

PS

THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY

Issue 17

PMI Series

Oh, Sergeant Dyer  
Your attention that  
those tools and parts  
won't all the time  
Those men have learned  
... a little in time...  
You'll always be my

VALENTINE

Corinne  
The  
Kidd



## The Engineers join California in FS Magazine



AMERICAN SOCIETY OF CIVIL ENGINEERS  
1801 L STREET, N.W.  
WASHINGTON, D.C. 20036

12 MONTHS 1988

200 copies  
200 copies  
200 copies

The American Society of Civil Engineers is pleased to announce that it has joined with the California Society of Professional Engineers in the publication of the magazine "Engineering News-Record". This new publication will be published bi-weekly, twice a month, and will contain the best news and information on engineering and construction in the United States.

The magazine will contain news, analysis, and commentary on the latest developments in the field of engineering and construction. It will also contain information on the activities of the American Society of Civil Engineers and the California Society of Professional Engineers.

By joining with the California Society of Professional Engineers, the American Society of Civil Engineers is pleased to announce that it is now publishing "Engineering News-Record" in California. This new publication will be published bi-weekly, twice a month, and will contain the best news and information on engineering and construction in the United States.

ASCE

AMERICAN SOCIETY OF CIVIL ENGINEERS  
1801 L STREET, N.W.  
WASHINGTON, D.C. 20036



See page 88 for the new magazine Engineering News-Record



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June 10, 1945

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# KEEP IT CLEAN...



## YOUR BATTERY, THAT IS

Folks are going around about guys having dead batteries, batteries coming loose, trucks that won't start, "quack moments," and all kinds of troubles. To hear tell, you'd think batteries weren't any good at all. Not so, friend, not so.

But, you know something? There's a darn good battery we have in our new vehicles. Top . . . It'll stand more abuse than two of the old ones, and still keep your buggy running. Shucks, Chalmers got to testing these batteries to see what it did take to kill one of 'em, and before they got done it had to be knocked on the head with a club, and even then it wouldn't lie down.







Sometimes, many cases of 'battery failure' are due to just one thing: Dirty Battery. One thing you can't do to one of these batteries (or any other battery) is to leave electrolyte salts on it. These salts get there from acid fumes given off from vents or from spilled or overflowed battery acid. When

any acid liquid is just wiped off or left to dry, it leaves electrolyte salts. These salts will pick up moisture from the air, and when they get moist they carry current like crazy. You know you can't keep using a car with a leak in it, and you can't keep using a battery with a constant leak, either.



It's easy to stop this. First of all, every time you wash your truck, hose lots of clean water over the batteries and carriers and the whole chassis. And then when you pull the 1000-mile service, give a real careful look at your batteries and the battery carrier.

If they are the least bit dirty, hild 'em out and give everything a good scrub with fresh water and a scrub brush. Then rinse with a so-

lution of baking soda and water. One pound of soda to two gallons of water is enough for a half dozen vehicles. Let the soda solution sit on the battery until all foaming stops, rinse it off with clean water and try again. When you don't get any more foaming, you have neutralized all the acid on your battery and the carrier. Rinse once more with fresh water and let dry.



Be sure your battery caps are tight, and that you do not get any acids into the battery. Acids will kill acid just as fast inside the battery as outside it.



While you have the tools handy, remember to clean the cable terminals and fuses, too. And rinse them in fresh water. If you run out of acids you can get by with using lots of fresh water.



This is a good time to paint your battery carriers, using acid-resistant paint (M.P. 308-728). If you can't wait for the acid-resistant type, remember that any paint is better than bare metal. Be sure you first scrub or sand off any rust



from the battery carriers.

While you have the batteries out is a fine time to check them all over for leaks, cracked cases, signs of chaling and so on. Then fill them to the proper level with distilled water and put them back.



Remember to put a light coat of grease on the battery posts and the cable terminals. You don't get as much good from a great job of grease slapped on top after hooking up as you do from a light coat spread all over the post and the clamp after the terminal is secure-



ly fastened; and if the metal terminals are attached, clean and grease them, too. So that's where you need the grease. The best grease for the purpose is GSA or Grease, high melting point. But, CD or Penetration will work, and any grease is better than no grease.



Now that you have your batteries all shiny and spotless, the easiest way in the world to keep them that way is to be darn care-

ful when filling 'em. Overfilling a battery is just as harmful as underfilling 'em. When you done to the stick, stop.

## Here's How ON YOUR M34



### TRANSFER-CASE VENT

A lot of the trouble with leaking oil out of your M34 Transfer Case is caused when the gasket under the oil-pressure inspection plate is stretched and forced upward from side-to-side splash. This seals off the vent fitting on the inspection plate.

The gasket has two vent holes that are purposely offset from the air vent in the plate so as to let out air and keep in the gear oil. So the cure is to keep this gasket in place. If you're having this trouble, you can fix it this way:

Drill a hole through the plate, not too far away from the vent-fitting support hole (Fig. 1). Then plug the hole with a bolt (3/8" x 3 1/2") through the underside. Seal it with Permatex and hold it snug with a lock-washer or self-locking nut on the outside of the inspection plate (Fig. 2).

The head of this bolt will hold the gasket away from the vent hole. Then air can go out of the transfer case before it builds up enough pressure to blow out your oil seal.

FIG. 1



3/8" X 3 1/2" BOLT

3/8" DIA.

FIG. 2



## RAND-BRAKE ADJUSTMENT

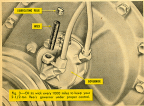
Wind cones that come with the leading line rods to adjust the linkage of their 2000 L.C. cone handbrake. First to see you go on all that trouble when you've got these cones made in Tool Box, General Mechanics, 41-7-2004-30, that'll do the job.

You can use a 1/4" open-end wrench (SN 41-W-004) to bend your cone while you're using a 1/2" open-end wrench (SN 41-W-000-06) to loosen the jam nut. When you've got the jam nut loose you can use a 1/2" hex wrench (SN 41-W-422) on the top nut and cone is checkin' which'll take up the slack in the linkage with the hand lever fully released. When you can apply the hand lever at least one-half of the normal range, you've got a normal adjustment.

## LAME GOVERNOR

The main way for your governor to get out of kilter is to run without oil on its shaft. This happens sometimes between rebuilds on Ram trucks leaving the governor lapping to wear, letting air get through around the shaft. And since the governor's efficient operation is governed by how much air goes through the shaft's center, air creeping through anywhere else will make it inaccurate.

The housing is made of porous metal and lubricated by a wick under the lubricating plug (Fig. 2). While the wick should stay oil-soaked from rebuild to rebuild it sometimes dries out and needs to be re-soaked. Check the left wick every second rebuild and keep it damp with OE-30 oil—just like you do on the 7-000 falls.



*Keepin' Body and Soul  
Together on the . . .*

## GMC 2½-TONNER



A FINE GMC  $\oplus$

A FINE LOCK  $\equiv$

### GMC 2½-TON LOCK

The front lock's backing-plate to steering-knuckle retaining screw torques specs have been changed. Now these retaining screws (all 12 of 'em) need tightening a 50% more. The latest and proper torque is 98 to 105 foot-pounds. So, cut with your wrench and start torquing.

To keep them properly torqued and from working loose and maybe steering off to the steering-knuckle support, lock'em in place.

Get some strip steel about 1/16" thick and cut it and drill it like in Fig. 1. (You'll need 12 pieces to lock the retaining screws in pairs on both wheels.) When all set, you only need one corner of the lock against the flat of the retaining screw (Fig. 2). If you have to remove the lock, instead of making new ones when you get them back on, just bend another corner against the lock heads.



Fig. 1—The little piece of steel will lock those retaining screws in place.



