

Issue 103

**PS**

1941 Series

**THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY**



# Your Pen

When it comes to picking up Army equipment that's not up to par:



It just doesn't fit...



It won't work right...



It's showing signs of wear, cracks, rust...



It's not doing the things it's supposed to do...



Or, it won't stand up under its intended use...

## IS MIGHTIER THAN YOUR WRENCH



your Army equipment. The way you and we will get modifications made, equipment replaced, so it's floppy modifications—get the maker back on the straight-and-narrow.

You speak straight as the design boys. Your SER goes down to the technical center—the standards for the SER you need in your AF 700-28. See it for all the right addresses. On Army strength you use GO from 1978 like AF 700-11 says. Electronics equipment has special code in AF 700-28, and you get the word as guided missiles in AF 700-27.

Some major commands require that a copy of your SER be forwarded up the line for information, but that has no effect on the way you shop in the U.S. modification test service. Expedient!

So, pull out your trusty ballpoint and write—under better or OADR if necessary. Did that SER fit on your equipment that's not SER-gee?

FOR MORE GET INFORMATION GO TO PAGE 14, NUMBER 10 FROM 1984

# PS PREVENTIVE MAINTENANCE MONTHLY

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**YOUR DIESEL MAY SWALLOW WHOLE IN**



It's the story of the rhytm and the lilms of ever again—this one about keeping dirt and water out of diesel fuel.

Old Jaws'll go south, every time if a mouse sneaks up his trunk. And the diesel'll go to pieces for the wall—if the tiniest amounts of dirt and moisture sneak into its fuel system.

Here's why: The diesel's fuel injection system is so sensitive to the tiniest of mice upon mice, its fuel pump and fuel injection valves so much have gears that're machined so fine you couldn't follow it.



When dirt or grit gets into the fuel and then into the fuel injection system it grinds away on these sensitive surfaces . . . and pretty soon the engine starts coughing and knocking and losing power and giving off heavy black smoke.

Water in the fuel sneaks up these sensitive gears and leaves the diesel clean as a whopper as it'll be with dirt in its pumps and valves.

Now it's true most diesel fuel injection systems are made so they'll hold dirt and water before they get into pumps and valves—but that'll depend on how the place to begin protecting your fuel is in the storage drum because you don't have protected storage pumps before it even gets to the diesel.

#### HERE'S HOW:

1. Stop the rough stuff. Don't buy diesel at other construction yards—use one store. And don't fill too near rocks and stuff. If you have to fill in the drum you're losing a pack of teeth.



2. Keep 'em up. Put your drums on racks that're higher in fuel level. So that the milk-back gets the rough stuff out the still can settle at least 24 hours before you use it. And always drain off the sediment and water before settling.

2. **Keep valves long.** Before you open them, wrap 'em with dry brush or air stream. Don't use rags—they're too hard to keep clean, and they don't get softened. After you clean 'em, screw the caps on tight.



3. **Always keep your fuel tanks as full as possible** to cut down on condensation in the tanks.



When your engine starts knocking, coughing, sputtering and belching smoke, you know it's sick. The doc's for less a heavy dose of kerosene and see what's wrong. Instead, check out the fuel injection system first. Most times that's not the cause of the trouble's contaminated fuel.



4. Is a good kerosene. Poly, wax, kerosene, kerosene, kerosene, etc., all have to be in clean when you can keep 'em to prevent contamination of fuel filter before and after use... every time. Some old cans that've been used for other liquids have to be thoroughly cleaned before you use them for diesel oil. Make sure the container's not labeled right.



Here's some steps you can follow to track down the trouble:

Flush the traps and drains. You'll find either a sediment bowl or trap trap under the fuel tank. This ought to be drained daily before the engine's started. At any rate, be sure you do it when the engine's been stopped for some time... or the sediment's had a chance to settle.

Drain the trap or bowl till the fuel runs clear. Then close the trap or bowl and turn over the main engine with the starting engine (if you've got one) and open the filter drain. If you stick your hand under the drain and let the fuel drip on it, you'll soon see if it's clean or not.



Of course, if dirt and water get by the wildest filter or trap or trap, they can be eliminated further along in the fuel system by straining the filter, and replacing them, if need be. Water rots the filter and makes 'em soggy. And dirt fouls the flow of fuel.



But, if your engine poops out suddenly, chances are you've had to where water in the fuel is concerned. This indicates that the trap and filter haven't been drained regularly... that they filled up and water got into the fuel injection valves and pumps.

Should all you can do in a case like this is to drain the entire fuel system... from the tank to the engine, including the fuel lines, to get rid of the water.

This water is especially dangerous in very cold weather, since it may freeze in the fuel injection pumps and valves and block 'em up. Keweh! Goodbye fuel system!

IF YOU'RE HAVING SOME SERIOUS DIFFICULTY, THERE'S HELP FOR YOU ON THE NEXT...

# SCORPION SCOOP

IT'S TIME TO GET THE SCORPION SCOOP OUT OF THE WAY. YOU'VE GOT TO GET IT OUT OF THE WAY FIRST.



Start about 1000' (300m) SW of Scorpion base. There is also a field for a while east of the kitchen base, noted on page 10. Here's the base:

## TRACK REMOVAL

1. Drive on two gears till an level ground and the track upper plate are between the drive sprocket and the front road wheel.



DRIVE FROM ONE GEAR TO THE OTHER TO GET TRACKS TO STOP.

BACK FROM THE SCORPION SCOOP.

2. Put on your parking brake and block the track, system not working on.



1. Put a piece of wood—about 1/2 inch thick and 1/2 inches square between the sprocket retaining bolt and ball.

# SCORPION SCOOP

2. Leave the sprocket retaining bolt until the ball head is supported the block and the locking bolt until the sprocket and lock ring have separated about 1/2 inch.

3. Remove track by moving the sprocket adjusting screw shaft. Turn counter-clockwise until you get enough slack in the track.



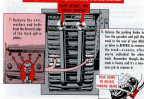
BACK OF THE SPROCKET TO THE TRACK.



DRIVE FROM ONE GEAR TO THE OTHER TO GET TRACKS TO STOP.

BACK FROM THE SCORPION SCOOP.

2. Set up the wood between the track and before until there's no compression on the track upper plates. If you've got a parking wedge for this job, use that just until you set it up, optional, directly in the center of the track.



TRACK SYSTEM, THE SCORPION SCOOP.

2. Remove the sprocket retaining bolt and the ball head from the forward side of the track upper plate.

3. Release the parking brake to free the sprocket and pull the track to the rear of your sled or sled to the front to remove the track. Remember though the track is heavy and it's a two-man job to remove it.

PUT DOWN THE WOODS BETWEEN TRACKS TO STOP.



## BACK IN PLACE



1. Roll the track on the ground with the wheel side up—the arrows on the blade should be pointing forward. Push or tow the M5A on the track until the front road wheel is about 10 inches from the end of the track.



2. Roll the rear end of the track up and over the idler wheel, road wheels and drive sprocket.



3. Install the two track links and pull track ends together. Push both the bolts, washers and nuts through track spur plates and tighten 'em down.

## ADJUSTING TENSION

1. Drive your M5A a short distance. Release the track tension by setting the vehicle coast to a stop on level ground without applying your brakes.



3. Set your right track tension. Tighten front the lock-in nut block between the sprockets retaining bolt and ball.



Keep in mind—the idler sprockets and the lock ring assembly suspended to get your adjustment. Otherwise, you won't be able to turn the idler sprocket adjusting screw.

Then by turning the idler sprocket screw clock to a clockwise motion...



...until the track sag—measured from between the bottom of the strapledge and top of lowest point of the track—measures between 1 1/2 to 2 1/2 inches. But only that, make sure the sag measures the same on both sides.



4. Tighten the sprockets retaining bolt, making sure the locking teeth of the idler sprocket are lined up to engage the teeth on the locking ring.



5. Tighten, drive the vehicle a short way and check the track tension; make sure you're close to the end of the line.







After you get "repositioned," both these two points will tend to move toward each other and the top and bottom of the blade even out the blade position.

