
114	Gyro control resistors feed
115	Firing relay feed
116	Gyro indicator light feed
117	Positive lead to gun firing switches
119	Normally open side of anti-backlash SW. to circuit #107
120	Normally closed side of anti-backlash SW. to gyro control resistors feed
121	Junction of Circ. #114 & 120 to gyro motor feed
122	Firing switch to loaders safety relay
123	Loaders safety relay to shell primer
124	Firing switches to selector switch
125	Feed to loaders trip button
126	Loaders trip button to feed on test relay
127	Test relay to loaders safety relay coil
128	Loaders trip button through loaders setting button to controlled side of test relay
129	Loaders ready to fire indicator circuit
130	6.5 inch selector light
132	Ammunition hoist circuit
133	Parallel disconnect circuit
137	Outlet socket
138	Dome LP. spot LT. and reel circuit
141	Interphone #1
142	Interphone #2
143	Interphone #3
144	Interphone #4

Wire Number	Circuit Description
145	Interphone #5
146	12 Volt radio circuit
147	Light for periscope and sighting devices
148	24 volt radio feed
149	Commanders master control circuit
151	Interphone #7
152	Commander's master control circuit feed
154	Rammer motor control circuit, including switch & indicator
155	Elevating motor feed through circuit breaker and main switch and indicator light
156	Brake solenoid feed through brake relay
157	Elevating lead from reversing relay to elevating depressing motor
158	Depressing lead from reversing relay to elevating depressing motor
159	Turret vent. fan
160	Interphone #6 (extra when used)
161	Feed for elevating & depressing control mechanism thru circuit breaker
162	Elevating relay control thru control switch and limit switch
163	Depressing relay control thru control switch and limit switch
164	Brake relay control thru brake switch and ground
165	Elevating and depressing relay mechanism to ground
166	Automatic elevation control through resistor & limit switch
167	Automatic depressing control through resistor & limit switch

Wire Number	Circuit Description
168	Equilibrator motor feed including switch and indicator light
169	Gun, How. firing area control circuit
173	Radio terminal box to ground
174	Rammer, control circuit
198	Interphone #8
199	Interphone #9
201	Generator field circuit
202	General armature circuit
203	Generator ground circuit
204	Generator regulator to ammeter shunt
211	RH ignition switch feed
212	RH ignition switch RH coil
214	Starter switch or relay feed circuit
233	Temperature gauge to sending unit
234	Oil pressure pilot LT
235	Water temperature pilot LT
236	Oil pressure gauge to sending unit
255	Flame primer low tension circuit
256	Flame primer high tension circuit
267	Emergency stop switch
270	Regulator ground RH
272	Transmission oil pressure pilot circuit-right
274	Starter solenoid circuit-right
280	Ignition coil to distributor
282	Starter motor lead (feed) RH
293	Starter relay grounding circuit
294	Starter relay aux: grounding circuit

TORQUE CONVERTER & SPECIAL DRIVING EQUIPMENT CIRCUIT NAMES

Wire Number	Circuit Description
300	Air Pressure gauge to sending unit
301	Ignition SW. to throttle sol. through feed term in term box
302	Throttle solenoid to throttle out switch (H)
303	Throttle out switch to brake throttle switch (A)
304	Feed term in term box to feed on clutch SW. (D) & normal range SW. (E)
305	Normal range switch to low range (F) & high switches (G)
306	Hi-range SW. on low range-Hi range shift to SW. on Hi-range-norm. range shift SW. (K)
307	SW on Hi-range-norm. range feeding direct sol. & convertor sol.
311	Brake governor switch (C) joining 312 to low side of governor
312	Convertor solenoid to brake governor switch (C)
313	Common lead on brake governor switches to high side on governor
314	Brake governor switch (B) to direct solenoid
315	Low range switch (F) on low range-Hi shift to Hi range solenoid
316	High range solenoid ground
317	Clutch switch (D) to clutch solenoid
318	Clutch sol. to clutch sol. ground SW. (J) on converter direct shift
319	Common side of throttle cut-off SW. & clutch sol. grounding SW. to grounding term in term box
320	Brake throttle switch to grounding terminal in terminal box

Wire Number	Circuit Description
321	Transmission lube pressure gage circuit
324	Transmission temperature gage circuit
325	Red flasher light with switch indicator and flasher
326	Differential low oil pressure warning light
327	Transmission high oil temperature warning light
329	Feed to transmission and steering control
330	Transmission high range control
331	Transmission low range control
332	Transmission reverse range control
333	Transmission clutch lockup control
334	Steer control right
335	Steer control left
336	Converter low oil pressure
337	Pilot control indicator circuit
338	Co-pilot control indicator circuit
339	Converter low lubricating oil pressure
340	Speed selector switches feed, pilot
341	Steer selector switches feed, pilot
342	Speed selector switches feed, co-pilot
343	Steer selector switches feed, co-pilot
344	Inlet fan — right
345	Inlet fan — left
346	Circulating fan — right
347	Circulating fan — left

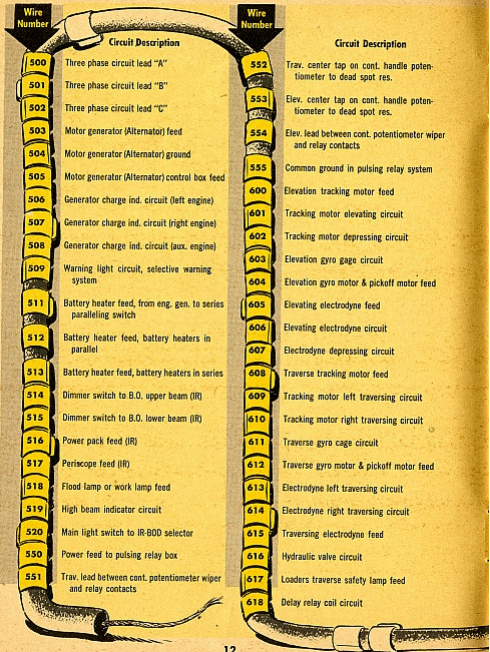
SPECIAL EQUIPMENT AND WINTERIZATION CIRCUIT NAMES

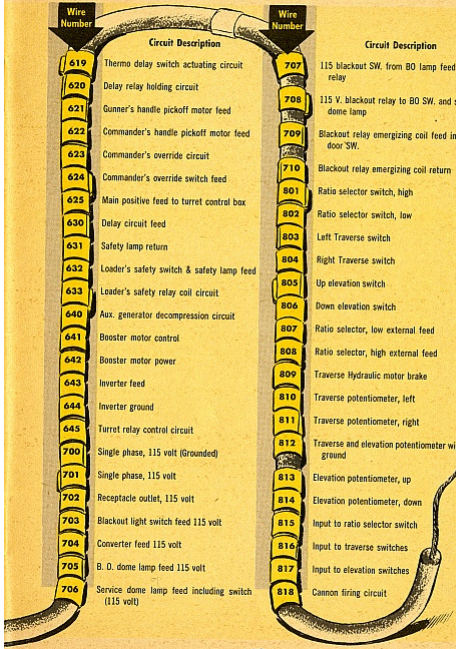
Wire Number	Circuit Description
400	Heater feed
401	Heater starting switch to coil & indicator light
402	Heater starting switch to pump and solenoid valve
403	Running switch to thermal switch
404	Thermal switch to heater starting switch
405	Heater starting switch to motor & indicator light if used
406	Heater ignition circuit, and indicator light if used
407	Heater in operating position indicator circuit
408	Oil heater circuit, including indicator
409	Compartment heater circuit, including control unit
410	Safety valve reset circuit
411	Ventilation fan lead
412	Aux. generator transfer switch to battery heater & indicator
413	Heater relay control circuit
414	Auxiliary gen. voltage control rheostat to voltage regulator
415	Feed to special ventilating fan or rotoclone
416	Ground lead for special ventilating fan or rotoclone
417	Auxiliary shunt to auxiliary ammeter-positive
418	Auxiliary shunt to auxiliary ammeter-negative
419	Main feed to auxiliary control box

Wire Number	Circuit Description
420	Auxiliary Engine oil pressure gage circuit
421	Auxiliary engine fuel cut-off valve
422	Auxiliary engine magneto ground
423	Signal lamp aux, interphone
424	Field telephone aux, interphone
425	Field telephone aux, interphone
426	Ground aux, interphone
427	Tachometer, electric, "A" terminal, send to receive
428	Tachometer, electric, "B" terminal, send to receive
429	Tachometer, electric, "C" terminal, send to receive
430	Tachometer, electric, "D" terminal, send to receive
431	Speedometer, electric, "A" terminal, send to receive
432	Speedometer, electric, "B" terminal, send to receive
433	Speedometer, electric, "C" terminal, send to receive
434	Speedometer, electric, "D" terminal, send to receive
435	Rear door emergency warning light
436	Comp. feed incl. relay
437	Comp. relay contr. circuit incl. SW
450	Bilge pump switches feed. & jumper between switches

Wire Number	Circuit Description
451	Bilge pump switch to rear bilge pump
452	Bilge pump switch to front bilge pump
453	Ignition retard circuit, starter to solenoid through normally closed switch
454	Ignition retard circuit, battery to normally open side of switch
455	Two-speed generator control circuit
456	Aux. gen. disconnect control circuit, including the switch
457	Interphone #10
458	Engine fan clutch circuit
459	Control circuit for master relay, and indicator light
460	Turn indicator circuit, right, service
461	Turn indicator circuit, left, service
462	Generator equalizer circuit, shunt type
463	Interphone #11
464	Interphone #12
465	Range finder, feed
466	Range finder, ground lead
468	Bulldozer, actuator, armature feed
469	Bulldozer, actuator, field & clutch feed
470	Bulldozer control, solenoid valve circuit
471	Winch control switch feed
472	Winch reverse solenoid circuit
473	Winch forward solenoid circuit

Wire Number	Circuit Description
474	Front end fuel tank solenoid
475	Rear end fuel tank solenoid
476	Transmission fan clutch circuit
477	Differential filter pressure circuit
478	Generator equalizer circuit, interpole type
479	Battery heater control circuit
480	Wrecker solenoid valve control circuit
481	Feed to magneto switch
482	Feed to auxiliary engine magneto grounding relay
483	Turn indicator, right blackout
484	Turn indicator, left blackout
485	Cab feed
486	Manifold heater main engine
487	Manifold heater aux. engine
488	Control, rectifier, to master relay circuit
489	Clearance lamp service feed
490	Clearance lamp B. O. feed
491	Parking lights to light switch
492	Ignition ground (GR mag. SW)
493	Aux. Gen. temp, (indicator circuit)
494	Engine decompression control circuit
495	Trans. oil level gage circuit
496	Spotlight or flood lamp ground
497	Red flasher ground

