

Issue 36

PS

1950 Series

THE
PREVENTIVE
MAINTENANCE
MONTHLY



BUT
MOTHER CAROLINE
I HAD A TALK
WAS GOOD, BUT I
WANT TO CLEAN
THE KITCHEN
GOT BACK!

PS MAGAZINE

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BREAK THAT HYDRA



A lot of times we drive many Hydra-Matic transmissions from the M115-series trucks get pulled out and we look for overhead when all they really get done is right in a few minutes' work right in the truck.

You know the linkage adjustment procedure and the front end alignment directions provided in TM 7-83A. Do those real careful like, and also check your engine, HX and transmission oil pressure. (Para 11, TM 7-83A, Page 207).

Then, of course, you're ready for the road test. You make this just like it tells you in the TM also. (Para 17b, page 215-262). Now the TM have diagnostic chart to help you understand what the road test showed you was wrong in the transmission.

Here's a more elaborate diagnostic chart which covers a few more and the points of checking transmission. You can't be like this.

First, you make the road test, taking note of anything that says just right in the performance of the transmission. For example, let's say all your shifts occur at the high a vehicle speed.



-MATIC LOG-JAM

Second,

you list the conditions in the list of operating conditions. Whether, in this case, and other it is a list of possible causes.



The causes which are within your second-choice maintenance schedule - those which are for *Chrysler's Service*

Third,

you check any of the items that's *Chrysler's second-choice maintenance*, in this case, B¹. *Throttle linkage too long*, and B². *Over throttle valve control lever bent*, also C¹. *Valve body loose to cause if the driver's over your throttle*, then the transmission must go to *Chrysler's* for a check on the interval items B¹, B², B³, C¹ and C² in this example.



Let the *Chrysler* people know just what symptoms you have already found on your road test. They'll really appreciate that level and you'll give 'em

DIAGNOSIS GUIDE Factors of stress are within personal/behavioral responsibility

Possible Causes	Warning Conditions	Possible Causes
<p>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100</p>	<p>None to 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100</p>	<p>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100</p>

MISSION MALFUNCTION



C. CAREER

- 1 - Inadequately prepared due to little practice and proficiency.
- 2 - Limited skill base.
- 3 - Inadequate training education.
- 4 - Inconsistent training.
- 5 - Change in role.
- 6 - Change in role.

D. LEADER GOVERNANCE

- 1 - Single person not in position for 100% of the time.

E. OR RESOURCES

- 1 - Inadequate staff.
- 2 - Change in resources. Staff in 100% for the practice and proficiency.
- 3 - Change in practice or venue. Practice venue too small to conduct practice or independent practice requires transfer of staff to another location or loss of critical practice venue.



F. NEEDLE INJECTION

- Ⓐ - Needle has to sting. The user is forced to use sterile needles plus syring or syringe in the process against needles.
- Ⓑ - Needle needles sting. It will cost in lots of dollars to get any high-pressure, sterile needles with the right needles plus the use against the user's own. It costs in lots of dollars.
- Ⓒ - Needle needles plus get changed in using.



G. CORNER VALVE ADJUST

- Ⓐ - Valve setting is made with setting.
- Ⓑ - Valve has to work automatically. There's lots of work in setting valves under lights.
- Ⓒ - Valve valve is related with some other valve.
- Ⓓ - Valve valve is set.



H. REVISE BLOCKER BRACKY

- Ⓐ - All passage had to make blocks brackly. There's lots of work.
- Ⓑ - Revise blocks plus setting in some other blocks.
- Ⓒ - Revise blocks plus work in some other blocks.
- Ⓓ - Revise greater than in some other blocks.
- Ⓔ - Revise valves brackly lots of work.



I. GOVERNOR

- Ⓐ - Use of both groups setting in governor.
- Ⓑ - Governor of valves plus setting in governor.
- Ⓒ - Governor had to govern.
- Ⓓ - Make governor (governor) in changed tag work.



J. REDUCTION QUANT DRAFT

- Ⓐ - Reduction plus work setting.

K. FRONT DRAFT

- Ⓐ - Comparison had to front draft. There's lots of work in all the same comparison plus setting. The comparison plus draft is the same.
- Ⓑ - Draft to front draft. There's lots of work in all the same.
- Ⓒ - All draft plus comparison plus work in all the same.
- Ⓓ - All draft plus work in all the same.
- Ⓔ - All draft plus work in all the same.
- Ⓕ - All draft plus work in all the same.
- Ⓖ - All draft plus work in all the same.
- Ⓗ - All draft plus work in all the same.
- Ⓙ - All draft plus work in all the same.

slow down-FOR A GOOD TURN



On your M48 self-propelled howitzer, you've got to know its moving behavior—backward and forward. The y may be credible for a heavior. With six wheels (yes, six) on the road, it won't whip around like your cousin's hot-rod. It's got longer turning radii than other light tank vehicles with fewer road wheels.

Get an eye on the chain below and practice judging your distance a bit, and you'll be able to negotiate a turn

without side-swiping a tree or the GI Man's jeep.

If y'have to a jerk, do your jerks elsewhere. Start with a light, steady pressure—like slow, even turns. Avoid sharp reverses, and you and the M48'll both live longer, happier lives.

Notice thing to keep in mind: When moving in reverse, everything's backward—both forward steering wheels and pressure on the handle swings you take counter-clockwise takes you right.