From now on hit these two points at the millage and close periods or after "Operation Under Unusual Conditions," come up for the other ground things, like it says in Item 5 of the LO.

### IDLER GUIDE CUT-UPS

There's one other spot in the same area that might be giving you a hard time—the idler track guide.

If your D7G has been in the field for any length of time and been bounced all over the place ... the steering track idler guide probably has been dented or bent.

Two dimes or further in-trough wear is weak that 1/4 in. metal wears up through the track adjusting screw ball's screw hole for adjusting the track.



As long as you've got the guide getting do that idler job ... idler track can if the idler guide ball's screw hole is out of line with the adjusting bolt. If it is—cut the hole a little bigger so your screw'll be able to slip through later, you might check the guide to break a track —and well say you led.

CUT ONE ABOUT THE INCH

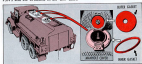
WELL SAY

## ELUSIVE GASKETS



Some operators of the 4700 series, M35 & M35C, 1200-gallon, gasoline tankers have been 'sabin' from us get and install the gaskets used on the (T-Type, late type) manifold covers... the ones with a ring assembly on top.

First of all, they can't be found in the JEP's for the vehicle, but they do have POC's and are available to all -200' users.



The tanker, here, comes with (18) POC-20-4700. This is the large gasket used on the manifold cover and held tight by the ring assembly. Gasket, size, (18) POC-20-4700 fit under the filler area.

Keep your eye on the gaskets, 'cause something can happen to 'em, especially the inner one. It can dry up and shrink enough from the ring position. A bit of jiggling and bumping and it gets separated. This is just enough that with a hard rain hitting the top deck, water can easily slip through the bad gasket and down into the tanks. (inside)

If you find your filler cover is loose on the gasket... shift one of the slits from the vent valve assembly to the top of the filler cover. If it takes several times go right ahead and switch 'em.

When the inner gasket has been on for a long time, it might be better to check it when tightening the ring. This way issues be revealed and kept in shape.

When putting on the new gasket (above) or if the old one has to be re-used, make sure the outer edge (all the way 'round) meets with the outer edge of the manifold cover. And before putting the ring on, smear some G.L.L. inside the "Y" ring. This way the ring won't shift to one side when driven up, set or curl the gasket. Tap the ring with a hammer (see hand) so it won't hang up any place.

If the ring hangs up, that's just the spot where the gasket'll leak.

Along with making sure your gaskets are laid-out straight, but important, form of removing the run from top-dish drain plugs when the motor is started around idle.

They're taken out to keep water from a real heavy rain from going over the cover top and down down the breather vent.

Now when the motor goes out on another haul, the plugs get put back in again. Can't afford to have the gas spillage running on down in the exhaust area.

Keepin' the water outta them get under it your job to check the gaskets, make sure of the plugs, and if necessary reposition the chains.



## WATCH THE PSI



Dear Half-Mast,

All our wheelbar vehicles have pressurized rollers. Now, looking at the T.W.'s, I find that the caps operate at different pressures.

How can I tell if I've got the right cap with the right PSI? And what happens if I get one with a PSI rating one high or one low?

Ed R.K.E.

Dear Specialist R.K.E.,

There're two or three ways to make sure you've got the right cap.

One just won't fit on the wrong vehicle. But some can be switched, and, directly, from one vehicle to another. Caps for the 1-ton and 1½-ton (1574 and 1700-series) models, Primaries, are the same, so it's OK to interchange 'em.

But caps for the 5 and 10 tonners can be arbitrarily switched on the 1744-series 2½-tonners . . . or the other way around. That's where your engine may start to leak, or your rollers spring a leak, 'cause these caps operate at different pressures.

So . . . watch the PSI on these. It's stamped right on the caps . . . & PSI for

the 5 and 10 corners, 655 to 8 PSI for the GT40 down-and-a-half's.

What'll happen if you get the caps mixed? That's playing a guessing game but here are some clues.

Each cooling system is made so your engine will operate at the temperature that's expected to give you the best performance. And the PSI rating of the cap determines the temperature at which the coolant will boil.

So, if you install a cap with a lower

PSI rating than the radiator is supposed to get, the coolant will boil at a lower temperature—raising the level of coolant which, if not corrected, will result in overheating. You're likely to boil over when climbing hills.

If you give it a cap with a rating too high, it won't boil so easy, but you'll be putting more pressure on the cooling system than it was designed for. This may cause leaks in many places, including the radiator itself.

## HERE'RE THE CAPS YOU NEED FOR YOUR TACTICAL WHEELED VEHICLES.



GT40 and GT40-series 7½-inch top radiator. Also, the 10-inch top. 47½ to 47½ PSI. P/N 704-70-4228. They're marked like this on their tops.



GT40-series GT40-top Cap, radiator. Also, P/N 704-70-4228. (This package 47½ to 70 PSI pressure relief valve in the cooling system itself.)



GT40-series 7½-inch top radiator, 10-inch. 67½ to 67½ PSI. P/N 704-70-4228. These are installed and they're marked like this on their tops.



GT40-series GT40-top Cap, Also, a 10-inch top. 67½ to 67½ PSI. P/N 704-70-4228 with radiator, that one's P/N 704-70-4228.



GT40 10-inch and GT40 10-inch Cap, radiator. Also, w/drain, cap pressure top. 67½ PSI. P/N 704-70-4228.

NOTE: ALL THIS CAPS ARE 3/4" DIA. ALL THE OTHERS ARE 1" DIA.

*Haystack*

# READING THE "RAINBOW" GAGE



Read it right and that rainbow-colored battery-charge indicator on most of your modern wheeled vehicles can tell you a story that may keep you from getting stalled somewhere on a dark, cold night.

These rainbows (also indicators)

give you more info than the ammeters they've replaced. ... which tell you the charging rate of the generator. Here're some things the needle and the red-yellow-green colors on the indicator can tell you. (This is for the frangible bulb case with three color zones only.)

## SAFETY IS NOT A JOKE! ALWAYS USE PROPER OIL, ENGINE OIL GRADES!



## BEFORE YOU STARTING, BE SURE TO USE PROPER OIL!





3. Throughout towing at maximum clamping speed long enough to charge the battery, contact should stay in the green (last of the white slot) with all electrical accessories ON. If it doesn't, voltage regulator is set wrong or battery is low.

4. Reading low means voltage regulator is incorrectly adjusted or defective.

If you suspect the generator (or alternator with the 100-amp system) is defective, check it out with the Low Voltage Circuit Tester, P/N 5629-000-0136, and Adapter Box, P/N 4100-104-1111 or P/N 4018-148-7000. You'll find instructions with this tester.

## YOUR RECEPTACLES DIFFER?

DON'T GET PLUGGED BY THE WIRE HARPER



No need to pinch it in when you discover that the electrical hookup receptacle on your trailer and the receptacle on your prime mover don't match. All you gotta do is get the right adapter assembly. The right assembly, naturally, depends on what you're towing and towing.

mainstream people the way an mixing electrical systems may look in August 1976. Today, aside from searching elsewhere for the adapter's P/N's, you can still go to the TB for help on electrical connections for towing.

From the list below you can pick out the P/N for the adapter you need, and also learn how each hooks up to what-

TB Owl Old told operations and



End of complete of prime mover having 12-pole when motor has 12-pole complete.

Adapter, 47 12-pole pin contact FM 293-264-2023



End of complete of motor having 4-pole when the prime mover has 12-pole complete.

Adapter, 47 12-pole pin contact FM 293-264-2023



End of complete of motor with 4-pole when the prime mover has a 12-pole complete.

Motor, 47 12-pole motor contact FM 293-264-2023



End of complete of prime mover having 12-pole when the motor has a 12-pole complete.

Adapter, 47 12-pole pin contact FM 293-264-2023



End of complete of prime mover having 12-pole when having a motor with gearbox with 4-pole motor.

Also make a strong mental note of this very important, and often neglected, warning slip—be sure to change light bulbs on the trailer vehicle to match the voltage of the prime mover.

