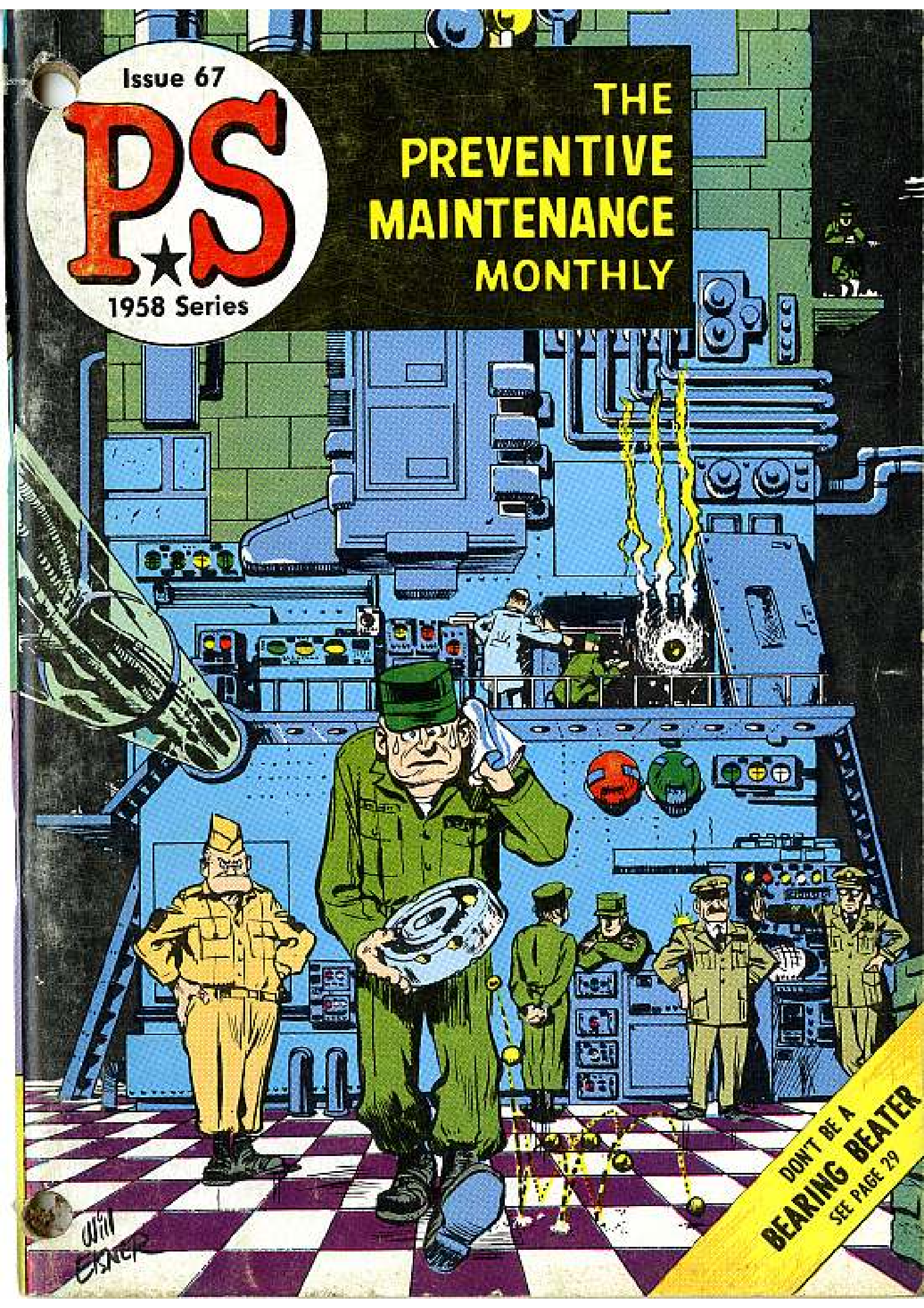
Issue 67
PS
1958 Series
THE PREVENTIVE MAINTENANCE MONTHLY
DON'T BE A BEARING BEATER
SEE PAGE 29
WILL EISNER

YOUR *Best* BUDDY

Lots of men who had experience in World War II and in the Korean operation found out that their **best** buddy was their ol' M1 rifle.

And that M1 remained their best buddy as long as they gave it the best ever-lovin' care they could...with cleaning, lubing, adjusting, and protecting from the weather. Sleeping with your rifle was never punishment—it was the only safe thing to do, to protect your "buddy" so he could take care of you when things busted loose.

Plenty other men found that **their** best buddy was their machine gun, tank, artillery piece, truck, dozer or whatever. They kept their maintenance tip-top because they knew that for the showdown only their equipment stood between them and disaster.

Suppose you would have a chips-down all-out showdown tomorrow. Would your rifle (or machine gun, tank, artillery piece, truck or whatever you've got) stand as **your** best buddy?

You can be sure only with top-notch Preventive Maintenance.

PS

Issue No. 67 — 1958 Series

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IN THIS ISSUE

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

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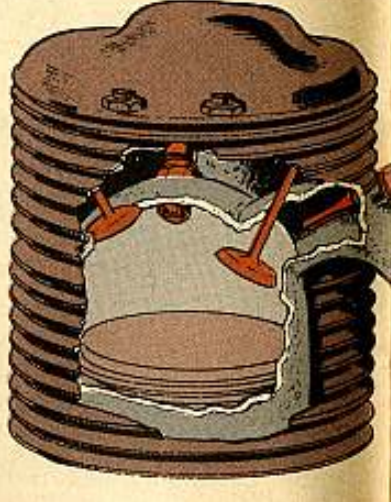
Even Your Tank Gets
The Needle With The New—

FUEL INJECTION SYSTEM

That's right, there's a lot of similarity between the new fuel injection systems used on the Continental AOI, AOSI, AVI and AVSI engines and the hypo the medic used on you. O'course, the needle is screwed into the intake manifold of the engine, permanent like, instead of stabbed into you. But the idea is the same.

Whuffor this? Well, it seems that by using fuel injection they can solve some of the problems that have been plaguing these engines, and get better performance outa them.



THIS FUEL INJECTION SYSTEM IS NOT THE SAME THING YOU FIND ON DIESEL ENGINES.

INTAKE

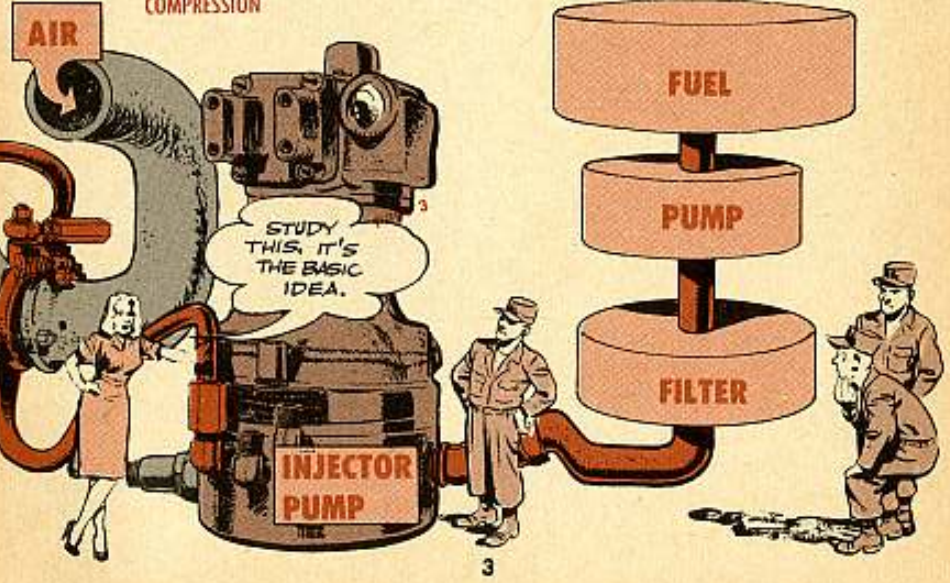
COMPRESSION

It does not inject fuel directly into the cylinder, and the fuel is not fired by compression ignition.

In this new system the air is drawn into the intake manifolds, or forced in by the supercharger on the AOS and AVS types, and the fuel is squirted into the valve ports just outside the intake valves while the valve is open. Once inside the cylinder, it is compressed and fired by a spark-plug, like any other gasoline engine.

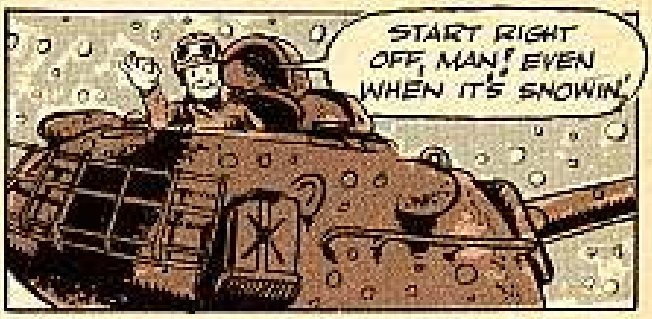
POWER

EXHAUST



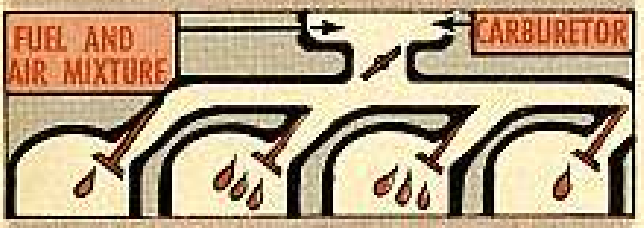
Still, the system offers several advantages over the carburetor systems.

First, you get better cold weather starting and better running during the warm-up time.



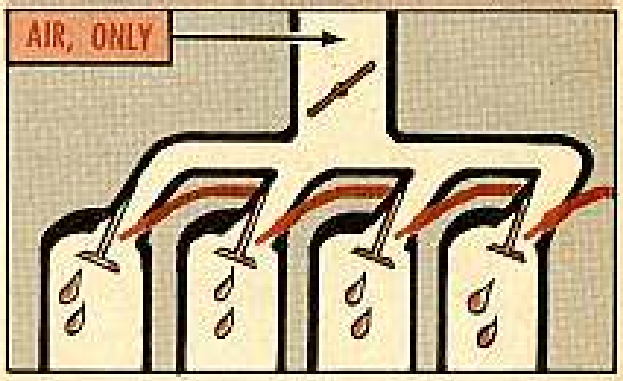
Second, you get much better fuel distribution.

IT HAS ALWAYS BEEN HARD, IF NOT IMPOSSIBLE, TO GET AN EVEN DISTRIBUTION OF FUEL BY RUSHING THE FUEL-AIR MIXTURE DOWN A LONG MANIFOLD.



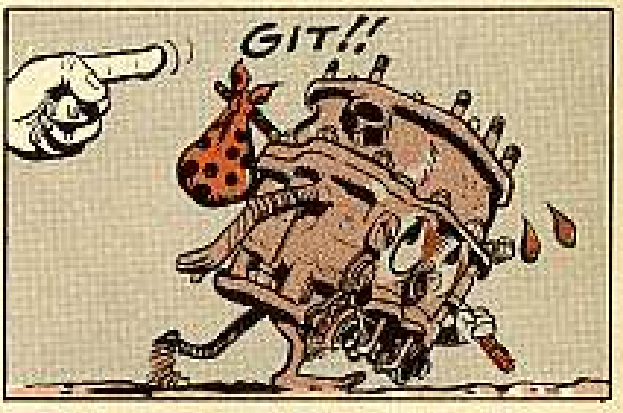
Any droplets had a tendency to slide right into the middle cylinders, overfeeding them, and not get to the ends of the manifold so the end cylinders ran too lean. This is one of the reasons for the recent crop of four barrel and multiple carburetor installations on the newer cars. They tried to design manifolds that had passages equal in length from the carburetor to each cylinder.

But, with fuel injection, the air is supplied to the cylinder under manifold or supercharger pressure, and an exactly equal amount of fuel is injected right into the intake valve port, so each one gets the same amount.



This makes for more even performance, hence more power, and that gives better fuel economy.

Third, since the fuel is injected in a fine spray right into the hot valve port, they no longer need a hot-spot on the manifold. This eliminates the manifold heater valve mechanisms, and also makes for greater power output, since cold air is denser, and consequently more oxygen is packed into each cylinder.



Fourth, the problem of carburetor icing has been solved by eliminating the carburetor.

Fifth, the danger of hydrostatic lock has been greatly reduced since fuel can no longer be forced through the carburetor float valve. (Ya still gotta use your head about water in the manifolds, and prime only on a turning engine.)

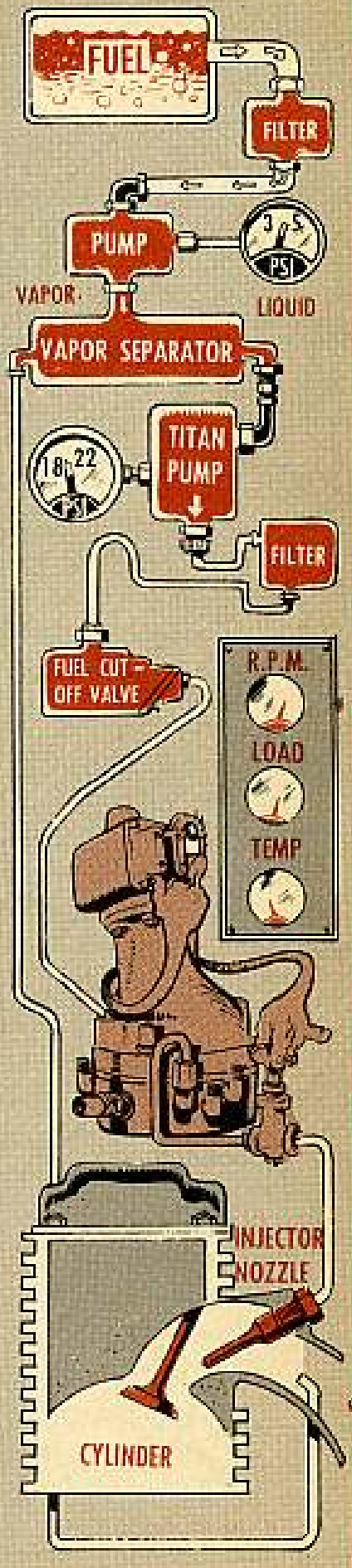
And sixth, bein's as the injection system operates at higher pressures than carburetor systems, your chances of vapor lock are much less.

All of which add up to make this a pretty good system to have around. Let's see just what it is.

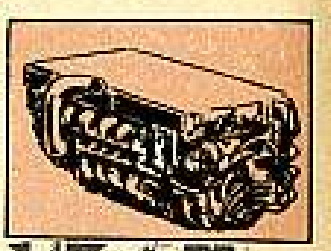
Starting from the fuel tank, your fuel comes through the same kind of lines and filters as before, and through the fuel pump. This pump delivers it to a vapor separator on the AOSI-895-5 at 3 to 5 pounds pressure. The vapor separator does just that; it lets any vapor bubble out of the fuel and go to the intake manifold. Solid fuel is then fed to the so called "Titan" pump. This is a vane pump which boosts the fuel pressure up to 18-22 PSI and delivers it to the fuel injector pumps. (1790-6's in the M51's get their fuel from electric pumps in the fuel tanks which feed right to the Titan pump).

There are two fuel injector pumps on 1790-6 engines, one for each bank, but only one on the AOSI-895-5 engines. These fuel injector pumps are real clever gimmicks. They think like Univac, only by different means. The pump has to take into account the speed of your engine, the temperature, and the load (derived from the intake manifold pressure); then it figures the exact amount of fuel each cylinder will need under these conditions, and delivers it at exactly the moment the cylinder needs it. (It's timed to number one cylinder by the fly-wheel timing marks just like a magneto.) And then, for "other assigned duties" the pump has to listen for your final jingle saying you are finished with engines. This information comes by way of a solenoid cut-off valve when you punch the "Whoa!" button on your ignition switch. Brainy, wot?

From the fuel injector pumps,steel lines carry the fuel to the fuel injector nozzle assemblies, one for each cylinder, located just outside the intake valve ports. This is the needle of the hypo, and contains a filter, a filter support and retaining screw, and a device called an injector retainer which positions a spring-loaded valve. The valve keeps the nozzle closed except when fuel is coming from the injector pump (at a pressure of 50-70 PSI or over). The fuel forces the valve open and sprays into the manifold.



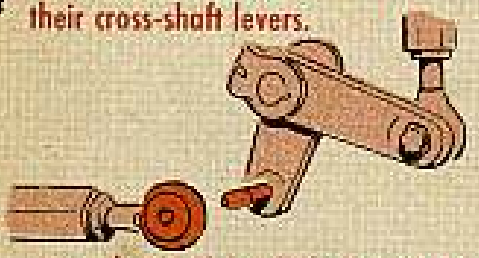
MAINTENANCE



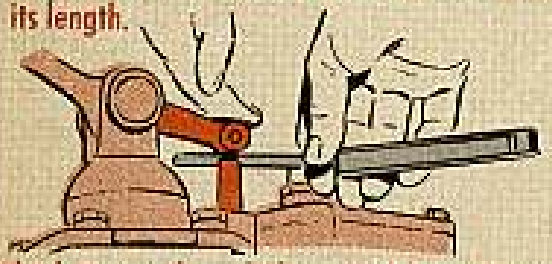
Fortunately for the boys in the units, all the internal repair of the fuel injector pumps is done by support. All the second echelon shop is responsible for is adjustment and replacement of assemblies. Even this involves quite a bit of very careful work.

THROTTLE AND GOVERNOR LINKAGE ADJUSTMENT: 1790-6 ENGINES

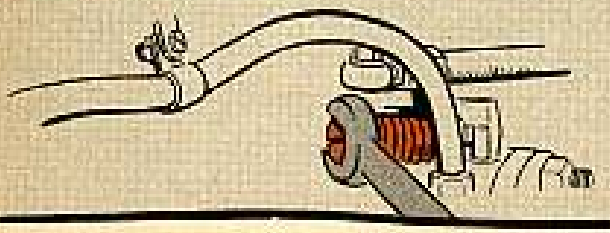
First: Disconnect the throttle control rods from their cross-shaft levers.



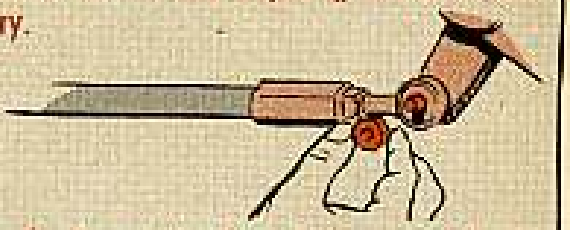
Second: Put the vehicle control lever in full open position. Be sure the governor bellows is **fully** extended. The governor rocker arm must be 0.010 inches from its stop. If not, loosen the governor control rod lock nuts and adjust its length.