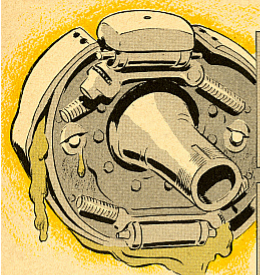

Wire Number
Circuit Description
500 Three phase circuit lead "A"
501 Three phase circuit lead "B"
502 Three phase circuit lead "C"
503 Motor generator (Alternator) feed
504 Motor generator (Alternator) ground
505 Motor generator (Alternator) control box feed
506 Generator charge ind. circuit (left engine)
507 Generator charge ind. circuit (right engine)
508 Generator charge ind. circuit (aux. engine)
509 Warning light circuit, selective warning system
511 Battery heater feed, from eng. gen. to series paralleling switch
512 Battery heater feed, battery heaters in parallel
513 Battery heater feed, battery heaters in series
514 Dimmer switch to B.O. upper beam (IR)
515 Dimmer switch to B.O. lower beam (IR)
516 Power pack feed (IR)
517 Periscope feed (IR)
518 Flood lamp or work lamp feed
519 High beam indicator circuit
520 Main light switch to IR-BOD selector
550 Power feed to pulsing relay box
551 Trav. lead between cont. potentiometer wiper and relay contacts
Wire Number
Circuit Description
552 Trav. center tap on cont. handle potentiometer to dead spot res.
553 Elev. center tap on cont. handle potentiometer to dead spot res.
554 Elev. lead between cont. potentiometer wiper and relay contacts
555 Common ground in pulsing relay system
600 Elevation tracking motor feed
601 Tracking motor elevating circuit
602 Tracking motor depressing circuit
603 Elevation gyro gage circuit
604 Elevation gyro motor & pickoff motor feed
605 Elevating electrodyne feed
606 Elevating electrodyne circuit
607 Electrodyne depressing circuit
608 Traverse tracking motor feed
609 Tracking motor left traversing circuit
610 Tracking motor right traversing circuit
611 Traverse gyro cage circuit
612 Traverse gyro motor & pickoff motor feed
613 Electrodyne left traversing circuit
614 Electrodyne right traversing circuit
615 Traversing electrodyne feed
616 Hydraulic valve circuit
617 Loaders traverse safety lamp feed
618 Delay relay coil circuit


Wire Number
Circuit Description
619
Thermo delay switch actuating circuit
620
Delay relay holding circuit
621
Gunner's handle pickoff motor feed
622
Commander's handle pickoff motor feed
623
Commander's override circuit
624
Commander's override switch feed
625
Main positive feed to turret control box
630
Delay circuit feed
631
Safety lamp return
632
Loader's safety switch & safety lamp feed
633
Loader's safety relay coil circuit
640
Aux. generator decompression circuit
641
Booster motor control
642
Booster motor power
643
Inverter feed
644
Inverter ground
645
Turret relay control circuit
700
Single phase, 115 volt (Grounded)
701
Single phase, 115 volt
702
Receptacle outlet, 115 volt
703
Blackout light switch feed 115 volt
704
Converter feed 115 volt
705
B. O. dome lamp feed 115 volt
706
Service dome lamp feed including switch (115 volt)
Wire Number
Circuit Description
707
115 blackout SW. from BO lamp feed to BO relay
708
115 V. blackout relay to BO SW. and service dome lamp
709
Blackout relay energizing coil feed incl. BO door SW.
710
Blackout relay energizing coil return
801
Ratio selector switch, high
802
Ratio selector switch, low
803
Left Traverse switch
804
Right Traverse switch
805
Up elevation switch
806
Down elevation switch
807
Ratio selector, low external feed
808
Ratio selector, high external feed
809
Traverse Hydraulic motor brake
810
Traverse potentiometer, left
811
Traverse potentiometer, right
812
Traverse and elevation potentiometer wipers, ground
813
Elevation potentiometer, up
814
Elevation potentiometer, down
815
Input to ratio selector switch
816
Input to traverse switches
817
Input to elevation switches
818
Cannon firing circuit

Wire Number	Circuit Description
820	D. C. power to bridge box for amplifier heaters
821	Firing circuit D. C. to override relay
822	D. C. power for directional switches to override relay
823	D. C. to inverter, pin lock, solenoid, and ratio solenoid
824	By pass Sol valve ground Ckt. thru pressure switches
825	Solenoid valves ground Ckt. thru line relay
830	A. C. to traverse velocity generator primary
831	Ground side traverse, velocity Generator, secondary
832	Ground side traverse, velocity generator, primary
833	Output traverse velocity generator, secondary
834	A. C. to elevation velocity generator, primary
835	Ground side elevation velocity generator, primary
836	Ground side elevation velocity generator, secondary
837	Output elevation velocity generator, secondary
838	Output of traverse amplifier
839	Ground for traverse amplifier
840	Traverse amplified heater circuit
841	A. C. power to traverse amplifier
842	Velocity generator input to traverse amplifier

Wire Number	Circuit Description
843	Bridge input to traverse amplifier
844	Bridge input to elevation amplifier
845	Velocity generator input to elevation amplifier
846	A. C. power to elevation amplifier
847	Elevation amplifier heater circuit
848	Ground for elevation amplifier
849	Output of elevation amplifier
850	Elevation servo balance potentiometer, up
851	Elevation servo balance potentiometer, wiper
852	Elevation servo balance potentiometer, down
853	Elevation servo amplifier phase
854	Elevation servo amplifier phase ground
855	Elevation servo line phase ground
856	Elevation servo line phase
857	Traverse servo balance potentiometer, right
858	Traverse servo balance potentiometer wiper
859	Traverse servo balance potentiometer, left
860	Traverse servo amplifier phase
861	Traverse servo amplifier phase ground
862	Traverse servo line phase ground
863	Traverse servo line phase
870	Right traverse pilot valve solenoid
871	Left traverse pilot valve solenoid
872	Up elevation pilot valve solenoid

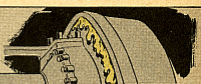
Wire Number	Circuit Description
873	Down elevation pilot valve solenoid
875	Elevation limit potentiometer, down
876	Elevation limit potentiometer, up
877	Elevation limit potentiometer, up wiper
878	Elevation limit potentiometer, down wiper
879	A. C. power from inverter
880	Ratio selector governor and relay
881	Lock switch power feed
882	Turret lock switch on
883	Turret lock switch off
884	Gun lock power
885	Gun lock switch on
886	Gun lock switch off
887	Inverter ground
888	Turret lock power
889	Contactor to limit switch
891	Brake solenoid including contactor to battery
892	Turret lock motor armature and fields
893	Inverter power feed
894	Breech switch feed
895	Traversing interference switch feed
896	Oil gear elevation solenoid valve
900	Flame thrower battery feed
901	Flame thrower ignition coil to ignition switch
902	Flame thrower ignition coil to spark plugs
903	Flame thrower atomizing fuel solenoid valves to SW
904	Flame thrower main fuel solenoid valves to SW.
905	Flame thrower timer to switch
906	Flame thrower secondary fuel solenoid valve to SW.
925	Turret lock lamp switch feed
950	External voltage adjustment control rheostat
951	Boom auxiliary power motor control
952	Boom auxiliary motor feed



HOW FULL IS PACKED?

"Packed" fits Marilyn to a "T". Not too full and not too little—just the right amount to keep you in a constant spin.

1



WHEEL-BEARINGS AND HUBS IN TRUCKS, TRAILERS AND TOWED ARTILLERY PIECES SHOULD BE PACKED THE SAME WAY: TOO FULL AND THE GREASE'LL SQUISH OVER AND RUIN YOUR BRAKES.

2

TOO LITTLE GREASE AND THE BEARINGS WILL GRIND THEMSELVES TO BITS.

3

PACKED FULL APPLIES ONLY TO THE BEARINGS THEMSELVES. SQUEEZE IN AS MUCH GREASE AS SHE'LL TAKE. GET THAT GREASE BETWEEN THE BALLS OR ROLLERS WHERE IT DOES THE MOST GOOD.

Now here's where fully packed is misunderstood and usually causes grease to leak on the brakes. "HUB" IS THE KEYWORD.

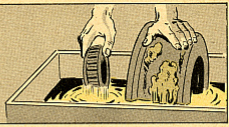
4

WHEN YOU PUT TOO MUCH GREASE IN THE HUBS AND THEY GET HOT, THE GREASE GETS A LITTLE THIN AND EVENTUALLY RUNS THROUGH YOUR SEALS ONTO THE BRAKES.

SO—WHAT DO YOU DO?

5

BEFORE PACKING MAKE SURE ALL OLD LUBE IS CLEANED OUT OF BEARINGS AND FROM INSIDE THE HUBS WITH VOLATILE MINERAL SPIRITS OR DRY-CLEANING SOLVENT.



6

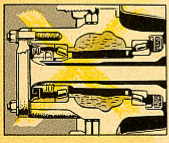
DRY THE HUB AND PARTS REAL GOOD. YOU CAN USE COMPRESSED AIR ON THE HUBS BUT NOT ON THE BEARINGS. IT COULD DAMAGE THEM.

7

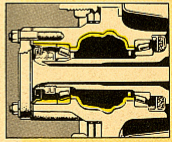
PACK BEARINGS BY HAND Ok WITH BEARING PACKER. GET GREASE BETWEEN THE BALLS OR ROLLERS. KEEP DIRT, GRIT AND OTHER CONTAMINENTS AWAY WHEN PUTTING ON THE GREASE.

NOW—ABOUT THOSE HUBS

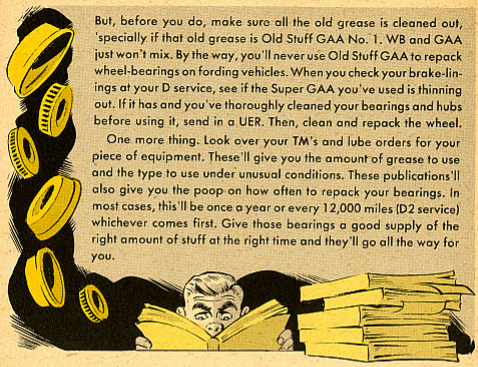
TB 9-2835-12, which deals with repacking wheel-bearings in vehicles, trailers and towed artillery, has been rescinded. Now the rules laid down in the TM's are the rules to follow.



ALL TM'S TELL YOU TO PUT A THIN SMEAR OF GREASE, USUALLY NO MORE THAN 1/16 OF AN INCH, EVENLY 'ROUND YOUR WHEEL-HUBS. ALL THIS DOES IS PREVENT YOUR HUBS FROM RUSTING. REMEMBER—THIS LAYER OF GREASE SHOULD BE AS THIN AS THE HAM YOU GET IN SANDWICHES—JUST ENOUGH TO COVER THE SURFACE.



As far as what grease to use, you've got that Super GAA No. 2 on the market now. This is the one you'll use, in most cases. If you can't get Super GAA, use General Purpose Grease No. 2 (WB).



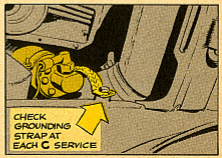
But, before you do, make sure all the old grease is cleaned out, 'specially if that old grease is Old Stuff GAA No. 1. WB and GAA just won't mix. By the way, you'll never use Old Stuff GAA to repack wheel-bearings on fording vehicles. When you check your brake-linings at your D service, see if the Super GAA you've used is thinning out. If it has and you've thoroughly cleaned your bearings and hubs before using it, send in a UER. Then, clean and repack the wheel.

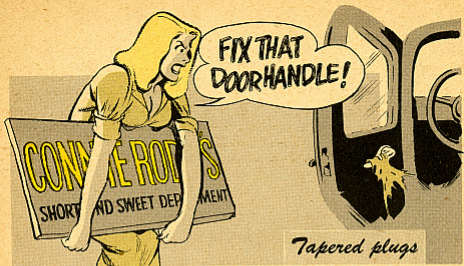
One more thing. Look over your TM's and lube orders for your piece of equipment. These'll give you the amount of grease to use and the type to use under unusual conditions. These publications'll also give you the poop on how often to repack your bearings. In most cases, this'll be once a year or every 12,000 miles (D2 service) whichever comes first. Give those bearings a good supply of the right amount of stuff at the right time and they'll go all the way for you.

HOW'RE Y'CONNECTIONS?

Got a good ground connection on your M48 tank's auxiliary engine? Ever consider what can happen if the ground-strap breaks and Li'l Joe's juice grounds out to the hull through the metal in the flexible fuel-line?