Fig. 2—Use the locking plate over two screws. One corner, lock them—other.



## GMC AUTOMATIC TRANSMISSIONS

The same steps make the truck's transmission all it's ready for the grade you

**T**hey're like the last Joe in the pack, on the second Blue Lizards, who drops one foot on the floor and keeps everybody awake wondering what he's going to drop the other one. It's those drivers who let the top-mounted 245-assembly reach the critical downshifting stage in F-1 on an upgrade, and then let it run the scale on a shifting cycle, ripping down from 2nd to 1st and up there 2nd to 3rd again, never actually settling on any ratio.

As you drive up a stiff grade in F-1 (often single) and reach a point where you can feel or hear a lot of heat, indicative upshifting and downshifting in the transmission, the scale is "hunting." At this point, too, you're in the wrong slot

—you should be in F-2. Being in F-1 on a too-stiff grade telegraphs the shifting mechanism a lot of conflicting messages, and by the time it acts on one it gets another.

You're crawling up a grade which 2nd handles very nicely when the engine begins to pick up rpm's, and the shift is into 3rd. It rolls but a few yards until it discovers that 3rd just doesn't have it—so it automatically downshifts to 1st with a jerk—then to 2nd, and again it tries third—no good. All this "hunting" wastes the delicate art of the clutch, gears, and bands.

None of this would happen in F-2, for the transmission is held to 2nd speed, and it won't be hopping up to 3rd where you haven't got the power to keep the truck crawling up the grade.

To get her in F-2 is the best place. Transmission parts cool down.



# QUARTER-TON **FLASHES**



UNDERCOVER STORY

SPARK PLUGS

If you've got one of the early M38A1s and been feeling a tap-tap-tapping under the hood, it could be the rockers arm hitting the valve cover. The first batch of 'A1's came out with the covers set a little too close to the rockers.

Should you be tapped with the problem, loosen the cover and reposition it a little with the engine running. Then tighten it again when the rockers stop hitting the cover.

## OPEN WIND

Here's something a seasoned mechanic wouldn't do but his helper might:

When TM #804, page 67, says to feel compression on the M35 "with choke wide open," watch him for the new-cruiser's mistake. The man I mean thought he was following instructions when he pulled out the choke control-lever at the dashboard. The fool is he was letting too air in the carburetor, "choking" it.

To make the compression test, hands go under the hood to make sure the choke "butterfly-valve" in the carburetor is open all the way—giving it all the air it can get.

If you will look on page 26 of the new Oct 2 1971, CTR, you'll find two spark plugs listed as optional equipment for the M38A1.

This has been changed, and the latest word is that spark plug H904-820724 is the **only** one for the M38A1. Since this plug is also suitable for the M36, the latest dope from DOD is that the alternate plug, H904-7524258 will not be listed for your quarter-ton. Good is, the H904-820724 is a better plug, and has been found to work better in the F-150's engine.

## CHERRY PEARL—TAKE IT EASY

Take it easy with those M38A1 1/2-ton-1125cc runlines runlines. That 1125, plus crew, equipment and more can be rough on your 1/4-ton if you top it off with some low flying.

Right now, that type of runline work special easy handling by the driver. Keep out of rough terrain when possible, be a good driver to cut out unnecessary trips.



## Connie Rodd's "TIPS 'N' TRICKS DEPT."



### *Loose power-pack mountings*

Put a light coat of grease on the contact surfaces of power-pack mounting lugs (guide-pins and guide-sockets) when installing the power pack on the Light Truck family. You'll have easier sliding and less rattle.

You need grease on the forward mount especially because the saddle has a tendency to creep before the power pack has completed its slide into forward position and, if the mountings are not fully seated when the power pack is forward, it'll likely cause loose and cause engine vibrations.

The mounts should always be free of paint and the power pack mounting-studs should be checked often—especially on the front engine-supports. They have a tendency to vibrate loose whenever they're not properly torqued. **Note:** Be sure careful to make sure your ground wire back at the transmission is grounding the power pack to the ball-frames on the mounting might interfere with the groundings.

**Another Note:** On the subject of mounts and good mountings, when you're installing the power pack it's a fine time to make sure that all mounts and mounting surfaces (especially the transmission) that should be lubricated are properly oiled correctly. Like it said in PS #13, page 308, a single strand of wire won't do the job.

### *Fix your radiator*

Fixing cracks in the radiator, when keeping your truck from overheating, is a major concern. Without that radiator, you can lose the engine and heater hoses from the upper radiator tank, and a leak you'll have.



The proper adjustment of the self-lubricating nuts on the rollers mounting tracks and the way-end will supply this flexibility.

When you adjust them, tighten the mounting end nut up even and snug. When you get to the way-end nut, be careful not to pull it up too tight so that you completely compress the spring on the way-end bracket on the upper railless track. Get it right enough to hold the railless strap. This'll stretch enough spring to fit the railless box when you fit the new pinions.

### *Rest on the oil life cover*

You can get an end to rest which crops up on skiers, hessians and wonder bindings inside the shift cover of hydraulic 7½-ton A-1 tracks. Get off the bindings by removing the shift cover, check off any rust that has formed and coat the bindings with ALL-473, Best Penetrative Compound (Stock No. 14C-507). You have to be careful about other lubricants; they've already been lubricated—no, don't add more. Lots models of your M128 and other tracks have already had their bindings coated. You might take a peek into the cover to make sure no rust is forming.



### *Witch short-pin replacement*

Despite previous warnings, there are still some steel short pins floating around. Remove the short pins from your tracks equipped 1½-ton and 3-ton tracks, bag or box them a magnet for yourself. Imagineite (steel plug, 8081-05-0715) will do the trick; and if you



can pick up the pins with the magnet—buy those steel pins. Replace with the aluminum-alloy type that'll stretch when they're compressed and won't wear transmission and power takeoff axles.

All of your 3½-ton 60's (new type) the new-type short pin Q745-7400011, plus two-center pin H001-4417141 per short pin. All 3-ton 60's should now use short pin Q744-7400148, plus one center pin H001-4417428 per short pin. Take a gander at TR Ord 152 (15 July 1953).

## Dog started fuss

You may have trouble from the dog-clutch jaws on trucks equipped with winches when you try to release the clutch with a load on the drum.

If you try to move the drum-back lever and it resists, put the power-take-off in reverse and back off the clutch just enough to take off the strain. The jaws will proceed and kick the drum clutch lever should be kicked in the past. They'll heat up the winch works.

Of course, you can't relieve the pressure of a suspended load by backing off.



## Suspension oil

441, 44141 (TRUCK), 4441, 4474,  
44812, 44811, 449 & 4494

Light Truck family members take note . . . OE 10 is the recommended oil to be used in all suspension-bearing components in temperatures ranging above  $-10^{\circ}$  F. and 240 in temperatures below  $0^{\circ}$  F. (S) the same oil used in the transmission.

Buy one quart of 10 (10) (TRUCK) (motor), and 80 in the blank space on page 42. And if your vehicle 10 and 1M says anything different, straighten them out too.

## Keep trailer air-brake hose out of a "squeeze"



Note what happens to air-brake hose when steering knuckle—the lower portion of a truck and the forward part of a trailer, flexes. A broken hose and a broken head of power-planting something with you when you try to hold it up a hill.



Fix it quickly with two springs replaced by the body of the truck and attached to the frame so it will be held above the "squeeze". The springs are made by GAF 1-500 (100) (100) for the trailer connecting-hose springs. You'll need two per truck.

## *Don't almost or cracked windshields*

Let's face it, almost-windshields may crack when gasoline heaters are turned up high for a quick inside warm-up on a cold (then misty) (yet) day in a vehicle that has been frozen stiff from being out in the elements.