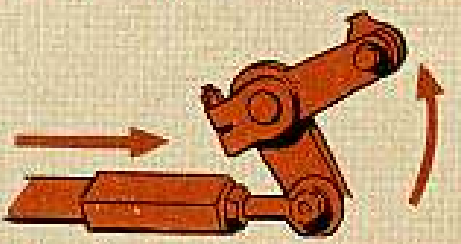
Third: Swing the vehicle control lever (fancy name for the throttle) to the closed position—full idle. Back off the idle screws in the butterfly valve control levers until you can completely close the butterflies in the air horns.



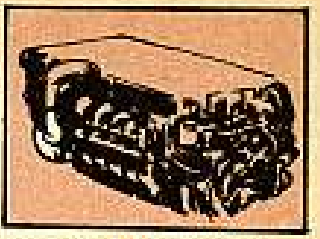
Keep the butterflies closed and re-connect the throttle control rods, adjusting 'em as necessary.



Fourth: Now swing the vehicle control lever back to full open. The butterfly valves should now be in the vertical or full open position. Be sure they do not go past the full open, as there is no full-open stop. What you have accomplished so far is a check to prove that the throttle valves will fully close when you close the lever, and fully open when you open it. The ten thousandths of an inch clearance on the governor control arm tells you the governor won't interfere when you need full open throttle. If the butterflies do not come to the vertical position, check for bent control rods or butterflies. Check your AOSI-895's the same way.

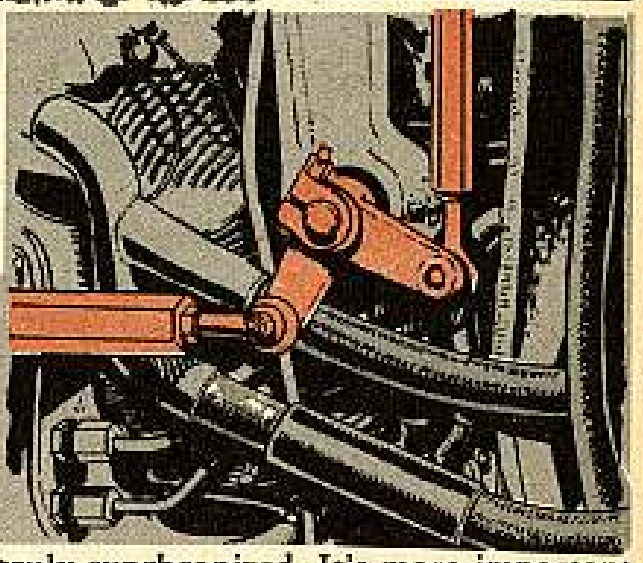


ADJUSTING IDLE SCREWS: (1790'S)



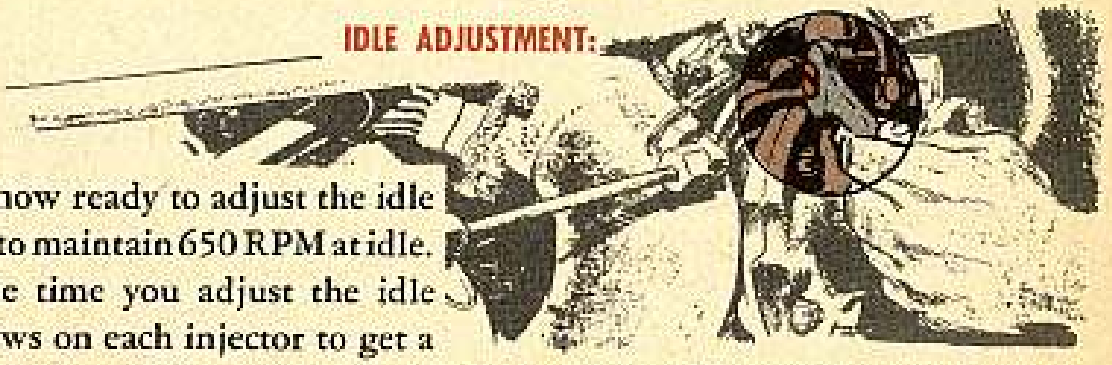
First: Attach a manometer to the No. 1 intake manifold tube on each bank; you'll find a ⅜-in. Allen plug to let you in. Back off the idle adjustment screw on each injector about one and a half turns from fully closed as a starting point.

Second: Start the engine and run it about 2000 RPM. Then balance the pressure in the manifolds to within one inch steady. You do this by opening the butterfly on the low bank and/or closing the butterfly on the high bank, by adjusting the throttle control rods.



This tells you that your throttles are truly synchronized. It's more important that the valves give you the same manifold pressure on each bank than that they happen to be precisely the same distance open. (AOSI-895-5 engines have a balance tube between the manifolds—so this step isn't needed.)

IDLE ADJUSTMENT:

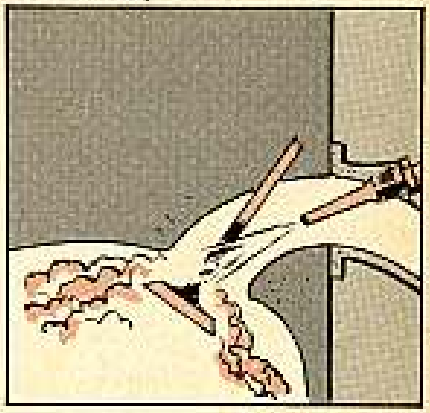


You are now ready to adjust the idle stop screws to maintain 650 RPM at idle. At the same time you adjust the idle control screws on each injector to get a smooth and balanced idle. This adjustment has been eliminated on the latest injectors, used on M48A2 tanks. (If adjusting the idle control screws does not affect the idle of the engine, check for loose fittings or plugged lines.)

KEEP YOUR MEAT-HOOKS OFF THE METERING CONTROL VALVE AND THE MAIN METERING ADJUSTMENT—THESE ARE SET AT THE FACTORY, AND TINKERING WILL GOOF YOU UP...

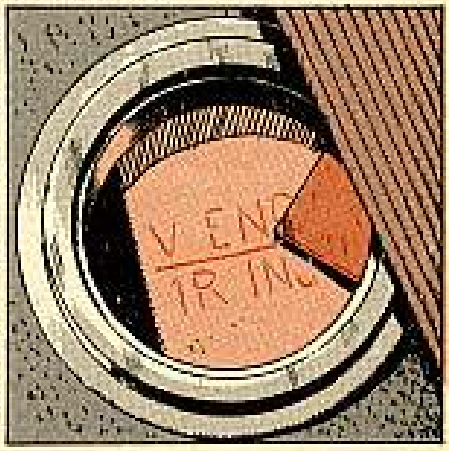
That's it for adjustments, which are all you'll have to make most times. The injector nozzles are designed to be self-cleaning, and you probably won't have any trouble. Remember that a properly-working injector gives a slight squeak when operating. If you don't hear it, goose the engine a couple of times and listen again. If you should have to take apart the injector system or lines, don't use thread lubricant when you put 'em together. It'll clog the nozzles and injectors sure. Put a drop of OE on the threads instead.

REPLACING INJECTORS



No machinery runs forever, so it may happen that you'll have to replace a fuel injector at some time. At first glance, this seems to be an awful job, but actually it's not too bad. You've gotta have the power pack outta the tank, o' course. Remember that the fuel injector provides a squirt of gasoline just when the intake valve is open. So, the injector pump has to be timed to the crankshaft rotation, sorta like the magnetos.

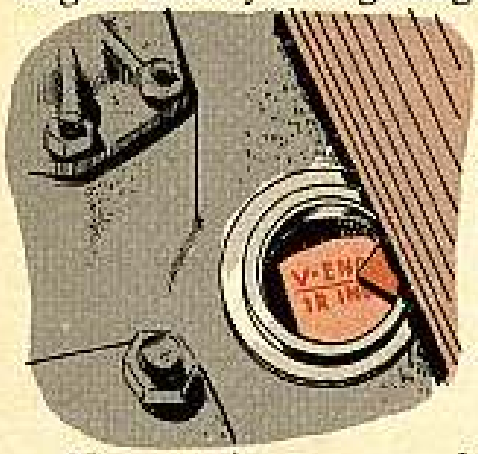
First, you'd better check your valve and magneto timing. This is the same as on the carburetor engines, so your manual has the dope. When you're sure this is OK, you can install the injector.



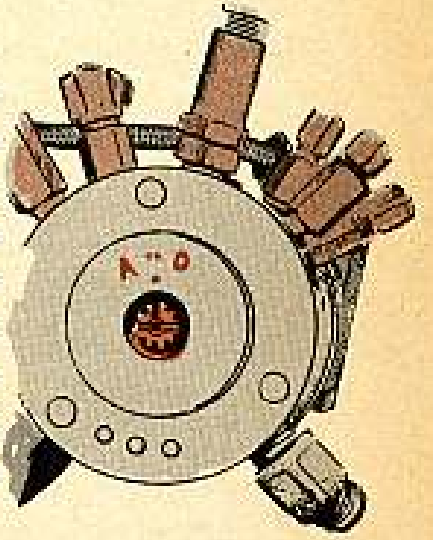
On your 1790's, you'll find a set of marks on the flywheel for "V-ENG-1R-INJ" (Vee Engine, No. 1 Right Cylinder, Injector) and "V-ENG-1L-INJ" (Vee Engine, No. 1 Left Cylinder, Injector). Be sure you don't confuse 'em with the "IGN" ignition timing marks which look about the same. "INJ" is what you want. You'll get by with a little less hand cranking if you install the right injector first, but either one will work OK. Just be sure you use the correct timing mark.

First: Set your engine. You can turn the 1790's from either end you like, 895's from the accessory end only. Remember to turn it in the direction of normal rotation. (Clockwise when seen from the accessory end.) One thing. If you should happen to go past a timing mark, either turn it on forward two complete revolutions or else back up at least a quarter turn. This is to take out any backlash in the accessory drive. In other words, you must arrive at the timing mark while turning the engine in the direction it runs. (We'll assume that you've just checked the ignition timing. Therefore you have removed the valve cover from No. 1 cylinder of each bank to be sure that it was on the compression stroke—both valves closed—when you timed the magneto for that side.)

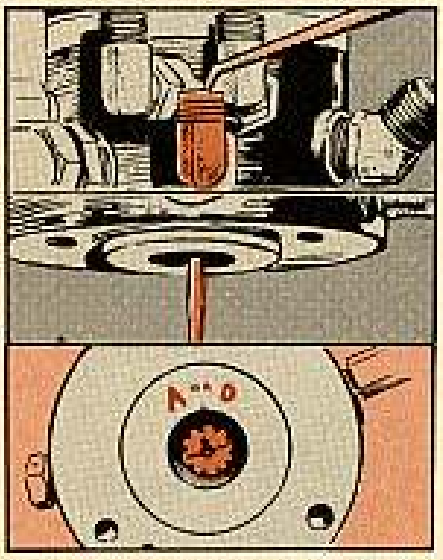
After setting the left magneto (V-ENG-1L-IGN), you turn the engine on forwards about 40° to the right injector mark (V-ENG-1R-INJ), and carefully stop with the mark right at the point of the timing pointer. Be sure nobody turns the engine while you're getting the injector set and installed.



For the AOSI-895-5 engines, the flywheel reads "OPP-ENG-1 & 2 INJ." Take the rocker box cover off No. 1 cylinder and rotate the engine until the intake valve starts to open. You have just passed the injector timing mark. Back the engine a quarter of a turn and come up to the mark, easy like.

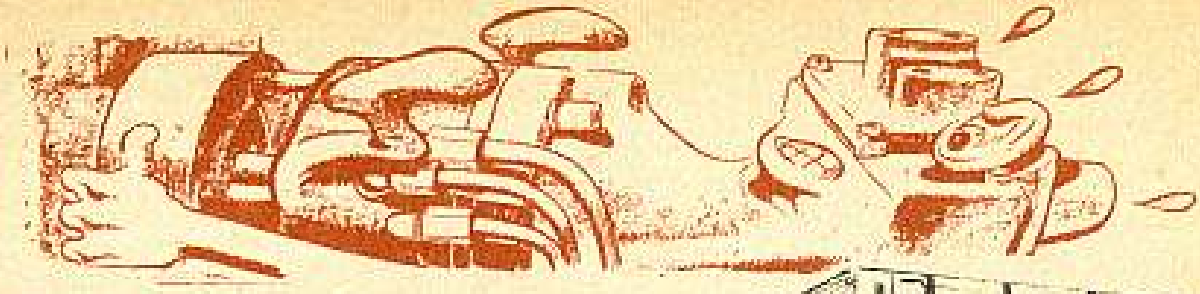


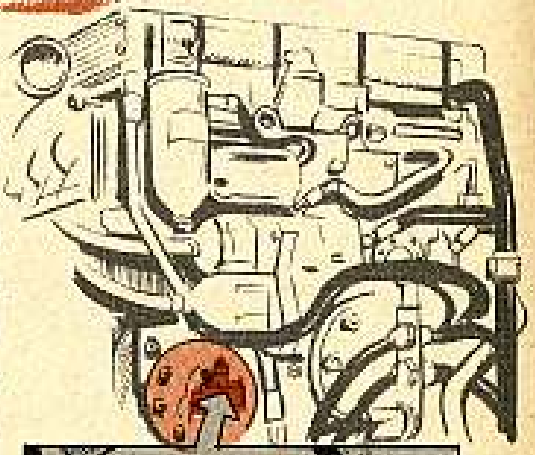
Next, you've gotta set the injector so that it's ready to put out fuel from the "A" port. Ya see, this injector has six pump cylinders, but it uses two of 'em at a time to supply gas to a cylinder. To do this, it has an internal valve that directs the output from each pair of pump cylinders, first to one output port and then to the other. You've gotta make sure that when you line up the arrow on the injector pump shaft with the timing dot, this valve is set for the "A" port, not the "D" port. (That's the other one served by the same pump cylinders.)



To do this, you squirt a little light oil into the "A" output port. Then turn the injector pump shaft in the direction of rotation until this oil starts to rise up in the port. This shows you the valve is on this "A" port. You turn the shaft until the arrow on the butt of the spline shaft is within the arc stamped "A" or "D" on the distributor block. If the oil does not rise in the "A" port while this arrow is in the arc, make one complete turn of the shaft and try again. This'll fetch it unless the injector slipped by with an incorrect internal timing. If for any reason you can't get the oil to rise in the "A" port while the shaft arrow is within the "A" or "D" arc on the distributor block, don't fool with the injector. Turn it in and get another.

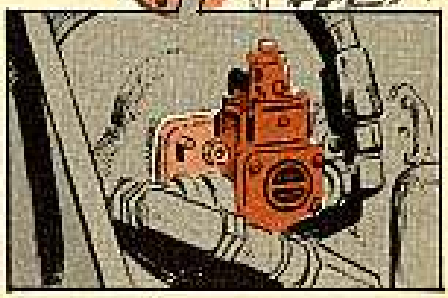
When you do find the oil rising in the "A" port, set the arrow right on the timing dot (centered below the stamped "A" or "D" on the distributor block). The injector pump is now ready to install on the engine, and the engine is set right to receive it.



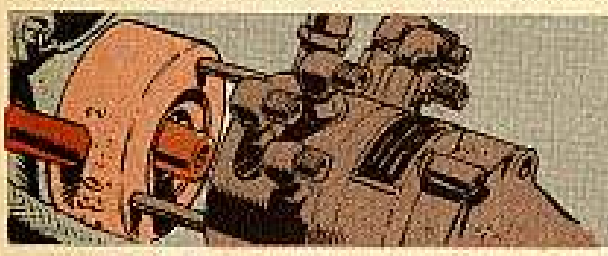


INSTALLING INJECTOR:

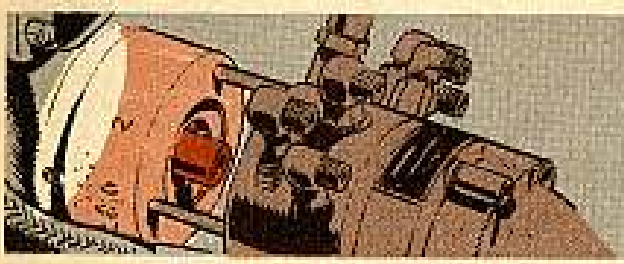
If you are lucky, your pre-timed injector will slip right onto the mounting pad of your pre-timed engine. If it doesn't, don't force it. What you have to do to get a perfect alignment on 895's is remove the Titan pump, or booster pump assembly from the end of the magneto housing assembly. Reach in and draw out the fuel injector-pump drive-shaft and gear. Then install your pre-timed injector. You'll be able to reach inside the housing and move the fuel injector-pump-driven bevel-gear enough to mate it to the splines on the injector drive-shaft. Be careful not to disturb the setting on the injector. Bolt up your injector-pump.



Now you can replace the injector-pump drive-shaft. You'll find that the number of splines on the internal splined end of this shaft is different from the number of gear teeth, so by trying it in several different positions, you'll find one that will mesh. **Don't force it.** When the shafts mesh, replace the Titan pump.



There is another way this pump can be installed on 1790's without removing the Titan pump if you prefer. If the splines don't mesh when you first try it, remove the injector-pump.

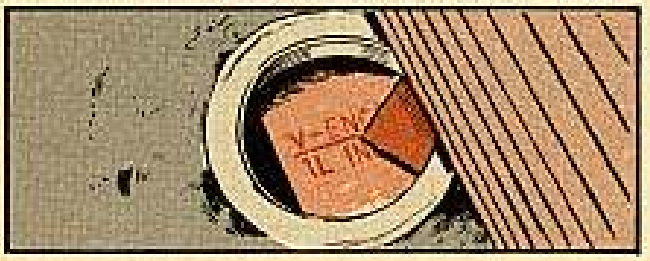


Then slide the mounting adapter an inch or so off its pad. This will unmesh the driven gear from the drive gear.

Turn it a few degrees and slip it back. Try the injector-pump again.

The same thing applies here as when removing the drive shaft. Due to the different number of splines and gear teeth, there will be one position which will allow the shafts to mesh.

The important thing is not to move either the injector-pump shaft or the engine crankshaft.



After you have timed the right injector, turn the engine crankshaft 270° forward (clockwise from the accessory end) to the "V-ENG-1L-INJ" mark and install the left injector the same way.

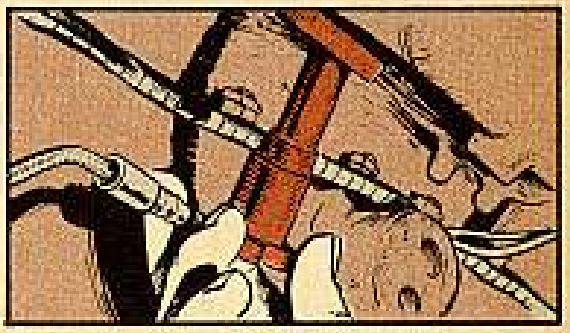
CONNECTING FUEL LINES:

Each port on the injector-pumps is marked by a stamped letter. You hook up the fuel tubes to the cylinders like this—

	1790						A05I—895					
	THE SAME ON BOTH BANKS											
INJECTOR PORT	A	B	C	D	E	F	A	B	C	D	E	F
ENGINE CYLINDER	1	5	3	6	2	4	1	6	3	2	5	4

Same as the firing order, see?