# Cosmic Road's

"DON'T BE JUST BIT"



## A NEW FORD

If you've ever had the problem of a gasoline engine sputtering around doing nothing for a month or so—and who hasn't when you'll be glad to hear about this TD that'll give you some ideas on starting with a cranky boxer.

TD God (TD 00-000 00) gives with the pump on the hundreds of minutes' any engine (he is in a new vehicle, a new space or vehicle job) without these problems' is.

**The perfect job is done with an amazing spray. Job of TD 00-000 00 (TD 00-000 00) is what you'll see.**



**Just remove the spark plugs, and spray a couple ounces of the oil in each cylinder... wait 15 minutes... then crank the engine for 30 seconds.**

Fuelless engines and vehicles should be rugged on help needed you to do the job.

Now for the amazing job itself.

It may be a bit hard and sometimes impossible to do the spray job. Turn the engine's pulled across the vehicle... but the job should be done.

You can either use TD Gas, pneumatic, curved right neck, 3/4 on top, TD 00-000-222-222, found in your No. 1 Common Tool Kit, or—

Get your hands on a copy of TD 00-000 00 (00-000 00). On pages 00 there TD shows a spray that can be fabricated.







The supply people up the line need not be wondering what's going on with the firing pin in the M1 firing mechanism. That's the firing mechanism that's in the M1 and M1A1 155-mm howitzers ... the M2 and M2A1 155-mm guns ... and the M1 and M1A1 81-mm mortar.

The guys in supply keep getting hit with requisitions for the firing pin and they can't figure out what's gone wrong.

What they don't know is that some units are using the firing pin in the firing mechanism when they're using dummy ammo. And what the crews ought to be doing is replacing the firing pin and firing pin housing with a receiver when they use dummy ammo. The receiver goes into the firing mechanism just like the firing pin housing.



Check your supply manual for the receiver (DSM 1505-11-2-6022) under the section headed "Articles for Instructional Purposes." If it's not there, tell your support unit you've got to have it.

### *A good plot*

You want to keep your M1A2 plotting board from warping—yes!

You've got half the battle won if you store it in its chest the right way. And the right way is like so:

The legs go in first ... next the brace ... then the support and bracket ... which goes in the lower right hand corner of the chest.

The last thing you do before the frame with the grid disk into the last row. This means the board will sit on an even keel all the way around.



## Tach Link

Some M442 tank owners have been raising their tach cables when pulling or replacing power packs. They claim the tach cable gets caught on the engine and float links. So, even, by not and push it back out of the way. You'll find there's a clamp to secure it to the backhead near the left fuel tank.

That tach is a mighty handy thing to have, so don't lose it by getting a link in its cable. Of course what some of the guys might be doing is forgetting to unhook the tach cable when they pull the pack. If you do that—and it is mighty easy to do—you likely won't discover your mistake until it is too late.

Routing the cable around sharp corners or bends is another way to hook it.



Like the main eng, you can't tell the players without a close look, and you can't tell how fast your engine is turning over or how many hours it has got on it, without a tach . . . and those things are vital to know.

## You haven't been clipped



You haven't been robbed. If you think someone's clipped the clip and stop for moving the M42 instrument light on your M444 and M444C 100-mm rifle, they haven't.

There are mounting brackets for the M42, sporting rifle are located on the 100-millimeter rifle. Mounting brackets, part numbers 587118 and 587102 have clips (part number 518144) and

stop (part number 582977) attached. For the heavy brackets (part number 7499211) don't include the clip and stop.

Since the M42 instrument light's equipped with clip (part number 518144) and stop (part number 582977) you'll use them on the mounting brackets of your sporting rifle.

## Dangerous pinning



The anchor pin for pinning your M77's Army Mule is 1/2-inch and it won't even cut full out if its pull ring is missing.

But if, if the pin slips through the anchor you'll have no more . . . and anything can happen.

When the pulling is missing there's nothing to hold the pin in the anchor—

don't end-the-end the pin, or, it'll jump out of the anchor as the spring-loaded ball is there on top of the anchor, and this isn't enough to hold the pin.

If one of your pins is missing its pull ring, weld a splash of metal to the top of the pin.

Just be sure your weld is above the hole where the ring goes thru the pin.



## Over-a-week run

Didn't you notice how your muscles get flabby and weak when you don't get regular exercise? Well, it's no accident.

Exercise keeps a lot of things going around. And that includes the engines on your vehicles. It may not fire up their muscles, but it'll keep 'em burning a steady pace.

Any time there's going to be a gap of more'n a week when your vehicles won't be used, the engines should get a bit of exercise once a week as scheduled. You, wrap out any rust that's formed on cylinder walls and bearings, and drive out water or fuel dilution from the crankcase oil.

WENT THROUGH  
WENT OUT FROM  
CRANK CASE  
AND DROVE OUT  
WATER OR FUEL  
DILUTION FROM  
CRANKCASE OIL.



After the engine's up to operating temperature, it'll take only about 15 minutes to warm up 30 minutes to allow to put 'em in the plink and save a lot of sweat later.

It may take a hard SOW from your CCI to give you the go-sign, but burning a bit of gas every week in these engines can save your souls from a bad burn of another kind when the hot stuff starts flying.

# SINGLETONS or SETS



Craving the blues because you were gipped for working a mismatched set of V-belts when your -DIP TM says you're authorized "one each"?

You can help get this V-belt snafu squared away by sending through a DSA Form 262B, "Recommend Changes to The Technical Manual Part List or Supply Manual 7, 8, 9", an empty SML or -DIP TM (the files would be in a "one each" folder) the SML also has a note that "one each" is a "set consisting of two belts" or something like that.

Seems like there's some confusion on how these mismatched sets of V-belts are issued and stocked.

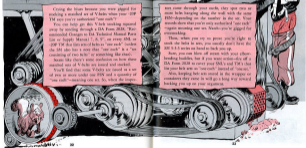
You'll find that some V-belts are issued as a set of two or more under the SN and a quantity of "one each"—meaning one set. So, when the imper-

son comes through your work, they spot two or more belts hanging along the wall with the same PDM—depending on the number in the set. Your records show that you're only authorized "one each"—again meaning one set. Thanks—you're gipped for overstocking.

Then, when you try to prove you're right to stock the belts in sets, you usually don't have the SN to let us in on how to back you up.

Now, you can blow off steam with your elbow-banking buddies, but if you want action—dry off a DSA Form 262B to correct your SML's and TM's that list your belt sets as "one each" instead of "one set."

Also, keeping belts sets issued in the wrapper or containers they come in will go a long way toward backing you up on your argument.



# TRACKED

# TRANSMISSION TIPS

A Strikeland vehicle is like a god all alone—she's not doing anyone any good. It's especially hard when your vehicle has to go to higher echelon for repairs. Then, it might be quite a while before you see the old buggy again.

One of the things that will send your tracked vehicle to the maintenance hospital is the driver's failure to "engineer maintenance" (maintenance right?). This means most of your crewmembers should always strap tracked vehicles into its operation facilities (the CD-500 or CD-850) using transmissions.

So here's some of the why's and whereof's for keeping your transmission's health insurance up to par—and to make sure it just means maintaining a few things.

1. The transmission should never be downshifted from high to low except at low speeds.



With the CD-850, the low range hand clutch supports could be pulled in or the handclutch being applied out of the low range supply band. And for the CD-500,



the low range clutch/disk may be burned or broken (some of the discs) behind the low range shift gear . . . when the gear is stopped by the clutch discs. Downshifting should not be attempted as speeds above 7 or 8 MPH.

2. To stop damage to the final drive, the engine should be slowed down before putting the transmission in gear.



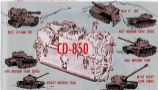
With the engine in running low low when the transmission is put in gear, a surge of power is sent to the final drive and shock may be broken off.

3. Your vehicle should never be "bump" or "jerk" started.



With the engine in running low low when the transmission is put in gear, a surge of power is sent to the final drive and shock may be broken off.

If you start in bumps or jerks, every part in the steering power flow, as well as the final drive, feels the jerk on the gears. This could cause the gears to crystallize and break. By starting smoothly, it will give longer life to the steering power train and the final drive.