Your windshield is made of two pieces of glass sandwiched together. When you give the inside slice of glass a sudden blast of hot air, it expands before the outside slice knows what's happened—and "pop" goes the windshield.

Take it easy when warming up your cab. Turn the heater on low first. After the cab is warm, you can turn it higher. That way it's easier for you and everything else. And keep the hot blast of defroster air off the windshield until the cab's nice and warm. That way the outside half of the windshield will have a chance to warm up, and there will be no popping of glass.



## *About-face (in winter)*

Here's a trick to keep your engine warm.

"When halted for short durations (for fuel), the vehicle should be parked in a sheltered spot out of the wind. If no shelter is available, it will be helpful to park so that the vehicle engine faces into the wind", according to TM 9-4034, (paragraph 50 b, page 37).

What it means to say it "faces into"



SO YOU DON'T GET  
PS #14?

Maybe it was no purpose... because PS #14 is being awarded for guys who really need it (it's all about units 74111 and 74112 and other members of the Light Tank family). So just work the gun in your life. "Building Edition."

But, if you work around a Light Tank and get overlooked during your regular publications mailmail... or if you've won in a battle all the copies you got... or whenever you do come in contact with the Light Tanks... get a letter all right away to PS Magazine, Attention: Printing Division, Maryland. If you tell how many you need (and don't forget to send your complete military address), PS #14 will be first light book at you.



But, pull down... because you're one of those who've gotten far in the know about the Light Tanks so PS can speed the word where PS do the most good.



### Dear Editor:

Here's what we did at our track yard to reduce the headaches involved when adjusting tank tracks. We'll let the enclosed snaps speak for themselves . . . It's a combination of good old carry ingenuity and cheap metal. How about getting your Ordnance support unit to give you a hand in making this?

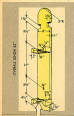


The Ordnance Gang at Fort Hill

### Snappy Snaps for a

## TRACK ADJUSTING TOOL

This is the piece that's saving our heads. It can be made to fit almost every type track. The specs will tell how it's made and just how much cheap metal you'll have to scrounge.



Make this so it'll slide over to the inner 36" hole on the bar and be used on narrow tracks.



Here's how adjusting bar works on the M4A3 tank with the wide steel track using tool #1 W-240-028. The wide rubber track on the M41 Motor Carriage works like this, too.



Another way it's applied to the M4A3's that have the narrow rubber track features making the outer grip into the inner hole.



The M4C will take it, too . . . with a modification to the upper and the sprocket of W-238M-27E. (However #1 W-142M-33 also works on M4C.)



## PUT THE WHOM ON LITTLE JOE

If you wonder why the auxiliary engine in your M47 tank sometimes sputters like a candle in the last row of a cotton patch, here's your answer and here's how to battle the curdles.

On the Wisconsin "Little Joe" job, the trouble comes from the governor-to-carburetor linkage binding. She's supposed to whirl at the rate of 2800-rpm with a full load output of 150 amps, and at 2600-rpm at half a load.

What happens is this: The throttle is opened wide for a full load. When the load is taken off, the governor is supposed to reduce speed by partially closing the carburetor. The governor arm moves to change the carburetor, but the carburetor linkage doesn't respond.

Result: The engine runs like mad and is likely to bust something.

Such high speed is especially harmful when "Little Joe" starts cold. Oil doesn't reach all parts and those parts take a beating.

The easiest way to get her controlled is to adjust the linkage so that the corner pin on the linkage barely touches the governor control arm. Hook the governor's tension spring in the third hole from the top of the governor-control arm. The linkage will then move immediately when the arm moves to close the carburetor (see Skort).

If you still have trouble with this set-up, you better check for bent linkage or rust or dirt on the linkage. Take a look at the ground cable from the auxiliary-engine governor. Sometimes it will be in the way of the governor linkage.

Now "Little Joe" should purr along smooth and steady. You've got him tamed.



a quick switch

# CURE FOR BATTERED FUEL LINES



Fig. 1—Here, you remove the main fuel-line on engine with quick-disconnect like this.

These battered main fuel-lines in the M48, M48A1 and M47 tanks can be fixed—fast, quick.

Some of these tanks come off the lines with the quick-disconnect at the fuel-tank end of the fuel line (Fig. 1). When the engine is pulled out the dangling fuel-line often gets damaged and fuel lines have been hard to replace.

The cure comes by taking the fuel-line hose at both ends, putting a  $3/8$ " steel elbow in the engine connection, remove coils of the main fuel-line and connect it (Fig. 2). This puts the quick-disconnect on the engine where it can be taken line fast and placed out of



Fig. 2—Avoid battered lines by moving the quick-disconnect and adding a  $3/8$ " elbow, the way when the engine is to be pulled (Fig. 2).

Some tanks have this quick-disconnect feature built in.



Fig. 3—Now, you test the main fuel-line every time replacing the tank power pack.

"It's your oil, not it!"  
Make that last one say so...



## AVOID HOT OIL TREATMENTS

### OVERLUBE TRANSMISSIONS

Dear Mr./Ms.:

We have noticed that some technicians come in a while and fill their CD-550 transmissions in AMC, AMAL, AM, T41, AM, T21, T38, and CD-500 transmissions in the AM, (T481), AM, (T482), M42, AM, T481, T56, M3 (T181) vehicles. The only method we have read for reducing the oil to correct level is to remove the inspection plates from underneath the tank and remove the transmission drain-plugs. Generally, much of the oil is lost that way.

In any case, we don't waste oil. In fact, we don't get a hot oil bath. Here is the way to work:

1. Stop the engine.
2. Remove a lubrication check plug from the transmission sub-body. Use the plug where you have the lowest oil pressure—the lubricating oil line plug. The illustration below shows the lubricating oil line plug location. Fig. 1 is for the CD-550 transmission plug; Fig. 2 gives you the CD-500 plug.

3. Insert in its place a draining fixture made of brake hose from GMC 6011 or equivalent, a short-cut valve, a 3/4" flare connector,





two or three feet of 1/2" copper tubing and a flare nut. Be sure the flare you use has pipe nipple threads on one end and the 1/2" flare on the other for proper connection.

4. Remove one end of the brake hose right into the hole (check opening). Attach the cut-off valve to the other end, and fit the valve to the copper tubing with the 1/2" connector.

5. Be sure the shut-off valve is off before starting the engine.

6. Start engine, warm transmission close to operating temperature, open valve and drain oil slowly off. You can turn off valve and check the oil level with the oil-level gauge as often as you like while the engine is running at 1000 rpm.

7. When the correct oil level is attained, stop engine, remove the draining fixture and install and tighten hole plug. Check for leaks. Do not tighten too tight because the plug is made of cast aluminum. You're apt to damage it.

Different kinds of fixtures can be made, depending on what is available in your shop.

#### The Delimiting Gang

Over Gang.

Sounds like a fine idea, but it has its dangers. Never use this method to completely drain the transmission. You will ruin a transmission quicker than it takes to sign a statement of charges.

When draining off excess oil this way, be especially careful because it's siphoning hot (200°) and you can get an extremely hot burn.

It might be a good idea to put the end of the tubing in a bucket to keep the oil from splashing and spilling.

Another good plan is to use the plug you have removed somewhere on the transmission (find a niche or groove so it won't vibrate off while the engine's running) during the draining operation. This way, you can keep the plug hot. A cold plug replaced in a hot valve/body can give you a hard time removing it later on.