Better check that strap at each "C" service, pal. (Or else check out some asbestos drawers . . . !) Make sure the strap strands are not broken and that there's no paint lousing up the contact surfaces.





A safety tip

Here's a tip that'll make your vehicle safer to drive:

If your inside door handles are pointing toward the rear of the vehicle and open the door by downward pressure, you've got danger, especially if your passenger likes to be comfortable. He may forget himself for a minute and rest his arm on the handle. Before you can say "Hey," he's dribbling his head along the cobblestones.

Most of these inside door handles can be made safety-sure by pulling out the retaining lock or pin which holds the handle in place. Then, rotate the handle a half-turn so it's facing toward the front of the vehicle. Put the retaining lock or pin back in.

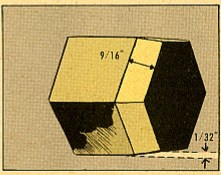
Now to open the door, you swing that handle up.

You can read more details on this in TB Ord 603 (29 Apr 55).

Tapered plugs

Had any trouble removing torsion-bar end plugs on your M48 tanks?

On some early 48's there's a slight taper in the hex-head plug opening. Makes 'em tough to handle with your plug wrench tool (41-W-1961-125) as is.



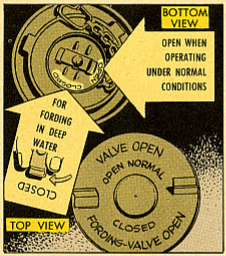
But y'can handle 'em by grinding a taper on one end of the wrench Make the taper 9/16 inch long. Vary its cut from 0 to 1/32 inch at the end. On all six sides of the wrench, o'course.

That'll give you the fit you're looking for.

Capping it right

If you're puzzled when it comes to using that new fuel-tank filler-cap (Ord Stock No. G744-8333722), puzzle no more.

When you're operating under normal conditions, turn the internal-vent valve on the inside of the cap to OPEN. When you're getting ready to take a ford in deep water, turn the valve to CLOSED.

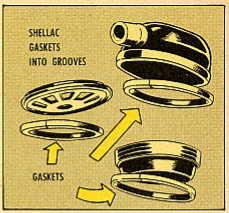


The instructions are stamped on the outside of the cap, so you can't go wrong.

The cap's now being passed out, so if you haven't gotten yours yet, bide your time—it won't be too long coming.

Take it and stick it

The new straight NEOPRENE gaskets for the M38A1 Jeep's air-cleaner will give you less cause for hollerin' if you'll clean all the parts up clean and dry and then shellac the gaskets into

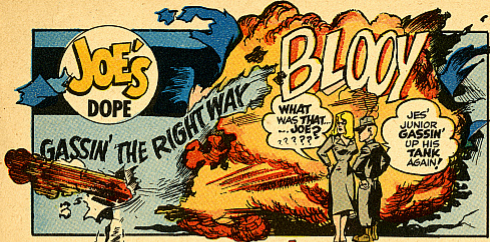


the grooves. This'll keep the gasket from getting stretched and distorted when you clean the air-cleaner. Then you won't have oil sloppin' out of the cleaner and getting you a gig five minutes after you service it.

Tester gone blooie?

If you've been having any trouble with the ammeter and the meter multiplier on your low voltage circuit tester, FSN 17-T-5575 or 17-T-5575-50 make sure you send in a UER (Form 468) to Chief of Ordnance, Washington 25, D.C. That is, if the trouble is in the tester. If you goof and connect the leads wrong so you burn it up yourself, then you need a report of survey, not the UER.

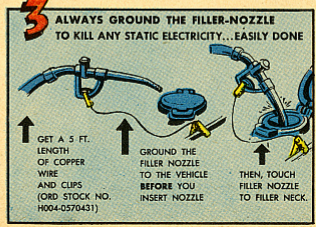
Be very careful in connecting these testers for high amperage tests to be sure you have the big shunt and are putting the tips in the right jacks for the largest amperage you expect. If you are in any doubt, check first with the 1000-amp scale. Then move down to the 500-amp scale if necessary.

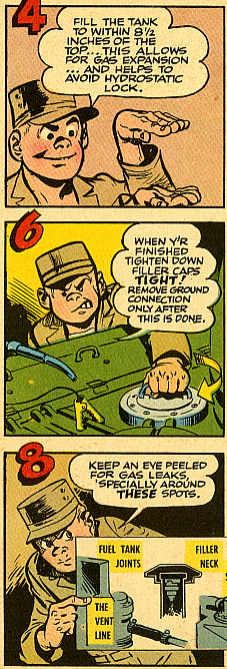

JOE'S DOPE
GASSIN' THE RIGHT WAY
BLOOY
WHAT WAS THAT, JOE? ???
JES' JUNIOR GASSIN' UP HIS TANK AGAIN!


THAT REALLY YOU, JUNIOR?
YUP!
MY BOY, THERE'S CERTAIN BASIC COMMON SENSE THINGS YOU GOTTA DO WHEN GASSIN' UP...NOW LET ME SHOW YOU!

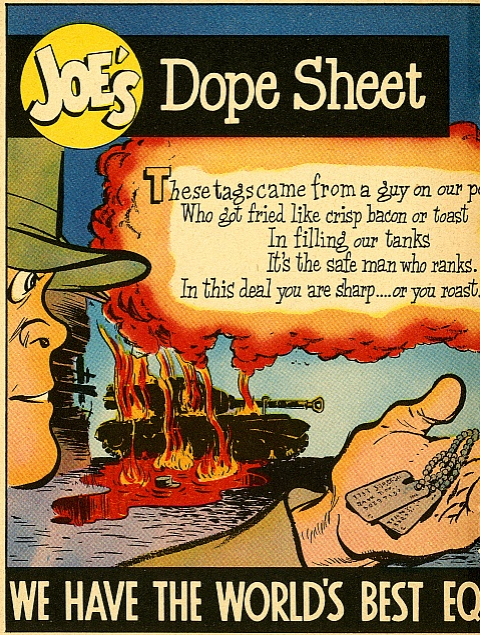

1
PUT A FIRE-GUARD NEARBY WITH A CO2 FIRE EXTINGUISHER! USE A MEMBER OF YOUR OWN CREW... WE'LL USE CONNIE FOR DEMONSTRATION.


2
WIPE AROUND THE FILLER CAP TO PREVENT CRUDD FROM GETTING INTO THE GAS AND MESSING UP THE DEAL.


3
ALWAYS GROUND THE FILLER-NOZZLE TO KILL ANY STATIC ELECTRICITY...EASILY DONE
GET A 5 FT. LENGTH OF COPPER WIRE AND CLIPS (ORD STOCK NO. H004-0570431)
GROUND THE FILLER NOZZLE TO THE VEHICLE BEFORE YOU INSERT NOZZLE
THEN, TOUCH FILLER NOZZLE TO FILLER NECK.

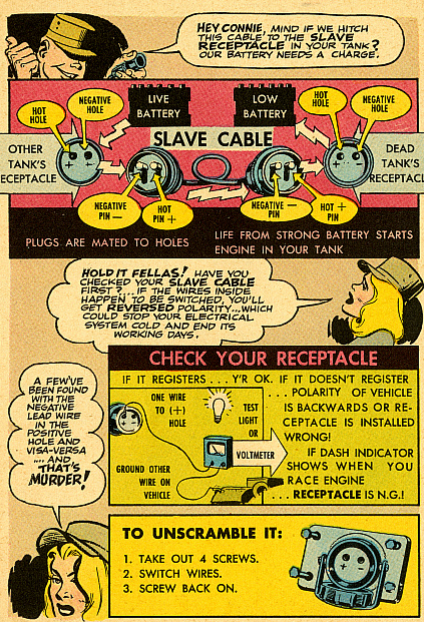

4
FILL THE TANK TO WITHIN 8½ INCHES OF THE TOP... THIS ALLOWS FOR GAS EXPANSION ... AND HELPS TO AVOID HYDROSTATIC LOCK.
5
MAKE SURE GAS DOESN'T SPLASH AROUND THE TANK OR IN THE ENGINE COMPARTMENT. GAS FUMES CAUSE EXPLOSIONS. NEVER LEAVE NOZZLE UN-ATTENDED!
6
WHEN Y'R FINISHED TIGHTEN DOWN FILLER CAPS TIGHT REMOVE GROUND CONNECTION ONLY AFTER THIS IS DONE.
7
IN CASE YOU GOTTA GAS-UP RIGHT AFTER A RUN... BE CAREFUL NOT TO SPLASH GAS ON HOT MUFFLER SHIELDS OR BLOOIE!
8
KEEP AN EYE PEELED FOR GAS LEAKS, "SPECIALLY AROUND THESE SPOTS.
FUEL TANK JOINTS
FILLER NECK
SENDING UNITS
THE VENT LINE
9
... AND KEEP ALL SMOKERS AT LEAST 50 FEET AWAY
DANGER GASSING TANK

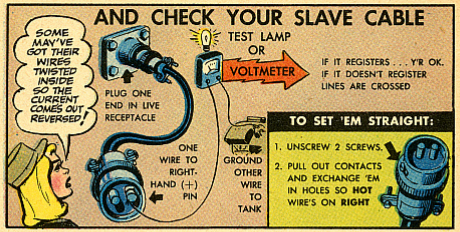

SHUT-OFF VALVES
GASSIN' LIGHT TANKS... FIRST SET THE FUEL SHUT-OFF VALVE TO EITHER... BOTH ON OR BOTH OFF.!
PARKED SIDEWISE ON A SLOPE?
SET FUEL SHUT-OFF VALVE TO LEFT ON OR RIGHT ON... AND FILL EACH TANK SEPARATELY
...AND KEEP IT ON THAT POSITION 'TIL YOU'VE USED UP ABOUT ½ THE TANK'S GAS...OR 'TIL Y'GET BACK ONNA LEVEL.
IF YOU'RE GASSIN' UP A MEDIUM TANK, SET THE TWO FUEL SHUT-OFF VALVE HANDLES TO OFF POSITION BY PUSHING DOWN.
AND...AS FOR GASSIN' A MEDIUM TANK ON A SLOPE... FILL IT THE SAME WAY AS YOU DO ON LEVEL GROUND. IF YOU'RE FILLING FROM DRUMS Y'LL FIND A HAND PUMP IN THE RIGHT REAR STOWAGE BOX.
THAT'S IT... OH, YES, IF YOU'RE FILLIN' FROM DRUMS DON'T FORGET GROUND CONNECTIONS
GOTCHA...
WHOOSH
...AND I FORGOT TO ADD... KEEP GASOLINE OFF YOUR CLOTHES... OR DON'T SMOKE TILL YOU CHANGE 'EM!

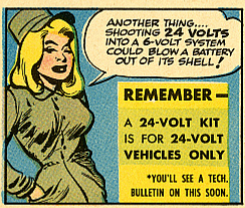

JOE'S
Dope Sheet
These tags came from a guy on our p
Who got fried like crisp bacon or toast
In filling our tanks
It's the safe man who ranks.
In this deal you are sharp....or you roast.
WE HAVE THE WORLD'S BEST EQ


RULES FOR GASSIN'-UP
1 PUT A FIRE GUARD NEARBY
2 KEEP GAS CLEAN
3 "GROUND" FILLER NOZZLE
4 FILL ONLY TO 8½" FROM TOP
5 AVOID SPLASHING GAS
6 TIGHTEN FILLER CAPS "GOOD"
7 WATCH FOR GAS LEAKS
8 KEEP SMOKING BYSTANDERS AT LEAST 50 FEET AWAY
UIPMENT... Take care of it


JOE'S DOPE
KNOW YOUR SLAVE KIT
STONE COLD DEAD! WE'LL NEED AN ALADDIN'S LAMP TO GET OUTA HERE!
YOU GOT A SLAVE KIT, ERNIE! GET WITH IT!
KINDA DIRTY, THOUGH!
YAAH, I S'POSE YOU RUB IT NOW AN' A GENIE APPEARS, I S'POSE!
HAVIN' BATTERY TROUBLE?
?
HI CONNIE, Y'SURE MATERIALIZED IN TIME!