All about Jack-screws



Been playing out those light and transmissions all these years with a goodly lot of some such procedure? You'll love us for this. Things to do to use Jack-screws. Here's the fun for handling CD-500's flow at each E service.

OUT



FILTERS—



CLEAN

Take off the float-valve assembly, then the nut, both ends of the filter-tubes. Remove the O-ring gasket and large washer, then away the O-ring. Blow off with the 21 washers (upward) and 21 filter disks from the valve. Clean all the parts with solvent—get off all gum and grit. Drain and wipe dry with a clean cloth.

IN 1

REMOVE THE O-RING GASKET AND LARGE WASHER FROM THE VALVE. TAKE OFF THE NUT, BOTH ENDS OF THE FILTER-TUBES.



2 BLOW OFF THE WASHERS (UPWARD) AND 21 FILTER DISKS FROM THE VALVE.



3 CLEAN THE O-RING GASKET AND LARGE WASHER THE SAME WAY AS IN STEP 1. CLEAN THE NUTS THE SAME WAY AS IN STEP 1.



4 PUT THE O-RING GASKET AND LARGE WASHER IN THE CLEANING SOLUTION.



5 WASH THE O-RING GASKET AND LARGE WASHER IN THE CLEANING SOLUTION.



6 CLEAN THE NUTS THE SAME WAY AS IN STEP 1. CLEAN THE O-RING GASKET AND LARGE WASHER THE SAME WAY AS IN STEP 1.

7 THE END OF THE O-RING GASKET AND LARGE WASHER IS THE SAME WAY AS IN STEP 1.



Remember that the aluminum filter nut is similar to the main filter and gets the same 15-minute treatment. The vital difference in procedure is that before starting to remove this baby, you get to

disconnect the nut from the aluminum air-coupling and swing it up out of your way. (Just opened it, it's loose, when you're through) Also, it's got an inlet-valve assembly to mess with.

Conoco Road's
"DON'T BE OVER OILY"

ACQUAINTANCE
LEARN ABOUT
CONOCO ROAD'S
"DON'T BE OVER
OILY" CAMPAIGN!



Keep the car clean

Considering the training a soldier gets, it's a wonder you'd ever have an oil film to clean up a car. But it seems that some of the boys are getting careless with both cars and houses lately.

And since there are two and four are by name "Oil Dispenser, Oil Sock No. Y084-80 (1947)" and "Filter and Drain Pan assembly, Oil Sock No. 15-8-245-940" which are used in handling the petroleum oil for the variable precision engines in the M4E1 systems, it's not a bit funny.

Why? Because the slightest pollution of that oil by foreign material can cause the shorting out of the petroleum wiring. At the very best, this means a decrease in motor backer than in the tank.

Some like there have been cases where people have used the cars and houses for liquids other than oil and didn't get things cleaned up afterwards.



DO DO THIS



Don't lose your glass

A target, you know, is an object of thing, particularly prone to light. It's seldom around for the second round as the first one had better be right.

Whether you hit it whether you miss in a knock-down, drag-out fight, depends on the bubble in the leveling vial of your levelment string-right.



So take care of these sights like you do your own. Keep a focused eye on the bubble. Don't wear an eye or lose the vial. If you do, you've really got trouble.

A purpose in life

This loading valve on your vehicle's got a purpose, just like most things you're familiar with. Try and use it for something 'cept its purpose—you're sure to end up in trouble.



Take the loading valve. When it's closed, it creates pressure inside your engine. When loading, this pressure equalizes the water pressure on the outside of your engine.

Now, what happens when you run 'round with that loading valve closed no good, solid ground? Simple. You lose oil splashage. As that pressure builds up in your crankcase, it pushes oil past the oil seals and piston rings. First thing you know the oil'll find your spark plugs. Eventually you'll have an engine running without oil.

So, if you want to avoid trouble, check that loading valve every once in awhile and make sure she's **open** when she's not being used for anything 'cept her purpose. A technical bulletin has been prepared to provide instructions for use and operation of loading valve. This publication will be available soon.

WHAT???



No, it's not a ball diamond, but, you also get this in relation to the hole in some through with flying valves. Shock? Well then run to page 12.

CHARGED AND DRY

In case you're wanting to charge a new battery like was told in PS Magazine Issue 35 (page 18), here's some new steps to look over:

If you've been out of battery chargers, don't go flipping your lid. A discharged battery has charged plates, and it can deliver about 75 per cent of the battery's rated capacity—with no charging.

All you have to do with that dry-charged battery is to fill the cells to the right level with electrolyte (1.280 specific gravity at 80 degrees F.). Keep your battery and acid above 60 degrees, but below 140 degrees F.

Let her stand 1 to 24 hours and add a little more electrolyte to make up for what was absorbed by the plates and separator. Then, your battery's ready to use.

Now if you're not going to use that battery for 12 hours, you might to charge it (if you've got a charger) until the specific gravity becomes constant.

If you've got cold weather (below 60 degrees F.), you'll have to give it a 4- to 11-hour charge at a low rate to raise the specific gravity of the electrolyte above the freezing danger point.



Lower your supply materials

The new Qd 1 (Qd 91), "Introduction" to Cadwance supply materials, has been printed and distributed and should be hit your supply room by now.

It's a book all you work supply men'll get to know and appreciate. And anybody who needs to know the more on Cadwance supply materials will spend a lot of time with the new Qd 1. It'll save a lot of expensive fumbling through the wrong books.