Dr. CD-850 transmission, another method of removing excess oil is by using a spare crankcase oil line (either available with a 90° oil-line reducer on the exhaust) and tap cut-off valve that will fit this line. The engine is stopped, the oiler is fitted in place of one of the transmission oil plugs on the oil cooler, and the line and cut-off valve are attached. The engine is started and the operating temperature brought up to normal. Excess oil may be drained off and the oil level checked while the engine is operating. When the correct level is reached, the engine is stopped, the oiler and tube are removed, and the plug is replaced.

*Harold*

## ON DIPSTICKS AND BREATHERS



### Engine Dipsticks

In your Continental AV-1790-series turboprop, the engine oil dipsticks come in two different sizes—one short, one long. But get these two sizes apart and you can't tell the difference. Unless you know which is which and where it belongs, you might end up with an oil level reading that's all wrong—the engine running low and the other overflowing oil.

Here's how to keep the long stick out of the short hole:

AV-1790-8A engines and AV-1790-8B engines through Serial No. 1586 have the dipstick housed at the rear (flywheel end) of the right bank of cylinders—use the short dipstick.

AV-1790-8B engines after Serial No. 1586, AV-1790-T, and AV-1790-7B engines have their dipsticks housed along about the middle of the engine (between #2 and #3 cylinders on the right bank)—use the long dipstick.

You can tell the short from the

long by the Manufacturer's Part Number on the dipstick and by the 5" difference in length.

This change in dipsticks isn't spelled out by engine serial number in your MEL's. How about marking each short dipstick with an "S" and putting an "L" by the hole where it belongs. Use an "L" for the long ones.

### Engine Breathers

If your MH-60 has noticed great smoke rings on a steep climb, the chances are that its induction is due to an out-of-date crankcase-ventilation assembly. First mistake of the Continental 8A engine had a breather assembly that didn't breathe so good, which is especially bad when the engine's working your smoke.

A new breather assembly is well on its way so don't be an old storage pot—ask DeLorean to see if you have the old or new assembly. Refer them to MWO Ord G244-W-15 (5 Nov, 52).



# HAIRNET

**JOE  
DOES**

HOW  
THEY TURN-UP  
WORKS



THE STORY YOU ARE  
ABOUT TO HEAR IS TRUE...  
FROM THE HARBOR NEAR AFRICA,  
LEFT TO PROVE YOU ARE  
INNOCENT.

*STINK  
RINGS*



THIS IS THE FIRST... FILLED  
WITH MEN... SOME OF THEM  
GAVE UP... I SHOULD KNOW  
... I'M IN SUPPLY??

IT'S FROM NEW YORK... I AM  
OLD FRIENDS THE ONLY  
FROM OUT OF SERVICE (CONFUSION)





2045 HOURS, THE TROOP LEAVES AMBLY...

WHEW! YOU  
GIVE DOWN HERE  
AT THE END OF  
MTP 2-27



WELL!  
THEY DO  
THE  
FOOT-  
LOCKER?

... THEY SAY  
IT WAS A  
SCOUTING  
CHECK-UP



2100 HOURS

NOTHING?

NOTHING!

NOTHING!



2153 HOURS... HE WERE AWAY  
IN THE ORDERLY ROOM

JOE... I'M SURE  
OF IT... THESE GUYS  
OVERSTOCKED AND  
THEY AINT TALKIN'!

ONLY ONE  
THING  
TO DO  
TODAY!



PUT THIS SIGN  
OUT FRONT ON  
THE BUILDING...



A JOE  
DOES  
FORGET  
JOE?

RIGHT... IF  
YOU WANT A  
BETTER LOOK...  
TURN THE  
PAGE!



# WANTED

Joe's Dope Sheet

## SPARE PARTS





**For** those who can't get behind the never-  
free bag-in-life systems you'll choose  
being in parties that you've matched.  
There'll be no questions asked.  
Especially, you get parties we can use.

## REWARD

THE TUBES HAS BEEN APPROVED TO BEAN IF MAJOR FOR TOP TO  
THIS TRANSCENDING FOR PARTY BACK INTO CHAIRS WITHOUT A LOT  
OF PAPER WORK AND THE TUB... USE IT, IT'S FOR YOU.

**THE ALSO INCLUDES VARIOUSLY NUMBERED WE CAN IN THE**

**WE HAVE THE WORLD'S BEST EQUIPMENT... *Talk more of it***

WORLD'S BEST EQUIPMENT... TALK MORE OF IT... WE CAN IN THE



2357 HOURS... THE AGENT  
CAME STRAIGHT OUT OF THE OFFICE!  
NOISE: THERE WAS A PROCK  
ON THE FLOOR...

EUREKA!

EUREKA!



...THIS A  
FREE-  
TURN-IN  
STATION?

NO!



...DID IT MEAN  
IF I TURN IN  
MYSELF, MIGHT  
I BE... MAY  
HAVE BECAUSE  
MY ACTIVE...  
NO QUESTIONS  
ASKED?

NO!



...NO PROCKS  
TO SIGN?

NO!



WELL THEN...



...THIS A  
FREE-  
TURN-IN  
STATION?





# ARE YOU GUILTY OF OVERSTOCK?

MAKE YOUR INVENTORY  
AND STOCK CONTROL CARDS  
**KISSING** SWEET



USE THESE TIPS - IN

★ IT'S AUTHORIZED ★

AND HOW ABOUT TO MINNET  
THE INVENTORY TEAM FOUND  
A COMPANY NOT GUILTY.....



... MAKE YOUR STOCK CARDS  
A SWEET CARD THAT YOU WANT  
IN THE APPROVE.....



What's what and when with

## COLD WEATHER LUBES

Wanda, folks, keep winded tales about auto maintain for lubing in cold weather is like telling how the motor responds on a cold morning. What's got some guys in a spin is the overlap of temperature ranges in the DO's for using different grade lubes. If you'll look close, you'll see that the LO's made up for "expected temperatures," and that's where you've got to see part of the slip.

So—if you have OE 10 in your condition and it's 11° F, and you know it's going to go colder for a stretch—stick to OE 10. But, if it's going to stay the same temp or get warmer—low in the

OE 10, in any weather this could mean go or no go for your truck. If it's going to get colder, change quick to a sub-zero lube; your LO doesn't want you to wind-stick him — 11° F.

When weather differences around the world is considered, you some just think the same level tells you to switch lubes. That's so—if you and your truck are winning in the lowlands beyond, you probably won't change to a cold weather lube. It's the expected temperature that counts—and when it drops, use the next lighter weight lube.

Here's a guide to winter temps in various areas and the lube type you'll need.

For areas like	Temperature	Lube to use	Remarks
The Inland North North, N.E., Can., etc.	Arctic Temp. (-30° to -50° F)	OE 000-100; OE 000-200; FL (Special)	In this area, keep OE 10000 handy.
The Inland North West, West., etc.	Extreme Cold (-10° to -30° F)	OE 000-100; OE 000-200; FL (Special)	These use the same lube as the Arctic.
The northern Plains Ohio, Maryland, etc.	Normal Winter Temp. (-10° to +40° F)	OE 10; OE 30; FL; OE 000-200; FL (Special)	Change ahead of the cold weather.
The heavy South S. Calif., Fla., Ga., etc.	High Winter Temp. (20° to 50° F)	OE 30; or OE 000 30; OE 000-200; FL (Special)	This probably won't need any lube here.

And so for getting the lube, dig up a copy of SA 38-5-1 (Oct 31)  
—it covers the lube situation pretty well, stock numbers and all.



### MI11 SHIFTS

Dear Half-Ton:

I would like some information on the hydraulic transmission on the new GMC 2½-ton flat-bed MI11.