HEY CONNIE, MIND IF WE HITCH THIS CABLE TO THE SLAVE RECEPTACLE IN YOUR TANK? OUR BATTERY NEEDS A CHARGE.
HOT HOLE
NEGATIVE HOLE
LIVE BATTERY
LOW BATTERY
HOT HOLE
NEGATIVE HOLE
SLAVE CABLE
OTHER TANK'S RECEPTACLE
DEAD TANK'S RECEPTACLE
NEGATIVE PIN —
HOT PIN +
NEGATIVE PIN —
HOT + PIN
PLUGS ARE MATED TO HOLES
LIFE FROM STRONG BATTERY STARTS ENGINE IN YOUR TANK
HOLD IT FELLAS! HAVE YOU CHECKED YOUR SLAVE CABLE FIRST? . . IF THE WIRES INSIDE HAPPEN TO BE SWITCHED YOU'LL GET REVERSED POLARITY...WHICH COULD STOP YOUR ELECTRICAL SYSTEM COLD AND END ITS WORKING DAYS.
CHECK YOUR RECEPTACLE
IF IT REGISTERS . . . Y'R OK.
IF IT DOESN'T REGISTER . . . POLARITY OF VEHICLE IS BACKWARDS OR RECEPTACLE IS INSTALLED WRONG!
ONE WIRE TO (+) HOLE
TEST LIGHT OR
VOLTMETER
GROUND OTHER WIRE ON VEHICLE
IF DASH INDICATOR SHOWS WHEN YOU RACE ENGINE . . . RECEPTACLE IS N.G.!
A FEW'VE BEEN FOUND WITH THE NEGATIVE LEAD WIRE IN THE POSITIVE HOLE AND VISA-VERSA ... AND THAT'S MURDER!
TO UNSCRAMBLE IT:
1. TAKE OUT 4 SCREWS.
2. SWITCH WIRES.
3. SCREW BACK ON.


AND CHECK YOUR SLAVE CABLE
SOME MAY'VE GOT THEIR WIRES TWISTED INSIDE SO THE CURRENT COMES OUT REVERSED!
TEST LAMP OR VOLTMETER
IF IT REGISTERS . . . Y'R OK. IF IT DOESN'T REGISTER LINES ARE CROSSED
PLUG ONE END IN LIVE RECEPTACLE
ONE WIRE TO RIGHT-HAND (+) PIN
NOW GROUND OTHER WIRE TO TANK
TO SET 'EM STRAIGHT:
1. UNSCREW 2 SCREWS.
2. PULL OUT CONTACTS AND EXCHANGE 'EM IN HOLES SO HOT WIRE'S ON RIGHT


ANOTHER THING.... SHOOTING 24 VOLTS INTO A 6-VOLT SYSTEM COULD BLOW A BATTERY OUT OF ITS SHELL!
REMEMBER—
A 24-VOLT KIT IS FOR 24-VOLT VEHICLES ONLY
*YOU'LL SEE A TECH. BULLETIN ON THIS SOON.


ALL SET!! YOUR SLAVE IS READY! ALAKAZAM... NEW LIFE FOR YOUR BATTERY!!


WE'RE GENERATIN'! NOW OUR ENGINE'LL CHARGE UP THE BATTERY PRONTO! HEY ERNIE... WADDAYA DOIN'???


I'M RUBBIN' THAT GENIE BACK..... SHE TOOK OFF BEFORE I HAD A CHANCE TO ASK HER FOR A DATE!

MORE ON THE TRIP TICKET

Dear Half-Mast,

The more I mess around with that DD Form 110 (trip ticket), the more questions pop into my mind.

Take this one, for example: If a convoy leaves the same area, covers the same route and returns to the same area, is one trip ticket sufficient for the whole convoy?

Or this one: Is one trip ticket enough to cover the movement of a prime mover towing a trailer or should each of these vehicles have its own ticket?

My crystal ball's kinda misty. How's yours?

Sgt R. J. C.

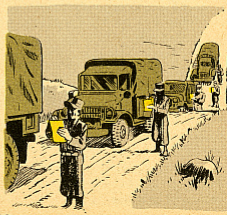
Dear Sgt R. J. C.,

Receiving loud and clear. But you don't need a crystal ball when it comes to this DD Form 110. All you need is a keen eye when reading the authorities covering the subject.

AR 700-5 says that operators and crew chiefs are personally responsible for their vehicles. Squad, section and platoon leaders are responsible for the supervision of vehicles in their command. And unit and organization commanders are responsible for seeing that the vehicles in their command are properly cared for and used.

Which all means that each vehicle is treated individually, whether it's used alone or as part of a convoy. If you assign one trip ticket to a convoy of 20 trucks, how're you going to record starting and ending mileages for all those vehicles on one ticket? How're you going to record on one ticket the extent of damage if a couple of those 20 vehicles break down?

In order for all the people responsible for a vehicle to keep an accurate, up-to-date record of that vehicle, that vehicle



has to have its own trip ticket—even when it's in convoy.

To go a little further, TM 9-2810 (October 1953) "Tactical Motor Vehicle Inspections and Preventive Maintenance Services" sets up a **daily** service for each vehicle. This includes before-operation service, during-operation service, at-the-halt service and after-operation service. If you send 20 vehicles out in convoy, how're you going to record all these things on one trip ticket? You can't. Which again leads us to the

conclusion that you need a trip ticket for each vehicle.

Some people'll argue that FM 25-10 (February 1953) "Motor Transportation Operations" says to use only one ticket for a convoy. Here're the exact words from the FM: "Dispatch is normally exercised through the scheduling and recording of driver and vehicle assignment and by the issuance of **a ticket** covering each trip of a vehicle or **group of vehicles.**"

This manual's talking about dispatch and the ticket the dispatcher issues to a convoy commander before the convoy takes off. This ticket in a sense, is not a trip ticket. It covers such things as time of departure of the convoy, place of departure, destination, time of arrival, number of vehicles in the convoy, etc. It has nothing to do with preventive maintenance like the individual vehicle trip ticket does. It's sort of a dispatching record, so don't let that tricky phrase toss you.

The same explanation can be used for your question about the prime mover and trailer. These're two distinct and individual vehicles and have different types of preventive maintenance services performed on them each day. If one prime mover had 15 trailers to tow, the driver would have 16 trip tickets—one for the prime mover and one each for the trailers.

This is the only way a true, accurate record of maintenance services can be kept.

Half-Mast

FIGURIN' SNL'S

Dear Half-Mast,

What gives between the allowances in the new Ord 7's and the items listed in the new Ord 8's available to the using unit? Are the new Ord 8's to be used by the using unit? Or, what explains the following:

New Ord 8's (under explanation of symbols) say that items marked with the # symbol may be issued to the

using unit for direct replacement when required for organizational maintenance. Still, the 7 manuals make no mention of this.

What's the score, anyway?

Mr. J. W.

Dear Mr. J. W.,

Nope, the new Ord 8's are not meant for the using unit any more than the old Ord 8's are. The using unit sticks to Ord 7's.

Here's the explanation to your question:

That # symbol in Ord 8 is to guide your Ordnance support unit. It tells them what parts the using organizations are authorized—or what items are listed in the Ord 7's.

Of course, there may be certain differences between the items marked with a # symbol in the Ord 8 and items authorized in the Ord 7 if the publications were put out at different dates. However, these differences are to be corrected as rapidly as possible by SNL revisions or changes. Where the differences exist, using units will still follow the Ord 7.

Half-Mast

DE-PICKLING DOPE

Dear Half-Mast,

What's the guide for deprocessing track vehicles—such as the M48 tank and M59 personnel carrier—before issue to an armored unit?

Shouldn't Ordnance sort of take off some of the cosmoline and give 'em a final-type inspection—such as changing some of the protective oils and grease to the proper grade—and checking out the gun prior to issue? Where can I find this information?

Pvt J. K. H.

Dear Pvt J. K. H.,

Y'might start with a look at TB Ord 385 (with Change 2, 15 Aug '51). Para 14a says: "A technical inspection will be made by the issuing installation in accordance with AR 700-105 . . . Use Form 462 for full track and tank-like vehicles . . . Refer to the pertinent technical manuals for inspection criteria and requirements. All defects disclosed by the inspection, which affect and impair satisfactory operation and safety, must be corrected."

Seems like that would imply that Ordnance should give the item a final-type inspection. And see that it's got the proper grade of oil, etc. Right?

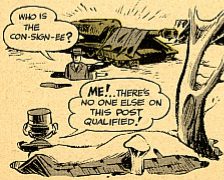
But then SB 9-4 (9 June '52), which spells out some of the details of deprocessing duties, says "Deprocessing is the responsibility of the consignee." (Para 4b.)

And just who-n-ell is the consignee? It's not defined in the SB, but SR 320-

5-1 (Dictionary of U.S. Army Terms) gives consignee as "officer or other persons to whom the last carrier turns over the shipment. A consignee is not necessarily the person to whom the property is invoiced or for whose use it is intended."

In practice this leaves the responsible Ordnance officer in local areas some latitude for deciding how and where the deprocessing can best be done. As consignee (of shipments from depots and arsenals) he'll usually set up SOP for deprocessing materiel before it's issued to using units.

But sometimes it may be decided that the users would make good consignees —at least as regards some of the de-pickling chores. Justification might be shortage of Ordnance personnel or facilities in the area or expediency.



'Course, it's nice to have your stuff delivered ship-shape and ready to roll. But—doesn't always work out that way. And TM 9-2810 and current vehicle manuals are pretty definite about organizational duties "Upon Receipt of Materiel."

Take TM 9-7012, fr'instance. It says you first inspect to see that the tank's been properly prepared for service "by the supplying organization" and delivered in "condition to perform any mission to which it may be assigned when placed in service." (Chap. 2, sec 1, para 7.)

And what if y'find it was not? Then —deficiencies will be corrected "in the usual way; that is, by the using organization" or by a higher echelon. (Para 10.)

Be sort of hard to squeeze outta that one, wouldn't it? Even with the cosmoline.

Half-Mast

CUTTING TRACK ADJUSTING SWEAT

Dear Sgt Dozer,

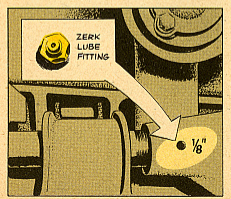
Our shop recently got in a D7 Caterpillar tractor with the track-adjusting nuts frozen solid to the screws. Three hefty men leaning on the wrench couldn't break the seizure, so we gave up.

With the track-adjusting nuts and screws exposed to all kinds of muck and water (and the pile-up of caked mud kept from washing or falling off by the track guard) the corrosive grime worked itself in between the parts.

The only way we could free the seizure was with lube. We drilled a hole in the large nut (we used a 21/64-in drill and tapped in a 1/8-in thread) and put in a 1/8-in zerk lube fitting (like in picture). After several shots of chassis grease the adjusting nut gave way to the pressure of one man on the wrench.

The lube fittings have reduced track adjusting sweat and cut down on the man-hours for the job.