It also pays to keep your copy of Qd 1 attached to your copy of DA Form No. 34-29 "Index to Supply Manual, Cadwance Corps." You'll know your supply materials a lot better.



Get a twist

It's the little things in life that count—like trying to turn the nut and sleeve. You might have to use your M&M's® CTSO® pulper without unhooking the line.



Before you can make any adjustments with these knobs you've got to release the locking lever by pulling outward

you. Otherwise you'll twist the right right out of that pulper.

After you've got the knobs set where you want 'em, then push the levers away from you to hold 'em there.



WHAT'ZIT ANSWER

RIGHT



WRONG



It's true cap screws should be turned together the right way.

Cap screws should be turned together in pairs according to size. If there's an odd number of screws, wire the last three together. Threaded all the screws on a single wire is an error. A single hook at any point in the wire will knock out all your screws. Do it the right way and your holding arrangement'll be 1,000.



With the Pink Lady...

A LITTLE BUBBLE DOESN'T MEAN

One thing you get when about draining the small mechanism on your field service piece-it's a pretty colorful experience. When rich purple pink small oil, purple language and gears running blue in the face, it's a real gear production.

And if you don't think language can get people and faces out of line, just wait until you bleed your small oil and it starts out controlled. Your small, hot oil is even less cheerful for oil and it's even less a plague of the gas.

As you know, oil becomes controlled in two different ways, or a combination of both. Either air is mixed gas into the oil while you're filling the small mechanism, or nitrogen leaks into the oil past the floating piece in the cylinder.

Whether air, water or nitrogen gets cleaned up in the oil by the small water, the oil gets bubbles, foam and a

change of color. In when it's kind one, it may look more like a secondary work than small oil.

But there's the good news! Bubbles, foam and a change of color in your oil. **WEL-0-5000 Pink Lady!** Don't necessarily mean your oil and mechanism are overworked! Your oil is over-

I can get the maximum oil protection, water, dirt, and nitrogen cleaned out of my small mechanism.



WEL-0-5000 Pink Lady! Don't necessarily mean your oil and mechanism are overworked!



TROUBLE

ailed, yes. But the chances are your pump is still in good working order.

Chief: You say that here's no way to know for sure?

Ray: Just follow this outline and chart. First make sure the temperature of the oil is normal, anywhere +40°F to 50°F. Then—

1. OIL LEVELS SHOULD BE AT LEAST TWO INCHES ABOVE THE MARK.



2. ADDITIONAL OIL SHOULD BE A GOOD, THICK AND CLEANLY AS A GOOD OIL. OILS WITH ADDITIVES ARE BETTER. IF OIL IS OLD, ADD NEW OIL. OILS WITH ADDITIVES ARE BETTER. IF OIL IS OLD, ADD NEW OIL. OILS WITH ADDITIVES ARE BETTER.

Now, the chances are the drained oil will not look like Fig. 1. That's new oil that hasn't been jugged yet.

If your sample oil looks like Fig. 1, with approximately 10 per cent foam on the top and just slightly thickened, it's normal and good for the motor.

If it looks like Fig. 2, with up to 40 per cent foam, **and there was no splashing after the looks examined**, your oil and mechanism are still in good shape.

Even if your sample shows from 40 to 60 per cent foam, your mechanism is all right as long as there was no splashing after the looks examined.

But, if it looks like Fig. 4, with about 60 per cent foam, your oil looks ready for the sewer and you should have DeLacoste give your mechanism the once-over. But in a critical field situation, it wouldn't be dangerous under the wrench as long as it was functioning properly.



In any case, if the oil keeps seeping from the mechanism after the initial fuel service, call Onan's. Chances are the work done in slipping past the floating piston.

Just a couple more things to keep in mind. Even though your oil and work orders seem OK, keep a close eye on the level and consider re-oil sooner the next time you fire the piece. Your TR-8

tell you how to allow for different temperatures. Call Onan's if you get any more seal leaks.

Now, about the only thing left to be decided is how the oil got installed. If you're certain no air or moisture entered when you filled the mechanism, it's safe to bet that stringer's leaking past the floating piston. But to keep in

This Chart and the Weather'll Tell You' ... WHICH RECOIL OIL TO USE !!!

Keeping the right oil in your recoil mechanisms is simple enough when you've got the oil the M's call for. When you haven't, it's a little bit of a hassle, but a problem of another order. This chart'll show you in it, when, and how you can mix your oils should the need arise.



RECOIL OIL	CRAN PROOF NO.
Hydramatic 300, petroleum base SAE 30 (SAE 40 when temp. below 32°F)	144-001-01 (2) 144-001-01 (2) (2) 144-001-01 (2) (2)
Hydramatic 300, petroleum base, petroleum Hydramatic 300 SAE 30 (SAE 40 when temp. 32°F)	144-001-01 (2) 144-001-01 (2) (2) 144-001-01 (2) (2)
Hydramatic 300, petroleum base, lead, zinc SAE 30 (SAE 30W)	144-001-01 (2) 144-001-01 (2)

©1988 Onan. For more facts on recoil mechanisms, write Onan at 1000 N. 1st Street, P.O. Box 100, Appleton, WI 54912. For more facts on Onan's products, write Onan at 1000 N. 1st Street, P.O. Box 100, Appleton, WI 54912. For more facts on Onan's products, write Onan at 1000 N. 1st Street, P.O. Box 100, Appleton, WI 54912. For more facts on Onan's products, write Onan at 1000 N. 1st Street, P.O. Box 100, Appleton, WI 54912.

your oil checks out as serviceable, you don't have to worry about it.