That's it, hook up your fuel supply line from the booster pump, the pressure and the temperature lines, and the electric lead to the solenoid valve, and you are ready to run.



The only other thing you ever touch on this system would be a clogged injector nozzle which didn't clear itself when you gunned the engine.

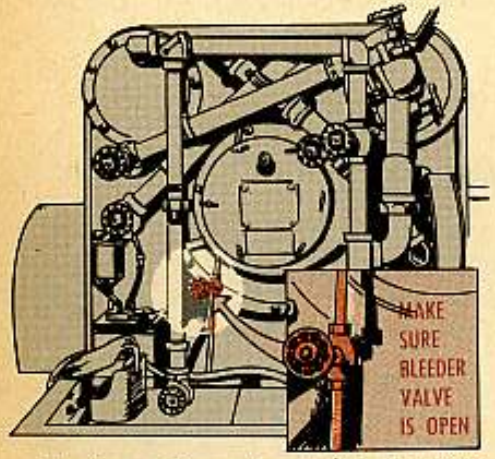
You can remove the fuel tube, take out the injector nozzle, and carefully tap its fuel line end on a clean wood surface. This will shake out the little filter and filter retainer. Watch for the little gasket that may or may not follow 'em out. You can carefully unscrew the filter retaining screw and remove the little filter screen if it appears dirty. Clean and replace. Re-install the injector-nozzle and try again. If she still doesn't squeak, get a new nozzle. (Naturally you'll be sure the fuel tube is clear.)

These Tips'll Help You...

STAY OUT OF HOT WATER

That M-1950 mobile bath unit can get more than the bathers into hot water. Things can get hot for the operators, too, if these mighty important points are overlooked.

Take the boiler bleeder-valve, for example. It has to be open all the time when you're operating to keep air pockets from building up in the boiler. These are the same kind of pockets you get when the unit isn't level. Air pockets can cause hot spots in the boiler. And hot spots can build a big enough head of live steam to blow it apart. So make sure that bleeder valve is open before you start operations. There should be a trickle of water and steam coming from it all the time you're operating.



Speaking about the boiler, here's another important thing to watch for. Always make sure the boiler is filled with water before you fire the burner. Those heating coils need water to keep 'em cooled down, and if they don't get it—schboom! The coil burns up and you're out of business.

Most of the trouble here centers around the pressure switch. If it isn't working right, you may not be getting any water into the heater. So to play it safe, make sure there's water coming from the showerheads before firing up the boiler.

Which brings up a little caution about firing the heater.

If the burner fails to fire when you turn on the fuel—act fast.

Close the manual control fuel-valves to keep any more fuel from entering. Then run the engine at governed speed for about 15 minutes to drive off the compressed atomized fuel.

If you don't, those fuel vapors can build up on you, ignite, and explode.

Here're a coupla more points that are pretty simple but powerfully important for trouble-free operation.

The fuel-oil pump's gotta keep well-oiled to give smooth performance. 'Course, when you're using fuel-oil, there's no sweat.

The fuel is capable of doing its own lubricating.

But if you have to switch to gasoline, here's a formula to keep in mind: One quart of engine oil for each five gallons of gasoline. That'll keep the pump oiled and running right.

Use a clean, 55-gal drum for the mixing operation. Pour in 11 quarts of OE 30 engine lubricating oil—and then fill up the drum with gasoline. By pouring the oil in first you get a better mixture.

And the gasoline pumped into that drum will be extra clean if you use a fine mesh screen to filter out the dirt.

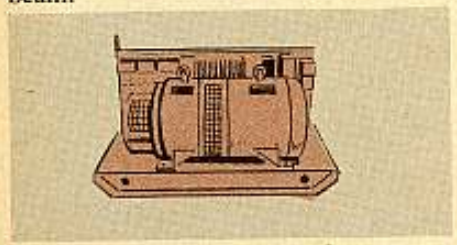
If there's anything worse than running the fuel-pump without lubrication, it's running it without anything at all. Like when the fuel line feeding the pump gets crimped, broken or disconnected. It pays to keep an eye on the fuel line, 'specially near the rightside door assembly panel. It can get crooked up there easily and shut off the fuel completely.

MISSILE BLASTS

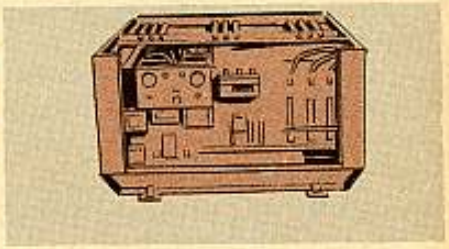
FCS Snafu? Your Frequency Converter's A Good Bet For...

JUICE

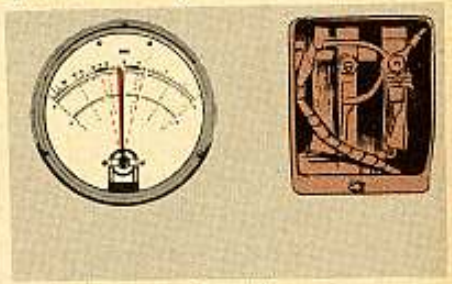
As you M33 and Nike-Ajax guys know, the frequency converter has the job of giving out with the juice that keeps your equipment operating. If the converter goes on the blink, you have to get your standby generators into operation until you get it back on the beam.



The voltmeter on the panel will clue you to troubles in the AC circuit. If the needle starts fluctuating, shut down the converter and check out the brushes. If they're arcing or making poor contact, it could give you a voltage drop and blow a fuse.



The converter has a couple of jobs to do. First, it has a motor-generator unit that gives you 120/208 volts, 400 cycles, AC. That's the main power supply for your rig. The transformer-rectifier unit supplies the 28-volt DC to operate the relays.



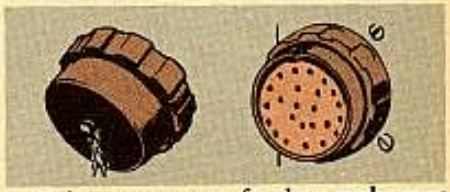
Same goes for the commutator. Check it out for wear . . . pitting . . . loose connections.

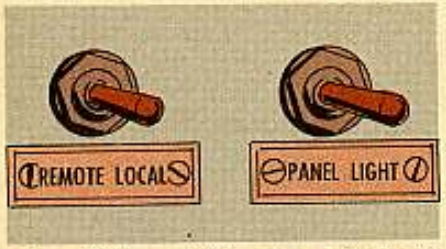
Use your TS 352/U multimeter to find out if the meter is playing you false and to check the voltage output right at the converter while it's running. To get the right AC output, check each phase of the three-phase 400-cycle current.

TROUBLE

CHECK IT OUT LIKE THIS:

You have two AC-DC outlets. Take the dust cover from one of them. If cables are connected to both, uncouple both cables. Each receptacle has 28 contacts and each contact is numbered.



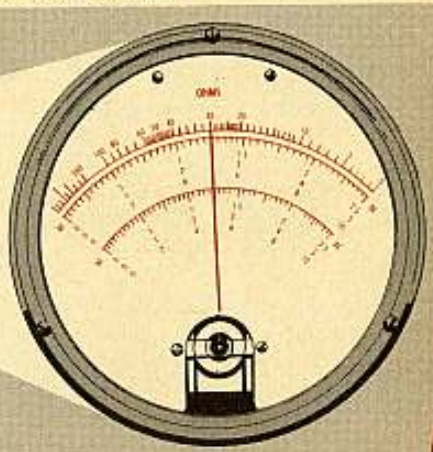


Before you go any further, make sure the remote-local switch is in the local position. You put the switch in local to prevent damage to the converter when you're operating it with the cables disconnected. If you foul up here, you'll be in for more than your share of headaches. If the unit is having voltage trouble, it could be in the cables. If the circuit is open in the external rheostat circuit... or the cables... or connections—you couldn't control the voltage with the switch in remote.

Now set your multimeter for AC operation and use a range scale of 250 volts.

Put the negative lead (black) in any of the contacts numbered 1, 2, 3, or 4. They're all connected to the same phase.

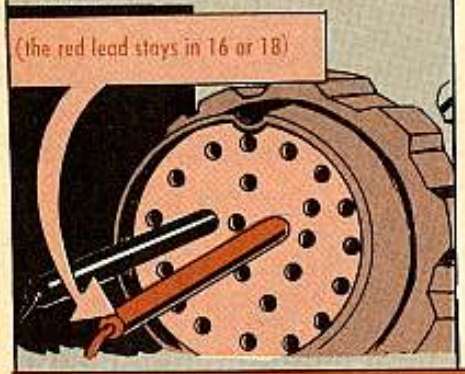
Put the other lead (red) in either pin 16 or 18... they're the neutral contacts.



You should get a reading of 120 volts.

Test the second phase by putting the black lead in pin 6, 7, 8, or 9 . . .

(the red lead stays in 16 or 18)



For the third phase, use the same neutral contact and put the black lead in pin 11, 12, 13, or 14. You need a reading of at least 120 volts in each of the phases. If you don't get that reading, call in the Engineer maintenance people.

It's no sweat to test the direct current output. Use the same multimeter, only set it up for Direct operation and use the 30-50 volt range.

Put the red lead in pin 20. Then put the negative lead in pin 21. The needle on your meter should jump to 28 volts.

If your reading is OK, then check 20 and 22, 20 and 24, and 20 and 26.

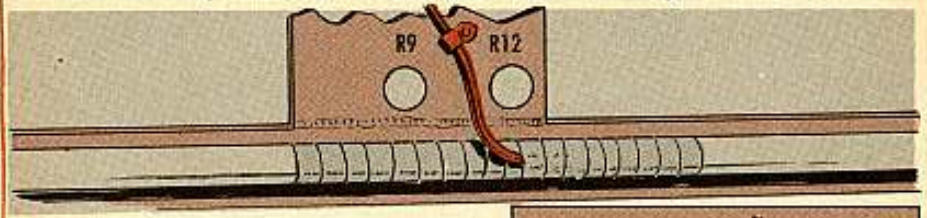
You need a reading of 28 volts in each test. If any of the contacts show less than that, you're clued to your troubles. Yell for the Engineer maintenance crew again.

Of course, if everything checks out at this point, you follow the troubleshooting routine on the section panel outlined in the TM.

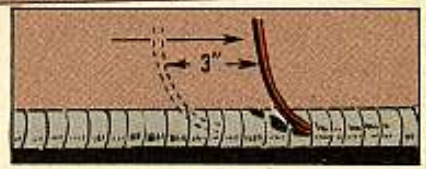
But remember: If your converter isn't doing right by you, troubleshooting the whole section panel isn't going to help a bit.

That high voltage cable in the PPI chassis of your Nike-Ajax radar van sure enough does get mighty warm. Matter of fact . . . the cable gets so blamed hot at the point where it passes the R-9 and the R-12 resistors the insulation is ruinated by the heat. Then you get shorting and arcing.

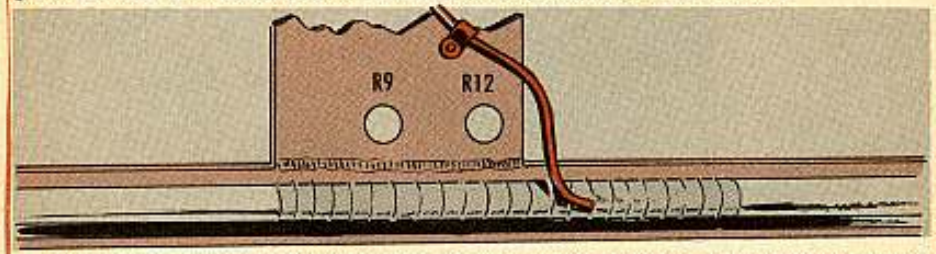
You can call a halt to the burned cables as fast as it takes to do the job. First . . . make sure all power is off. Then take off the cable clamp.



Next, pull off three inches of tape from the cable harness. That gives you three extra inches of high voltage cable.



Those three inches let you reposition the clamp about 180° from its former position and reroute the cable around and above the R-12 resistor.



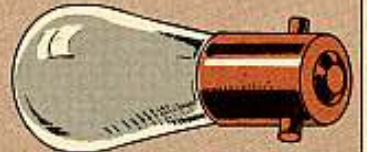
Replace the clamp and finish up by ripping a 12 to 15-inch piece of black plastic tape off the roll (FSN 5970-331-7772) and retaping the cable harness.

The cable move will solve the heat problem while you're waiting for MWO Ord Y4-W105.

LIGHT-UP TIME

You say you requisitioned 6-watt blue bulbs for your Nike-Ajax launching control trailer? And you got the bayonet-base type instead of screw-base type?

Try this number next time: FSN 6240-299-6468. You'll get the screw-base type bulb.

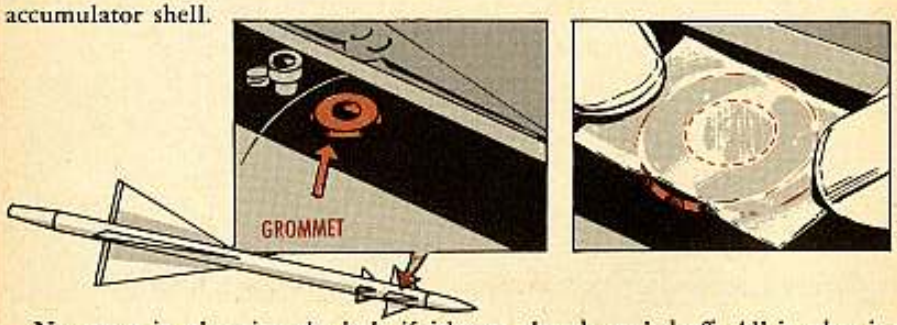


You get the bayonet-base type bulb—like's used in M33 FCS equipment—when you use FSN 6240-759-9971.

PLUG THE HOLE

You've seen the hole in the accumulator under tunnel 2 at the forward end of the early Nike-Ajax missile? Yes?

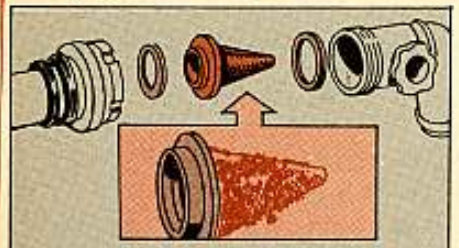
The hole gets put in there when the missile is made. It doesn't do much except let water in. And the water causes rust on the forward inside surface of the accumulator shell.



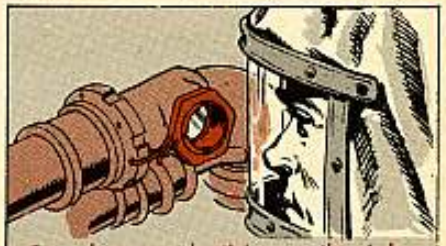
No sweat in plugging the hole if it's not already sealed off. All it takes is a piece of 1 x 1½-in tape. The calling name is Tape: Pressure sensitive, oil and moisture resistant . . . and has this FSN: 8135-269-8089. The tape is a Quartermaster item.

A REAL HOSING

Comes the day when your Corporal propellant is moving through the hoses so slowly, you think maybe the hoses are clogged. And . . . you're probably right.



Those cone-shaped screens in the nozzles have the pesky habit of getting covered with sludge. When that happens, the propellant isn't about to move anyway but slow.



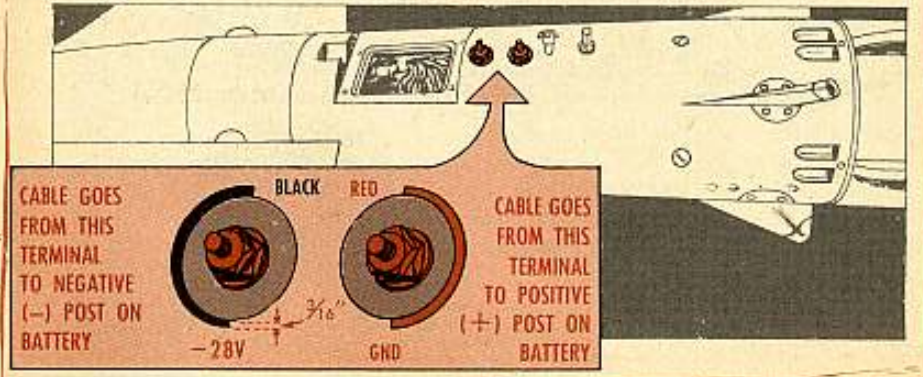
So . . . keep your shootin' eye on the window that lets you see through the nozzle to the screen. If it's covered with junk, decontaminate the nozzle. Then remove the screen and wash it out in some volatile mineral spirits.

Keep checking the screens before you run aniline or acid through the hoses—like it says in TM 9-5056.

RIGHT HOOKUP

Sure enough . . . the Nike-Ajax GS-15660 and GS-17120 missile guidance sets work as a positive grounded system. And that means the positive side of where the power comes from—a 28-volt nickel cadmium battery—is always connected to the ground terminal on the guidance section.

It's tough to get the wrong hookup if you paint a different colored 3/16-in wide semi-circle around each terminal. Make it red enamel, No. 3115, FSN 8010-297-2114, around the ground (+) terminal and black enamel, No. 3725, FSN 8010-297-2121, around the −28-volt (−) terminal.



KEEP THOSE SCREWDRIVERS

There's been some talk about Nike-Ajax mechanics not knowing what to do with their R&P screwdrivers.

They say they can't use an R&P on a Phillips head screw 'cause the R&P will wreck the screw mighty fast. And, they're right.

But, hold on to the R&P. There're some R&P screw heads in the supply system and you may get some of 'em. The Phillips and R&P screws look the same from a distance . . . the secret's at the bottom of the screw's crossed recess.

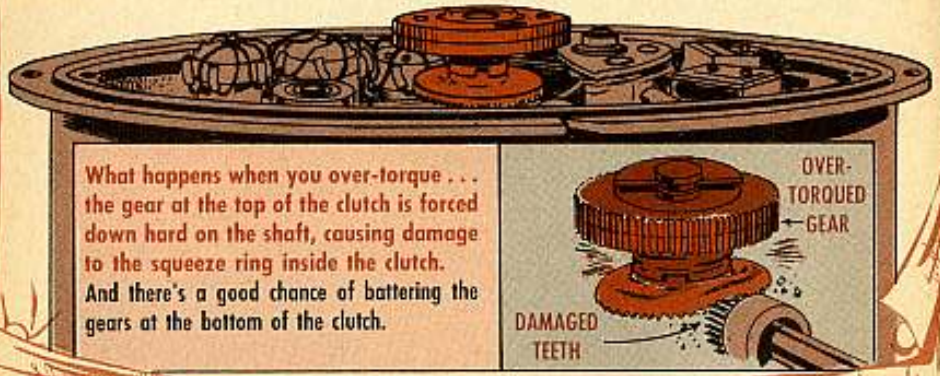
USE THE RIGHT KIND AND THE RIGHT SIZE FOR THE RIGHT SCREW.