4. The transmission should never be shifted into REVERSE when the vehicle is moving forward.



**NEVER** The same thing happens as a slow vehicle is made at the wrong speed from high to low range, only it allows the reverse range band and range clutches.

Going down steep hills: Vehicles with the CD-200 can be put in REVERSE to help in going down a steep hill. But your vehicle down the hill will then come to a stop. Shift into REVERSE and let the vehicle start down the hill.

Remember that the vehicle is in REVERSE and you're not moving.



Keep an eye peeled on the high oil temperature warning lights since you'll have complete slippage between the turbine and the pump and the oil may overheat. The vehicle's speed can be slowed down by spreading up the engine.

CAUTION: REVERSE SHOULD NOT BE USED AS A MEANS OF STOPPING VEHICLES EQUIPPED WITH THE CD-200. THE ORIGINAL OPERATOR SHOULD INSTRUCT TO DO THIS JOB.

5. The brakes should not be ground on the class you're moving.



**NEVER** The brake discs are optimized on the proper planet carriers.

When the brakes are stopped on, these planet carriers are slowed down or stopped. When you start, one of the planet carriers is slowed or stopped and the other is speeded up. By trying to speed and stop these planet carriers at the same time, the moving power train will be damaged.

6. Never use **NORMAL** gear when there's high resistance on the tracks—like being frozen in or starting in mud or sand.

**NEVER USE**



**NOTE:** Excessive resistance on the tracks could cause failure of the steering shaft or damage the rear differential. Shift to low, apply full gear and resistance to control movement.

7. A deeper turn can be made in **LOW** range than in **HIGH**.



**NOTICE**  
THE INFORMATION ON TURNING

**NOTE:** The gear ratios are different, with a minimum turn in high about three times what it is in low.



When CD-100 vehicles have to be moved for a distance, the universal joints should be disconnected and tied. If there's been a transmission failure or failure, the universal joints have to be disconnected and tied—to be moved—no matter how short the distance.

If there's failure in the engine, the main input shaft should be pulled to the rear and tied—if you're not towing the vehicle more than four miles.

When the CD-100 transmission is to be moved because of any kind of failure (other than one bearing), the universal joints must be removed from the vehicle. If the universal joints are left attached to the final drive, the free end might hit the fuel tanks and you'll have a fire on your hands.



The transmission is not to be pulled by anyone but your Ordnance support unit. (Use a special "beam collector" plate to seal.





# JOE'S DOPE

AFFAIR  
AT  
BIG  
LITTLHORN



"Aye, Littlhorn, it  
will be told many times around  
the great round horn—how I,  
Sploring Bull, defeated the  
long hair's, General Almost Certain."

"Sploring Bull talks  
with bull tongues a many times  
we hear HOW... Now it is  
time we hear 'HIT'!"



"They mean here I cut back garden at Fort Nighth and now how long takes prepare for war?"



JONES' AGE TO THE WOULD IN THEM ARMED BRIGADES...

YES, SIR!



WITTY A. BUTTER—MARRY BIRD AND THREE THING ANY MORE... WARR LETS GO IT JUST BEFORE INSPECTION NEXT MONTH.

YEAR, ON A QUART FORT LIKE THIS AND MORE AHEAD AND...



JONES!



THESE GARLANDS ARE IN HALF QUART... FORTY FIVE BENT CORNER... FORTY, MARRY BIRD WITH A LAMP? IN THE NEW-FANGLED TYPE OF WAR, YOU GOTTA HAVE FIREPOWER!

BUT, CAPTAIN, WE'VE GARDENS AND COM-PLICATED, AND WE WON'T CROSS THE TAI YET.



LOOK AT THESE ANIMALS' MOUTH... YOU CAN'T CROSS GROUND ON MOUNTAIN THAT WON'T CARE FOR, IN THIS NEW-FANGLED TYPE OF WAR, YOU GOTTA HAVE ABILITY...

BUT WHY YOU BEEN BLIND WITTS—MARRY BIRD BY BOOKS AND THE FLAG-POLE.

HEY RAYNE, WE'LL GET FLYNN DOWN AT SIGNAL TO COVER UP THAT TELEGRAPH STUFF WHILE I GET A DETAIL TO WASH THE MESSAGES...THE OLD MAN IS ON A MAINTENANCE RUN!

LET'S GOOOOOOOOOOOO! LOW CHANCE CAN HE GET... WE HAVN' EYEN ON AN ALERT... FLYNN A BLANKET OVER THEM FRAGS FIRST, SOLDIER. QUICK! WE'LL BE HEARDING ABOUT LOW IMPORTANT COMMUNICATIONS IN THE NEIGHBOURHOOD OF...  
...MAY.



BUT WE GOT NO TELEGRAPH KEY... I THINK I BOARDED A NEW ONE A MONTH AGO, BUT... OH, AWESOME, MY SA... RECEPTION HAVN' PROPERLY FELLED BUT SO WE GOT NO NEW RECEIVERS AND A BUSTED SENDER.



OH, SLAP A COAT OF PAINT ON IT AND CALL THE KEY IN PLACE... STILL LOOK GOOD ENOUGH FOR INSPECTION!



HE SAID HELL THESE HORSES NEED SHOES, CROWN AND GET STARTED SOLDIER!

RYNE, I JUST PAINTED THIS RAYNE FOR INSPECTION. TAKE THE HORSES DOWN TO THE WATER-HOLE WHERE HE WON'T SEE 'EM...

"It was clear... their maintenance practices was bad... I knew it was time to make war"



# Joe's Dope Sheet



On the plains it was "Shoot, Scoot and Send,"  
That gave them the light-as-airing brand,  
It came of your staff  
Doesn't come up to snuff,  
You won't "get back to the fort" in the end.

**\*FIREPOWER,  
MOBILITY,  
COMMUNICATIONS**

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



**DAWN**

IT'S DAWN AND THEY  
AIN'T BACK...GET COOKIN'!  
Right?

GET ON THAT TELEGRAPH,  
BOLDIE... AND TELL FORT  
FUNKY WE NEED...

WE CAN'T... THIS TELEGRAPH  
IS ON THE BLINK... KEY DON'T  
WORK, WHEEL'S SPIN... BATTERY  
ACID SPILT...

HOW ABOUT THE ARMO?... BLA'S  
UP? (OH WHEW... AIN'T STARTED  
TO MOVE YET?)

THE WHEELS  
ARE SPINNIN' SPOON  
NEEDS AND WE  
GOTTA DEESE TAIL...

THEY HOPES'LL TAKE  
HOURS TO BRAC AND  
NORSE KNOWS BILBO  
ABOUT A ISLAND...

YEAH... COULD  
BE...

YEAH... YOU'RE  
DOCKED!

"And as my camp doors  
open them to waters of  
the timber upon door of  
watering..."

"Then, till us fighting  
hall... why, then, did  
the party riders from  
distant feet make roll  
on our village, rubbing  
every today..."



BECAUSE... YOUR BEAVER DID FIND GRACE,  
WHILE SOME STROKE LIP BEAVER, CHECKED LANCE  
AND WAGGED ARROW WENT LAMENED, POWER FOLLOWS?  
... MURPHY ARE MOVED IN BLANKETS SO GRACE  
DONALD WERE NOT CLEAR... HEAR ORLANDO  
MAINTENANCE

**BAD MEDICINE ANY TIME!!**



## ALL ABOUT PLUGS



Dear Half-Max,

Is there any manual that will give us all the dope on hot and cold spark plugs? I think you need a hot spark plug when you see your truck for fast, long distance travel, that my master mechanic says that's when you need a cold spark plug. Who is right?



Pls J.W.



Dear Pls J.W.,

Your master mechanic is right.

TM-5-8658 (17 Dec-54) spells it out that you use cold spark plugs with a hot-type engine, high speeds, minimum starts and stops, severe service and hot climates.

Hot plugs are for cold type engines, low compression, low speeds, frequent

starts and stops and cold climates.