When your oil does get bad, Oldeman will take your traps there and check your mechanism. To keep your oil free of dirt, water and acids, and Oldeman will take care of the rest.

If you have given all or mixed oil in your mechanism and you want to give

it a try, you can run through this same test routine. But the results won't be the same. However, if just a little from above is in your sample, the chances are your oil is still ready for service. Keep any extra on hand, as long as the usual and conventional oil usually, your mechanism and oil are serviceable.



TRAP APPARENT GOOD, PROBABLY	MID-RANGE APPARENT GOOD, MECHANICAL	TANK APPARENT GOOD, MECHANICAL
<p>It separates later — 100 drops 1, 2 or less of liquid. Fraction 1 (bottom) is clear. Fraction 2 (middle) is clear. Fraction 3 (top) is clear. No 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11.</p>	<p>No 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11.</p>	<p>Fraction 1 (bottom) is clear. Fraction 2 (middle) is clear. Fraction 3 (top) is clear. No 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11.</p>
<p>Good as it looks. Probably satisfactory.</p>	<p>Good as it looks. Probably satisfactory.</p>	<p>Good as it looks. Probably satisfactory.</p>
<p>The bottom — 100 drops 1 and 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100.</p>	<p>The rest is clear. Probably satisfactory. No 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100.</p>	<p>Bottom — 100 drops 1 and 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79 or 80 or 81 or 82 or 83 or 84 or 85 or 86 or 87 or 88 or 89 or 90 or 91 or 92 or 93 or 94 or 95 or 96 or 97 or 98 or 99 or 100.</p>



IN THE KNOW WITH LI'L JOE

HEADING 'EM RIGHT

There's one way to get a true oil level reading on your tank's 440-E (Econo-Diesel) auxiliary engine.

First—make sure your bagger's level.

Then remove the filler cap, take out the dip stick and wipe it with a clean cloth. Put the stick back into the filler tube—with the cap just resting on top of the tube opening. Now



pull out the stick and you'll get a true reading.

Lowering the cap down on the threads for the check'll give you a less accurate one—the tube level higher than it actually is. And that's no mercy on your way, having LI'l Joe handle—the spouts! Tsk! Tsk!

And take it easy on that fill-up, too. The crankcase should have about 3 1/2 quarts—so don't go looking for 4 quarts or more and assuming all's well.

Overfilling allows oil to be pulled into the intake system through the crankcase venting system—which is

a good way to foul up spark plugs, get you excess carbon build-up, general loss of power, etc.

So—take a moment at Joe's crankcase at each "N" service, and keep 'em filled to the FULL mark on the scale. But remember—you can overfill 'em. You'll be seeing this slope in the revised TM's.

HOT LEADS

Some drivers are taking off in their tanks with their LI'l Joe leads dangling loose, unaware that the positive cable is hot when the engine cranks in ON.

Leaving 'em dangling is real dangerous, 'cause one little spark from the hot cable can cause a big fire.

If LI'l Joe has been removed and the leads are loose you better tape up the ends. This'll keep any stray sparks from igniting loose gas or oil which may be around. So to prevent your or your tank's doom, see if the leads have been left off LI'l Joe before taking off. Your future TM's will have this slope in them.



**JOE'S
DOPE**

HOW TO ADJUST HEADLIGHTS

MAM, I WANT
A PAIR OF
BEAMS
WAAAA!

THE
MOTHER
WAS
A
MOTHER
MOTHER



IS MY BEAM?
IS MY BEAM?
IS MY BEAM?
IS MY BEAM?

I SEE YOURS
BEAMING YOUR MAM!

WAAA!



YOUR BEAMS
ARE AS GOOD
AS DEAD! YOU
NEED A PAIR
OF BEAMS!
WAAAA!



ADJUST YOUR
BEAMS NOW!
YOUR BEAMS
ARE AS GOOD
AS DEAD! YOU
NEED A PAIR
OF BEAMS!
WAAAA!

10 CHECK AND ADJUST LIGHTS: USE LEVEL GROUND, PAVED



ADJUST LIGHTS TO THE WALL. MAKE SURE LIGHTS ARE ON THE SAME LEVEL AS THE LIGHT SOURCE. ADJUST LIGHTS TO THE WALL.

TYPE	NO. OF	NO. OF
100	10	10
100	10	10
100	10	10
100	10	10
100	10	10
100	10	10
100	10	10



IF POSSIBLE... FACE A WALL OR SETUP A WIDE SCREEN





Dope Sheet



WE HAVE THE WORLD'S BEST EQ

As a driver, our doc's a bright guy.
But he once set his light beams too high.
The results as you see —
Cracked skulls and debris —
Keep 'em out of the other guy's eye.



EQUIPMENT... Take care of it

JOE'S DOPE TIMBER TUMBLER

CLEARING AN AREA FOR HOUSES AND BARNYARD? THE DOPE THROTTLE? HERE'S THE WAY TO GET IT...

BRUSH AND
LARGE TREES

GET INTO
THE "DOPE
THROTTLE"
AREA!