The bottom of the recess in an R&P screw comes to a point—like the blade of the R&P screwdriver.

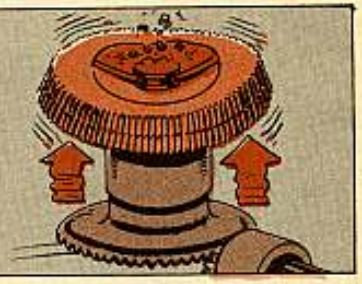
And the bottom of the recess in the Phillips screw is round—same's the blade of the Phillips screwdriver.

CLICK DOES TRICK

You don't want to let the wrench get outta hand when you're torquing the clutch assembly in the Nike-Ajax missile tracking antenna and target tracking antenna.



You can also run into trouble by not having the clutch assembly torqued. That kinda goof forces the gear at the top of the clutch past the metal flange. Chalk up a sheared off flange . . . and elevation data readings that are of no account.



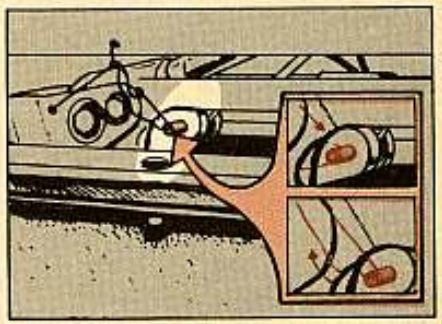
To make sure you get the right torque, use the torque wrench (FSN 5120-212-6459) that's in your Ord 7 missile and target tool pack. Don't mess around with a hex-socket wrench.

There're no readings on the torque wrench but you can tell you have the right torque by keeping your ears open. When you hear a click, stop turning—the torque is right.

DON'T LOSE 'EM

The shear pins in the hydraulic arming lanyard of your Nike-Ajax missile, that is—they have a nasty habit of falling out and losing themselves, which could be disastrous.

Best way to keep 'em snug . . . and make sure they stay that way . . . is to secure 'em with the safety wire that holds the bayonet to the aft section of the missile. Just put the ends of the safety wire through the hole in the shear pin, give a twist, and that's it. That shear pin'll stay put till you undo the safety wire. That wire is local purchase, remember—get carbon steel wire that's 20 thousandths of an inch in diameter.



Generator Operators—

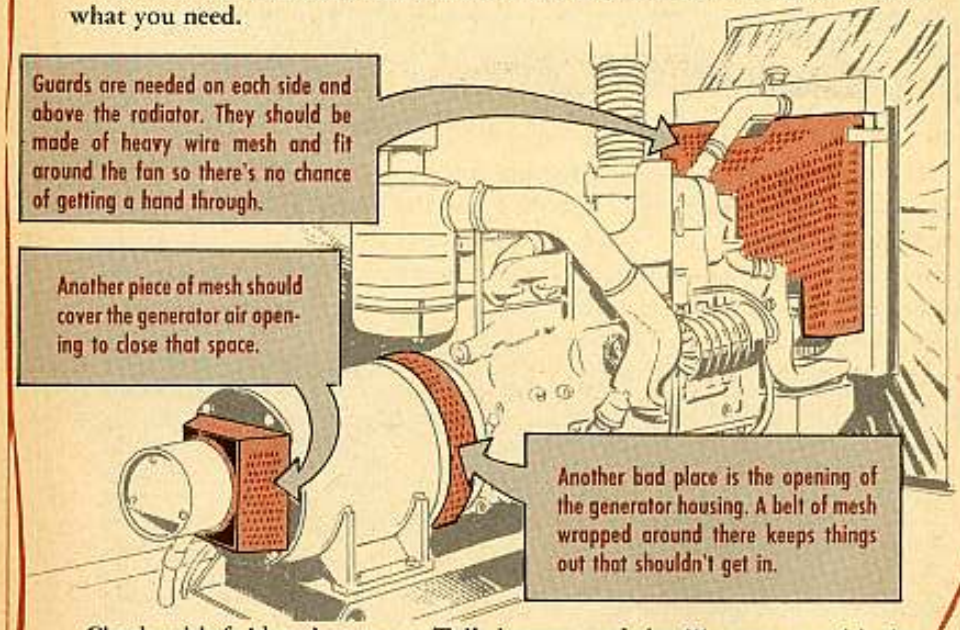
A FAN MEANS YOU'RE OUT

Diesel-driven generators can be as dangerous as a stood-up woman. Even worse, 'cause a guy can get hurt bad operating generators. Especially from the radiator fan.

Get pulled into that fan and you've got as much chance as a fresh egg in a meat grinder. It's as powerful as a weight-lifting gorilla.

There's a big chance for an accident when starting a generator. You're standing close to the radiator fan while pulling the compression release lever. Clothing could get caught in the fan—and pull you in. Especially loose clothing, of which there shouldn't be any. Or, you could slip or lose your balance or something. And careless handling of tools or equipment around it could really wreck your diesel-generator.

Get together with your support outfit and maybe they can help you out on what you need.



Check with field maintenance. Talk it over, and they'll come up with the material and know-how to fix those generators for safer operation. MWO 5-5274-1 takes care of the Cummins 150-165 KW in the launching area.

FILTERS FOULED? FIX 'EM

Next time you're on a maintenance detail around the pit at your Nike site, take a minute to look at the air filter on the hydraulic system.

Pull off a few disks and run a finger over them. Dirty, eh? No wonder.

Put a hand by the filter when the elevator goes up and you get an idea how much air gets sucked in. And dust and dirt get carried in with the air, which is bad medicine for the hydraulic system.

Every month, take the filter apart and wash the disks in dry cleaning solvent. FSN 6850-281-1985 (QM) gets a 1-gal can, and FSN 6850-264-9038 (QM) a 5-gal can. Wipe the disks dry before reassembling.

If you're in desert-like country . . . or the hot, dry season is on in your part of the country . . . give the hydraulic system a little extra protection by fixing up an air filter. One way is to fold a piece of cheesecloth over two or three times and wrap it around the bottom of the filter cap. Here's the dope on getting it: Cloth, Cotton, Cheesecloth, .98 oz, white, unshrunk, 36-in width, 1 yard, FSN 8305-170-5062 (QM).

Put a piece of screen over it, and fasten the screen down with wire to hold the cheesecloth in place. It'll help the hydraulic system live a clean life.

CORPORAL CHAOS CAUSERS

Would you requisition a hog just to get a slice of bacon? Some guys do almost as bad.

Like f'rinstance . . . if a tube blows in a radio transmitter or signal generator, just ask for a new tube. Don't order the entire transmitter or generator.

Never make like you're in a hurry when you remove a tube from a computer, radio set, or what have you. Ease it out. If you get rough, you'll shake it like you were jacking up a truck to change a tire. That shaking business is murder on the tube guide pins.

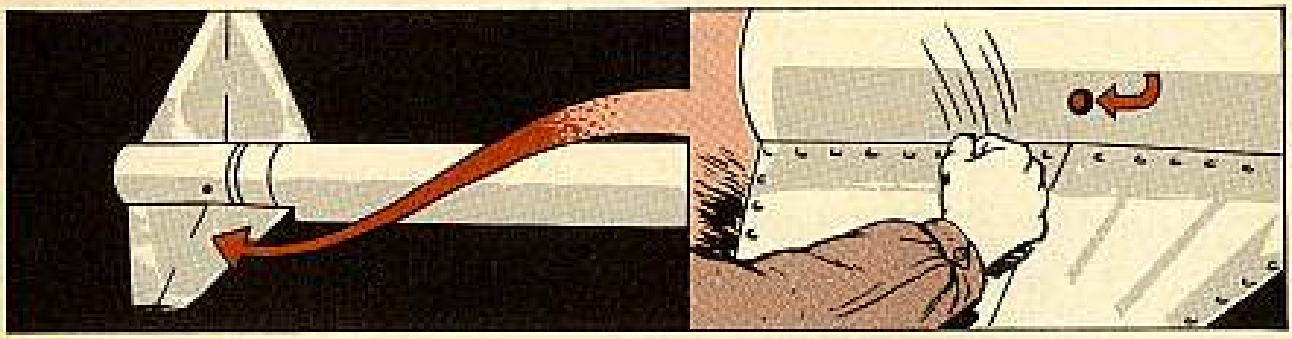
"Cannibalization" is taboo, too. Stripping a chassis for parts never works out in the long run. But "controlled exchange" will get you out of a pinch when a real

emergency crops up. Emergency, in this case, means when you need a part to keep from deadlining a major item. Controlled exchange means removing a part from a spare chassis and then replacing it when you get the new part from supply.

Leaving any loose parts lying around inside a piece of equipment when you send it back for repair is like putting a cow in a china shop. So . . . don't leave a dead tube free to float around the inside of a radio set—it'll only wreck other tubes.

GIVE IT A TAP

After tightening the booster fin attach bolts on your Nike-Ajax missile, give the fin a light tap at the inboard end with your fist to make sure those locking bolts



are in place. If they're not seated right, you'll be able to hear a slight "click." Double-check the fin by feel to make sure it doesn't move.

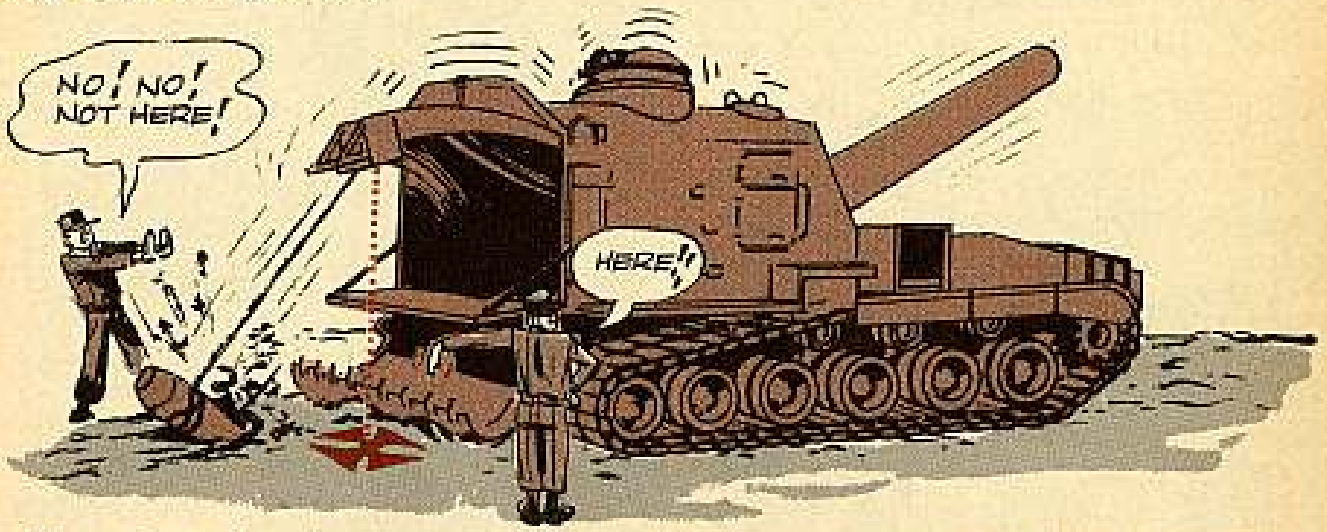
Connie Rodd's

"SHORT 'N SWEET DEPT"

Winchin' in is out

One thing the M55 self-propelled howitzer's hoist was not meant to do is drag projectiles from a distance. It's only meant to hoist and load projectiles from one spot—and that's "directly to the rear of the lower section of the turret rear door."

Hauling heavy projectiles by manpower can get to be a rough deal. But think how much more work it will be if you ruin the hoist and have to manhandle 'em physically up into the vehicle. The best deal is to get one of your trucks with a boom on it and cart 'em to the focal point. Or, if at all possible, get the ammo truck to drop the projectiles where you can hoist them straight up, rather than drag them into position.

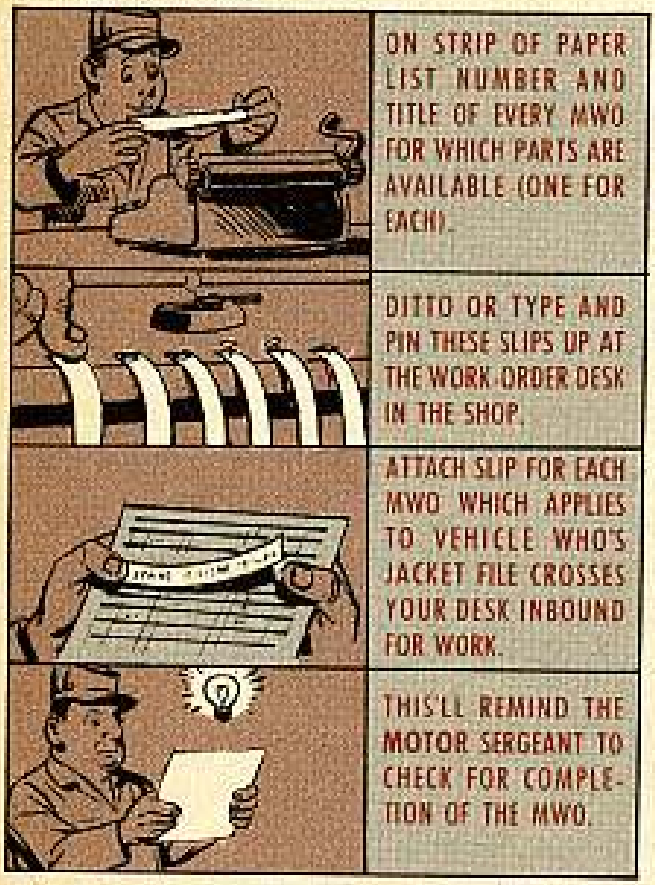


If you're using the hoist for winching chores, the cable will fray and get burned. If winching at an extreme angle, and you get slack in the cable, it's easy for it to jump off the drum. Then, you'll have a job on your hands.

That hoist'll do the job it's meant to do and no more. Stick to this and you'll have your hoist when you need it most.

Slip to skip slips

Been looking for a sure-fire way to keep track of MWO's that've got to be done? Well, here's a way to get rid of the guess-work.



If the modification's already been made, he'll remove the slip and write it on the 478 jacket.

If not, the same slip'll remind your mechanics to get the MWO (which you'll have available at the desk) and either do the work or get it done.

It's no ball

Your M25A1 hand grenade (Riot) is often called a baseball grenade, but before you start winding up for the pitch, better give it some thought.

The first thing to take into consideration is the direction of the wind. No matter how much you wind up and how hard you throw, you still might get a snootful of tear gas if you throw against the wind.

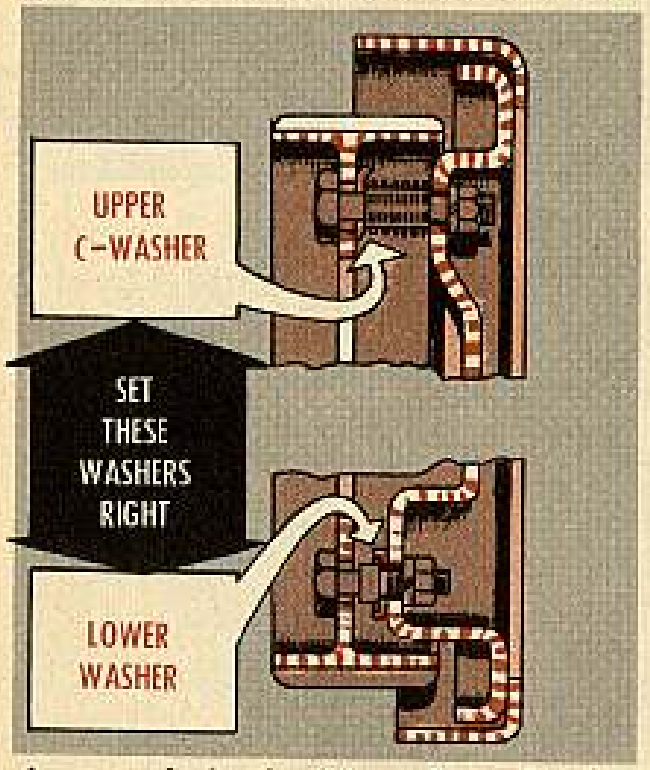
The next thing to remember is that grenade has a fuze with a 1:4 to 3-second delay.

The gas cloud spreads out real fast from the point of burst, so don't be shy when throwing.

Brake shoe washers

Men pulling D-services on G742 trucks which have had MWO Ord G742-W11 (3 Apr 53) put on have sometimes run into trouble when reassembling the brake shoes to the backing plates. They don't always get the washers in exactly the right place.

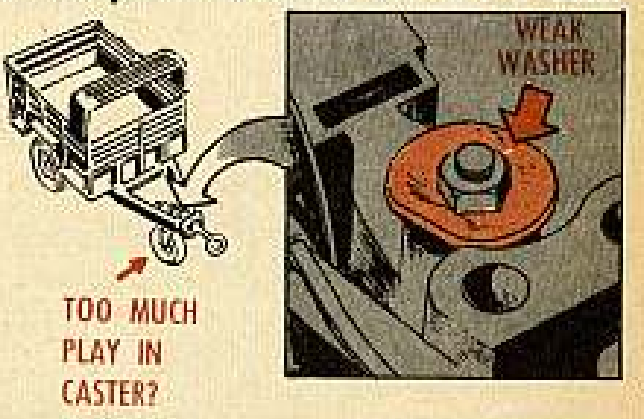
Be sure when you reassemble your G742 2½-ton trucks that you get the upper C-washer between the anti-rattle spring and the brake shoe, and that you get the lower washer between the brake



shoes and the backing plate. Placing these washers anywhere else will throw the shoe out of line and result in wrong brake operation.

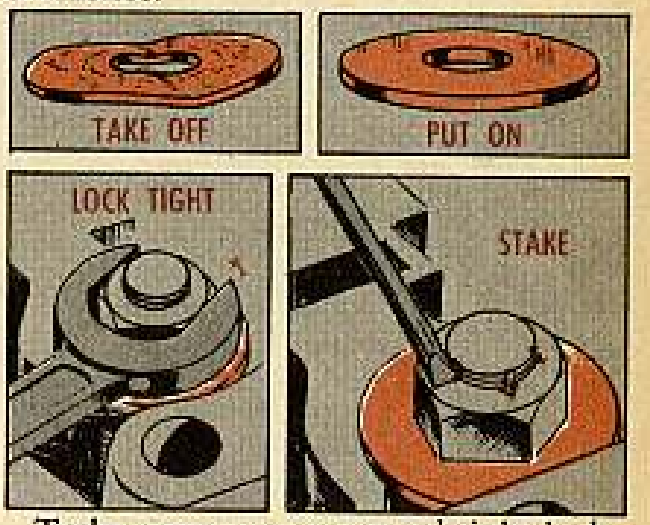
Substitute

Getting too much end play in the front caster assemblies of your M103A1, M104A1, M105A1, M106A1, and M107A1 1½-ton trailers? If your answer's yes . . . chances are it's a bent



steel washer causing the trouble. This washer's kind of weak for all the jouncing around the caster assembly gets during towing operations.