"Spark Plugs Used On Ordinary Material" is the TM's title. If you don't have one in your automotive shop or pool, you get a copy on a "need-to-know" basis by citing AR 130-1, para 41 in Change 4.

For more complete info

*Half-Max*



## YOUR THREADS BARE?

Dear Half-Max,

What's the story on our 100-amp self-propelled 10-ton pump? I mean the counterweight doesn't tighten up on all the gun tube threads. And why are there two key slots in the counterweight?

SP3 J. S.

Dear Specialist J. S.,

You got about three tube threads showing after you tighten the counterweight the way it tells you on page 80



of TM 9-2110-115-10 ... right? That's OK, 'cause the way the tubes're made, you just end up with extra threads after you've tightened the counterweight.

These two key slots mean you do the turning of the counterweight after you've tightened it and then backed it off so the slot lines up with the key way on top of the tube ... is it right in the TM.

If you only had one key slot, you might have to back off almost a full turn of the counterweight to get it to line up with the key. With two slots, the most you have to back off is a half turn.

## UNFREEZE 'EM



Dear Half-Max,

Our jumps with the 100-amp charging system are freezing water pumps by the numbers. Some three foot belts around the pump have no mark just.

One way to solve it, though, is to use the 100-amp belt for communications and use the standard-type vehicle for general loading. Right?

SP1 E. A. M.

Dear Specialist E. A. M.,

No need to "break" those 100's and 100A's with the 100-amp charging system. Short belts will put 'em back in circulation.

One belt is all you need to run that pump. So you can replace three of the

four with belts that connect only the controller's and alternator pulleys.

The belts you need are 2 1/4 x 1/4 x 20 degrees. Until they show up in supply you'll have to buy 'em commercially. Might take a look on page 13 of IS 85 for more info about 'em.

## M15A2 TRAILER OVM

Dear Hal/Matt,

Maybe I'm dumb but I can't find anything on the M15A2 Trailer OVM. Can you help me?

SFC J. H. T.

Dear SFC J. H. T.,

The OVM for the M14A2 Heavy Trailer is exactly the same as the OVM for the M15A1-45-ton Trailer - which you will find in ORG 7 5N1, G100 (7 Aug 51) pages 15-18. Just leave those 7 items off the M15A1 OVM list and you'll have the M15A2 OVM list:



ITEM	DESCRIPTION	QTY	UNIT
1	TRAILER, HEAVY, 45-TON	1	EA
2	TRAILER, HEAVY, 45-TON	1	EA
3	TRAILER, HEAVY, 45-TON	1	EA
4	TRAILER, HEAVY, 45-TON	1	EA
5	TRAILER, HEAVY, 45-TON	1	EA
6	TRAILER, HEAVY, 45-TON	1	EA
7	TRAILER, HEAVY, 45-TON	1	EA



*The real way*

*Several attempts*

The military codes that maintain the M15A1 or M15A2 Heavy Trailer system brochures... don't waste away your copy of TD 7-1000-211-20 and forget about it. That's the one that tells you how to check your brochure rolls for weightness. And as the TD says, you make the check every 30 days.

Want to get loaded without a crane? If you're having trouble getting a load on the M15A1 or M15A2 trailer, maybe you need loading ramps. Get 'em for both these uses by asking for Ramp, loading, (width), ISN 1119-103-6004 (ORG).

## BROKEN TRACK PIN



Dear Half-Mast,

Have you ever told when a track pin is broken at the center?

LA. M. R. S.

Dear LA. M. R. S.,

When a track pin is broken at the center, the track shoe guide will go out of alignment. You may not see this at first, but soon the tank a few feet and you will see the track shoe guide swinging into positions that wouldn't be possible if the track pin wasn't broken.



## WHAT'S THE M88A2C?

Dear Half-Mast,

Thanks for telling us about the M88C tank in PE 53. But I think there is an M88A2C tank. Where does it fit in the picture?

LA. M. R. S.

Dear LA. M. R. S.,

The M88A2C and the M88A2 tank differ from the outside. The big differences are in vision and fire control devices. If necessary, the M88A2C has the new M1141E1 coincident range finder collimated in center instead of yards, while the M88A2 has the M1141 mono-copic range finder.

Design 3 (also 10) to M 4-7001 (the 10) for the legs.

You'll also find the difference spelled out in TM 9-235 (12 legs 60) which gives you the legs on all military tactical vehicles that Ordnance is responsible for.



## MASTER CYLINDER REMOVAL



THEY ARE WORKING TOGETHER TO GET THE JOB DONE.

Dear Herb-Max,

We've got trouble taking off the master cylinder on the 1934 and 1935 2½-ton trucks. The 1½-in. nut screw and stud nut in the frame is mighty tough to get out.

Can you tell us an easier way, or is there some special type of wrench for this?

Spd D.C.P.

Dear Spd D.C.P.,

Sorry, there's no special wrench for this job. You can get the stud out with the 1½-inch square drive sockets, 30-in. extension, 1½-inch square drive universal joint and 1½-in. nut, all from the General Mechanics Tool Set.



Another good way is by throwing together a five-part set here assembled like this:

Your square drive socket, on which you first put a 3-in. extension; then you add your 1½-in. square drive universal joint, then another 3-in. extension, and lastly your 1½-in. nut.



This works OK, but it takes out more 3-in. extension than you have in your tool set, so you borrow one from another mechanic or from your Ordnance Supply.

Herb-Max



## INSPECTION FATIGUE...?

It's not very likely to, but it *can* overdo . . . that's true. It's OK for the tech service inspector to wear a bit when he handles your mask. He knows how to go about it.

When he jabs and twists the face-mask, or pokes the eyes, he's not checking your mask for fun . . . he's probably just found that your mask needs an extra close check.

Your own care and handling of the mask he's supposed to be exactly help-proof, of course . . . but, on the other hand, it doesn't normally call for so much extra trouble.

If you enjoy your inspector's routine every time your mask has mask inspection . . . your mask'll very likely be logged out and ready for months long before he does. So just keep this in mind:

**Keep him to make a lot to your mask - all the time, but especially at INSPECTION TIME.**

For a step-by-step translation mask care see TM 3-511-15 (M5A1 power drive mask), TM 3-6240-281-15 (M17 protective mask), FM 21-41, page 161 "Your Lifesaver," and FM 29, pages 29-36.



# IT'S REALLY HOT



Learn more about CMB's a bit quicker than you may've guessed. It's got a flash-point of less than 100°.

You'd best take time right now to memorize this Chemical Corps reaction concerning this training and test gas.

**CMB (PZ 145-177-247), CMB, IS FLAMMABLE AND SHOULD BE HANDLED WITH THE SAME PRECAUTION FOR HOT OILS (FLAMMABLE MATERIAL).**

The new handling procedure for CMB—which the Chemical Corps recently TRS'd to all concerned says—

**Use of CMB in training and tests is now PROHIBITED!**

1. CMB mixture is made up of 11 gallons of CMB and two gallons of water.



2. Smoke tests will be filled not more than two hours ahead of take-off time.

3. Tests will be carefully checked for leaks immediately before take-off.



4. Operations: **Always keep lid closed tight at the beginning of the test and keep open.**

5. Handling and Storage: All CMB containers will be marked "FLAMMABLE," and they'll be handled and stored with the same safety procedures which apply to other flammable materials.





## PLEASE TO TORQUE

It's been said before—but it's one of those things that can't be repeated too often.

Torque all components of your Home on John rocket according to the figures spelled out in your TM.

In other words... don't overtorque or undertorque with your torque wrench. And don't guess at the right torque figure by using an ordinary wrench.

Mike's own cousin has had a perfect flight with an Home John—except that a tin or two fell off along the way.

## TROUBLE SHOOTING TROUBLES



You can save yourself a lot of hair tearing and blind guesswork jumping when you trouble shoot guided missile electronic equipment. Just keep this line in a spot where you can get at it quick-like.

A device may be changed by an MFTG, but it doesn't show up in your schematic.