The Gang
Heavy Equipment Maintenance Shop
Post Engineers
Aberdeen Proving Ground, Maryland



Dear Gang,

Looks like you've solved a tough problem and got yourselves an ease-of-maintenance idea to boot. But all this trouble could've been eliminated if the guy performing organizational maintenance had given it a drop or two of oil now and then. Incidentally, that must be an early D7, 'cause the later models are equipped with grease fittings at that very point. It's a good idea, though, to add the fitting to the machines that don't have it.

Sgt Dozer

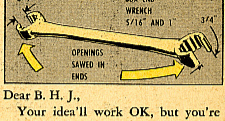
BURNED IS RIGHT

Dear Sgt Dozer,

We find it a tough job to remove the shielded-wire nut without unscrewing the sparkplugs on the 400-cycle Hobart generator. We used to get burns on our arms trying to keep the plugs in place while removing the wire. But we've got it beat now. We came up with a tool that'll hold the plug in place while the shielded-wire nut's being loosened.

We took an old box-end wrench (5/16-in and 1-in) and sawed a ¼-in opening at each end. It slips over the plugs easily and the length of it makes the plugs easy to reach. Now we don't have any burns or unscrewed plugs to delay a job.

B. H. J.



Dear B. H. J.,

Your idea'll work OK, but you're liable to get more than your arms burned for cuttin' up that wrench. A standard open-end wrench or the crescent wrench from the first echelon tool kit'll do the job. Either of 'em will help you reach over the hot exhaust manifold to hold the plugs steady.

Sgt Dozer

WHO'S RIGHT?

Dear Sgt Dozer,

I'm a little bit mixed up about when to change the oil filter on the HF 30G-400 cycle generator. The instructions on the generator door say "Change element every 50 hours." But TM's 5-5072 and 5-5166 tell you to clean and renew the element every two weeks.

And there's also another one. "Operating Instructions, T-982," which is furnished with the generator by Hobart Brothers, gives the following information on page 11, para 16 f: "Every 300 hours of operation replace cartridge."

Now, do you see why I'm confused? Which one's right?

H. P. L.

Dear H. P. L.,

It's easy to see why you're confused. You called your shots right down the line, but what you read in the TM is the right dope.

You see, LO's 5-5072 and 5-5166 are reprinted in the TM's. They cover the Continental model M-330 engine—and that's the one that gives the Hobart generator set its power.

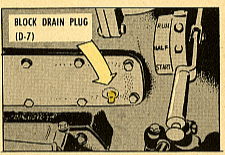
Instructions for changing the filter element are based on a normal 8-hour daily operation. The best time to change the filter element is at 112 hours. You get that figure by multiplying 8 hours a day by 14 days. And that's two weeks on any calendar.

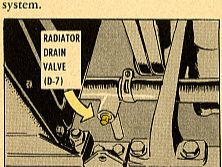
If you'll take a look at para 16 of AR 312-20, you'll see that LO's are mandatory to all users of Engineer equipment and have to be physically attached to the equipment. So, you see, the LO gives you the last word as to when to change the filter element. And—the LO supersedes any other instructions or directives that might've been issued.

Sgt Dozer

DRAIN—DON'T BUST

Of course, it shouldn't happen to you. But just in case you're ever caught short of antifreeze for your equipment, now's a good time to take out your TM or manufacturer's maintenance manual and make sure you know which plugs to pull to completely drain the entire cooling system.





Some people think that getting the water outta the radiator does the job. But, tain't so. They're sure to end up with a busted block, and maybe worse.

The plugs you have to remove or open to relieve your equipment of its potential belly fulla ice are:

1. Radiator drain-valve.
2. Cylinder-block drain-plug.
3. Starting-engine drain-plug (in some cases).

Radiator drain-valves and cylinder-block drain-plugs are located differently on different pieces of equipment. Even different models of the same type of equipment may have the drains located on different sides of the radiator or at different spots on the block. Your manual will tell you where each hole is under the section marked "Cooling System Draining."

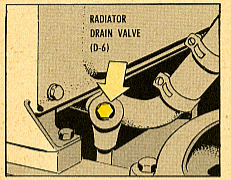
And here're a couple of cautions for when you're feeding your baby antifreeze:

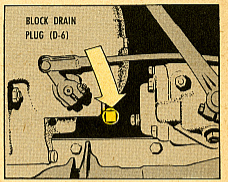
Before adding antifreeze look for leaks at the hose, hose clamps and gaskets. After adding antifreeze, look 'em over again. Antifreeze can seep through places that're too tight for water.

Then, after you've operated for about half a day, check the crankcase oil-level

in the engine and in the starting engine (where applicable) to make sure anti-freeze hasn't snuck in there.

If antifréeze does leak into the crank-case, the oil will be black and sticky. Only thing you can do is stop operation, trace the leak, get it stopped and yell for some fresh oil.





BUTTERFLY DE-ICER

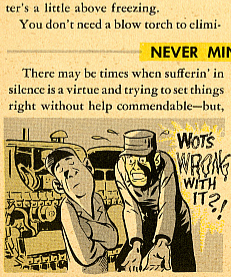
Don't get all shook up if the butterfly valve ices up on the carburetor of your 400-cycle generator. Some of the boys at the fire control units have been running into this problem under certain temperature and moisture conditions. It generally occurs when the thermometer's a little above freezing.

You don't need a blow torch to eliminate the ice. All you gotta do is run the set with the side covers down. If you'll open the small doors on either side of the canopy behind the radiator, that'll give the necessary ventilation.

Naturally, you wouldn't want to use this method of ventilating the generator set in warm weather, but the idea'll work real well when the north winds blow.

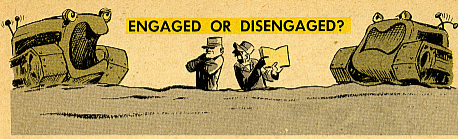
NEVER MIND SULKING

There may be times when sufferin' in silence is a virtue and trying to set things right without help commendable—but,



the day you discover defective construction or some incorrect assembly on a new piece of Engineer equipment, just isn't the time to be a quiet little fellow.

The action that'll really help on that occasion is to wrap up your findings in a DA Form 468 (UER-Unsatisfactory Equipment Report) and get your boss to send it to Office, Chief of Engineers, Attn: Maintenance Division, Washington 25, D. C. And shoot off a note to PS about it. And the quicker the better for all concerned.



Remember that article, "Cat Stake-Out," back in PS Issue #25 (page 43)? Man, the mail's been flyin' hot and heavy on that 'un, especially about the last sentence. It said on all Cat tractors—When you knock off for the day, make sure that master clutch is disengaged so's to keep the clutch plates from stickin'.

Several men say they don't agree with this. That sent Sgt Dozer scurryin' for his manuals and operator handbooks. He even checked with the Office, Chief of Engineers, and found out that it's the basic policy of the Corps of Engineers to advise disengaging the master clutch on a tractor when you shut 'er down for the day.

The manufacturer's manual, under the subject, "Stopping the Tractor," says to engage the master clutch **if the engine's to continue running.** There's no argument on that count. A pilot bearing seizure could cause the tractor to move away if the operator had left it in gear with the clutch disengaged. That's when the engine's running, though.

But when the tractor's shut down for the day, the master clutch should be disengaged. Just try and find an operator's handbook that tells you to engage the clutch when you shut your tractor down for the night. Dozer's been stayin' up nights tryin' to find this bit of information, but he hasn't bumped into it yet.

Some say if you leave the clutch disengaged while hot that the clutch plates'll warp.

If an operator had been moving stumps and had the clutch almost on fire, there's a good possibility the clutch plates'd warp if he'd immediately stop the machine. But you can't straighten out warped plates by merely engaging the clutch when the machine is parked.

Now—here's something else to consider. When an operator shuts down his tractor after a day's work, he doesn't know for sure how soon he'll be back on the job again. Bad weather might keep him from working for days or weeks.

If a machine is left parked in damp weather for—let's say two weeks—with the clutch engaged, there's a good chance the clutch plates will stick. Rust from dampness'll cause the clutch plates to stick together in some cases. One veteran mechanic working for a Caterpillar dealer tells of an instance when this happened and he had to use a bar to separate the plates.

So remember, when you park your tractor and shut 'er down for the night, disengage the master clutch. If you do, you'll be following the basic policy of the Corps of Engineers.

ROUND-UP

TM's

5-3091 Pump, Carver mod 1-1/2-MWI, 14 Apr 55
5-0000 Generator, OED, 30-kw Hill Diesel mod 6E, 13 Apr 55
5-3399 Compressor, air, 500-cfm, Worthington 500, 11 Apr 55
5-3039 Pump, 450 GPM, Carter mod 504CW, 6 Apr 55
5-5335 Generator, 3/4-kw, Atlas Aircraft mod 741, 5 May 55
5-3039 Pump, cent, Carter mod 561-LC-1-1/2, 4 May 55
5-6007 Camera, copying, Rutherford mod MAC, 2 May 55
5-3019 Pump, pet BLM pipeline, Reiner mod CP60 w/Continental engine mod Y-827, Apr 55
5-3032 Pump, pet BLM pipeline, Peerless mod and Barnes mod CE 4-P4, 3 May 55
5-3334 Sawmill, Corinth mod 1-C, 20 Mar 55
5-9097 Carrier, crane, 6 x 4, mod HC-700, 3 May 55
5-5011 Generator, 15-kw, Hill Dsl mod 4F, 2 May 55
5-5043 Generator, 3-kw, Hollingsworth mod BI-3, 30 Mar 55
5-3034 Pump, cent, German Rupp mod 66-H-260, 18 Apr 55
5-5067 Generator, 100-kw, Buda mod DO 300 AIDC, 21 Apr 55
5-6103 Spirit process map reproduction, A. B. Dick mod 293, 6 May 55
5-9067 Trailer chassis, generator, ACF Brill mod M-200, 18 May 55
5-9477 Air cond unit, skid-mtd, 73,000-BTU, Typhoon mod SA-580

TB's

5-9460-1 Air cond unit, type 890, for camera trk darkroom, 6150 BTU, Chrysler Airtemp mod 8-13C, 24 May 55
5-4026-1 Driller drill, pneu, wagon mtd, Ingersoll-Rand mod X-71 WD, 14 Jun 55
5-5398-1 Compressor, air, 13-cfm, Nix mod 5302, 3500 psi, 13 Jun 55
5-9026-1 Conveyor, drag type, Barber-Greene mod 554, 13 Jun 55
5-3301-1 Tractor, whld, MRS mod 125, 22 Jun 55
5-5391-1 Generator, 10-kw Reiner mod GGC-104E, 27 Jun 55
5-5301-1 Gen Set, 30-kw, Consolidated Dsl Elec mod RD-14A, 22 Jun 55
5-5053-1 Generator, 30-kw, Reiner mod GGE 30AC, 28 Apr 55
5-4062-1 Paving breaker, Cleco mod RC80, 12 May 55
5-4003-1 Sharpener, rock-drill bit, Ingersoll-Rand mod 160-60, 6 Jun 55
5-9316-1 Crane-shovel pwr unit, trk-mtd, Thew-Lorain mod MC-414, 23 May 55
5-1133-1 Dist, wtr, trk-mtd, 1,000-gal, Yic mod 73, 25 May 55
5-2066-1 Pump, cent, Marlow mod 34-PV, 6 Jun 55
5-5402-1 Compressor, Westinghouse Air Brake mod 1-BYD4-15, 6 Jun 55
5-9147 Generator, Gridler mod 32-4027, 27 May 55
5-9395-1 Plow, snow, Sicard SnoBlower BH-10, 25 May 55
5-5096-1 Generator, 1/2-kw, Homelite mod 20-5208-29A, 13 Jun 55

5-5973-1 Generator, 1-1/2-kw, Homelite mod 24A120-234, 6 Jun 55
5-5258-1 Engine, Continental mod AU7, 6 Jun 55