We have a drive arrangement as in the forward shift in F-2 (High Range). Our man says there are two speeds and I have driven two different trucks and have got four speeds out of both, but only down a grade as the governor won't permit you to get low now on level ground. The governor takes hold in F-2 at about 20-mpg and at about 22 to 25-mpg the shift is third gear, then you let fourth at 27 to 30-mpg. **Note:** This is done in F-2 (High) high range from a dead start.

We would like to know who is right or none or possible.

Pat C. E. R.

Dear Pat C. E. R.:

Look down, about this little argument on the shifting of the MI11 and MI11 transmissions. You are in the wronger position of winning the Pyrrhic argument by losing the truck.

What I mean is this, the transmission will only shift 2-3 and 3-4 in F-2 when your engine has been turned way above its governed speed. So—for the better,

you, pullover quit trying to do it. If you drive that truck the way it is supposed to be driven in F-2, clutch on hydraulic will keep it from shifting as shed.

Of course, if you are running in fourth gear at the time you shift to F-2, like what you see talk about of you, it will may be fourth until the hill slows it down. But any time it shifts up from second to third while in F-2, something is very wrong. It could be the wrong linkage adjustment—or you.



I know that you use F-2 to get some precise braking from your engine, but you want to use your head and your brakes too, and keep your engine speed down. In the first place this will save your engine, and sometimes, given a heavy enough load and a long enough hill, it may save your life. If you let that engine over-rev until your transmission shifts up, you can only get it

lock down again by using your brakes. So if your brakes prove unable to slow you down, you set off on the roller coaster. Happy landings, bud.

And your last hope of getting the most braking effect out of that transmission lies in keeping the linkage adjusted right.

*Half-Mast*

#### OH, DASH AN INCHIDE

Dear Half-Mast:

I've been having trouble with the oil gauge on the new vehicles—they don't read right and changing them for new ones doesn't help. Got any suggestions?

Bill S. L. H.

Dear Bill S. L. H.:

The electrical gauge on the new vehicles isn't in for some big changes but until they come along it's an even bet that reading your oil gauge is the wrong one (it's the answer there's probably nothing wrong with the one you have now). All you can do is treat it as an indicator instead of a gauge since the needle's movement will indicate there's oil pressure in the system—if not how much. But to be sure there's enough pressure, test it with a Bourdon gauge if there's one around—connecting it to the indicator inlet line.

*Half-Mast*

#### SPECIAL TOOL SETS

Dear Half-Mast:

What is shown happened to the wheel bearing wrenches for our M111's? They don't come with the

truck, and I can't find one listed in the Tool Reference and this office, nor get the Oid 7. What's the deal?

WYOM MCC

Dear Mr. MCC:

Could you please advise just, or how, your copy of Change 2, August 53, for your Oid 7, SVE G-749.

Because you are right, the special tools for each specific vehicle have been shifted around lately, and wheel bearing wrenches are no longer in the tool bag dimensions with the trucks. But your T/Oid will show you that you not only get the Tool Set, Organizational Maintenance, Tool Reference, (No. 1 Common and Tool Set, Organizational Maintenance, Tool Reference) No. 1, Supplemental, but also Tool Set, Tool Reference, Special Set B. And that's the list that has your wheel bearing wrench.

Look in the Oid 7, SVE G-749, Change 2, August 53, page 5, and you will find this list listed as a change for page 49.

Your gun fanatic wished that they get the Tool Set, Organizational Maintenance, No. 1 Common, but see the No. 1 Supplemental, and that they are authorized Special Set B in the pertinent Oid 7 SVE's.

You understood that you are entitled to one of these special tool sets for each type of vehicle you maintain? Look for these in the Oid 7's under "Organizational Tools and Equipment."



## HEAT UP DIFFERENTIAL BEARINGS

Dear Half-Max,

We are having lots of trouble keeping bearings in Chevy differentials (GM models are and 1976 trucks). The rollers and balls get hot up and are black like they've done too. We use GM 30 which is right for our location. Thought maybe you could help us.

W. L. T.

Ed: W. L. T.,

Your trouble could mean you've got some of the Chevy passage case and light trucks that messed up with defective differential pinion-shaft bearings, and TD-200 481 (14 Nov 52) which explained out the problem hasn't caught up with you yet.

Production changes over to a more reliable bearing and arrangement were made to get the new part to vehicles in the field through the regular manufacturer replacement network from the district authorized Chevrolet dealer—see BU 9-08-4 (9 Mar 55). The manufacturer's warranty limit on these bearings was extended from the usual 4000 miles to 20,000 miles or one year. The marking: New Equipment 5005 on the inner race identifies the old Chevy bearing. The new bearing (Chevrolet Part No. 304780) is marked New Equipment 13059.

If your vehicles already have the new bearing here are a couple of other things to consider:

Factor's distribution is load? Thrust and rear wheel bearings, as well as rear axle bearings) don't mean the bearings are defective, or that there's been



lack of lube, excessive heat or improper adjustments—the roller change appears and disappears during operation and is caused by electrolytic action. If you find the balls (and rollers) OK, except for discoloration, go ahead and reassemble 'em.

Of course these bearings, like all other bearings, have to be kept lubricated—OK . . . as always . . .

Half-Max

## TOO POWERFUL

Dear Half-Max,

Is there any danger in using a 14-cell accessory on a 24-cell vehicle by unhooking it to only one of the batteries?

Op'd. R. T.



Dear Cpl L. M. T.,

Fig. . . . there is, Putting a 12-watt accessory on one battery creates an unbalanced load on the batteries which in turn causes the batteries to discharge unevenly. You can't keep both batteries at the same state of charge. How quickly the trouble shows up depends on how much juice the accessory draws (degrees of unbalance).

The problem is basically solved. If you must use a 12-watt accessory, install a dropping resistor in series with the accessory. It'll work much better.



#### ASP SWITCH SWITCH

Dear Wally-Mark,

As far as I know, the MM is the only vehicle on which the ignition switch OFF position is set diagonally and ON is set vertically. In all other cases, OFF is in the vertical position. In it's no surprise that even though the words ON and OFF are printed on the ignition plate, like MM's (and C740/M7) find it, I've sometimes forgotten and left my '38 parked with the ignition on. And when that happened, it didn't take long for the batteries to run down.

The nice thing is that with a little filing, these vehicles could be made to work like the others. All you have to do is take off the switch lever, knock-out and ream-out and bore the ignition plate so that OFF is at the top. Then after joining a pencil in the stud hole to make a mark on the dash, take off the plate and drill a 1/4" hole at the pencil mark. Finally, take the end out of the old hole

and put it in the new one. Place just the plates together again and OFF on the ignition plate is 12 o'clock (Fig. 1).

WOPG T. E. C.



Fig. 1 All you've gotta do now is ream-out the OFF switch position to 12 o'clock.

Dear WOPG T. E. C.,

This takes a little considering, Mr. C. It's sure a good idea, and if all the MM's had been fixed that way in the beginning, things would be just fine. But . . . this is a few years later. How about the guy who's already in the habit of driving the MM and using the diagonal position for OFF, eh? You're putting him in the same boat you want to begin with—dead batteries either way.

Oh course, since you know which rod is up now, it's clear, for you see you're the only guy who's gonna drive that MM!



# SUPPLY & DIRECTIVES

## FLASH-

### NEW SPECIFICATION AND ADJUSTMENT TO

It's here—Til-Clad out (July 82), which is the latest yardstick of adjustments and service specifications of the, dimensions, and wear limits on 1/4, 3/4, 2 1/2, and tank vehicles. It shows the work and is separate your vehicle Tilt's no item like these:

Axles	Fuel Belt
Brakes	Fuel System
Clutch	Governor
Cooling System	Steering Gear
Electrical System	Tires
Engines	Turbo

Transmission

### 1982 PUBLICATION STORY

Here's the low-down on directives for the new M42 wrecker. The P-821 has been classified and covers the wrecker chassis. For higher reliability maintenance on your vehicle, there's TM 5-689-5 which will be available about 1 Dec 1982.