So, when you go to trace out a circuit on your schematic to find out

what's gone on the bench—the maybe in a schematic—check the MFTG that's been applied. Your trouble could be something like a capacitor that was added by an MFTG... and which doesn't show up on your schematic.

## FOR FORDING



A question's been making the rounds in Corporal circles.

Some guys're wondering what those four charred holes are for on each side of the engine compartment of the motor.

They're not there by accident—that's for sure.

The answer's in a new order para-

graph 81 of TM 9-3028-12. And the way you plugs get put in the holes before fording.

You won't find the plugs in Ord 7 (M, Y, B), but your support unit can get them for you. Tell the man from support they're listed in Ord 8 (M, Y, B) as plug, pipe, NSN 4150-010-0044.

## ON THE BEAM



Some things're held up without straps. Then there's some things that're held by straps—like your Heavy John roller.

And that means you brace down the roller with the straps when it's in stowed position.

But don't forget to take off the straps before you push the fire button. Things'll really get messy if the roller tries to get off the beam with the straps saying it should stop.



What, what, what. Just about everywhere.

Especially everywhere around and in-the-bodies piping used in the tower sections (A-B-201/U and A-B-206/U) of these A-B-216/U towers.

Naturally, these towers are exposed 100 per cent to all kinds of weather everywhere. Not only that, but moisture formation, rusting, condensation, freezing and a few other nasty tricks are going on right now inside the horizontal and vertical piping of the tower sections.

Which is especially dangerous in cold weather.

Because once that water freezes in there, it'll bulge, distort and soon burst the piping. Which will bring the whole works down to ground level. But a simple pair of PM checks can seal the whole problem down the drain.

First you keep the weather from getting inside the piping in the first place—put a cap on each of the four legs of the top corner section. And just about anything will serve as a cap. Maybe just a small piece of plastic stretched across the top and held in place by tight wire or even string.



As for any water that may already be inside the sections—there are drain holes in the horizontal and vertical tower members designed to let the water run out.



But no hole can carry out its rainwater if it's plugged up. Which means a cheap corner man will grab the No. 6 copper wire that comes with the tower. It's anything narrower and sharp will close those drain holes out.

Those two PM checks will go a long, long way toward keeping water in its place . . . which is outside the tower sections.

## ~~NO PAINT, PLEASE~~



Paint is no person's fit.

Sound policy, of course, for metal and wood surfaces.

But the war in the world when it comes to rubber. Especially the rubber section of your 4B-1500R must have assembly—and other man's hands, too.

For one thing, the oil in paint just doesn't mix with rubber. It's a soap. Not only that, but the straight coating

that paint forms will dry out rubber and destroy flexibility.

So if a vehicle with a radio mounted in it gets the call for a paint job—always take a few minutes to do one or two things. Either cover the rubber part of the base (plus the ceramic insulator) with tape, or just disconnect the base and reattach the whole mounting bracket.

## ~~FITTING SUBJECT~~

"Sure, you made the jacket too big!"

Or something like that. Anyway, the cardboard jackets that come 4B-1500/1 batteries are designed to use a fit that fits. Strictly speaking, the cardboard is a shade thicker than it should be—which makes for too tight a fit when time to slip the battery into the battery compartment of its 1M-100/100 or 1M-100A/100A battery.

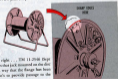
If you come across a 4B-1500 that is too tight a fit, don't force the issue. Just use 'er in the one that does fit right.



## SPOOL-PROOF



When the spool starts going "round and 'round—look out!  
 "Look out!" to run sharp edges on the flange that are intended to bite, and bite!  
 And, if they catch a witness on the flange or arm or anywhere,  
 "What speed?" "What flange and what sharp edges, where?" It's the DE-BA Speed  
 when the characteristics are best: to become an SE-SP Book.  
 And the sharp edges are found where the flange is run through to allow access  
 to the O-11501 Jack (all parts of the Connecting and twisting Kit DE-11501).



That's right . . . The 11-0101 Dept  
 44 (where the Jack mounted on the die)  
 is such a way that the flange has been  
 broken up in possible passage to the  
 job.

But, like the man with the bleeding wrist says, when the flange is run through,  
 you're liable to end up with two sharp edges that cause the job when the real work  
 is done.

## SOLUTION



In a safe method for mounting that Jack has been given the alternative right by  
 the Signal Corps.

Simply stated, the idea is just to mount the Jack at an angle to eliminate the  
 need for mounting the flange in other places.



You can secure this process by using two standard 11-0101 flange washers in  
 spaces on the side between the spool and the flange. Rollers.

## SUPPORTING EVIDENCE



A little hidden support on the right place has saved many a good man.

Take the rear cross member of your PU-25A/PU Power Unit. That part of the tubular frame carries most of the weight of the generator, and also soaks up most of the bounce of vibration.



As it works, more than a few of them have ended up cracked, or even broken. Trouble is, that part of the frame is way down under and can be overlooked real easy.

So, next time you pull a maintenance check, look extra close at the rear member—right where it joins the front support. If it's cracked, do work now with gusto.



And to provide that support, all you need is some steel wrapping, about two feet long... a little welding with a welder's torch... and maybe some nuts and bolts.



The strip of reinforcing strap (1/2 x 2 1/2-in.) should first be welded throughout the under side of the rear cross member. Then wrap the two ends of the wrapping so they lay flat against the frame.



Those ends can be secured either by using the welder's torch again, or drilling a couple of holes in each joint and using nuts and bolts.

Once that strap is firmly fixed to the rear frame supports, your rear cross member will enjoy all the splits it'll ever need.

## DO WE LUM?



Dear Half-Mast,

Draw your papers over photographs (page 56) (1) (c) of TM 38-600-2, Chap 19), "Organizational Maintenance Instructions and Procedures for Administrative Motor Vehicles."

That first reference which talks about the preparation of new equipment for operation, and refers you to the other one, which says: "Repair gross lateral wheel bearings and adjust."

This means that all the wheels of a new vehicle must be jacked and the bearings removed, cleaned, repacked and reassembled with a couple out of time and material for unnecessary work.

Is this really necessary on a new vehicle? Repacking bearings on new vehicles, I think, is more purposeful than to load a shop down with unnecessary work.

W. H. J.

Dear Mr. H. J.,

TM 38-600-2 has no intention of making you do unnecessary work. All it wants you to do is to determine whether the wheel bearings of new vehicles are lube and in good shape.

To do this on a new vehicle, you're going to have to remove the hub caps or wheel covers, and inspect the bearings to see if they're lube and adjusted

right. If they check out OK, then no repacking or adjusting is needed. But, if they don't, then you'll have to do whatever work is needed on 'em 'an right.

It's been known to get a new vehicle hot off the production line and find a wheel bearing or two not lube or adjusted right. TM 38-600-2 just doesn't want you to take any chances.

# ARMY AIRCRAFT

APPROXIMATELY 100,000 TO 150,000 TONNES OF

# CODE YOUR ELECTRONIC

They may all look alike on the outside, but just inside all you get inside! The difference is sometimes more complex than you realize.

Difference? "Electronic configuration" as the TC and Signal Corps often call it. Meaning that the same type of aircraft manufacturer has different electronic equipment . . . and you can't tell which one fits without a program.

In what have they done? They're working up with the program . . . and they need your help.

Grab hold of the new SB-145-11 (11 Apr 64). It sets up a configuration coding system for Army aircraft world-wide.

The code you get to make it easier to read. This configuration set is now the best 1200 Army Aircraft Inventory, Issue and Policy Form you'll see filling out next. So, besides the old code used to designate the status of each aircraft, the new form will indicate different use of code letters denoting the status of each aircraft's electronic configuration.

Serial Number	Configuration Code	Inventory Status	Issue Status	Policy Status
101	A-1	Active	Active	Active
102	A-2	Active	Active	Active
103	A-3	Active	Active	Active
104	A-4	Active	Active	Active
105	A-5	Active	Active	Active
106	A-6	Active	Active	Active
107	A-7	Active	Active	Active
108	A-8	Active	Active	Active
109	A-9	Active	Active	Active
110	A-10	Active	Active	Active

The formal name for this SB is "Army Aircraft Electronic Configuration Identification Code."