LO's

5-3068-1 Tractor, Caterpillar mod D7, 31 Mar 55
5-5049 Engine, Continental mods 20-128, GD-357, GD-181, ED-336, AD-260, JD-282, 14 Apr 55
5-5051 Engine, Waukesha mods XB7W and XB7W1, 14 Apr 55
5-3042 Pump, deep well, Peerless High-Lift mod 42, 14 Apr 55
5-3084 Generator, 5kw, Onan mod CW04-5G, 1 Apr 55
5-3023-1 Crane-skd, trk-mtd, Koehring mod 304, 19 Apr 55
5-1080 Rooter, LeTourneau mod R-3, 9 May 55
5-1129 Rooter, 3-tooth, LeTourneau-Westinghouse mod R-36, 9 May 55
5-3019 Pump, sump, Chicago Pneu mod CP-4, 3 Jun 55
5-3055 Distribution unit, Mech Equip Co mod PB-3000, 9 May 55
5-3088 Pumping unit, Hale mod FZZP, 9 May 55
5-5088 Generator, 5-kw, mod JB30C, 9 May 55
5-5311 Generator, 3-1/2-KVA, Kohler mods 1821 and 1S821, 9 May 55
5-9022 Trailer, 8-ton, Fruehauf mod CPT-8, 9 May 55
5-9469 Trailer, dump, LeTourneau mod E-18, 26 Apr 55
5-9129 Mower, tractor-drawn, Case mod D-57, 9 May 55
5-9354 Truck, garbage, load packer, Garwood mod, 30 May 55
5-9189 Conveyor, drag type, Rexo mod 486 PM, 17 May 55
5-9097 Feeder, Pioneer mod 30-C, 26 May 55
5-9301 Scraper, road, air transportable, Murray mod 76-A, 31 May 55
5-3078 Pump, deep well, Johnston mod 80C, 31 May 55
5-5068 Gen Set, DED, 15-kw, Ready Power Mod XD-6A
5-5332 Generator, 60-kw, Consolidated Dsl mod 1581, 17 May 55
5-9136 Sawmill, American mod #3, 9 May 55
5-4025 Driller drill, pneu, wagon-mtd, Ingersoll-Rand mod X-71WD w/FM-3 wagon, 12 Jun 55
5-4406 Vibrator, concrete, GED, Wall mod, 14 Jun 55
5-5310 Generator, 1/2-kw, Homelite Mod 20-5-208-29A, 10 Jun 55
5-3396 Compressor, air, 15-cfm, Johnson mod 210-B, 21 Jun 55
5-5221 Engine, aerojet general, Crosley mod B, 24 Jun 55
5-6134 Machine, printing and developing, Paragon-Revolute mod Rotocol 55000, 14 Jun 55
5-4483 Air cond unit, Chrysler Airtemp mod 8-13C, 14 Jun 55

ENG MWO's

283-3 Class 60 Rig all highway type bridge, 6 May 55
3151-1 Class 530 Fire truck
5813-1 C2 Generator, 3-kw, Hollingsworth GH-3, 11 May 55
5831-1 C2 Generator, 5-kw, Hollingsworth CE-31-OC & CE-51-OC/WR2, 9 May 55

5853-2 C1 Generator, 30-kw, Reiner GGG 30 AC, 12 May 55
5865-1 Compressor, 210-cfm, LeRoi mod 210-CI, 12 May 55
5881-1 C2 Generator, 5-kw, Kohler mod 5mh81, 9 May 55
5183-1 E1 Engine, gas, Wisconsin mods VE-4 and VF-4, 9 May 55
5187-1 E1 Engine, gas, Wisconsin mods AEH-AEHS, 12 May 55
5256-1 C1 Engine, Briggs & Stratton, mod Z, 9 May 55
5083-1 Generator, 5-kw, Master mod GD-146, 6 May 55
9036-2 Tank, wtr, 1500-gal, Columbia Steel Tank Co, 17 May 55
9037-1 Trailer, 2-whl, 3-ton for clamshell bucket, 1 Jun 55
1127-1 Distributor, wtr, 1000 gal, Butler mod 6743, 2 Jun 55
6121-1 C1 Press, litho, American Type Founders Mod, 3 Jun 55
3040-4 Tractor, Caterpillar D8, 13 Jun 55
9489-2 Carrier, crane, 20-ton, Four Wheel Co mod MUC, 13 Jun 55
1139-1 Distributor, bituminous, trlr-mtd, 1250-gal, Etnyre mod MX, Style HX, 7 Jul 55
3012-1 Generator, 400-cycle, 30-kw, Hobart H9300, 2 Jul 55
9488-1 Carrier, crane skd, Four Wheel Auto Co, 1800 MUC, 1 Jul 55
9463-1 Air cond unit, trk-mtd, 26,580 BTU, Bosco mod TK 5236, 18 Jun 55
9474-1 Air cond unit, 26,930-BTU, trlr-mtd, Typhoon mod PAC 30C, 23 June 55

ENG 7, 8 & 9's

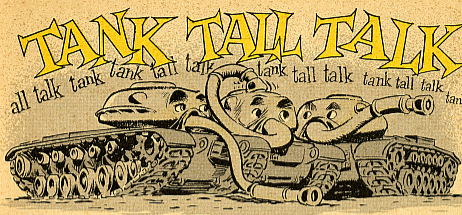
3081 Carver pump mod 1-1/2-MWI, 30 Mar 55
9169-1 Dim cleaner, Homestead mod A6-L, 8 Apr 55
5262 Generator, 30-kw, Onan Mod 30JT-1R1/55GN, 7 Apr 55
4075 Press Drill, Northwest mod D-45, 25 Apr 55
5242 Boiler, stm, 100-psi, 35 hp, 28 Apr 55
6134 Machine, prtg & dvlpg, Paragon-Revolute Meteor (special) 19 Apr 55
5083 Generator, 15-kw, DED, 26 Apr 55
6007 Camera, copying, Mobile Rutherford Machinery Type MAC, 28 Apr 55
5263 Generator, 60-kw, International-Harvard mod M 60DSE/R, 9 May 55
5266 Generator, 30-kw, International-Harvard mod M 10CE/1-5R6
9589 Conveyor, drag type, Barber-Greene Mod 680, 10 May 55
1167 Kettle, asph repair, Littleford mod US 8400-2, 27 May 55
3069 Pump, 500 GPM, mtg, Gorley type, mod F-200, 25 May 55
5399 Compressor, air, 2.0 FPM, Harris Supply mod 12-201, 25 May 55
5420 Compressor, air, G-o-ft, DeVilbiss mod 5300, 12 May 55

ENG 7 & 8's

1151 Distributor, wtr, Bosco mod 8ADC, 11 Apr 55

SB's

5-67 Corps of Engineers recoverable repair parts, 31 May 55
5-68 Crane-Shvl, power unit, 5-ton Bucyrus-Erie 22-B, Crawler, serial number range 37300 thru 48509, 22 Jun 55

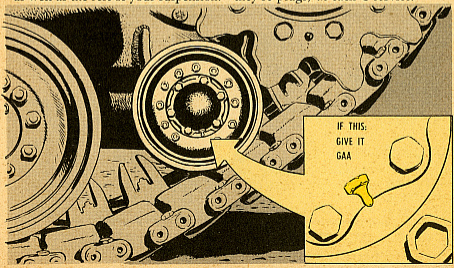


M48 TENSION IDLERS

Some early M48 tanks could throw a track like Rapid Robert Feller cutting loose with a fast one. The ol' gal's "wing" was clipped, though, when she got fitted out with tension-idler-wheels. They're the same as "compensating idlers" on the M47.

When you ramble over the terrain, keep a close check on these tension-idlers—as well as the rest of your suspension. See that the idlers get what they need in the way of lubing. You'll find grease fittings or oil plugs (on later models) there on the hubs—just screamin' for attention.

There'll soon be a directive out modifying caps to take just one type of lube. But—meanwhile—give 'em the good ol' GAA (if they're Zerks) or OE 10 (if they're plugs) at each **C** service.



M17 PERISCOPE POOP

Putting in and taking out the driver's periscopes in your M41 or M41A1 tank can be pretty much of a job. Or had you noticed?

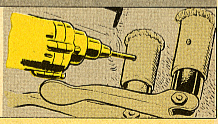
What with weld spatter and stuff, some of those periscope liners aren't exactly as smooth as a baby's cheek. Which makes it sorta rough all the way around.

IF YOU'RE HAVING TROUBLE WITH BUMPY LINERS, DRAG OUT THE OLD EMERY WHEEL AND GIVE 'EM A FACE LIFTING.

IF YOU CAN'T SLIP 'EM IN EASY LIKE, SMOOTH OFF THE SHARP EDGES AND CORNERS OF YOUR PERISCOPES WITH A FILE.

AFTER THAT YOU MAY HAVE TO FLEX THE LOCATOR ARM ON THE PERISCOPE LATCH MECHANISM A LITTLE SO IT'LL LET THE PIN SLIP IN THE RECESS IN THE PRISCOPE MOUNTING BOSS.

ALSO DO A LITTLE PREVENTIVE MAINTENANCE ON THOSE PERISCOPE CATCH PLUNGER SLEEVES. SO THEY CAN GET A LITTLE LUBRICATION, PUT A 1/8" HOLE IN EACH OF THE PLUNGER SLEEVES 2" FROM THE END OF THE SLEEVES.



And then shoot some lubricating or penetrating oil into the mechanisms.

A technical bulletin'll cover this one one of these days.

Play it cool with this

OIL COOLER FAN CHECK

Hot power plants in medium tanks can be caused by faulty oil-cooler fans.

If and when this happens, you'll find your hi-temp indicators won't pin-point the trouble. Power pack items are so close together that an over-heating engine'll usually give you an over-heating transmission, too—and vice versa.

A simple check, though, can help pin it down.

FIRST . . . WITH TANK ON LEVEL GROUND, CHECK FOR RIGHT AMOUNTS OF OIL IN YOUR ENGINE AND TRANSMISSION. MOST COMMON CAUSE OF OVER-HEATING IS LOW OIL.

OIL RADIATORS AND AIR PASSAGES SHOULD NOT BE CLUTTERED UP WITH TARPS, DEBRIS AND STUFF. OVERFLOWED AND SPILLED OIL GATHERS DIRT AND DUST FAST, CLOGS UP THE WORKS, CHOKES OFF AIR CIRCULATION.

NOW START THE ENGINE

Y'can tell whether or not an oil cooler fan's operating by checking the air flow over the triangular grill openings at the extreme right-rear and left-rear of the engine compartment. But—here's a way to tell if it's running up to snuff:

HOLD RAG—ABOUT SIX OR EIGHT INCHES SQUARE—IN FRONT OF COOLER . . . SIX TO EIGHT INCHES AWAY.

RUNNING RIGHT AT FULL SPEED—RAG'LL GET SUCKED IN

IF RAG HANGS, FAN'S ON BLINK

Keep in mind that a vehicle should not be moved on its own power after either warning light comes on—until the cause is found. Either unit (engine or transmission) can be cooked by continued operation when she's over-heating.

ARMAMENT — Making Hay With

SING NO SAD SONG

A little dust... that slowly grows and grows... the kind that blows and blows ...can really do you dirt.

It hardly seems possible, but those little bits of dust can gang up on you and put your M33 FCS completely out of whack. Just like the straws did on the camel's back.

It can clog the air filters of the ventilating system, causing the electronic components—like the acquisition magnetron—to burn out.

It can gather in the radar and computer cabinets and keep the heat from passing off like it should, giving you a hot operation.