If this be your trouble . . . **substitute** a thicker flat washer, FSN 5310-044-6521 (Ord). This washer is close to 3/16 (0.165) inch in thickness. The bent one you take off is only ⅛-in thick. It's enough of a difference to make the difference.



To be sure you get a good tight lock, change the safety nut, FSN 5310-044-3358, for a new one when you reassemble the front caster assembly . . . and

stake the nut in three or more places. Even with the extra thickness of the new washer, there should be room enough on the thread end of the pivot shaft to stake the nut.

This should stop your end play for right now.

A story

Gotta act like practical individuals when it comes to the air compressors on your heavier M-series trucks—the G742 and G749-series 2½-ton trucks, the G744 5-tonners and the G792 10-tons.

There're only two reasons why that air system's put in those trucks. First, they give you that braking power. Next, they give you a ready-made air supply in case you have to blow up a tire. Never use it for anything else than what it's built for—could make it go kaput when you need it most.

Treat it good and it'll treat you good. Make sure you drain those air reservoirs each night after using the truck —this'll keep that air system in good shape.

Chevy sideview

I know it is generally a commercial vehicle, but our Nike units have some 1957 Chevrolet sedans as TOE stuff.

We've found that as issued, the side view mirrors touch the glass when the window ventilator is opened. Strong-arming the vent has caused broken glass.

But it's simple to lower the mirror about an eighth of an inch—then she clears, no sweat. If your buggy is still in her warranty period, your support unit will get it fixed for you. If not, you can do it.

An SB that's a BH

Your new SB 9-1 (6 Sept 57) is a Big Help in finding just what pubs you need for your Ordnance equipment. There's something new in this SB...it now tells you who (which echelon) is supposed to have the MWO's and TB's. It also gives the priority for the MWO's.

JOE'S DOPE

DONT BE A BEARING BEATER

Onc't upon a time there was a li'l ol' bearing name of Ball

Now, this heah li'l ol' Ball lived in a piece o' military equipment maintained by a guy who was mahty porely when it come to maint-'nance...which nacherly led to mistreatment...and that's how come he run off...

...happen he meets up with Connie Rodd...

HIYA CONNIE

HI!

...She say→ MY, WHAT A POOR BEAT-UP OL' BEARING. WHICH BRANCH O'SERVICE YOU IN...??

←so, he say; MAKES NO MATTER WHICH SERVICE US BEARING IS... AH GOT COUSINS IN EVVY PIECE O' GEAR WHAT ROLLS, SPINS, OR TWIRLS... FROM ENGINEERS-TO-TRANSPORT AND BACK TO CHEMCAL, Q.M. AND ORDBENANCE!

...so, she say→ HMMM... WHAT'S NEEDED IS A LITTLE ONCE OVER LIGHTLY ON BEARING CARE. LET'S GATHER A CROWD.

SO... she up and... BEARING CARE ...which went like this;

BEARINGS, WHETHER THEY'RE BALL ROLLER TAPERED OR NEEDLE GENERALLY REQUIRE THE SAME KIND OF CAREFUL HANDLING... A BUM BEARING CAN STOP A TRAIN, 'COPTER, TANK, DECON OR CARGO TRUCK JUST AS EASY AS IT CAN CONK OUT A DOZER!

What's more . . . they're easy to take care of . . . And they let you off cheap. Take Ord's towed artillery and trucks, f'rinstance . . . A "look-see" every D service (6 month) and a grease job every D2 (yearly) service . . . and y'r rollin' for another 12,000 miles.

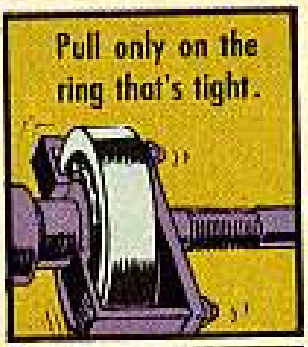
BEFORE REMOVING

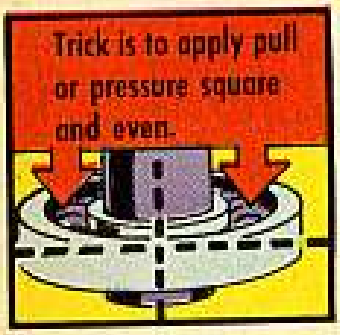
1 Wipe off old lube from hub, bearing, and shaft.

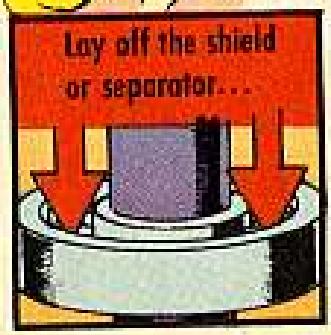
2 **NEVER** force a bearing from a tight fitting, housing, or shaft by brute force in this way.

TO REMOVE

a bearing from a shaft you pull on the inner ring.







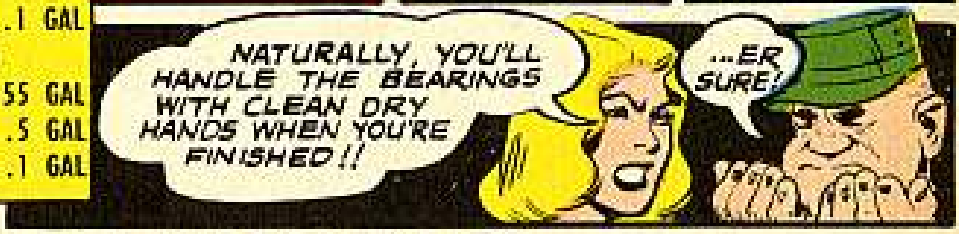
IF you can't get a grip on the tight ring—pull just enough on the other ring to clear the tight one so's you can get a hold on it.

IF ... the grease is too hard, sloshing may fail, so heat some OE 10 engine oil to 170° F and soak the bearing until the grease is looser.

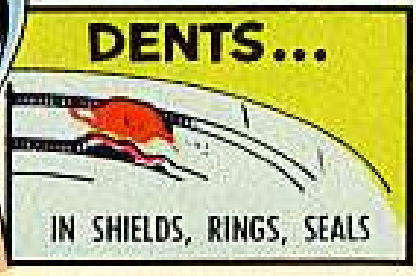
Dry 'em off good ... (Y'can use 'air' on hubs only). The bearings are tender.

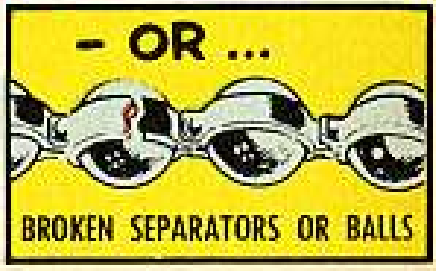
Use lint-free rag for wiping and let atmosphere do the rest.

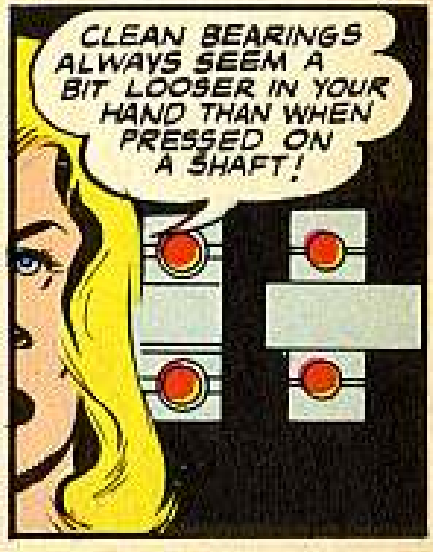
Lay 'em out on a clean piece of paper, away from moisture and dust.



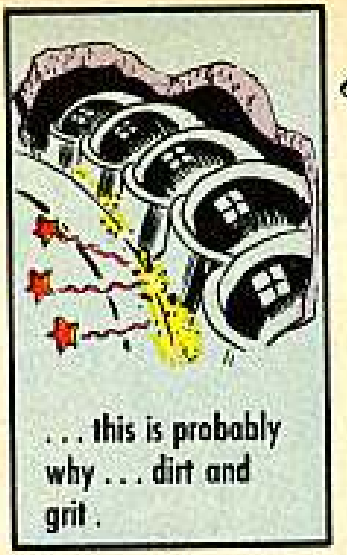
BEFORE LUBING

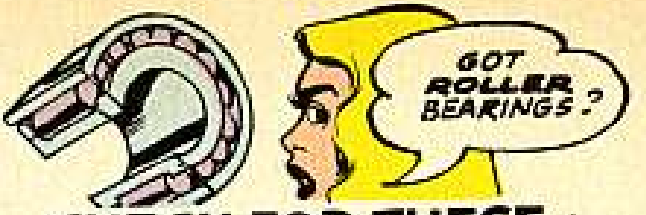




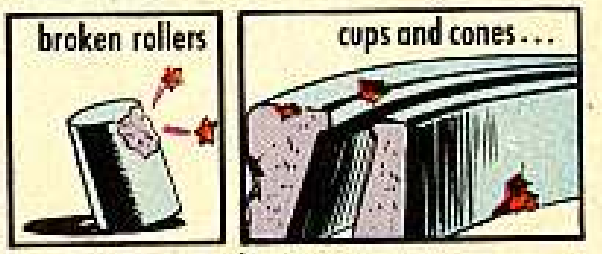



JOE'S Dope Sheet
For a bearing to keep going 'round
Like the earth—without making a sound,
You must be on the ball
When you lube, clean, install...
So no dirt, dents or wear can be found.
TM 37-265
WAR DEPARTMENT TECHNICAL MANUAL
INSTRUCTION GUIDE CARE AND MAINTENANCE OF BALL AND ROLLER BEARINGS
1945
WAR DEPARTMENT
WE HAVE THE WORLD'S BEST EQUIPMENT...Take care of it



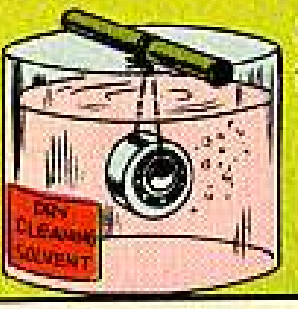


CHECK FOR THESE:



When replacing cup or cone replace both; they're mated.

AFTER INSPECTION



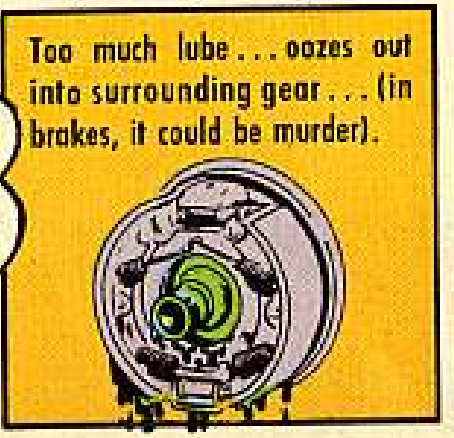
Clean the bearings with fingerprint remover (FSN 8030-252-8300).

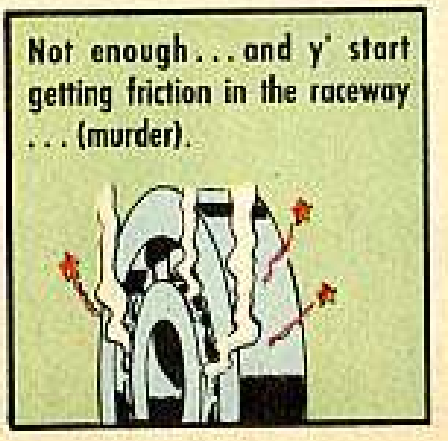
Then rinse in dry-cleaning solvent.

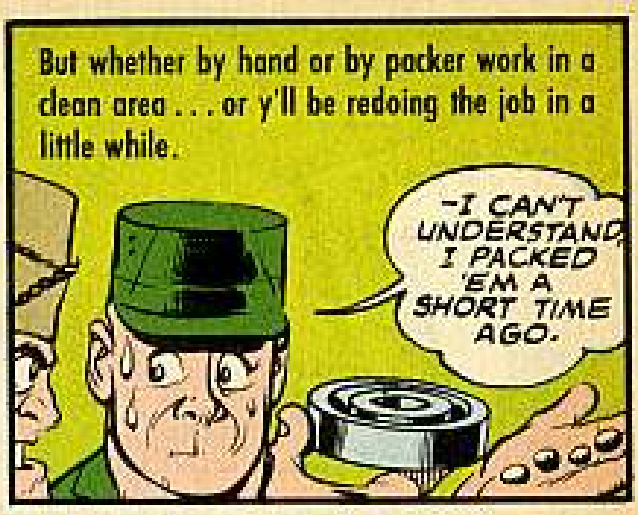
NOW... STORING

Now, just in case you have to leave a bearing in a partially put together assembly—or other machined surfaces, for that matter—never leave them exposed. Lubricate and cover them up with cloth or paper until you're ready to put the assembly back together again.

LUBING





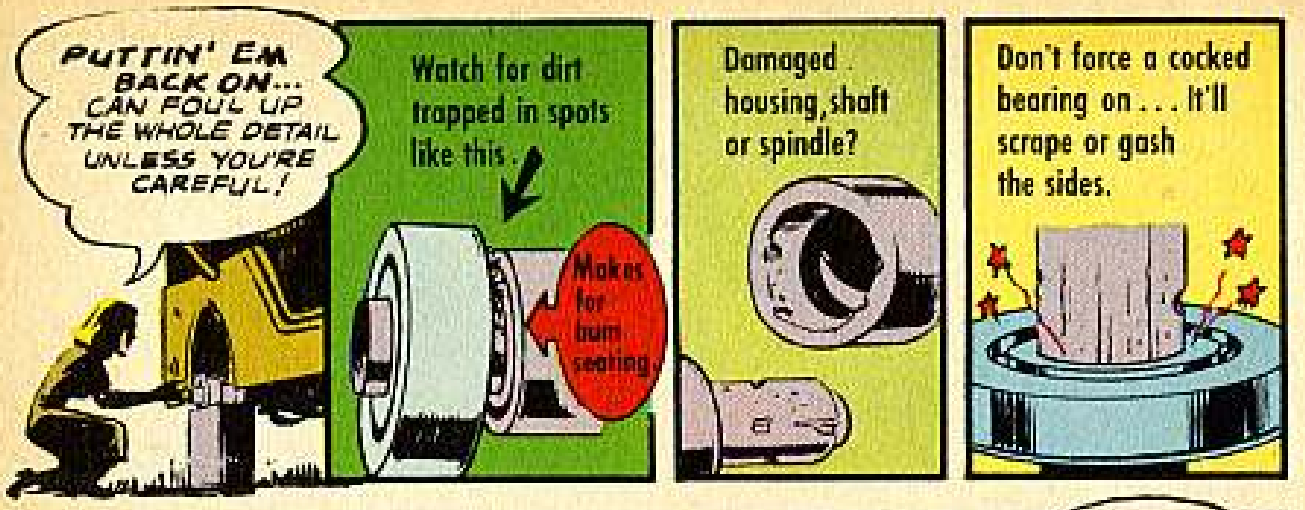


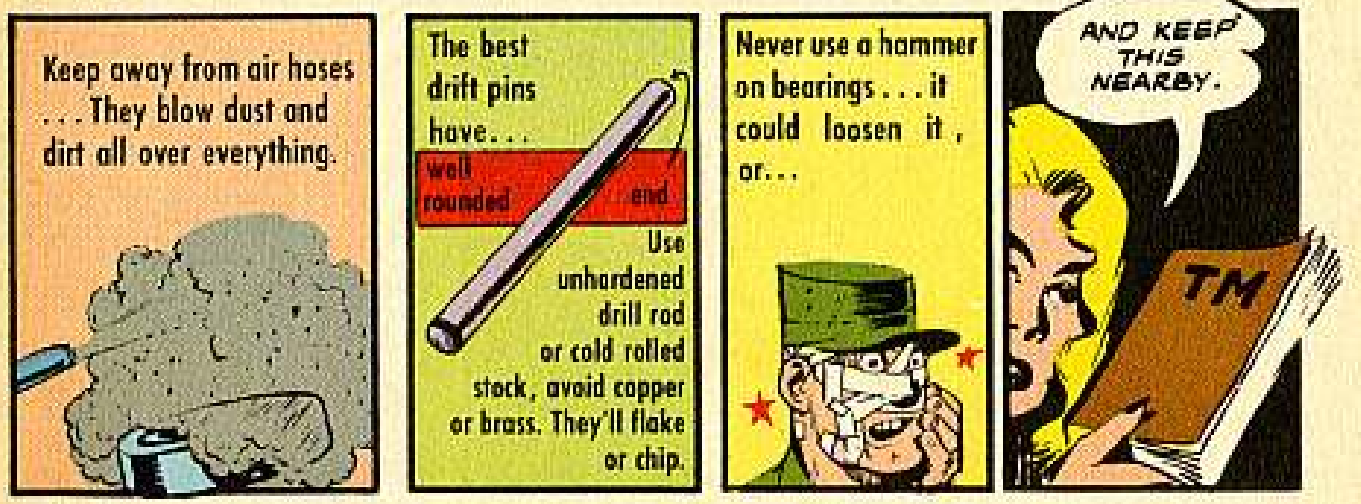
ON HUBS

Too much causes this...

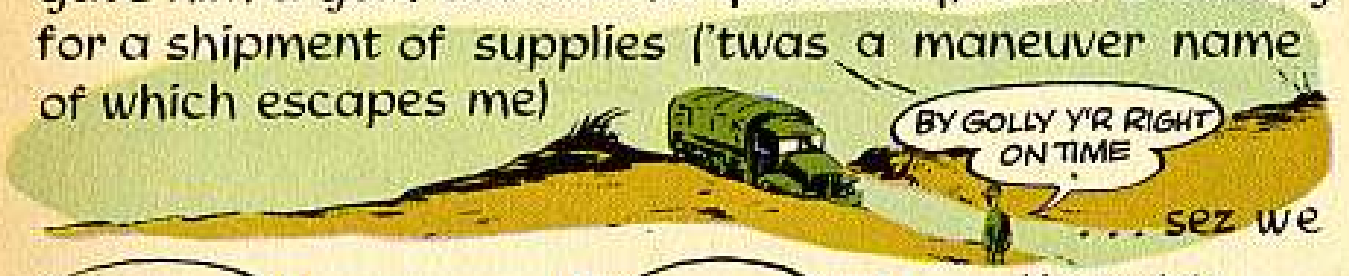
SO... in all trucks, trailers and towed artillery—all y'need is an even 1/16 inch of grease inside those hubs to prevent rust.

WHICH GREASE TO USE ...