- 1 LOWER BLADE A FEW INCHES INTO GROUND TO CUT OFF ROOTS
- 2 TO CLEAR BLADE AND KEEP IT FROM DIGGING OVER ROOTS... BACK UP AND BORE IN AGAIN



TREES
4 TO 10
FEET IN
DIAMETER
ARE
THE
EASIEST

- 1 BLADE HIGH AND CENTERED ON TREE FOR BEST LEVERAGE
- 2 CORRECT THE GENTLY

WATCH OUT FOR
WINDY MAKERS

LOWER BLADE INTO CRACK
AND PUSH THE LOGS AND LIMBS
TO SAFELY OVER THE CURB

PUSH A FEW
TURNS OF
THE
THROTTLE!

DON'T PUSH TOO
LONG AT ONE
TIME—SPENDING
WASTES OIL!





BEFORE YOU START, YOU SHOULD KNOW SOME BASIC RULES...

1 MAKE A COUPLE OF RINGS ON THE OPPOSITE SIDE TO CUT LARGER ROOTS

2 CLEAR THE SOIL

3 FEET DEEP

DIRECTION OF FAL ... DON'T CUT THE SOIL

4 CLEAR THE SOIL

5 BUILD AN EARTH RAMP UP STARTING SIDE OF TREE ... WHEN YOU REACH THE MID BELLY HEIGHT AND OVER-NOE, PUSH IT OVER







THAT HOT PLAGG

SHARP LEARNING?

Dear Half-Mast,

What work number can we use to get better spark plugs for our M42? Is our command tractor? We do lots of hillin' on these tracks to our own nation, and the H084-7524-250 plugs keep fouling out.

WYOMING, A. M. DOL.

Dear Half-Mast,

An oil leak in the decreasing mechanism of our M41 LVT amphibiously landing vehicle is bad. It leaks around the commander's control lever behind the hand-wheel assembly. We have to keep stopping up every time we operate. What gives?

1st Lt. A. L.

Dear Miss L. M. Bell,

You can draw the optional plug listed in your Ord 7 SNI, G-741 (Nov 1951) on page 17, the second line item on the page—Ord Stock No. H084-807724, or Ord Part No. 8357124. This is a better plug.

These plugs are listed as "optional" for the M41, M17, M58A1 and M54. They are not optional for the M38 and M158. However, if you have a well worn engine which is fouling plugs and you can't get it changed, your Ordnance tech can substitute a set of the hot plugs for these vehicles too, pending a new engine.

Half-Mast

Dear Sgt H. A. L.,

When that oil got worked up it causes air pressure and something's got to give. So your oil seeps through the assembly, loose GAA grease around the shaft will give you some relief. In the meantime, watch for a modification work order which is on the way to fix things up.

Half-Mast

STOP, SOLAR—

Dear Half-Mast,

Our M42 and M47 tanks have the compensating-tiler wheels between the front and rear road wheel. There's a stop mounted on the tiler arm bearing,

It stays the same before the filter packer forward enough to hit the road wheel.

The steps on both sides look like they do the same job, but they're not the same shape. One on the left side's rectangular on the right side it's roughly-shaped. Are these two parts interchangeable?

3/19/77 J.L.G.

Dear 3/19/77 J.L.G.,

They do the same job on both sides, all right—but they're not interchangeable. That's why the shape's-different—to help you tell 'em apart.



The step is part of the compressor-tilter-wheel-assembly. Here's the way they code:

Part No.	Description
104-71440	STEP, left compressor-tilter-wheel-assembly (104-71440) (104-71440)
104-71441	STEP, left compressor-tilter-wheel-assembly (104-71440) (104-71441) (104-71441)
104-71442	STEP, right compressor-tilter-wheel-assembly (104-71440) (104-71442)
104-71443	STEP, right compressor-tilter-wheel-assembly (104-71440) (104-71443)

If your bagger's got the filter-assembly-bearing (71427), it should also have a grease-feeding-on-the-rod-support-bearing. If it's not what's got the

rod's sleeves, then instead of grease fittings you'd find plugs that're



marked on the head: **WYLOM, DO NOT GREASE.**

Now—should you get off a step, or have to replace a bearing for some other reason—you'll want to take care to order it right. Right?

Half-Meat

BT—THE TOPGUN

Dear *Half-Meat*,

Write a lot for me, please. I say that all year. It was spark plugs in the 14-mm tracks done got in the bagged up to between 25 and 30 foot-pounds. A buddy of mine says no—that these plugs are supposed to be put in snugly. None of you put that much torque on 'em the gap won't change.

How about helping me collect?

3/11/77 J.C.M.P.

Dear J.C.M.P.,

Start collecting—you win. You can put 25 to 30 foot-pounds on your 14-mm spark plugs without the gap changing. This writing won't change until you get up to between 50 and 55 foot-pounds. Then, the plug starts to twist and the gap gets wider. The breaking point of these plugs is about 75 foot-pounds.

While we're on the subject of torque wrenches, you'll notice that some torque TB's don't give torque settings for plugs. Why? It's simple—a lot of outlets don't have torque wrenches and some plugs are in mighty awkward places.



No, if you have a torque wrench, get it out and start torquing. Go as high as 50 foot-pounds for 14-mm, but **not more**. If you don't have one, follow the instructions to your TM.

For more info on torquing, and spark plugs in general—see TB Ord 511.

Half-Mast

ORD OR BROT

Dear Half-Mast,

In Delwan's responsibility for maintenance and supply support of these battery chargers listed in SR 5-1 (12 Nov 54)?