The dirty little sneakers can also convene on the vanes of the ventilation blowers and set 'em off balance. This in turn causes vibrations and lots of wear and tear on the bearings of the blower motors. The vibrations then cause other parts of the equipment—like the acquisition automatic-frequency-control unit —to go on the blink.

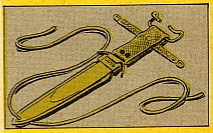
So a little cloth... that wipes away the stuff...and one that's used enough... is all it needs from you.

TAMING A BLOW

If you're in for a big blow of winds from 60 to 100 miles per hour and you've got to keep your M33 acquisition antenna on its feet, 20 100-lb bags of sand on each antenna mounting leg will do the trick. Be sure to put steel bars in the legs so they won't be bent. And, if you've got the time, lashing and staking the legs to the ground will also help.

In winds that high, it's also time to completely depress the track antenna and lash it to the trailer-lifting-bracket. The lashing should be fastened to the lens mounting brackets and **not** the lens —the lens'll bend.

WHATZZIT ???

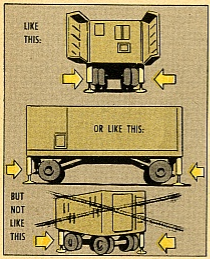


Just one clue. You'd better look long and close 'cause it's not as simple as it looks. For answer see page 44.

Your AAA

ON THE LEVEL, JACK

Leveling the M242 trailer and components of your M33 fire-control system is a pretty ticklish job under the best of conditions. It can become well-nigh impossible if the trailer frame is bent or distorted by improper jacking.



The secret of quick and curseless leveling lies in keeping the weight pretty evenly distributed on all four jacks at all times. This keeps the strain off the frame and prevents any bending or distortion.

Which means you should operate all four jacks at the same time, or two adjacent jacks at the same time. And it also means you should never put too much weight on one jack or on two diagonal jacks (the right front jack and the left rear jack, for instance). This puts a terrific strain on the frame, causing it to bend just enough to play hob with the leveling process.

When doing a leveling job, follow para 55 *i* of TM 9-6092-1 to the letter.

BALKY JACK

Before you AAA men get caught in a real cold spot with your 120-mm AA gun (M2A1 or M1A1 mounts) make sure the gun's hydraulic jacks have been worked on like it says in MWO Ord D32-W18 (July 54).

Until the jacks get larger oil tanks, larger holes in the cylinders, their pumps and oil-tubing guard-plates reworked and a few other things altered, they're going to balk at lifting the old girl into position when you're in zero weather.

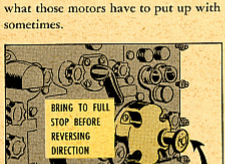
The MWO'll give you jacks that'll work at all temperatures, so if it isn't recorded in your gun's book . . . better let Ordnance see what can be done.

PREVENTIVE MAINTENANCE PAYS

Deadman Sector Scanning...

SERVO-MOTOR KILLER

From Skysweeper units here, there and yonder are coming loud wails about azimuth servo-motors getting hot under the collar and burning out sudden-like. Which isn't surprising, considering what those motors have to put up with sometimes.



Most of the failures can be traced back to the over-use and mis-use of the motors during manual azimuth sector-scanning. In this operation, the movement of the scanner is controlled by the azimuth handwheel.

Each time the direction of the radar is reversed to re-search the sector, the servo-motor armature has to "brake" suddenly and start twirling the other way. It does this by a reversal of power flow. During the switch-over, a high current is applied to the armature. It's this extra-large current that causes the motor to burn out in pretty short order.

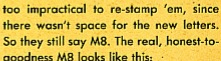
Right now the T38 system is being redesigned to include automatic sector-scan in azimuth to do away with the necessity of manual sector scan. Units in the field will be modified, too.

But, until that happy day comes along, the best thing you can do to preserve those servo motors is to use 'em as little as possible in manual sector scan. 'Course, you can't get away from it entirely, but you can take a few precautions.

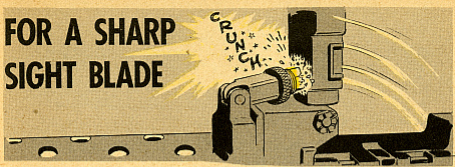
When you do have to scan a sector with the azimuth handwheel, always let the scanner come to a stop before reversing the direction. This will help to cut down the high current through the armature of your motor. And your motor will last a heck of a lot longer.

WHATZZIT ANSWER

Fooled you, didn't it? That's really an M8A1 scabbard, even tho it's stamped M8. When the metal belt hook was added to the M8 it became an M8A1. But it was too impractical to re-stamp 'em, since there wasn't space for the new letters. So they still say M8. The real, honest-to-goodness M8 looks like this:



FOR A SHARP SIGHT BLADE



If MWO Ord A6-W13, w/change 1, has been applied to your .30-cal. machine gun (M1919A4, A4E1 and A6) you may have a little trouble with the front sight post assembly.

Unless the sight blade is screwed down to its lowest position, it'll get banged up when the cover is opened. You gotta always make sure the front sight post is standing straight up before opening the cover.

The newest guns coming out have a milled slot in the cover which keeps the blade from being damaged.

The big question now is how're you gonna tell whether your gun's been modified or not. Well, the best way is to check your front sight post assembly.

There are three different assemblies in use now. Fig 1 shows the oldest type, which is on the unmodified guns. Fig 2 shows the sight authorized by MWO Ord A6-W13. Fig 3 shows the optional sight as authorized by change 1 of MWO Ord A6-W13. If you have either type B or C, your gun's been modified so you'll have to be careful about banging up the sight blade.

If you have type A on your gun, better turn it in to your repairman to be modified. He can order a new sight and put it on like it says in the MWO.

But here's somethin' to keep in mind. The parts of Post, front-sight, assembly, Fig 2 (Ord Stock No. A006-7162616) are not interchangeable with the parts of Post, front-sight, assembly, Fig 3 (Ord Stock No. A006-8401980). So when ordering replacement parts for your front sight, be sure to identify the type of sight assembly you have. Use the stock number as listed above.

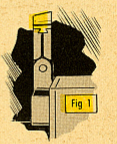


Fig 1

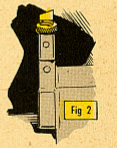


Fig 2

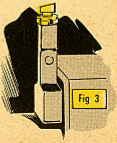


Fig 3

TECHNICAL BULLETINS

TB 9-1790B-1 Aut transm, 33-ton H-5 brake NSM, F Jun 55

TB Ord 444-11 2-1/2-ton 6x6 trk-wtd Sig Corps rep shops M185, M258: Install of load, O Jun 55

TB Ord 533 Fast transp veh: After light harness, switch to night master light switches interchangeable, F Jun 55

TB Ord 597-90 Degreaser (40-C-1008-460 and 40-C-425): Rebld standards, D Jun 55

TB Ord 597-11 Bld grind, buff mach (40-G-136): Rebld standards, D Jun 55

TB Ord 597-12 Utili grind mach (40-G-102-5, 40-G-144.5): Rebld standards, D Jun 55

TB Ord 597-13 Vert hon (cyl mach (Little Giant, mod 10B) (3320-241-8264): Rebld standards, D Jun 55

TB Ord 597-14 1/4-hp bench type tool and cutter Grinder (Naan Mfg Co mod 30) (Genoro Co Mod 30) (40-C-168-86): Rebld standards, D Jun 55

TB Ord 611-6 Micro-finish crankshaft mach (Storm-Vulcan, Inc, mod 1164) (40-M-26-370): (Sper Inst, F Jun 55

TB Ord 612 20-mm and 30-mm ammo, Rechambering of cartridges prohibited Jun 55

TB Ord 613 2-1/2-ton 6x6 shop van trks, M109, M220: Reloc stepladder mt brackets, F Jun 55

TB Ord 597-5 Elec drills (40-D-241, 5130-473-6223, 40-D-303, 5130-473-6228), elec drill w/ boring stand (5130-473-6227), elec drills w/ wrench stand (5130-473-6224, 40-B-354, 40-B-355, 5130-473-6228): Rebld standards, D May 55

TB Ord 597-6 Engine lathes (40-L-27, 40-L-28, 40-L-34.10, 40-L-29, 40-L-26.25, 40-L-26.90, 40-L-27.125, 40-L-28.53, 40-L-28.88, 40-L-28.89): Rebld standards, D Jun 55

TB Ord 597-15 Pedestal type tiger grinder (Delta mods 23-300, 16.70) (40-G-107-30): Rebld standards, D Jun 55

TB Ord 597-16 Port pneu sander (National Air Sander, Inc, mods 300, 300H) (40-S-25-90): Rebld standards, D Jul 55

TB Ord 597-17 (To 3472-3-1-3) Portable (tip) shaft grinder (Mcgraw-Hill and Staff Inc, Mod 231, 270C) (40-G-107-20): Rebld standards, F Jul 55

TB Ord 597-20 Vapor-solvent type degreaser (Topper Equip Co, Dixie Products Co, Optimax Equip Co, mod C-80-E) (4940-255-8230): Rebld standards, D Jul 55

TB Ord 611-3 Cam and main bearing boring mach (Cuter Rapids Engineer Co mod L-2000) (4910-251-7303): Oper instr, O Jul 55

TB Ord 614 Parts M30 (T30), M30B1: Install protective filler, F Jul 55

TB 9-827-5 5-t bridge erect trk XM336: Proced for refuel from 5-gal fuel cont, O Jul 55

TB 9-7013-3/1 Elev and travers sys for M48 tank: Procedure for adjust turret travers mech output pinion stop anti slip, F Jul 55

TB Ord 555 Tanks M48A1, M47: Remove, install and maint of nylon-type bearings, F Jul 55

LUBE ORDERS

LO 9-1247 Semitrlr, refrig van (Hydr) 5-t, 2-wh Apr 55

LO 9-6002 AA FCS M33 Jun 55

LO 9-8024 Trk, 2-1/2-t, 6x6, M135, M211, M215, M217, M220, M221, M222 Jun 55

LO 9-7419 Carrier, personnel, armor, M75 (T18E1) Jun 55

TECHNICAL MANUALS

TM 9-3303 155-mm how M45 (T186E1), 155-mm how mt M81 (T187) for sp 155-mm how M44 (T194) Aug 55

TM 9-6810 Inst lights M2, M12, M13, M18, M22, M26, M46 Jun 55

TM 9-7003 Misc compo for armored personnel carrier M59 (T59) Jul 55

TM 9-7469 Earth moving tank mtg dozer M4 Jul 55

TM 9-9072-1 1/4-in cap, single-phase, 60-cy, 115-v, 1/4-hp, bench, type, upright drilling mach (high speed hammer, mod N52) (40-P-1153) Jun 55

TM 9-9098-4 200-amp gas driven DC elec arc welder w/equip for mtg on 1/4-t 4x4 trucks (Hamilton Welder And Manufacturing, model 2080) (17-W-1758) May 55

TM 9-9812-1 Uni-volt 110-v axle-mtd type brake lining grind mach Barrett mod B-1118 (40-G-99-998) Jun 55

TM 9-2190 Cal .50 basic aircr Mach-gun AN-M3 May 55

TM 9-3007 75-mm gun T83E6 or T83E7, 75-mm AA gun mt T69 May 55

ORDNANCE MWO'S

ORD-W08 120-mm Guns M1A1, M1A2, M1A3 on 120-mm AA gun mounts M1A1, M1A2: Modify power rammer M8 to prev in-advertent loosening of the firing interlock oper cable clamp and mt brkt and the breech to clutch lever interlock cable clamp, F Jun 55

F342-N2 AA FCS M33C, M33D, T33C, T33D: Apply field changes to corr defl and to insure ordinate part of systems, F Jun 55