What it means is you airfield types is that the Army has instituted its standardization program for aircraft electronic configurations. It also means these configurations are organized to be aircraft type and geographical location.

So the deal's simple for using a control system check'll keep things organized and—most important—be the supply end of the maintenance team keep up-to-date on the exact electronic equipment you're using . . . today.

# CONFIGURATIONS

These copies of the new SB-145-11 will be distributed automatically according to the requirements listed by your job checklist for TB AAW's on DA Form 124, the National Guard and Reserve units get the SB to an 800M-line equipment on DA Form 124.

The table on all machine configurations listed in serial type 8-75, 8-41, and all the major command use codes in 20000, 20000, 20000, 20000, 20000, 20000. Here's a separate table in the appendix for all of this stuff, but in order it looks like you to get confused.

The contents in each table give you the electronic systems, and items and



important major components which make up the electronic configuration for each aircraft type. Besides the standard configuration column, you'll find extra columns showing you the electronic configurations also possible for each type aircraft.

New aircraft coming into the field later will be covered by changes to the SB and all instructions for future electronic serials instructions will include the expanding code to be used after each modification is completed.

To make you all right, the SB says you get somebody who knows each piece of installed electronic equipment by type number and the units letter that will be needed. You grab hold of the current Signal Corps man manual. Don't try it by your hazzards—or you may end up making life expanding some places, despite the simple instructions in the new SB.

Naturally, the initial inventory of your electronic equipment will be cross-checked with each aircraft's SB Form 124 (Aircraft Inventory Record) and special codes are assigned for training, tactical, command, use and development aircraft.

Talking the time to read the SB carefully is all you'll need to keep from doing a somewhat takeoff on this new expanding system. But if any questions develop to clear the mist, Staff-Mem is on duty in the corner.

DON'T TRIP YOUR OPERATOR BY SHAKING



GIVE 'EM  
A HOME

Forms like many of the smaller rigs are always behind the door when maintenance time around.

They just don't seem to get the tender-loving care that the maintenance people, larger pieces of equipment get.

Maybe at the time it just doesn't seem important and you figure it's not worth the effort. But, something as simple as a cross-leakage air cleaner will reduce

your rig at the time you need it the most. And, all it costs is a little attention.

Your (Rover) Model 114010-41 generator is a good Polarisman.

If it seems misbehaving, start in the end covers, or it's not giving out with the power you think the engine *should* be the air cleaner is clogged. All she needs is a cleaner to take a double breath of clean air.

**DAILY PM**

Checking the air cleaner should be one of your before-operation PM's.

Could be that you've been giving it the go-by because you have to get on it from the underside.

Once you've had the air cleaner on the Roverite and you are a hands off all and done on the screen, here's what you want to do: Break the fuel tank first. There's nothing to it.

1. Use just lower fuel filter cap.



2. Open the fuel



3. Remove the filter plugged in the fuel filter where filter, its outlet.

4. Turn in the generator to the rear.



5. Then, get the clean plug back around against the filter cap.



**TURN IT OVER**

This door, you turn the air on and with the generator normally down. Turn the assembly side in the closed take off the cover and use washer from the air filter. Now, remove the air filter from the generator.



The separate the two retaining rings and remove from the cover. This shows the cover rings, and cover in an approved order. Let them air dry.

Before you reassemble the cleaner, give the cover over to the screen and washers, rings, cover, and screens. Wash the screens, breaks, breaks, and excessive wear and tear. If the mesh is worn on the screens, you'll need new ones.

**LAP AND BASKET**

At the same time, you might as well check out the fuel filter cap and basket, and give them a good cleaning in the solvent. Could be that the basket is pushed up, too.

Give the cap, chain, and basket the eye-eye for defects. You replace the parts if they're bent up or damaged.

A regular check-up like this should keep your Roverite humming "I love, I love Rover."



## TIGHTEN THE CLIPS



Been loading the overrigger back plate on your 20-ton Quickway Model M200 crane-shovel?

Just take a hammer and give the retaining clips a couple of taps. That'll keep your plate tight in service, yet you'll be able to remove 'em with a gentle tap on the...



## THE RIGHT FORM



Dear Sgt. Davis:

Change 1 (12 Aug 59) to TM 3-103 tells us to stop using DA Form 3-04, *Engine Inspection and Service Record*, for scheduling and recording PM on our electric motor driven equipment.

OK, but what do we use in place of the 3-04 for scheduling our equipment?  
RDgt A. J. E.

Dear MAjgt A. J. E.,

Take those forms that used the 3-04 and add them to the DA Form 450, *PM Roster*, that you've already set up for your other rigs.

Use DA Form 2150, *Engine Equipment Monthly Operational Record*, to check off your daily PM services. Use DA Form 464 to record your Quarterly Services.

*Sgt. Dwyer*



## HOLD THAT ZIG-SAW!

Ho there! You wish that portable reciprocating saw? Before you begin holding wood with that air-blasted zig-zaw, here's a few pointers you wanna keep in mind:

**1.** Blow the air line to clear it of dirt. Then check the saw's air filter screen and clean out any dirt.

**2.** There's one oil bucket in this reciprocating saw. To before you start working, be sure to prime with oil, and load a full chain into the line. Pull the chain away from operating lever.

**3.** Check off the saw when it's not cutting wood. The saw has more muscle than horses. It'll shake hell to keep fast if you hold that trigger when it's not making work.

**4.** For more gas, this saw is best set to dirty. Before you lay it away in the box after working, it cuts or soaks water, wash the blades and pistons in oil—, load a pint of oil through the line for five minutes before shutting down.

**5.** Open it and put it back together by the numbers. The piston pins, in particular, must go back exactly on the back line of the piston—otherwise it'll tear itself off the piston rods and destroy the saw.

**6.** Pull it off the line before trouble starts. Little trouble (cracks, big trouble (put in the pump—see the parts or repair small trouble points—before it too big part before destroys the whole tool.

**7.** In freezing weather, add antifreeze like it says in the I.D. Fill a second oiler with antifreeze and couple it into the line between the compressor and the saw after.

**8.** Run off all oil before shutdown. The faster you fix all oil's air delivery parts in assembly, the quicker you called replacements before maintenance run out. Your oil's will also destroy the tool unless it any part—overloading up in circulation.

# HAVE TOOLS— WILL TRAVEL



Your mobile air compressor with pressure tools is almost the handiest work-a-holic you own.

On a minivan's trailer, this rig can move out wherever you need power tools to brace, break, abrade, drill, file, hammer, stamp, pitch, pump, saw or dip.

A 1000 PSI AIR COMPRESSOR  
A 1000 PSI AIR COMPRESSOR



There's just one catch—you gotta fit on the ball to keep an escape route as big as this in deeper snow or full strength.

Either you haul this rig, or it'll run you ragged. Once you're established back-to-back up in these real hours, you've got a mass of trouble. Your rig can't wade on waters, and you're a static picture for inspectors.

So here're some things you can do to keep your compressor and tool cache ready to roll on a minivan's trailer:

CALL

Take stock, by the numbers, of every air tool, attachment, hose line, accessory, and spare you own your rig.

Then check what's actually on the rig against the stock list in the TM, or the MM 1-4 that covers your compressor make.

Repeat each inventory item on your various check and push for replacements.



## ESCAPE EYEBALL

Now you know what's on hand—but is it in shape to operate? Do you check over each tool, from clicking it up to there's no cast or crack to cover up trouble.

You ought-ya check them for trouble like missing parts, loose connections, leaking gaskets, binding controls, warped blades, dirty plates, bent bits, cracked, jammed chisel bits, ground down, broken bearings—every leg and foot possible that can be caught and fixed before a job calls for the next right one.

While you're about it, you tighten and straighten and fix everything that you can handle with the hand tools on your rig.

Then you troubleshoot any damaged items to your shop, and tag 'em for repair or replacement.