The second edition of Oct 7 and 8 25L G74 contains the M42 wrecker data and is now in the field. The revision of Oct 8 25L G74 with its wrecker data will be available about 1 Dec 1982.

And for an all-time picture of the operations of the crane, and its controls, there's the item in P5-P15, page 114, designed to give you a total run-down on its features.



### CHECK THAT DOUBLE-TALK

Dear Editor,

Here in Japan we had been using one worthy maintenance check list, one printed in English and one in Japanese. Not only did it require a lot of the Japanese's time, but also made for bulky manual jackets. So we printed a form on which we use both languages. The form to be checked is listed in English with its Japanese equivalent next to it. This way

we've increased a lot of language efficiency.

Cpl Reed Gerald  
Japan

[Pvt Mike—Good idea, Corporal. Take heed, receive your personnel in order (in, eh, check.)]





## WHICH FORDING KIT?

To make sure you'll get what you need when you require a deep-water fording kit, check your vehicle's model number. Some, for economy's sake, may require needed variety for deep-water fording are no longer going on vehicles in pro-

duction—looking less for their trucks are bigger and bigger.

What you'll see and what you'll see a lot varies with the different vehicles, so you need a briefing. The chart below will help. It lists the vehicle model number breakdowns where additional fording items were added, and the model number for the kit you'll need.

### DEEP-WATER FORDING KIT GUIDE

MODEL	VEHICLE MODEL NUMBER (YEAR RANGE)	Before & Including MODEL NUMBER	ADDITIONAL MODEL NUMBER
1/4-ton cut 400	4000	0100-0701700	0100-0701700
1/2-ton cut 400A1	2000	0000-0701700	0100-0701700
3/4-ton cut 400	3000000	0000-0701700	0100-0701700
2 1/2-ton cut 400 (Red)	Red 10000	0000-0701710	0100-0701710
2 1/2-ton cut 400 (Black/White)	4000	0000-0701710	0100-0701710
2 1/2-ton cut 410	4000	0000-0701720	0100-0701720
2-ton cut 441	400 441 0104	0000-0701710	0100-0701710
2-ton cut 441 International Powerstar	400 441 0401	0000-0701720	0100-0701720
2-ton cut 441 (Model Demand 1)	4000	0000-0701700	0100-0701700
2-ton cut 442	Demand 1 441 0000	0000-0701720	0000-0701700
2-ton cut 444	400 444 0000 Demand 1 444 0000	0000-0701720	0000-0701700
2-ton cut 444 International Powerstar	400 444 0000	0000-0701720	0000-0701700
2-ton cut 444 (Demand 1)	4000	0000-0701700	0000-0701700
2-ton cut 444	400 444 0000 Demand 1 444 0000	0000-0701720	0000-0701700

## ARMAMENT & AMMUNITION

All About Air-Air



"Home, Home on the Range"

### *Do your charge home?*

The latest anti-aircraft gunners are singing since they found a way to load the M1A propelling charge home with the automatic ejection.

The ejection/injection method is when such the ejection plug on the charge was dropped in front of Palmarco. Palmarco forces such better than the old cock, which used to blow rounds back on the gunner's face.

But it seems that the Palmarco plug make such a right fit in the chamber that they compress the air between the charge and the propellant ahead of it. The compressed air won't let the charge go all the way forward.

With the charge dragging its feet, the breech block won't close. Real trouble is at hand, especially if your target is already down while you're still here.

Load off trouble this way:

Before loading, cut four or five grooves about 1/4" wide and 1/4" deep from front to rear of the Palmarco ejection plug (see figure below). This will let the air

in front of the charge come out, and the charge will go all the way home.

A bullet will do the trick. Or you can use a trench knife or bayonet. Of course, you have to be careful not to drop on the cartridge case. Another thing—you lay the charge sideways so the primer won't get braced against something that'll set it off while you cut the groove.

With a big firing mission at hand, you'll want to be up plenty of charges so you won't need to load too while grooves are being cut.

Incidentally, new charges (M1A) are being manufactured with a ejection plug that snaps away from case to case. If you have any trouble with these new plugs, tell the officer in charge right away. He can pass the word along to Ordnance.

### *Check that Mycroscopus amens*

and—mean't nose, look sharp.

Wood has given you something out of Mycroscopus amens (used as "Cartridge, M1, Camp B, T&E), without face, for "You've got THIS P.L.A."

So, before you start ripping up the skin, take a look-out at the markings on the packing. The "Camp B" is your signal to hold off until you get some other kind of ammo.



## Oil around

"Run for your lives—the dam's busted!" is some such expression is coming from one field installation after another these days. The report is that some given person (O'Brien A.A. gas-grows here) gave somebody in a big way—broke the master swimmer' is all up to their glasses, and beyond.

Some of how this particular burst



of volume gas may when he gets around the transmission and wavy-ends of the direction and crowding hydraulic-control mechanisms. The book says, "Oil," is all it is, he says. "More and beyond the call of duty" is the words of the communication, but that is not what these birds will go.

Maybe these young fellows haven't heard about too much of a good thing. Anyway, they heard that when a drop of oil (oil) from the level being, when the cap is removed, should level however.

As what do they do?

Fill her up! Lead it to the girl! Pour on the oil and then forget about it for awhile. That way, all they have to do

is march around, check the tank dips and report:

"All dips present and accounted for."

That includes them.

Now, Harlan look! Such nonsense is pure monkey-business, particularly when the overflow is enough to fill a creek. All you have to do, in most instances, is add a very small amount of oil.

It may be necessary, at times, to add a little—check—and then add a little more—until the dip checks.

## Water in the cables

One man way his job is gone up his 120 altitude is when he runs on the main chamber or pressure water hose. When he runs on such drastic methods of cleaning, Joe manages to find the water in a real way. One trouble spot is in the covered cables on the two inner-locks and the cables in the chamber on the four-way and runner.

Steam chambers or high-pressure water hoses have water right through the shooting on those cables. It isn't long, then, before rust or the weather breaks the cable tight. If you want the details on the air—or air-air—of water, steam and air under pressure for cleaning, see TR-G-47.



## MACHINE GUN



NOVEMBER MACHINE GUN BARBERS  
HOW CAN YOU SHOOT DIFFERENT LATELY



If you're firing .30 and .38 cal. machine guns over obstructions in calibration or battle courses, better do some check-firing first and observe mouth burns, cracks, and target dispersion. In other words don't do these things! ❊ ❊ ❊ ❊ ❊ ❊

Another thing to remember is that it's considered unsafe to use gun barrels worn beyond a throat-bore diameter of 0.004-inch. Also you can use your mouth the barrel should be carefully inspected for breach hole cracks by Gunsmith people who're authorized to use a throat-bore gage. If the bore is in excess of 0.004-inch, replace it. At the same time make a careful check of the magazine, slinging locks, and crowing locks. Your trigger stock—and the other valuable parts—depend on it.

### WINTERIZE YOUR SHOOTER WHEN YOU WANT NEEDS YOUR SCOOPER

When you hear 'em shooting winter rain, don't put it off as something for the week after. The machine gunner's

is on the party, too. Antifreeze in Gas Oil or 50 cal. water-cooled machine gun means the difference between 'shoots' and 'shoots' or 'shoots' and 'shoots'.