After 17-C-2611 changes in a wide line of Engines, and Delwan's team is, who maintains it?

East Capts. W. G. Capt G. P. G.

This change now brings a 17-C-2609 change. SR 708-11-124, page 16, item 4B changed that.

It's now the Engineer's job. They call it a Charger, battery portable, oil mounted, gasoline driven, 15-volt,

1000-watt, Deane model GTC-158, 6-volting van. The Engineer book No. is 17-2887, 289, 550.

It's listed in the supply manual as Category of Issue Code B with Spare Part Support Code V.

Code B means that items are the logistical responsibility of the Corps of Engineers and are parts of a set. It's an assemblage of similar technical items. In the case of this charger, the initial issue is made by Delwan but when you need replacement parts, you get them from the Engineers.

Code V in this case means you can get certain parts while they last. After they're gone no new part will be made.

This charger is nonstandard and spare parts are no longer made. If you need spare parts you'll have to get them by local procurement, fabrication or cannibalization.



Half-Mast

A CHANGE OF PLACE

Dear Half-Mast,

What's the group on the oil-filter breather assembly on the Fagot F-33-F that looks like the oil separator and runs out when the engine's running and



the bearing is filled to the oil level in the filler cap. What gives?

By R. J. T.

Dear Sgt. S. T.,

A change gives. Up to now the bearing assembly has been filled with oil. As the oil got hot, it expanded—and overflowed.

That's all changed now. You get less overcapacity restriction with just a thin film of oil on the filler element. And there's no loss of bearing filler volume, or need for overfill.

Here's how to make the changeover: Drain all the old oil out of the assembly. Remove the filler element and clean it with volatile mineral spirit. (Buy book No. 52-1879-700-700.) Wipe over all the old oil treatment off the element. Then, dip the element in OBE, drain thoroughly and put it back into the assembly. A TB will be published on this.

So you won't forget, tape the changeover instructions out and tape them to



the inside of the assembly. Or, if you want a dual giving these instructions, write the Twin Coach Service Division, East, Ohio, for Part Number A-15348.



Half-Mast

THAT'S OIL, BROTHER

Dear Half-Mast,

TM 9-812A says to use oil, lubricating, light (LO) when lubing the brake-power-unit of the 705-mm. dia., M111 or M211. LO 9-812B says to use oil, hydraulic, petroleum base (OBE) for the same purpose. What's correct?

By Col. L. R. W.



Dear Colonel L. R. W.,

Well, Sir, You're right as far as TM 9-812A and LO 9-812B are concerned. But some there isn't going to be any LO 9-812A. The whole thing has been revised.

The new tube order for the M111 and M211, which'll go under the title of DDY-800A, calls for to-use OBE (oil, preservative, hydraulic equipment) in your brake-power-units. This is the good OBE containing preservative qualities which OBE (oil, hydraulic, petroleum) doesn't.

Now to answer your question about the apparent mix-up in TM 5-8764 and LO 2-818A, TM 2-818A, dated July 1951, doesn't lay down any specific oil to use when lubing the brake-power-unit of the M111 and M111. LO is a general classification for any lubricating oil.

Before LO 2-8764 came out in October 1951, any light lubricating oil could be used in the brake-power-unit so long as it had a paraffinic base. LO 2-8764 gave you a specific oil to use. This was OSA.

Now, of course, the oil you'll be using in your brake-power-unit is DFC.

Half-Mast

POWER PACK IN-OR OUT

Dear Half-Mast,

I've been getting more of the light tank units (M47's, M47's, M47's) and our crews were frustrated by the and carburetor troubles.

TM 5-7614 says that the light tank can be removed without pulling the power pack. Our crew found we have to pull it, in order to get at 'em. How would the spark plugs.

Are there any special tools in the system which permit performing these operations without run engine in the vehicle?

Wm. J. J. M.

Dear Mr. J. J. M.:

The new double-end tubular plug wrench, Ord Stock No. 41-91-1127-58, (there's a modified version on the way)

makes pulling plugs a lot easier—especially on medium tanks.



Use on these light tanks—with the oil system unchanged—will take something of a concentration to get the plug out with the power pack in. Most



people find it best to pull the pack and get an open shot at the plug—even with the new procedure.



On each national, the power pack now come out—specially for making the linkage adjustments. You'll see the correction in the new TM 5-7215, when it's ready.

Half-Mast

HOLD YOUR FIRE!

Be sure you've got the right gas-cylinder lock on your M-1 before firing rifle grenades.

Before you check the grounds on your M-1 or M-1A5 launcher, be sure you've got the right gas-cylinder lock on your rifle. If you haven't, chances are your rifle will get roughed up worse than the target.



There's only two types of gas-cylinder locks to be used on the M-1 rifle when firing grenades with the M-1A2 or M-1A5. You were supposed to get one or the other when you were issued your launcher.

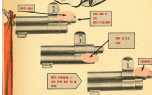
One of 'em (Ord Stock No. 8001-700071) has a big loop or bump on its head. The other one (Ord Stock No. 8001-700090) has an "M" stamped on it for easy recognition. It doesn't

have a chamber on the front face of the upper half of the lock like the old type does.

If your gas-cylinder lock has neither a bump nor an "M" on it, don't fire any grenades. It'll blow your ass out. If you're supposed to be carrying a launcher, trade your old lock in for the right kind. If you're just firing for practice, throw the right lock away today.