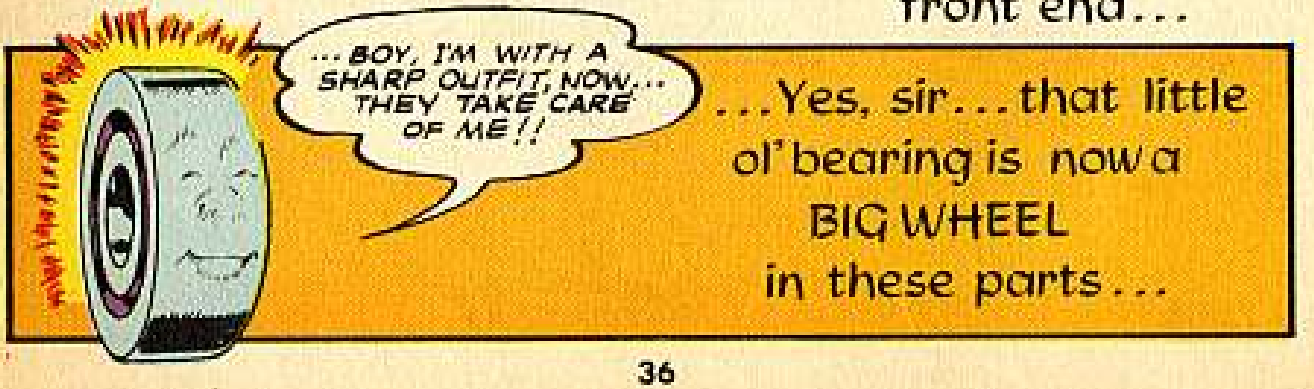


Well sir . . . we've not seen that ol' bearing since Connie gave him a goin' over . . . Until yestidday, we were waiting for a shipment of supplies ('twas a maneuver name of which escapes me)



. . . says the driver

. . . He adds . . . when all of a sudden comes a voice from the front end . . .



BOOMLESS BOOM JACK

Dear Half-Mast,

We've been short-changed. Our outfit just received some M62 5-ton wreckers, but minus the boom jack assembly. We've tried to find a stock number so we can order the assembly, but so far, no luck. Can you help out?

SFC R. V.

Dear SFC R. V.,

Your luck won't get any better, 'cause there's no stock number for the whole boom jack assembly.

What you have to do is order each individual part of the assembly. You'll find their stock numbers and nomenclatures listed in Ord 7 SNL G744.

And don't forget to put down why you need these parts, 'cause you can't get many of 'em without a justification. In this case, it's because you didn't get the assembly when the truck was issued to you.

Next time you receive a major piece of equipment and it's missing some assemblies or parts that're spelled out in the SNL—write up a UER (DA Form 468). That's the best way to stop future shortages like this.

Half-Mast

YOUR TRUCK-MOUNTED SEARCHLIGHT

Dear Sgt Dozer,

What's the story on the searchlight sets, carbon arc, 60-in reflector, DC, 78 volts, and its component parts? Our searchlights are mounted on M45 2½-ton truck chassis.

The problem is that we must maintain tools and equipment in accordance with the ENG 7 & 8. Some of the tools don't apply since the set is mounted on the M45 chassis. The searchlight set must have been modified since the ENG 7 & 8 was published.

I sure would appreciate it if you can give me the dope on changing the set from trailer mounted to truck mounted and include the tools that I should have.

SFC W. K. E.

Dear SFC W. K. E.,

There've been some changes made since those high-flying arcs were mounted on a pair of trailers. The power unit was on one, the searchlight was on the other, and they were towed from place to place. But, to make them more mobile, they were put on an M45 chassis and became a single unit.

Here's the rundown on that set:

It goes under FSN 6230-299-7082 and is listed as: Searchlight Set, carbon arc type, 60-in reflector, operating requirements 78 volts, DC, General Electric Co., Model 1942A.

Component parts include: Chassis, truck (Ord), FSN 2320-835-8196; Extended hand control, Searchlight, FSN 6230-371-9445; Generator Set, G.E.D., FSN 6115-243-7746; and Searchlight, FSN 6230-237-7756.

Here's the latest word on tools and pubs you need and rate:

*FSN OR MANUAL NO.	DESCRIPTION	QUANTITY
4240-391-0508	Shield, Arc Viewing	1
5110-243-1997	Reamer, Hand	1
6230-300-0017	Adjusting Tool	1
6230-428-9073	Cleaner, Negative	1
6230-428-9072	Cleaner, Positive	1
6515-307-0090 (Med)	Atomizer	1
7610-355-7130	Modification Kit	1
ENG 7 & 8-7112	Searchlight only	1
TM 5-7111 (Operator)	Searchlight only	2
TM 5-7112 (Parts)	Searchlight only	2
TM 5-7113 (Maintenance)	Searchlight only	2
ENG 7 & 8-7116	Power Unit only	1
TM 5-7115 (Operator)	Power Unit only	2
TM 5-7116 (Parts)	Power Unit only	2
TM 5-7117 (Maintenance)	Power Unit only	2

*All items Engineer except as noted.

Sgt Dozer

BETTER BELTS

Dear Half-Mast,

We have found that using the 5-ton truck fan belts, FSN 3030-322-9625, on our M74 VTR's seems to give us much better results than using the issue fan belt. They fit in with no problem, they're exactly interchangeable, and we get far longer life from them.

Capt S. E.

Dear Capt S. E.,

Sure, the belts will fit, and that gives you a good out in an emergency if you can't get M74 belts. But the original belt is reinforced and a little thicker, so it should give better service.

Are you sure your boys always replace the belts in sets? One old and one new belt never work together—all the strain goes on the new one. And have they been adjusting those belts right—with a ½-in slack like TM 9-7402, para 161 says? Bum adjustment is the worst cause of belt breakage.

SPROCKET HUB REMOVER

Dear Half-Mast,

Taking the sprocket hubs off our M48 tanks is one big husky job. There must be some way to do it without either damaging the studs or breaking our backs. We made a kind of battering ram from a torsion bar—welded handles to it so four men could grab hold and swing. After the bar hits the center of the hub a few times, the shock pops the dowels and we're all set.

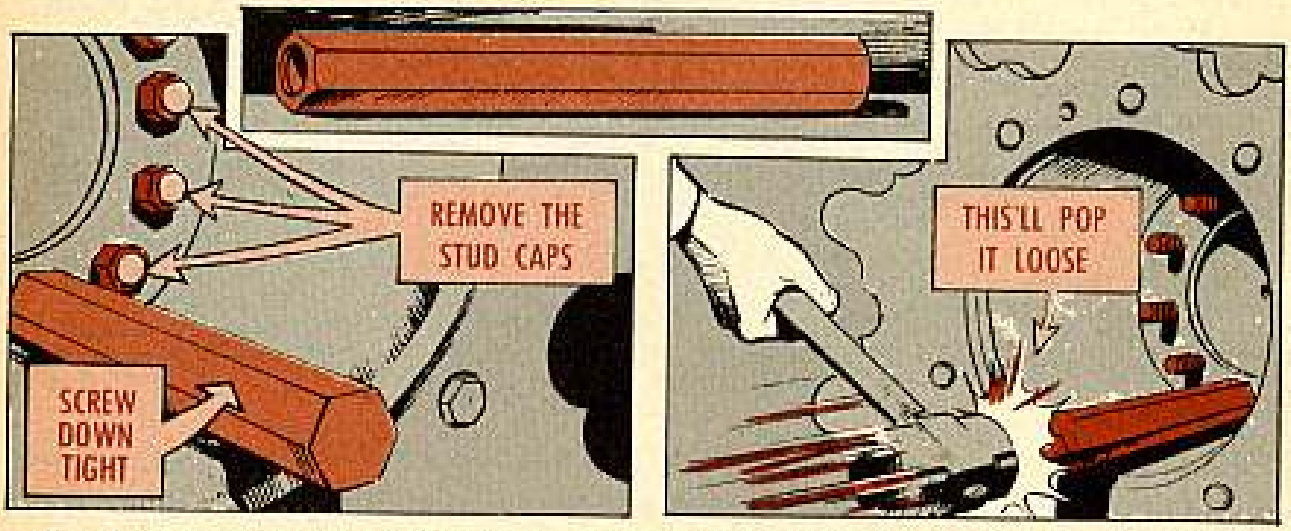
What do you think about this idea . . . or have you got an easier way?

Capt F. E. D.

Dear Capt F. E. D.,

Why go through the work of making up a special tool when there's one already in the system which you can have—actually, one you should have. This tool

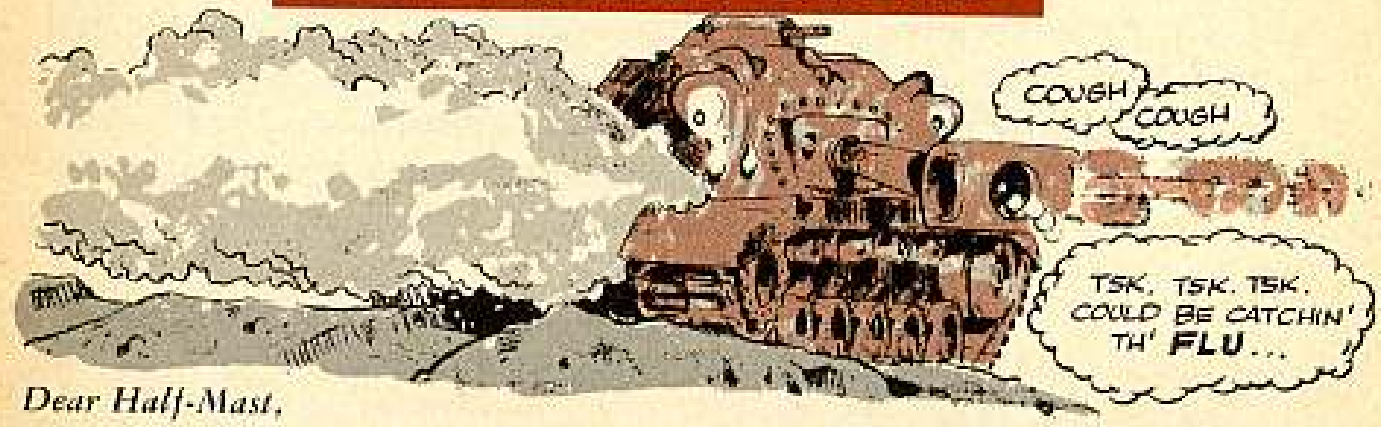
should be part of every Special Tool Set A or B for the M48 tanks. The tool is: Remover: final drive, 1¼ NF-2B female thd, 1½-in hex, 13⅛-in lg, FSN 5120-034-8445 (Ord).



In checking over your tool sets make sure you have this tool. If not, it'd be a good idea to order it—it's yours for the asking.

Half-Mast

SCREEN THAT SMOKE



Dear Half-Mast,

Isn't it a fact that when the M48-series tank's main engine carburetor idle adjustment is properly set, there should be a trace of black smoke at the exhaust?

SP2 W. M.

Dear SP2 W. M.,

Uh, uh! Black exhaust smoke means trouble at any time. Main engine carburetor idle out of whack, too rich a fuel mixture, high carburetor float level, dirt in the carburetor, dirty air cleaners or carburetors out of balance—these are the things that can cause black fog. So, you want to be sure your carburetor and throttle control linkage are rightly adjusted all the time.

You'll find that a vacuum test is the best tip-off to correct adjustment. Check para 218a of TM 9-7012 on the M48 for the way to go about adjusting.

Half-Mast

FLYING FLANGES

Dear Half-Mast,

What sort of power-takeoff or other accessory is installed on the front axle of the 2½-ton G742- and 5-ton G744-series trucks? And what goes on the rear differential? I see those flanges whirling around there and I don't know what they're for.

Sgt J. E. D.

Dear Sgt J. E. D.,

No power-takeoff or other device is installed on those differentials. The point is that all the differential carriers on one series truck are the same.

For example, one carrier, stocked under FSN 2530-734-6970 serves for the front differential, the forward rear and the rear rear differential on the 5-ton.

To simplify matters, these are shipped with a universal-joint flange attached. They can be bolted right in wherever required.

The slight cost of the flanges is more than offset by the savings in only having to stock one line item instead of three or four.

Half-Mast

ONE AND ONE EQUAL THREE?

Dear Half-Mast,

Our M52 (T98E1) 105-mm self-propelled howitzers have 73 shoes on the left track and 74 shoes on the right track.

Is this right and, if so, why?

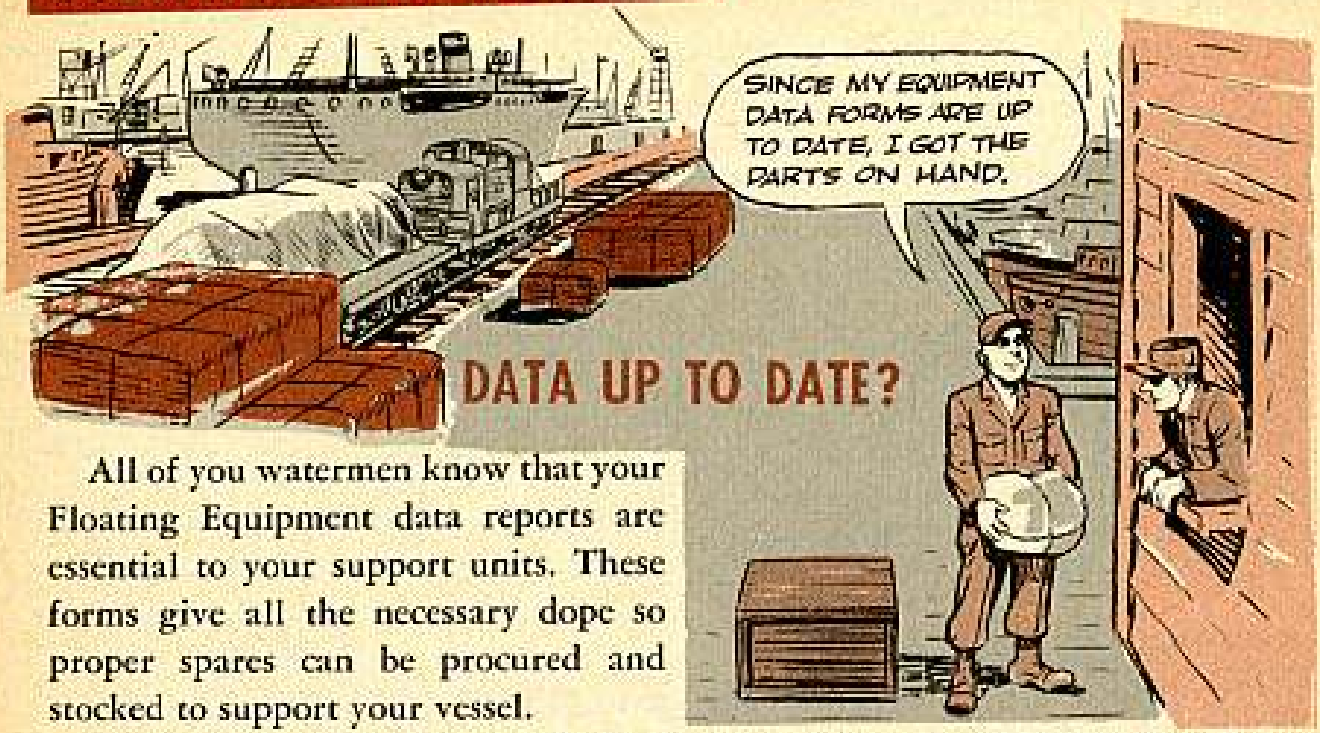
SP2 T.P.

Dear SP2 T. P.,

The road wheel arms and trailing idler on the right side of the vehicle are set 2¾ inches further to the rear of the vehicle than the ones on the left side, because of the torsion bars' staggered positions. So, to make allowances for this difference, the right track has to have one more shoe than the left track.

Half-Mast

ARMY AFLOAT



DATA UP TO DATE?

All of you watermen know that your Floating Equipment data reports are essential to your support units. These forms give all the necessary dope so proper spares can be procured and stocked to support your vessel.

But how recently have you checked up on yours? AR 700-1900-5 tells you what's required, and sets up the proper forms.

Briefly, it's like this: You fill out the appropriate DA or WDAGO forms in the 55-series (DA Form 55-26 through DA Form 55-31) and send them to the places called for in the AR, except that now the original copy goes to the Commanding General, United States Army Transportation Supply and Maintenance Command, PO Box 209, Main Office, St. Louis 3, Mo.

The forms go in 30 days after a new craft is received at its first duty station and any time after that when a change is made which alters the information in the first one.

Sure, there's work in it, but your chances of finding the right size outboard shaft bearing, f'rinstance, when you need it, are lots better if the support people know there is a craft at your station with that size shaft. Or if you change a winch for another of a different make, you'll likely find parts for the old one waitin' for you unless you report the change.

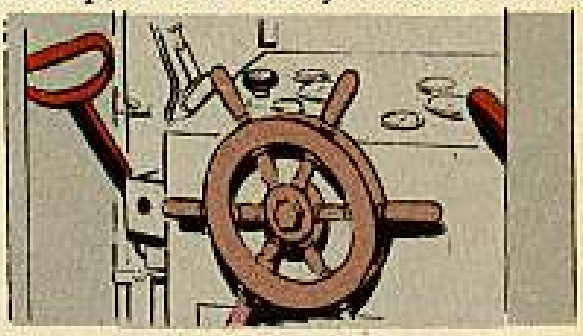
SICK SIXES

Y'd think everybody would know about it by now, but what with the personnel turnover and wot not, mebby we'd better look again at some of the little careless tricks that can make your LCM 6's look sorta sick like.

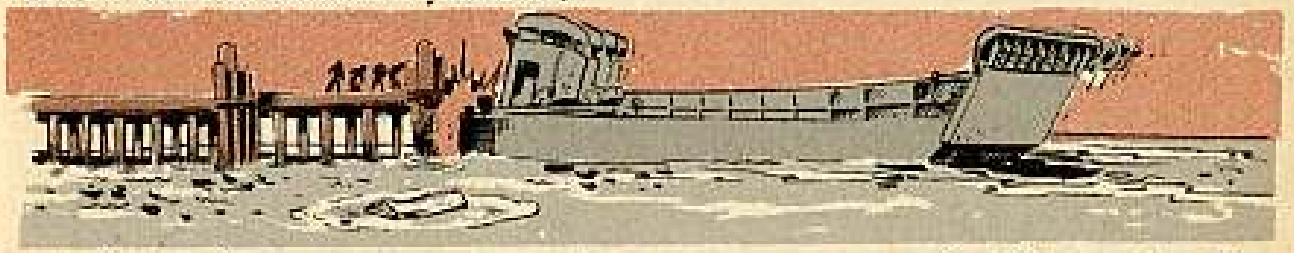
First of all, of course, there's the simple type who doesn't check his shaft logs after beaching operations. Heard tell one of these genius types was towed in the other day with three feet of water in his engine room.

Be sure to check for leaks after any beaching or grounding, intentional or accidental. (Forget it, and you may have to swim home.)