A mixture of 50% antifreeze (ethylene glycol type) and 50% water will keep 'em from freezing, even if the weather hits 50° below. Mix the solution in a separate container and check it with a hydrometer for the proper strength. When you've got the right gravity reading, pour it into the water jacket of the gun and the water done. Check it occasionally with the hydrometer and maintain the proper mixture.

If you haven't got the hydrometer (with the bulb and the glass float) just mix three parts of antifreeze to two parts of water—all the same difference.

### OLD TRICK—NEW NUMBER

If you've been having trouble with numbers when you tried to get a head space and timing gage assembly for the M cal. 303, maybe this will help some.

The new book Number is 303-333-117. This is for the same assembly formerly 303-333-117, called for in FM 15-55. Change 3 and Change 4 (Nov. 1958 and June 1955).

How's your head space?





In addition to information given in PG 211 concerning gas tubes whose serial number (not plate mark) is 7054 or above the following is furnished for more identification.

Tubes to be condemned in addition to DANGER (see TB Ord 244, 25 Feb 47) also 1866 marks are those with plate marks containing this series of numbers—705475. Watch for that last "75."

When you don't know how many rounds have been fired and the gas tank is missing, these tubes will be judged—best guess.

Read every figure on this tube. All new tubes have plate mark 7050000 and

can be fired beyond the 1866 round mark for the older tubes. The "7" makes the difference. No condemning limit has been set for tubes with plate marks ending "75." When the word comes, you'll get it right away. Until then, Ordnance can use a pull-over gage to tell if the tube can still be used.

#### MARK IT FOR GOOD

You can check all the usual jelling and heating you go through to snug your work gun in the travel lock. Like this:

With your gun in the lock, pick out a tooth in the travel ring close by the travel covering lock. Place the ridge of the tooth. Then, point a line directly above the tooth in the travel-bearing lower case.

Later, when you want to remove the gun in the travel lock all you have to do is line up the new marks and drop her in. Be careful to bring the gun to the travel lock and lay her in with manual controls.

#### SHOOTING IRON TROUBLE

Even having trouble with your shooter? Even lately?

Does your #1 ball go back only part way or not at all when you fly a round?

Course, you'll think it could be a stopped-up gas port or a little tooth or something in the works. But your rifle is as clean as a whistle. What now?

Super-chiefs of the 88 rifle department, Maggie Devere, searched their many files up the rock-bound coast of California for the answer. The old M's have been giving the ball department without a break since she found it.

The barrel-bearing was worn down and its gas lock was that rough on gas from

the cylinder to kick the piston back. That gives weak, sluggish operation, or else the lock doesn't retract far enough to complete the suction and rebound cycle.

To cure such old-time weapons, send 'em back to Ordnance. They can measure the barrel-bearing with a gage to see if it is worn down too much.

This gage business may mean the difference between bringing your snafu back alive or having it to adorn some foreign hill. If that rifle won't fire when the chips are down, you're dead.

So, get her in for a going over. To measure may be sure they say her.

## FIRE CONTROL



The 1966 Aqueduct Automatic Drive  
Just feel needs it more in hot  
weather than it does in cold.



## ALL WEATHER ANTI-FREEZE

Can you imagine anti-freeze being more necessary in warm weather than in cold? Well, the anti-freeze that goes in the 1966 Aqueduct Automatic Drive is one that can't.

To keep that sort of the automatic drive in the best of shape and gear trains worth brag, a liquid that that works in both hot and cold climates is the answer. And since water evaporates quickly in warm weather and freezes in cold, and oil thins in cold and has a tendency to creep when it's fluid, spreading the dirt with it, they're out.

Your best bet is anti-freeze, and with more dirt in the air in warm weather, there's more need for the anti-rusted and.

Now that you can forget your anti-freeze in cold weather, in the next corner from the factory, the clean anti-freeze will run solid at above 2° F. But when you use a combination of 60 parts of ethylene glycol and 40 parts of water by volume, it'll stay fluid at -60° F. So be sure—if you expect temperatures to go

below +32° F., drain the coolant and use the 60/40 combination.

So, check the anti-freeze's level after each wash cycle or replacement and in case semi-annually otherwise. Use an Ethylene Glycol anti-freeze (Stock No. 140-000-00) and check the level by attaching one end of a hose assembly (Stock No. 004-000-00) to a filling cap (Stock No. 100-701111), and the other to the petcock near the upper rim of the automatic drive unit. Then open the petcock and raise the coolant level to the staff line. When it starts to seep through the weep-hole just above the petcock, close it—you've reached the right level for a good hot road.

## NEW DRINK FOR BROADCASTERS

Your broadcaster are getting that "new look."

When you wash them and the carrying cases in the rebuild you're going to get them back in a new silver-drink dress.

In case they'll all be replaced in silver-drink but, and that happens, you'll get both black and 60-bleachable and black, too, or 60 carrying cases. Don't worry about the giga.

# ENGINEERS



**FIX IT AGAIN**

## FOR THE HOBART GENERATOR

**MM** If you haven't done it yet—waste no time.

The Hobart 30-amp, 480-cycle generator, model HF30G, used with M33 fire control systems, needs a little fix and. The trouble has to do with the terminal board on the instrument panel's rear and is too close to the rear control-panel cover. With this situation, the generator's vibrations wear away the heat insulation and you get an arc between the cover and the gas tank. And that's no good. It can explode the generator and slap you down.

Marion Engineer Depot, Marion, Ohio is giving away free (order it for your regular Engineer shop bill) a fix consisting of an insulating board and ground cables.

The thing's easily installed once you've removed the cruffer, top and side-cowlings, gas tank, four screws holding the rear metal panel, and the six standoffs between the main insulator and rear metal panel.

Then you take the insulation from the lid and put it against the rear metal panel and connect the lid's copper bonding from the rear panel to the side for grounding (Fig. 1). With that done you've emptied the lid and can put the whole thing together again.

With this set-up you're safe—if you don't spill gasoline all over the place when you're filling the tank.



Fig. 1—Pack up your trouble in a 10000 generator's fire generator lid . . . and solve it.



## PUT 'ER THERE, PAL!

The Indians sold it with smoke signals—

You can buy it with these easy-to-learn wig-wags.

Give 'em a hand for sales, specific operations.



**UNDER THE SCALE**



**OVER THE SCALE**



**SCALE THE BOOKS  
AND SHOW THE LEAD**



**WIG**



**SCALE THE LEAD  
LEFTY**



**SCALE THE LEAD  
RIGHTY**



**SCALE THE BOOKS**



**SCALE THE BOOKS**



**SCALE THE BOOKS**



**SCALE SCALE IN  
SCALE THIS SCALE  
SCALE**



**SCALE THE BOOKS  
SCALEY**



**SCALE THE BOOKS  
SCALEY**





UPPER THE BOOM  
AND RAISE THE LOAD



SLIDE THE BOOM  
AND LOWER THE LOAD



THUMB IN DIRECTION  
TOWARD WAY  
WANTED



CHANGE DIRECTION  
BY PULLING



PULL UP ON  
CABLE ROPE



PULL DOWN  
ON CABLE ROPE



## PS ADDS A CASTLE

(Figuratively speaking...)

In this case, it's the castle of the Corps of Engineers. Effective with this issue, *PS Magazine* will regularly include information of general interest concerning items of Engineer equipment, from pits to power plants.

*PS* is mighty happy to welcome every member of the Corps of Engineers to its family reading circle, and ventures to hope that you guys won't be bashful about writing in your questions, problems,



and what-have-you. If your bridges bend, or even if your head aches, gosh, write. Like always, *PS* will do its level best to give you the latest information available, even if it's only the formula for aspirin.