G1-W06 2-1/2-ton 6x6 Trucks M135, M211, M215, M217, M220, M222, Truck Tractor M221 and wheeled carrier M59: Modif transm front and rear planetary units, D May 55

G1-W08 Tanks M48, M48A1, M47, M46, T43E1: Modif end covers on CD 850-4 transm, D Jun 55

G254-W7 Tanks M48, M48A1, M48C, T67: Install new springs in engine cooling fan drive clutch, F Jul 55

G254-W11 Tanks M48, M48A1, Install hand protector bars on power plant access door handles, F Jun 55

G289-W15 Armor carrier M75: Right roof door support arm modif, F Jun 55

G289-W3 Ord Heavy gun-lifting track (& M34): Install bolt P8 to ratch transm shift lever check pin, F Jun 55

G288-W9 Ord heavy gun-lifting track (& M34): rear track M250: Reinforce engine compartment cover panels, O Jun 55

B42-W4 90-mm mort M2: Convert mortar M2 to mort M29, convert muzz cover M200 to muzz cover M308A1, F Jul 55

D38-W21 90-mm AA gun w/s M2, M2A1: Provide batteries to insure op of the breakaway system at all temps, F Jun 55

D38-W23 Recoil mech M17 series on 90-mm gun and mt M2 series: Provide a tube fitting for the hinge pin on the contr valve bar assy, F Jul 55

D48-W6 75-mm AA gun mt T69: Modif and relocate conduit on drawbar, provide shock absorber assys with drain holes, provide welds to brackets on mt soap area, F Jul 55

G1-W83 1/4-t 4x4 trks M38, M38A1, M170; 3/4-t 4x4 M37, M42, M43, XM152, M201; 2-1/2-t M34, M35, M36, M47, M49, M50, M59, M108, M109, XM110, M135, M211, M215, M217, M220, M221, and V18A/MTQ: 5-t M41, M52, M54, M55, M62, M64, 10-t XM122, XM123; 3/4-t chassis M35; 2-1/2-t chassis M44, M45, M46; 5-t chassis M40, M61, M63, M139, M139C; 2-1/2-t trk-tract M48, M221, M275; 5-ton trk-tract M52, M246, 10-t trk-tract M123: replace oil and/or air pressure gage, F Jun 55

SUPPLY MANUALS

Ord 5-3-8 List of all items, pricing guide—B-group-mat Jun 55

Ord 9 SNL A-6 Gun, mach, cal.30, Browning, M1919A4, Flex, M1919A4E1; M1919A6; Sl, mach gun, cal.30, M2 May 55

Ord 9 SNL D-38 Gun, 90-mm, M2, M2A1, M2A2; mech recoil, 90-mm, M17, M17A1, M17A2, M17A3; Sd fire, fuze, comb M20; ed, gun, AA, 90-mm, M2, M2A1 May 55

Ord 3 SNL F-1 Fire control maj items, maj combos, for use with small arms, auto guns, mortars, field art May 55

Ord 9 SNL F-283 Sec 2 System, local contr, M38A1E1 May 55

Ord 9 SNL F-330 Mt, sight, M74A1; Sight, recoil, M36 Jun 55

Ord 9 SNL G-288 Dozer, trtr-mtng, T8E4 May 55

Ord 7-8 SNL G-809 Dolly, trlr converter, 6-t, 2-whl, M197, 8-ton, 2-whl, M198 Jun 55

Ord 7-8 SNL G-813 Trlr, cable reel, 3-1/2-ton, 2-whl, M310 (Sig Corps mod K37B) May 55

Ord 6 SNL J-8 Tool set, maint (field) artillery renov plat (41-T-3408-85) Jun 55 Sec 6

Ord 6 SNL J-9 Sec 11 Tool set, field maint, mob arc weld (41-T-3557-500) Jun 55

Ord 7-8 SNL J-087 Grind mach, brake lining: axle rolling type, 110-v, 60-c, sgl-ph (Barrett Equipment mods B-118, B-120A) (4910-225-7668) May 55

Ord 7-8 SNL J-590 Gun mach, tire tread, elec type, 7-1/2-hp, 220/440-v, 60-c, 3-ph, (Retread-ing Equipment mod 7-1/2-hp) (40-G-938) Jun 55

Ord 7-8 SNL J-723 Wrench, elec, 110-v, 60-c, sgl-ph, reversible, impact type, 1-in sq-drive, 1-1/4-in. bolt cap (Ingersoll-Rand, mod 340) (48-W-3010-755) Jun 55

Ord 9-8-7 List of all items, pricing guide—H-Group material Jun 55

Ord 7 SNL A-4 Rifle, auto cal.30, Browning, M1918A2 Apr 55

Ord 8 SNL A-73 Gun, auto 20-mm, M24A1 May 55

SUPPLY BULLETINS

SB 9-121 Rebuild of road wheels, idler wheels, and susp supp roller for track veh, and tires and whls for mat handling equip, F Jul 55

SB 9-30 Standard rebld cost of Ord material, D Jun 55

SB 9-117 Repair and repl of parts for commercial shotguns, D Jun 55

SB 9-118 Cleaning rocker arms, Rea engine, D Jun 55

SB 9-120 Hitch 2540-649-0380 (8-R-1323) add of kit 8-K-458 to make hitch 2540-735-8343 (8-H-1825), D Jun 55

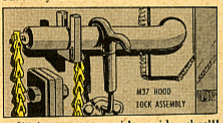
NOTE—On TB's, SB's and MWO's:
O—Organizational Maintenance
F—Field Maintenance
D—Depot Maintenance

CONTRIBUTIONS

SECURIN' THE SECURIN'

Dear Editor,

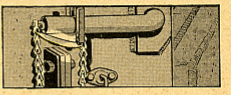
Gravity is the only thing that's holding the four outrigger securing-pins of the M62 wrecker in place. A loose pin really jumps around when traveling over rough roads. If any jump out of their moorings, the outriggers can slide out and you can have a serious accident.



We've come up with an idea that'll hold these pins in place. We got four M37 hood-lock-assemblies and bolted them to the M62, right below the securing-pins. Then, all you've got to do is flip the lip of the hood-lock over the pin. But, make sure you use the inverted lip of the lock, because the lip that holds the M37 hood in place won't fit over the securing-pins.

CWO Sherman E. Neblett
Missouri National Guard

(Ed Note—This problem has been recognized and the ball is now rolling to correct the hazard. Until the official fix

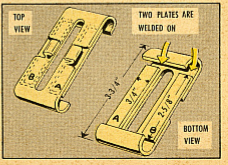


comes out, thread a piece of safety wire through both ends of the chain and tie the pin down by twisting both ends of the wire together.)

REO TRANSMISSION INTERLOCK

Dear Editor,

After several of our G-742 series vehicles (M34 Reos) gave us trouble by getting their transmissions into two gears at once, due to bent transmission-shifter-interlock plates, (Ord Stock No. G742-7521063) our supporting Ordnance unit worked out a fix for us.



They took new plates and reinforced them by welding on two flat bars, 2-5/8-in x 3/4-in x 1/8-in as shown. That did it. We haven't had a failure of a modified plate yet.

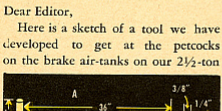
Mr. R. F. R. and F. F. S.

(Ed Note—Undoubtedly this will work, but why bother? If you write Service Division, Reo Motors, Lansing, Michigan, Attn: Military Service Engineer, and tell them you have an M44 series Reo that is shifting into two gears at once, they'll send you the new parts free. You will be sent one Transmission Interlock Plate, Ordnance Part No. 7521063, and one Reverse-First Shift Bracket, Ordnance Part No. 7521094, for each defective transmission.)

AIR TANK BLEEDER

Dear Editor,

Here is a sketch of a tool we have developed to get at the petcocks on the brake air-tanks on our 2½-ton

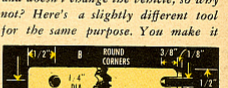


trucks. Ours are made of scrap pipe, and cost next to nothing. To use 'em you have to rotate the petcock 90 degrees, more or less, so the tool can reach the valve handle.

We find this tool makes all the difference in the world in getting our drivers to purge the air tanks. With it, they willingly bleed 'em every day. When we've got to have drivers looking spotless and presentable at all times, it's a real headache to make the boys crawl down under the truck, particularly when she's soupy beneath.

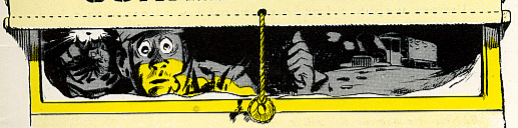
M/Sgt Lawrence Miller
Cpl Joe Contreras
771st Ordnance Bn.

(Ed Note— Been some argument as to how necessary this tool is. Stands to reason that if all the gas stations bought 'em in the Model-T days, they must have been useful. Besides, we never had anyone offer to prove how easy it was to drain an air tank ***without*** *the tool when the truck was hub down in a Korean rice paddy, did you? No cost, no trouble, and doesn't change the vehicle, so why not? Here's a slightly different tool for the same purpose. You make it*



out of a piece of 1/8-in strap iron 1/2-inch wide and 36 inches long, or any strap near that size you have handy. Just slot one end and drill a hole in the other. You can shove a screwdriver through the hole to form a handle. Use whichever tool you prefer and can get the stuff to make. About turning that petcock—a 90-degree loosening turn would in most cases make the fitting too loose—a 90-degree tightening turn may break the fitting. Best thing to do is to remove the petcock and coat the threads with any sealing compound (like white lead paint) and reinstall it to the desired position.)

CONNIE'S BRIEFS



Longer clutch life

For longer clutch life in your 5-ton 6x6 trucks lay off the double-clutch technique. Those 5-tons were built with synchro-mesh transmissions and should be clutched just once when shifting into any gear—whether you're carrying a load or not. And on these heavy birds—always start off in 1st gear.

Can clean and dry?

'Fore you start welding or brazing partitions in a carbide can to store electric welding rods (p. 3, PS Issue 34), better make sure there's no carbide left. Check corners, crimps and even the cover to make sure there's none. Heat, water, and old carbide's no combination to fool with—could be just as dangerous as a rattlesnake.

Winch reminder

To save the guts in your truck's winch housing and drum from being chewed to pieces, put the drum-lock knob in the unlocked position before operating your winch. The knob is located on the winch-end-bearing frame above the center of the drum shaft and has to be rotated 90 degrees when unlocking. Keep TM 9-8022 handy for front winch operation.

Canned engines?

Should you ever make an emergency replacement of your tank engine, you may find it comes in one of the new pressurized metal containers. If so, be sure to release the pressure by opening the air valves at each end—before y' start to work on those closure flange bolts. Else she might pop in your face. And keep this in mind, too: when the bum engine's turned in (in the same container) make sure it's tagged and the container's marked like so: CODE-6-NOT PROCESSED FOR LONG-TERM STORAGE. You'll see a Supply Bulletin on this soon.

Light tank edition

You can still get that special light tank issue, PS No. 14. Just drop me a card or letter in care of PS Magazine, Raritan Arsenal, Metuchen, N. J. Tell how many copies you need. They'll be mailed right to you as long as they last.

Forget those crystals

Forget about what Page 49 of PS 32 told you about those 1N23B crystals. It seems that there's no salvage on 'em after all. So, forget it.

What's your target? Is it a part to go on a certain model truck?... or tank? Your requisition'll hit home if you include the vehicle serial number.

This way you'll be sure to get the latest part that'll fit your model... your supply man's not a mind reader.

THE VEHICLE SERIAL NUMBER'LL PAY OFF ON YOUR REQUISITION