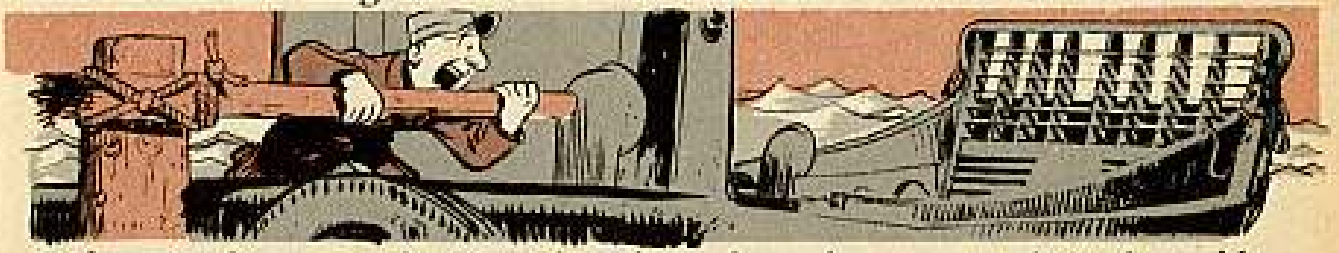
Then there is the hot-shot cox'n who doesn't bother to cut his throttles and let his engines slow down before reversing. This makes for real spectacular maneuvering, true, while your transmissions hold up, that is. But you don't fool any real seamen. If for some unforeseen reason you've gotta go full astern quick-like to prevent running something down, that's one thing. But to do this all the time is silly and hard on the craft.



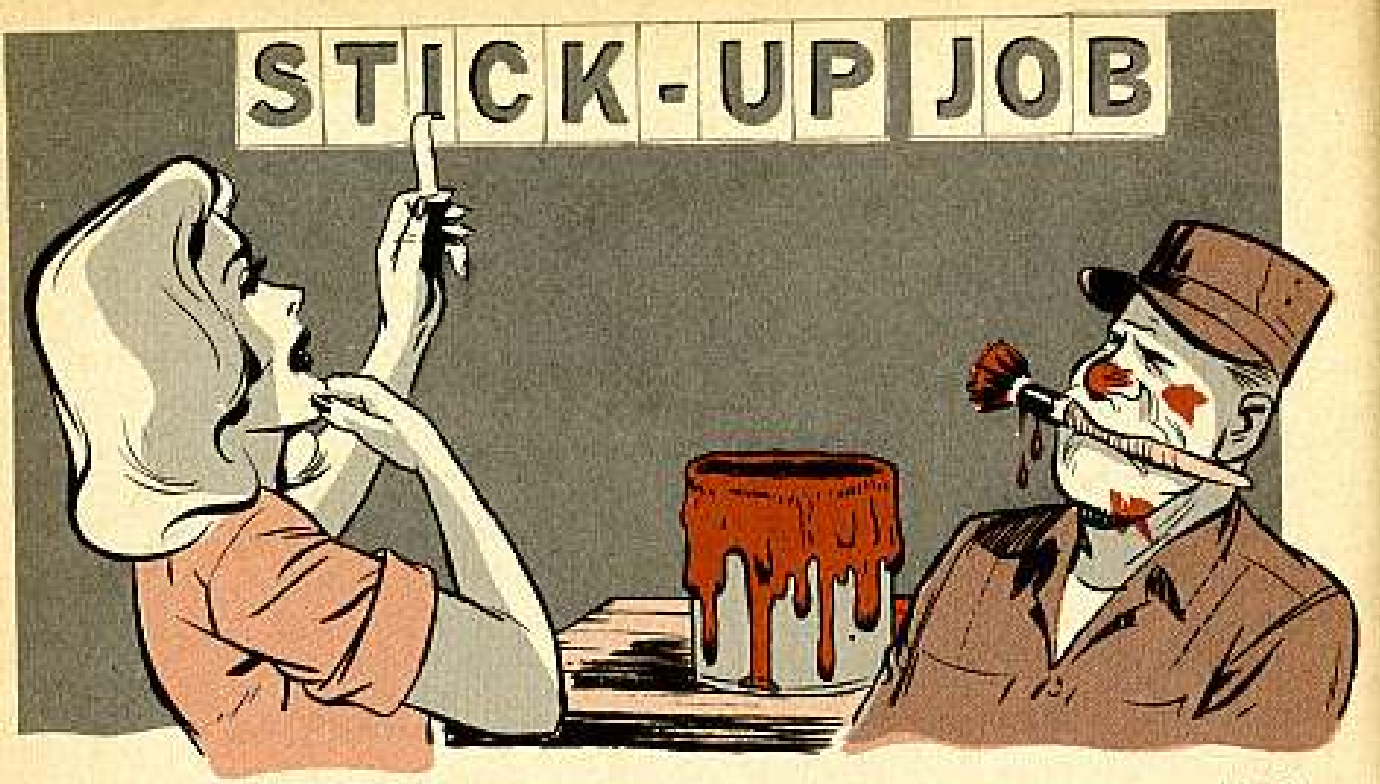
Then there's the engineer who idles his engines in neutral for long periods either alongside the dock or when waiting for formations to form up. This is fine in theory, but in practice it's hard on your transmissions. There's always some drag. Better idle in gear ahead and circle the craft to remain in place. (Or head into the wind or current if you can.)



And sometimes you see a man who never grew up, and still wants to play dodgems with his craft. It's true, most of the old sixes are a bit beat up and one more plate dented isn't going to sink 'em. But every so often this meathead will either bang his own stern into the pier or belt another craft hard in the transom. Which is the one thing the six can't take much of.



It doesn't take too much to transfer a blow from the transom along the rudder post braces and move the rudder post a little bit forward. Chances are she'll still steer OK, and you'll never notice a thing wrong. Until and unless your steering mechanism carries away some time in heavy weather and you hop back to rig the emergency gear. Which is a fiendishly unhandy time to discover that your rudder-post won't line up with the deck plug hole and you can't rig a tiller. This can be embarrassing, even fatally so.



Next time you raise your mitts to paint a few numbers, no need to be robbed of time and sweat.

The new gummed-back stencils stick where they're stuck, with no need to juggle a marking board in one hand and the paint brush in the other . . . and the tear-out bridges eliminate re-touching. And best of all, they're a one-shot deal.

So pick out your target . . . slap on the stencil . . . and make with the paint brush. Cast your glimmers on this list of Federal Stock Numbers for the ones you're after.

The how, where and why and when of these stencils is found in AR 746-2300-1 (ch. 4). In formal language, call for: STENCIL, MARKING, Paper, gummed back, block lettering, 5 per pkg.

SPECIAL STENCILS

STENCIL	SIZE	FSN (QM)	STENCIL	SIZE	FSN (QM)
AMBULANCE	2 in	7520-526-9665	MAX SPEED	1 in	7520-527-1871
	3 in	7520-527-1866	NO RIDERS	1 in	7520-526-9678
MILITARY POLICE	2 in	7520-526-9664	US ARMY	1 in	7520-526-9670
	3 in	7520-527-1867		1½ in	7520-527-1869
POLICE	5 in	7520-526-9672		2 in	7520-527-1868
ARMED SERVICES POLICE	5 in	7520-526-9673		3 in	7520-526-9668
NO SMOKING	1 in	7520-527-1872		4 in	7520-526-9666
NO SMOKING WITHIN 50 FEET	3 in	7520-526-9667		5 in	7520-526-9671
FLAMMABLE	6 in	7520-526-9675		6 in	7520-526-9674
ARCTIC LUBRICATED	1 in	7520-527-1870		7 in	7520-526-9676
FOR OFFICIAL USE ONLY	1 in	7520-526-9669		8 in	7520-526-9677

ALPHABET AND NUMERALS

	1 in	2 in	3 in	4 in
A	7520-515-1327	7520-526-1737	7520-515-1336	7520-515-1738
B	7520-515-1309	7520-515-1385	7520-515-1335	7520-515-1343
C	7520-515-1310	7520-515-1384	7520-515-1334	7520-515-1342
D	7520-515-1311	7520-515-1383	7520-515-1333	7520-515-1341
E	7520-515-1302	7520-515-1382	7520-515-1332	7520-515-1340
F	7520-515-1303	7520-515-1381	7520-515-1331	7520-515-1374
G	7520-515-1304	7520-515-1380	7520-515-1330	7520-515-1373
H	7520-515-1305	7520-515-1379	7520-515-1329	7520-515-1372
I	7520-515-1306	7520-515-1378	7520-515-1328	7520-515-1371
J	7520-515-1307	7520-515-1401	7520-515-1312	7520-515-1370
K	7520-515-1308	7520-515-1400	7520-515-1313	7520-515-1369
L	7520-515-1358	7520-515-1399	7520-515-1314	7520-515-1368
M	7520-515-1357	7520-515-1398	7520-515-1315	7520-515-1367
N	7520-515-1356	7520-515-1397	7520-515-1316	7520-515-1366
O	7520-515-1355	7520-515-1396	7520-515-1317	7520-515-1365
P	7520-515-1354	7520-515-1395	7520-515-1318	7520-515-1364
Q	7520-515-1353	7520-515-1394	7520-515-1319	7520-515-1363
R	7520-515-1352	7520-515-1393	7520-515-1320	7520-515-1362
S	7520-515-1351	7520-162-1167	7520-281-2803	7520-515-1361
T	7520-515-1350	7520-515-1392	7520-515-1321	7520-515-1360
U	7520-515-1349	7520-515-1391	7520-515-1322	7520-515-1359
V	7520-515-1348	7520-515-1390	7520-515-1323	7520-515-1389
W	7520-162-1165	7520-162-1166	7520-281-2804	7520-246-8460
X	7520-515-1347	7520-515-1403	7520-515-1324	7520-515-1388
Y	7520-515-1346	7520-515-1402	7520-515-1325	7520-515-1387
Z	7520-515-1345	7520-515-1404	7520-515-1326	7520-515-1386
0	7520-246-6456	7520-246-8449	7520-246-8439	7520-246-8429
1	7520-246-6457	7520-246-8450	7520-246-8440	7520-246-8430
2	7520-246-6461	7520-246-8451	7520-246-8441	7520-246-8431
3	7520-246-6462	7520-246-8452	7520-246-8442	7520-246-8432
4	7520-246-6463	7520-246-8453	7520-246-8443	7520-246-8433
5	7520-246-6464	7520-246-8454	7520-246-8444	7520-246-8434
6	7520-246-6465	7520-246-8455	7520-246-8445	7520-246-8435
7	7520-246-6474	7520-246-8456	7520-246-8446	7520-246-8436
8	7520-246-8427	7520-246-8457	7520-246-8447	7520-246-8437
9	7520-246-8428	7520-246-8458	7520-246-8448	7520-246-8438

SOMETHING NEW FOR YOU

Here's something new for you wheeled vehicle drivers—whether you're combat jockeys or commercial rollers.

Jot this name and stock number down: Compound, cooling-system conditioning and antiseepage (ORDJR-OME PD #115, type II, amend 1), 1-oz pellet—FSN 6850-664-0491.

This stuff is going to be used in your cooling systems to help prevent any seepage of the coolant into the crankcase and combustion chamber. She's also a dandy for sealing up any small holes you may have in your radiator. It'll do all this without hurting your coolant any, be it antifreeze or water, although when you drop one of these pellets in, the coolant will get a little bit discolored.

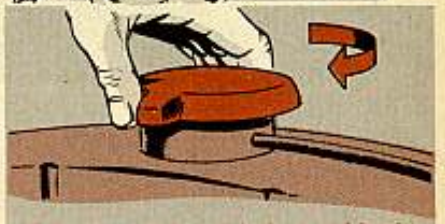
Now, the number of pellets you'll put in your cooling system'll depend on how much coolant that truck's supposed to hold. You'll use one pellet for every 8 quarts of coolant and one pellet for every fraction of 8 after that. In other words, let's say your truck holds 22 quarts of coolant. You use one pellet for every 8 quarts of coolant—that'll be two pellets right off the bat. Then, you use one more pellet to make up the fraction—a total of three pellets.

OK, here's how you go about getting your cooling system ready for this stuff and some other things you'll need to know—

1. Make sure the coolant in your truck is right up to level.

2. Put the radiator cap back on, start your engine and let it run until it reaches normal operating temperature.

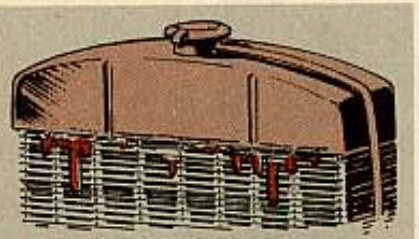
3. Check your TM to see how many quarts the cooling system holds. Then, figure out how many pellets to use—remove the radiator cap slowly (pressurized, you know), and drop in the pellets.



4. Put the radiator cap back on and let the engine run for another 15 minutes—at least—to allow the pellets to dissolve, mix in with your coolant and circulate through the cooling system.

5. After you're finished, you'll find a label in the package the pellets came in. Put this on the upper part of the radiator, near the filler neck. This label tells anyone who's going to use the vehicle that the pellets are already in.

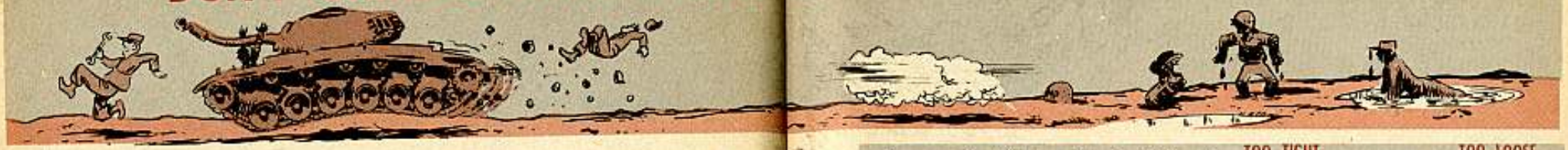
6. By adding the pellets, you should be able to stop small leaks and save the job of taking the radiator off and soldering, testing and replacing it.



7. If you later find that your cooling system is leaking badly, like from a bad seam leak, get it down to your shop and get the leak fixed. Never—but never—add any more pellets unless a leak like this is fixed.

8. You'll need to add the right number of pellets to your cooling system every time you drain and refill the cooling system with fresh coolant—either water or antifreeze. Also, remove the old label from the radiator and put on a new label every time you add new pellets. Be sure to get your copy of TB Ord 1001 (15 Oct 57).

DON'T GAMBLE WITH YOUR CD-850 TRANSMISSION BRAKES



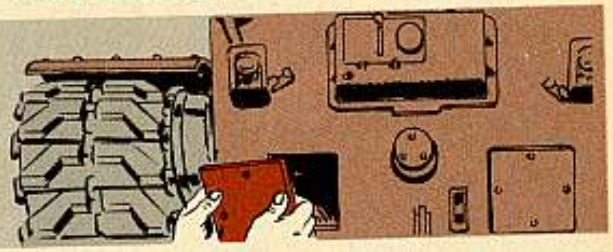
A natural, boy—that's what the brakes of your CD-850 transmission medium tanks are, if they're adjusted right.

Too tight and the discs inside the transmission—the ones that give you the braking power when you make a pass at that pedal—constantly rub together like a pair of shook dice. Pretty soon you roll yourself snake eyes and find yourself without brakes.

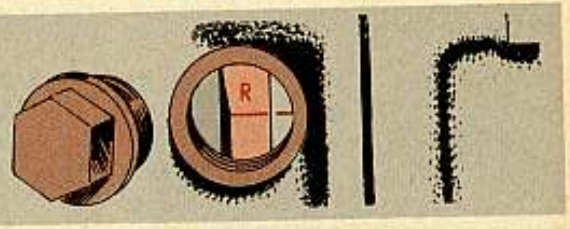
So, why not make your point? Keep those brakes adjusted right and you'll roll natural. Checking on both sides of the transmission, "adjusted right" goes like this—

BRAKE ADJUSTMENT

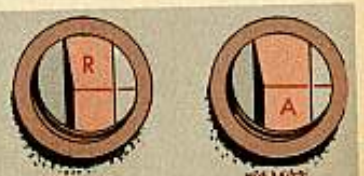
Take off both the transmission-inspection covers from the rear of the hull.



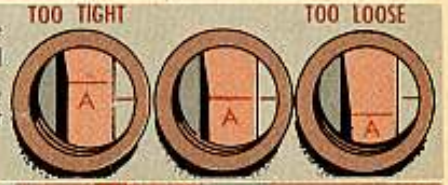
Take out the brake-inspection hole plugs on the transmission that are next to the end covers.



See that small circular window on each side of the rear of the transmission housing? With the brakes off, you'll see a mark at the letter "R" (this stands for Release) in the window lined up with a chisel mark on the edge of the window. Apply the brakes, and the mark at the letter "A" (stands for Apply) lines up with the chiseled line.



If you see the "A" above the chiseled line, the brakes are too tight and you're playing a loaded game with those brakes. If it's below the line, they're loose. And, either way, you'd better start adjusting before your brakes crap-out.



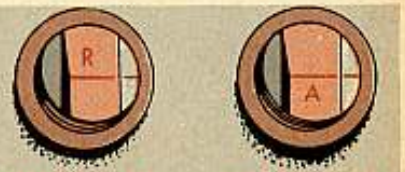
To get at the adjusting screws that're on each side of the transmission, you'll have to take the cap off the adjusting screw and loosen the lock nut. Now, to tighten the brakes, turn the adjusting screw the way the arrow on the housing tells you.

Careful with those brake-adjustment screws. They're close enough to the low-range band-adjusting screws to make for confusion. The brake-adjustment screws are located right next to the rear-end cover and are smaller than the band-adjusting screws. When adjusting make sure you're turning the correct screws.

Reverse the turn to loosen, but here you've got to be mighty careful or you'll miss your point. When turning the screw, the brakes must be in the released position. You apply and release the brake while adjusting to get the "A" line to match up. Never try to tighten the adjusting screw with the brakes applied.

Whatever you do—tighten or loosen—always make sure your final adjustment on the screw is to tighten it. This takes out internal friction and lash. So, if you happen to tighten too much or if you want to loosen tight brakes, back the adjusting screw off well beyond the correct point. Then, slowly tighten till you hit 'er right on the nose.

When you're all adjusted, the "R" line should hit the chiseled line when the brakes are off. When you push down hard on the pedal, the "A" line should come up even with its chiseled line. Now all you have to do is tighten the lock nut, replace the cap—and you've got a seven-come-eleven deal.