Could be that your lock has an "H" stamped on it. This means that it has been hardened, but it still ain't to be used with the M-1A2 or A5.





Just one more thing. Take out your gassy linker-bulk wires for a few links. If it has a valve-assembly, you're dealing with gas. If it's the solid-type plug

with no valves, hold everything. Test wire to supply and work it in for firm, gassy-linker-bulk no-valves, easy. Call Linker Plc. 8002-0180070. And you're all ready to blast away at the country-side.

By the way, that new-type gassy-linker-bulk-wire right down in Chicago Post Box 23, Street TR-001-001, changes 1, 2 and 3, is still under development and won't be available for a while. So carry on, man, carry on.



FOR MEN WHO WO



HOW CLOSE IS CLOSE?

Getting the right amount of distance between your M11 line control system and the guns can be a pretty simple job — but it can be crucial to your performance. It all depends upon the terrain and situation, so the advice looks like:

The following chart will give you an idea of the distance you should have between the FC2 and the gun mounts at your emplacement. There are more or less minimum distances, so if you can't reach 'em any longer, so much the better. And if your line won't permit this much distance, well... there you are!

The whole idea is to protect the FC2 and personnel from the enemy blast and concussion of the guns, and to give you essential dispersion, as they say in the books.

The condition of the soil at the site also has a lot to do with the amount of dispersion you get from the guns. Hard, rocky soil will carry vibrations better than soft, loose, gooey soil. So here are a few ideas:

Even in these situations, though, the direction may cause some of the mounts to be open. Keep an eye on 'em and repair 'em when needed.



ENGINEERS



SPUTTERING PONY ENGINE

Dear Sirs:

I'm a G.I. operator and have a lot of trouble with water getting in the pony engine's gas tank. I have to drain the gas every three or four days. It's a bother and a waste. What's wrong?

JVC A. C.

Dear PFC A. C.:

Look to your gasoline storage set-up. Two to see you're leading your pony from down the gas wood out-door and aren't tightly sealed. They can really gather enough rain water to fuel-up the gasoline. Take a look at part 85 in TM 7-501 for all the dope on storing and handling fuel.



EVERY ENGINE ON THE GO MUST BE PROTECTED. WE DO IT FOR YOU. THE PROTECTANT COMPANY IS A LEADER AND IS PROUD TO BE YOUR PARTNER IN THE GOING AND GOING.

A LINE OF ENGINE PROTECTANT PRODUCTS FOR USE ON THE ENGINE AND FUEL SYSTEMS OF ALL TYPES. ALL PRODUCTS ARE REGISTERED. A LEADER IN THE FUEL SYSTEMS OF THE GOING AND GOING. ALL PRODUCTS ARE REGISTERED.



And, by the way, here's another tip that'll help a sputtering engine give better service: Always stop a pony engine by shutting off the fuel at the tank-line fuel-valve. After the engine burns all the fuel in the combustion, then turn off the ignition switch. This way gasoline (that remains in the fuel system) won't run into the engine where it can wash all off the cylinder walls, fuel-up the spark plugs and dilute the crankcase.



You might to keep the gas tank as nearly full as possible at all times. I'll cut down the amount of water (condensation) that collects in the tank's empty areas when the engine's idle. Draining the tank's sediment bowl at the weekly maintenance check usually gets rid of the normal amount of water that does collect.

Sgt. Dwyer

'Close' Just Doesn't
Count When You're—

ORDERING SPARE PARTS



When your best buddy tells you he's going to fix you up with a well-washed redhead and they come up with a brown one—can you be disappointed? Probably not, just so long as there's no looking on the stocking on the cheek for produce. As long as the measurements and statistics are the same, nobody's gonna look about the color of the label's hair.



Well, it's the same way when you order spare parts for your equipment. You've got to get the right part for the right job—and the best way to do that is to make sure you requisition by the correct part number.

Part numbers have been causing plenty of confusion when it comes to ordering clutch drive links for Campbell DT's and DF's. There've been

different numbers for this part and it's important that you match 'em up with the serial number of the piece of equipment you're concerned with.



The original part number was 2A3025 for DT's with serial numbers up to and including 5T12812 and for DF's with serial numbers up to and including 2U10051.

For DT's with serial numbers beginning at 5T12813 and including 5T15322, and for DF's whose serial numbers are between 2U10060 and 2U15070 inclusive, you'll need part number 6F5819 to replace the clutch drive links. This part'll also fit the early models.

On the very latest models—that's 5T15323 and up for the DT's, and 2U15071 and up for the DF's—the Part No. is 5F5918. That's the only one

that'll fit the new models. This part, however, is interchangeable on all models, so you'd be way ahead to order Part No. 981558 when you're gonna replace the clutch drive links on any D7 or D8.

The 1970 170 (See the Air Force doc's TO 15-758J-100) gives you this dope, but here's a line breakdown on

the model, engine serial number range and the part you can use on all types of this equipment.

Always check your unit stocks today. Some units are installing the newer models with the old type links. When you requisition this part, might as well get the one that'll fit all models. Remember, that's Part No. 981558.

MODEL	TRACTOR SERIAL NUMBER RANGE	PART YOU WANT
	D7 - 50001	
	D7 - 50002	
	D7 - 50003	
	D7 - 50004	
	D8 - 50005	
	D8 - 50006	
	D8 - 50007	
	D7C2 - 51001	
	D8C2 - 52001	
	D7C3 - 51002	
	D8C3 - 52002	

SPARE PARTS SPEED-UP

Ordering Engineer spare parts with-out all the information on the requisition is just like meeting a blind date on a busy corner at the evening rush hour. It's hard to tell what you'll get or how long you'll have to wait.