## PUT SEASIDE

None of these air tools is complicated like an HBM, but you will use your TM and LO for operating, taking, and maintaining the equipment. Do check MM From 180-4 for the EM's and TM's on

the items that make up your set. In older compressors you use manual over the motor. In later ones you find separate manuals on each air tool.

TURN

## LUBING AIR TOOLS

Your air line rollers are **SLANT** items in lubing all your pneumatic power tools. This includes tools with oil packs, because they can't store enough lube for more than a few minutes' operation. Of course you also take care of grease points, like it says in the ILL, and you require a quart of oil on outside points that need it.

Some TBM's may require the tool with a slug of lube right into the air line. Then you fill the roller and complete from

the air line, not over 25 feet from the tool. Make sure the arrow on the roller points toward the tool, and the fuel is adjusted so a little oil comes out the tool's air exhaust.

But don't let cold-air temperatures fool you. Hold a meal of water in the exhaust and it shows all. If the roller runs dry for less than four hours, you might need to lean the fuel valve when you open it for the roll.



## COLD-WEATHER LUBING



Your LDFs give you the scoop on which lube you put into the roller at what temperature. You want to watch this, because the wrong lube can ruin an air tool as fast as it does an engine.

Your LDFs also tell you to add another roller full of anti-frost in cold weather, so lube from the air line can't clog your pneumatic tools. You scoop this second roller into the air line between the roller and the compressor.

## FIGHT TOOL WEARING

You know it takes more out of your arm to raise a swing than to lead a solid punch. Same way with pneumatic tools—they need something to hit. Without a work load, vibration shakes 'em up.

So on all pneumatic tools—the hammers, diggers, breakers, rock drills, and rebar-pulling ones—you take the tool to the work before pulling the trigger, and shut it down pronto when you pull away from the work.



## AFTER THE BALL

The moment of truth—as they say in the Shell System—is when you recognize a tool that's been working on a job. This is the time to make sure it's in shape to work next time you need it.

First of all, you never want to let down a dirty tool in the storage bin. Wash, crust and chips are easier to clean while they're fresh, and you can't count on having time to clean the tool "later."

This is likewise the time to fix any troubles that turn up on the job, before they get worse. A power tool on the job is worth ten in the shop, so you pull as much of the maintenance as your tools and experience allow.

There goes for chipped, duffed, bent or broken bits, chains, drill rods, nail sets, gages, steel pipes, tapping pins, picks, blades, couplings and haws.

You never want a working part that's unsafe, or unsafe for work. Fix 'em here in the shop for repair or replacement, while you still have space on the rig to keep you in business.



## THEY GOTTA BE HARD

You can't keep a rig like this company with six tools on a work-crazy footing with promises they keep piling on you.

Only way you can win is to shape up the whole work crew, sharp and complete—then allow nobody, including yourself, to let any unsharpened business back into the tool house.



## HERE'S A SWITCH

Tension Engineering parts men in TM 1-24 10-204-20P, page 57, covering parts for your Cat D8, you want to remember this up in manufacturer's part numbers on items 2 and 3 of the rubber guard.

Item 2, fig. 24, should read 1J8795. Item 3, fig. 24, should read 1J8795.



## HOT PLATES



HOT PLATE  
DANGER

Some readers seem to have overlooked an important Engineer MWO. It's more than five years old, but just as important now as the day it came out.

That's MWO ENG 1995-4 (28 July 1991).

It says that caution plates must be installed in operators' and drivers' cabs on all cranes and crane-booms.

These plates warn an operator not to operate his rig so that any part of his suspended load...lines...booms...will come within 10 feet of live power lines.

You can get the plates for your equipment through regular Engineer supply channels under Engineer Stock No MWO 000 ENG 1995-4, E3, MWO—free in today's units.

When you make out your requisition, be sure you give the P/N, make, model, and serial number of the equipment you need the plates for.

This is an urgent deal. If your cranes or crane-booms don't have these caution plates, get 'em and install 'em pronto.

## WELDED NUTS



“You say you’re having trouble with loose threads on your MC-30 crane’s hook assembly? And you’re afraid somebody’s gonna get showered if that hook comes loose?”

“Well, here’s a couple things you can do to make that hook safe again. Weld the hook nut and add a safety latch to the hook.”

### STEP 1

1. Take the lead block chain pin assembly out of the center of the lead block and remove the chain.



1. Remove the bolt and spacer from the top of the lead block to replace the block from the cable.



2. Remove the lead block from the block and install the safety latch (1/2 inch, safety “Barnegat”) or equal (1/2 inch x 1/2 inch) to the hook.



2000

4. Grind a 45-degree groove (chamfer) they will fit to the threaded part of the lead shield, extending about 1/4 inch below the top of the nut.



5. Slide the lead in the shield. Use lead and tighten the nut. Use heat the tapered pin and apply lead around the edge of the shield at the top of the nut.



Two things are very important in the welding job: 1. The only safe electric weld cable. 2. Lead welding must only be done by the electric method and within maximum amount of lead. Too much lead will crystallize the metal and cause it to break under strain.

6. Now install the lead block assembly to the cable by doing just the opposite of what you did in 1 and 2.

Your supply or agent can get the book for you from Columbus General Depot, Columbus 15, Ohio. It'll be issued free if it's to be used for this fix.

## COOKING WITH GAS?



YOUR SAFETY COULD BE AT RISK... IF YOU DON'T KNOW THE SAFETY OF YOUR EQUIPMENT!

If your gas-fired stove equipment doesn't have an automatic pilot shutoff control, you're playing with fire.

The automatic pilot control shuts off the gas supply to the main burner and the pilot when there's a pilot or gas failure. If your gas-fired unit doesn't have this control, here's what you should do right away:

Ask your maintenance support unit to whip up a requisition for a Shutoff Gas Pilot Control Kit and use it on the Gas Maintenance Equipment and Parts Commodity Center, Columbus 15, Ohio.

There's a special kit for each type of

equipment. So be sure you give all the facts about yours: Kind of gas used (natural, manufactured, mixed or LP—butane or propane), manufacturer, model and serial number.

This offer goes no matter what kind of equipment you have—range, deep-fat fryer, oven, coffee urn, kettle or griddle.

And speaking of safety, be sure to read DA Ltr 801-01 (14 Dec 59), which spells out some hazards on gas-fired equipment.

## Connie Rodd's BRIEFS

THE ONLY WAY TO GET THE BEST SERVICE FROM YOUR EQUIPMENT IS TO GET IT FROM THE SOURCE.



### *Heard the Word?*

It's the latest. Right now there's only one kind of 6344 lead tube modulator that Miller-Harcos sells and it's in their truck orders. There'd be the modulators, P/M 2900-04-0228, made by another company. As soon as modulators made by other companies are given the answer and get the green light for use, your support unit will pass the word to you.

### *Coffee break?*

Walls up to your coffee are being and ask it, "you get 'em hot bottom?" It's hot and it's a Miller, it's due for an application of AWS 12-012 202000 201. Very important. Miller says with hot bottoms need special welding equipment to keep from springing leaks.

### *4-way fix on 7D-18's*

In case of your 7D-18 motor your haven't heard, Engineer support shops now have the word — AWS 2-2110-202-2111 — to apply some real timely fixes on Series C434 and C435 models. Ask your support unit about 'em.

### *No spot check?*

The word is being passed around that spot-check inspections are no longer getting to be required by the AWS 720-series. That may be so but your customer can make an informed maintenance inspection whenever he thinks he should . . . so don't get caught with your maintenance down. Be ready for spot-check any time . . . whether the AWS call for them or not.

### *New 7M on tools?*

You say you can't tell your ideas from a post hole digger?

Read all about 'em in 7M 2-201, hot off the press Mar 68. You get inside info on all handtools based in power's and computer's sets, plus essential news and tips on how to use and care for tools.

### *A friend indeed*

Almighty handy. That's what you'd call 28 7-1 01 08 Dec 201. It's for Computer units—so help them identify the items in their system.

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



HOW  
A  
LITTLE BIT  
OF  
SABOTAGE  
CONNECTION

CAN DELAY A MASSACRE...



STALL A TANK



CLOBBER A PLANE



LOSE A BATTLE