## UNDER-COVER GENERATOR

Dirt, gasoline, metal chips from chiseling, and other gunk will get your Hobart Generator's exciter-generator if you don't watch out. With the louvers pointed upward and left in open space at the securing screws (Fig. 1), the louvered brush-cover around the exciter-generator housing holds an open invitation for these evil-doers. And once they get going you have more trouble than as well as danger from shorts and fires.

But here's the gimcrack to save the day—turn the brush-cover around so that the louvers face downward (Fig. 2), and then place a metal cap (Fig. 3) over the securing screws. A home-made cap from a piece of 18-gauge stock will do it. The part can be installed easily by first retreating the screws, then sliding the cap over the opening, and finally retreating the screws through the louvered brush-cover and cap for a nice hold.



Fig. 1—With louvers pointed up and no open space at the securing screws, dirt'll get in.



Fig. 2—For a good cover stop, here's how to cap it with the shield's screws as top.

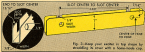


Fig. 3—Cap just needed to top screw by installing in screw with a home-made cap.

# CONTRIBUTIONS



## FIBRING FIBROUS BRAKES

Dear Editor,

After feeling a shallow rumble the other day, I stopped my GMC 275 van (old truck about 10 minutes or so old). When I was ready to leave, I found that my right intermediate wheel was stuck while all the others moved. Water had splashed onto the brake lining and the cold weather had frozen the lining to the drum.

Rather than call my mechanic for the routine I fixed the wheel myself. I did this by directing all the power to the rock wheel. I blocked all the other rear wheels, put the truck in low gear, low range and let up on the clutch. The wheel freed itself right away.

For Walter Gumbert  
Brew

*(Ed Note: The author and simplest way to solve the brake-freezing problem is to do some extra braking prior to your truck get out of the water. That'll dry 'em off before they freeze. You do the same thing when driving on slushy*

*roads in freezing weather. Using the power to break down frozen brakes will heat up the gears and slush; it'll really leave you out in the cold.)*

## WINDY BRAKE

Dear Editor,

A recent issue of PE recommended the wind cable on the MFI be removed on the drum, allowing the cable to pivot under the drum and rollers, to prevent roller support breakage. It's a good idea but you forget to make a change on the automatic brake to go with it.

When removing the cable, it becomes necessary to use reverse gear to which is, thereby losing the benefit of the automatic brake. The safety brake is not only made inoperative but when using reverse gear, the power is working against the automatic brake causing terrific friction and early lining replacement. We increased the conditions in the following manner:

1. Remove cover from automatic brake.

1. Remove small plug from steering opposite brake adjustment.
2. Remove anchor bolt, spring, and brake band.
3. Flip the band over and then reassemble by inserting the anchor bolt thru the plug hole.

WYOM D. B. Cavanaugh  
APD 184, New York

### POWER-TAKEOFF LOCK

Dear Editor,

Of late there's been considerable damage to winders, PTO's, and transfer case assemblies on the GMC 150-ton 80114. Whether by accident or otherwise, the lever in the sub-assembly engaged while the vehicle is moving.

To make sure our power-takeoff control lever stay in neutral we picked up some 1 1/2" x 2 1/2" hinges and cut a slot

in one side of the hinge 1 1/2" wide and 1" deep (Fig. 1). This slot fits the hinge flap over the control lever and holds it in place. We bent up one corner of the hinge for a finger grip. Next, we drilled two 1/4" holes in the power-takeoff lock-plate in the cab. We then attached the hinge to the lock-plate (Fig. 2) with two 1/4" x 1 1/2" bolts, using lock washers to hold them tight. When we installed the hinges we placed the hinge pin so it wouldn't interfere with the control lever when shifting.

J. P. Barber, DCT  
St. Hilap, Kansas

(Ed Note—Good idea, but the experts know of the problem and will take care of it soon. Your job should take care of the emergency until the real thing comes along.)



Fig. 1—Take a hinge out and drilled the slot to keep that PTO lever in its place.



Fig. 2—Locking the PTO lever with hinge plate pin is what when you want to shift.

Lighten your work with



Dear Editor,

During recent Field Exercises I needed a light for working in or around my maintenance truck at night. I solved this problem by taking a lightened extension, which is a part of the Organizational Instruction for Number 1, modifying the plug and replacing the brass balls with a 24-volt bulb. By plugging the light into the slave cable connector on the vehicle, I had ample light for any type of work I had to do.

It will work on any 24-volt system that has a cable connection. It is useful for repairing other vehicles, or by running the cable between the tarpaulin and across the horse, to provide a good light for working inside the cargo-body.

**SFC Lloyd McFar**  
APO 44, New York

*(Ed Note: Sounds like a darn good idea. It's a trick you won't get any one out of a brass extension used in a 24-volt outfit. Anyone with the later 24-volt vehicles which have an slave cable*

*connector can use a couple of battery clips on the end of the cable.)*

Dear Editor,

Speaking of available lights, and cargo handling lights, we always were our Troop Room headlight when our old power house ran. By attaching a hook to the lamp and putting on some lead wire, with battery clips on the ends, we had a steady available light. When we had a lot of horses to unload from our trucks, we rigged an old headlamp as a trailer light plug and hooked it into the trailer socket on the truck. We hung it inside the horse, and it worked fine.

**1st Frank Archer, Jr.**  
Japan

*(Ed Note: That's another good idea. Just be a little reasonable and don't run the light loop from a parked truck. If you must use your light all night, run another to keep batteries charged.)*





### *Fuel filters*

How often do fuel filters get clogged ranging from the filter itself to the 2-foot fuel lines that they should be changed every 3 months or every 3000 miles, whichever comes first. This applies to the three major kinds of fuel filters—those in the fuel tank, those on the line wall and those mounted on the frame. For details, check up a copy of TS-GM-447 (2 Feb 52).

### *Hot wires to here*

In the new ignition-cable for replacement in your 4-cylinder wiring harness is available. "Cable, Ign., High Tension, 18000-004 2507" is your hooky. Comes in bulk for replacement in the shielded harness. How you can return the phone wire, have strands and sheathings and build this cable.

### *Power plant heater kits*

Any of you who are working Dodges in cold climates will want to take a quick look at your Power Plant Heater Kit, Q248-4751275 (Perfection Stove Co.) before you put 'em back on. Seems there

has been some trouble from water getting into the flame switch and shorting it. Best way to fix this situation is to interchange #2 and #3 of the terminal box. New kits will come furnished right.

### *Call off your dogs*

That dog sure put the wobble on the wrong beam in that little M100 "Holes in the Bumper" item in TS #112. Seems he told you shackle-on on "H" beam, or the old doggie couldn't have dreamed his that any further in his mouth . . . well, been the way. Anyhow, he leaves his jaws open and connects with the idea they're "O" beam over's shackle'. So check it over before you reposition.

### *M100 storage boxes*

Go easy with those storage boxes that're on the old 30, 5-ton trailer. If you pile heavy equipment on the lid or forget to take the hinges, you're going to have a box that's not worth a feline's den. Then, you'll be looking around for something else to park your stuff in. Why? 'Cause you can't get a replacement. They're on the way out.



# LIGHTEN YOUR SUPPLY ROOM LOAD!

**It's just in keeping what  
you don't need...**

**GET RID OF IT...  
LIKE THIS**

Pass the word via letter three channels to higher headquarters recommending that you write down equipment and parts that are not needed. Your authority to do it is Department of Army Circular 53 (May 53).

Be sure you keep only the right parts and not too many of those, avoid excess spare shipments that can be repaired or reused and do not exceed TVOM and MIA allowances.

Building shelves of unused equipment and parts just costs extra work. Get those parts to where they can be used while they're new.



**CHANNELS**

**IF IT'S NOT USED...IT'S NOT NEEDED**