You'll also prevent a hassle, as well as help the people who fill your requisitions, by giving 'em all the information you can. One thing a lotta people forget to do when they order parts is give the

make, model and serial number of the tool item.

Put this dope on all your requisitions from here on in—and see if you don't get those parts a lot quicker.



GET HEP TO



Here's there a check on those Model 400 re-arrangement burners made by the Richardson-Turner Company (New York-Toronto Industries, Inc.)

Some of you don't ignite right—no! all because the igniter (Part No. 8045-00) is out of line with the wick. Take a look at Fig. 1. You can see that the igniter is not turned right, and the burner-element is standing at a right angle to the wick.

Now, shift your eyeballs to a view of the burner of the burner (Fig. 2).

Everything seems to be in order, but the burner-pipe on the base of the igniter is out of place. That's what's causing the burner-element to stand away from the wick.

That done, no burner-pipe ought to be in the position like the one in Fig. 1.

As a child expert, all you do is turn the igniter-assembly to the right position and guide of the burner-pipe. See the igniter on right, righten the clamp.



YOUR HEATER



rod that holds the igniter in the burner. Be sure and drop the pin at the bottom of the burner when you reposition the igniter. You're got to do this to make sure she's fixed up.

When you're through, the top of the burner'll look like Fig. 4. Notice how the burner assembly lines up with the tank.

And if you're worrying about the igniter slipping out of position, you

couldn't if you apply a little pressure when you tighten the clamp-on holding the igniter in the burner. One of the boys in the shop couldn't budge the igniter with a pair of thin pliers after tightening the clamp-on.

Just to be extra sure, and the first time you get a chance, have your shop replace the burner glass with the one in the magazine, your lawyer'll be all over the cold weather if you'll just clip off the glass and turn the igniter so it's in the right position.



CONTRIBUTIONS



SAVING YOUR WRENCHES

Dear Editor,

Down here on a Pacific island it's no trouble even the mean rules a daily bath is exact. With all this dampness and inclement climate "round rust" is public enemy No. 1.

When I took the wrench out of a wrenchholder each assembly on a M14 it was such you'd think it was Nigger's Ball. The way the water poured out. I got the problem solved, tho.

I drilled four 1/4 in holes in the bottom of the assembly—one in each end of the assembly, one in the middle of the assembly, and one on each side of the wrench rib.



Although this won't stop condensation from forming, it acts as a delaying action against "incrustate" rust. It gives condensation a chance to drip-out.

Sgt Felix J. Richard

MPO 334, San Francisco

Old Man's Spindly Idea—*Spindly* climates are bound to cause condensation and rust in your windshield assembly sooner or later. But with this idea, the rust'll come a lot later—and sooner. To be 100 per cent safe, and the delay 'round the windshield repair man to keep rain from leaking in, your idea can be used on all vehicles, not only the M14. You'll soon see an AMPG coming your way covering this fix.

FOR CRACKED JOINTS

Dear Editor,

Here's a fix we've got for our M14 tanks to stop personnel from breaking the universal joints on the output shafts linking the commander's control-handle assembly with the universal shafts housing.

We made up a piece of wire mesh and fixed it over the assembly. It keeps the linkage from getting twisted around by

the crew when they climb in and out of the tank thru the commander's capsule.

**Mr. J. B. Lammont
Camp Stewart, Wis.**

Ed Note—Reference has come up with a different type of chest which will be put on at the depot level. Don't your tank is modified, how to make your crew to keep their choppers off that bridge?



COME WITH THE WIND

Dear Editor,

Keeping the submerge and class blowers out of your aquaplanes seaworthy is a snap with this system:



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Turn on the motor and let 'em blow.
Course, this is only for emergency
and war-guards.

**Mr. M. H. Gorman
H. Belvoir**

(Ed Note—Spiral? ...)

WATER
COULD
BE YOUR
BEST FRIEND?

Coverie Road's 5 BRIEFS

Water splats steel

Splashing cold water on a hot exhaust manifold is why most of the cracked ones get that way. Next time you go washing your vehicle, keep water off the engine. At least until it's had a chance to cool down.

Pot monster?

One thing that'll make your M4 recovery vehicle's engine a huffless but it's operating with the rear exhaust deflectors rolled. Keep 'em down where they're supposed to be, and you'll not overheat. Same goes for all those vehicles with the M443 tank chains. You'll see this in the TV ads of these days.

So long, Pot Clips

We tried a grenade into the air. It fell to earth—be loose just where we waited for the bang, but it never came, so we

plucked up the grenade to fire it again. What happened this time you can easily guess. The dud came to life—what a million uses!

No-play's the thing

Any time you talk man find any vertical play in your turret race—it shouldn't be. Take a quick look at your receiver bolts (ball-to-rod, rod-to-barrel) and see if maybe they're loose and causing the play. If so, tighten 'em. If not, better take the problem to Ordnance. Now any serious damage is done.

Drop dogs?

Been wondering who's needed down to your building deck (M1, M4A1) before installing that Signal Corps air-ground radio (AM/ABC-37)? Wonder no more. The dog's to be had via MPO Out 0341/67.