But suppose this doesn't work out . . . then you may have linkage trouble. To check this out, remove the linkage access hole cover under the hull and remove the clevis pin holding the linkage to the transmission brake-apply arms. Now

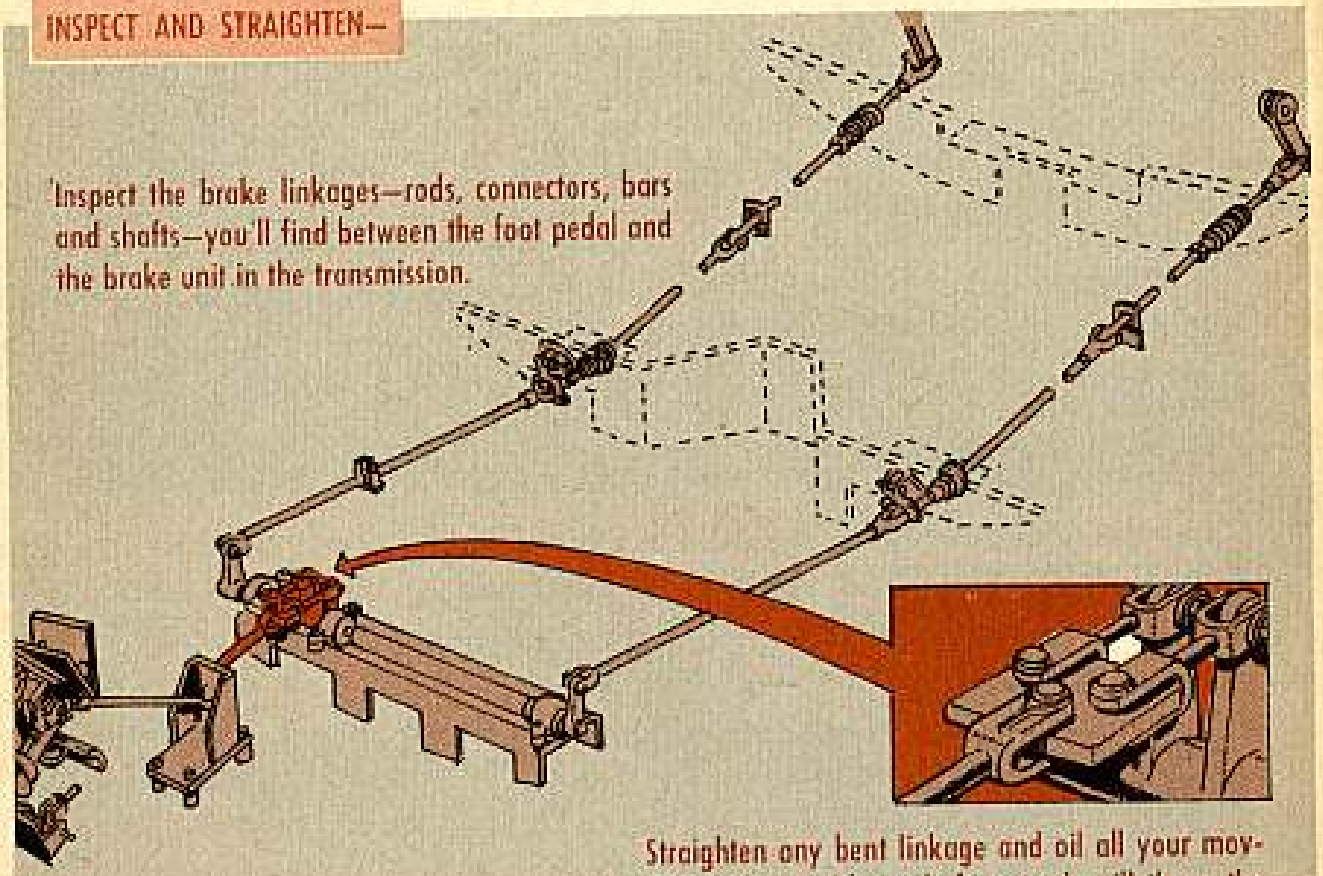
with both apply arms free and in the forward release position the chiseled line should automatically fall on the "R" line.

If it doesn't, then go no further . . . call support because you've got troubles inside the transmission. If it does rest on the "R" then your next step is to check out your linkage.

LINKAGE ADJUSTMENT

INSPECT AND STRAIGHTEN—

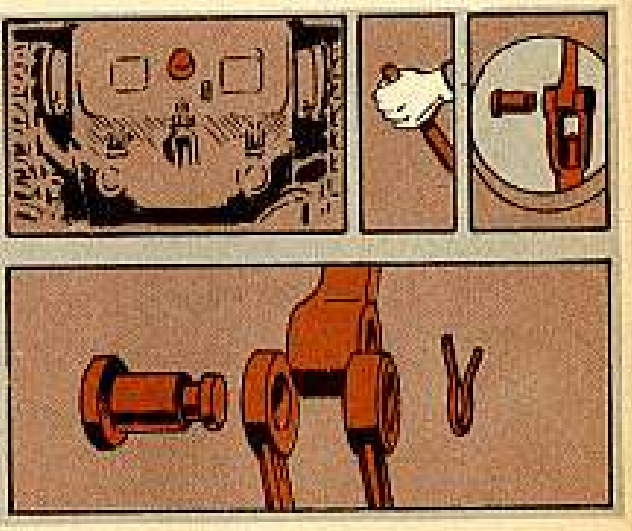
Inspect the brake linkages—rods, connectors, bars and shafts—you'll find between the foot pedal and the brake unit in the transmission.



Straighten any bent linkage and oil all your movable joints. Any bent shafts or rods will throw the adjustment off. Be sure the equalizer bar is straight.

TO THE REAR—HO!

Rattle on over to the rear of your tank to the transmission inspection holes, where you disconnected the brake-apply arm from the linkage and pull the linkage toward the rear of the tank till it bumps against the stops. This'll take up the slack.



GOT NO STOP?

If you're working on the M48A1 tank you won't find any stops when you pull the linkage toward the rear. You'll have to use 1/8-in diameter alinement pins to do the job. Put the pins in these places—

On the cam bracket assembly, near the connection of the linkage clevis.

On the brake assembly, to the upper right of the brake pedal.

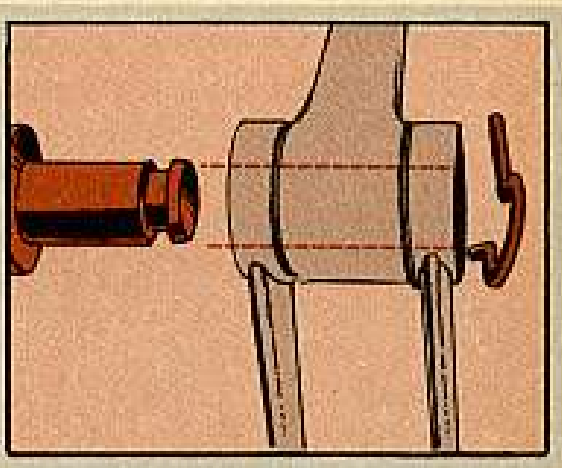
In three places in the levers, which you'll find next to the right cross shaft. Be sure the pins are in far enough, so that part of each pin is in the hole in the lever, and the other part is in the hole in the lever mounting bracket.

LINE 'EM UP . . .

Make sure the hole in the apply arm lines up with the hole in the linkage clevis. Never pull or push on either the apply arm or the linkage to get 'em to line up—they gotta fall in natural-like.

If the holes line up, you've got it made—just put your pin in and make it fast.

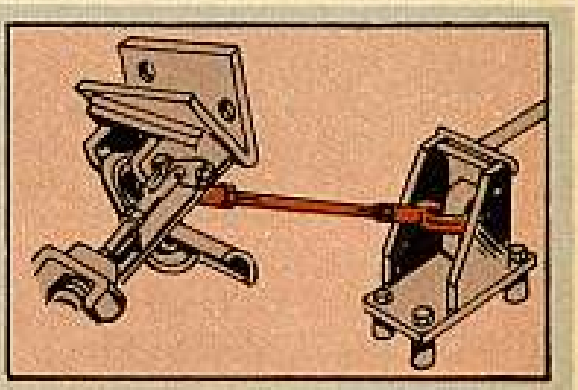
If they don't line up, adjust the yoke on the linkage until they do—then pin it.



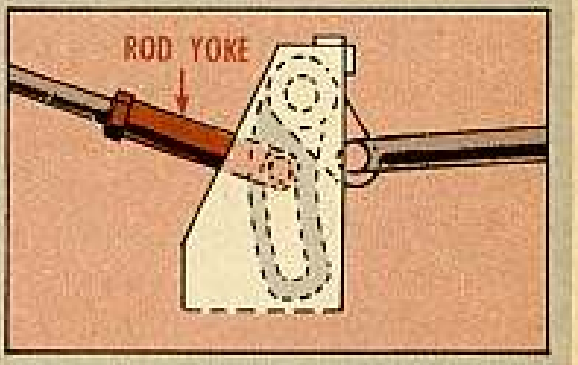
The linkage should have no tension on it in either direction—it should be relaxed and not tight.

TO THE FRONT—HO!

Roll over to the driver's compartment and peer at the pedal—there should be plenty of clearance between that boxcar's hull and the brake pedal. If not, remove the pin from the rod running forward to the brake pedal from the cam assembly. Then, adjust the rod's yoke till you can replace the pin so it'll be positioned at the top-most point of the long slot.

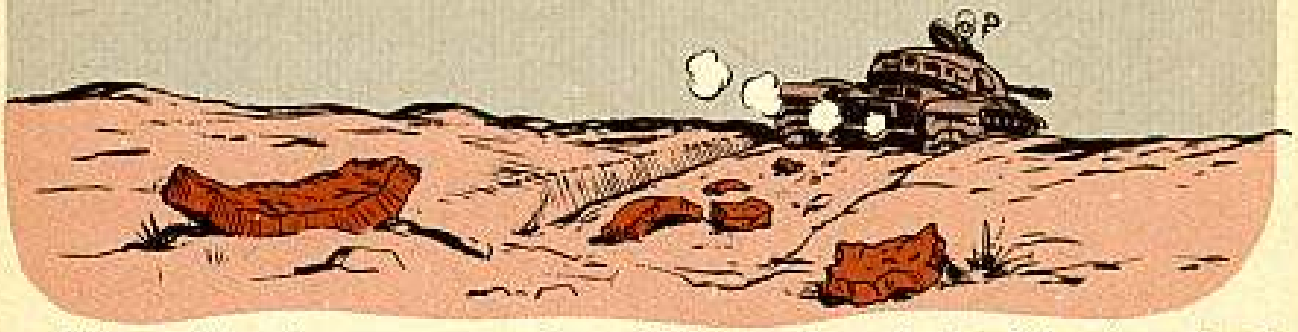


Always be sure it's at its top point—that is, as high as it can go with the brake released. This'll give you plenty of brake pedal clearance. Now that everything lines up, you can roll ahead with the brake adjustment again . . . this time it should check out.



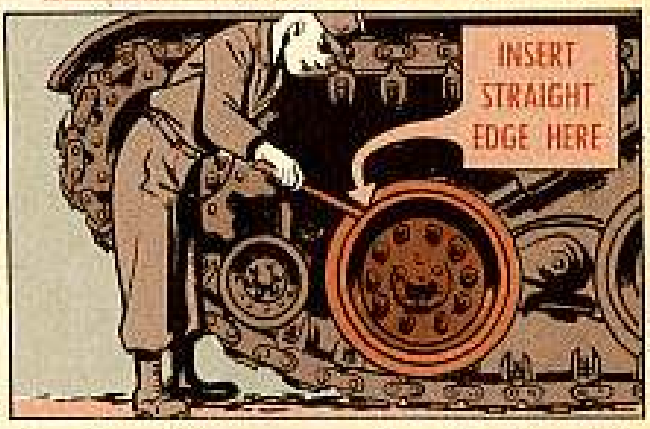
Here's a Quick Guide to—

BASE SEPARATION



If the rubber tire on your combat vehicle's track road wheels has been breaking away from the disk, that's base separation—so you'd better take a gander at this table. It has some new info you'll need to decide whether you can leave the wheel alone or whether you have to replace it.

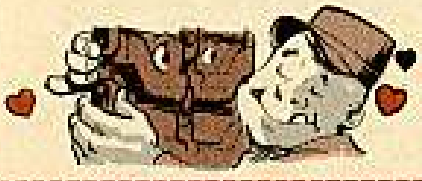
NOMENCLATURE	FSN	BASE SEPARATION (IN INCHES)
1. DISK, idler w/TIRE assembly, 22 x 6¼	2530-563-5861	1
2. DISK, road wheel, 20½ x 6¼	2530-563-5844	1
3. DISK, road wheel, 25½ x 4½	2530-657-6489	⅞
4. DISK, roller, w/TIRE assembly, 10 x 5	2530-563-5856	1
5. DISK, wheel, w/TIRE assembly, 26 x 6	2530-701-3976	1⅛
6. DISK, w/TIRE assembly, 24 x 4½	2530-562-1441	⅞
7. DISK, w/TIRE assembly, 10 x 3	2530-562-1440	½
8. DISK, w/TIRE assembly, 11 x 3	2520-699-7984	½
9. DISK, w/TIRE assembly, 13½ x 3¾	2530-563-5849	¾
10. WHEEL, assy., 12 x 4⅛	2510-654-8131	⅞
11. WHEEL, w/TIRE and RIM assembly, 20 x 6 x 16	2530-560-7928	⅜
12. WHEEL, w/TIRE and RIM assembly, 20 x 9 x 16	2530-657-8399	1½



One look at your Ord 7 will tell you which of these disks belongs to your vehicle. The third column in the table tells you how much base separation you can have.

To measure this separation, take a straightedge and slip it between the rubber and disk where they're separating. From the rim of the disk, measure in. If the measurement you get is more than the allowable amount given in the table, replace the road wheel, so it can be reclaimed and put back into good condition. In other words, don't wait till the thing is so badly beat up that nothing can be done with it.

BREAK 'EM IN, NOT UP



Pamper those pads, pal, and your tracks will carry you a lot farther—

and come up looking unshredded when inspection time rolls around.

New tracks should be broken in by the numbers when you first put 'em on your tank—because when coming from storage, pads are likely to be brittle.

Rubber loses its bounce when it's been stored for long.

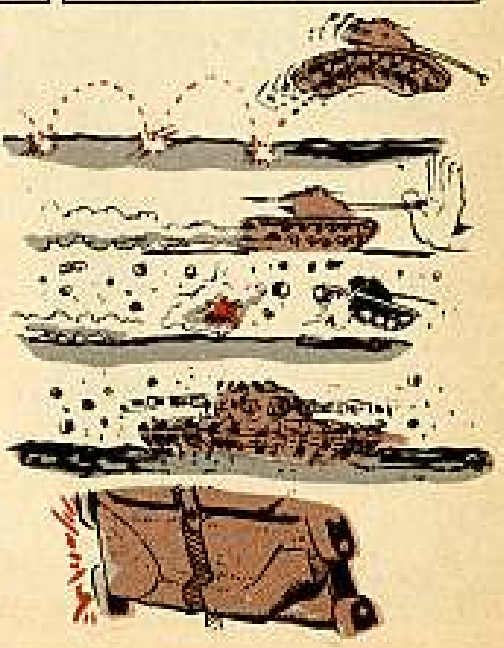
But, with a proper break-in period, it'll get it back like a runner catching his second wind. Soon after you put the new tracks on, head for a smooth secondary road, or a paved one...

AND WHEEL ALONG AT—

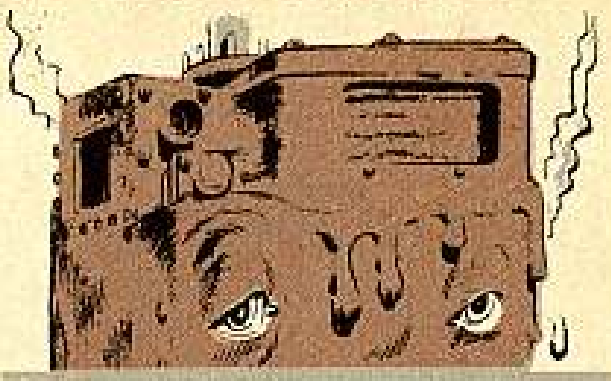
That should put the bounce back into 'em. Avoid driving faster than 20 MPH if the temperature is higher than 85° F. The pads'll heat up to a point where they'll start cracking, chunking or blowing out.

Pivoting on rough roads or rocky ground cuts pads, and may squeeze 'em loose. Try to avoid it.

If operating on crowned- or hard-surfaced roads, the tracks' outside edges will wear down faster than the outside. When this happens trade tracks from one side to the other to even up wear. It's good for the end connectors and center guides, too.



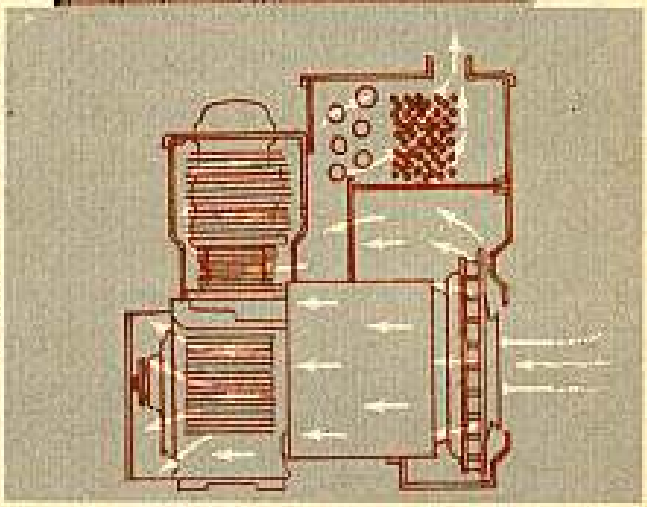
LITTLE JOE . . . A HOT POINT



Even "Old Lucifer" would sweat inside a tank turret on a hot summer day. So, consider how Little Joe must feel—cooped up in that hot engine compartment, chuggin' away to keep up a supply of juice.

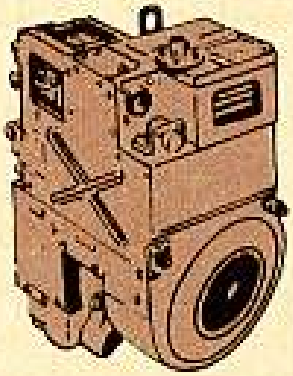
Joe's built so that with proper care he'll charge like a trooper . . . even when you may think your armor plate's wilting from the heat.

All around his carcass are air channels and ducts. When he's working full tilt, cooling air goes whistling through and around him like a pint-sized hurricane.



If you make sure all his panels and hole covers are in place and aren't bent or damaged, that air will do its cooling job a lot better.

Those panels and covers are designed to channel the air flow—if they're out of whack, the cooling action's reduced.

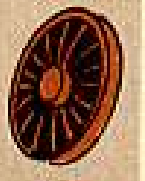


As in other engines, oil in Little Joe plays a big cooling role. So naturally, he has to have the right OE at the right level. Especially in hot weather, it's a good idea to double-check these items: Right oil level and weight; clean and serviced oil filter (see your LO).

A couple of other things to check to make sure the air's doing its job—keep the air cleaner clean;

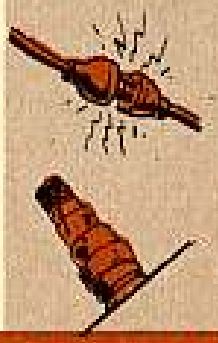
tighten the air intake connections;

clean the fan screen;



and check for dirty or bent fan blades.

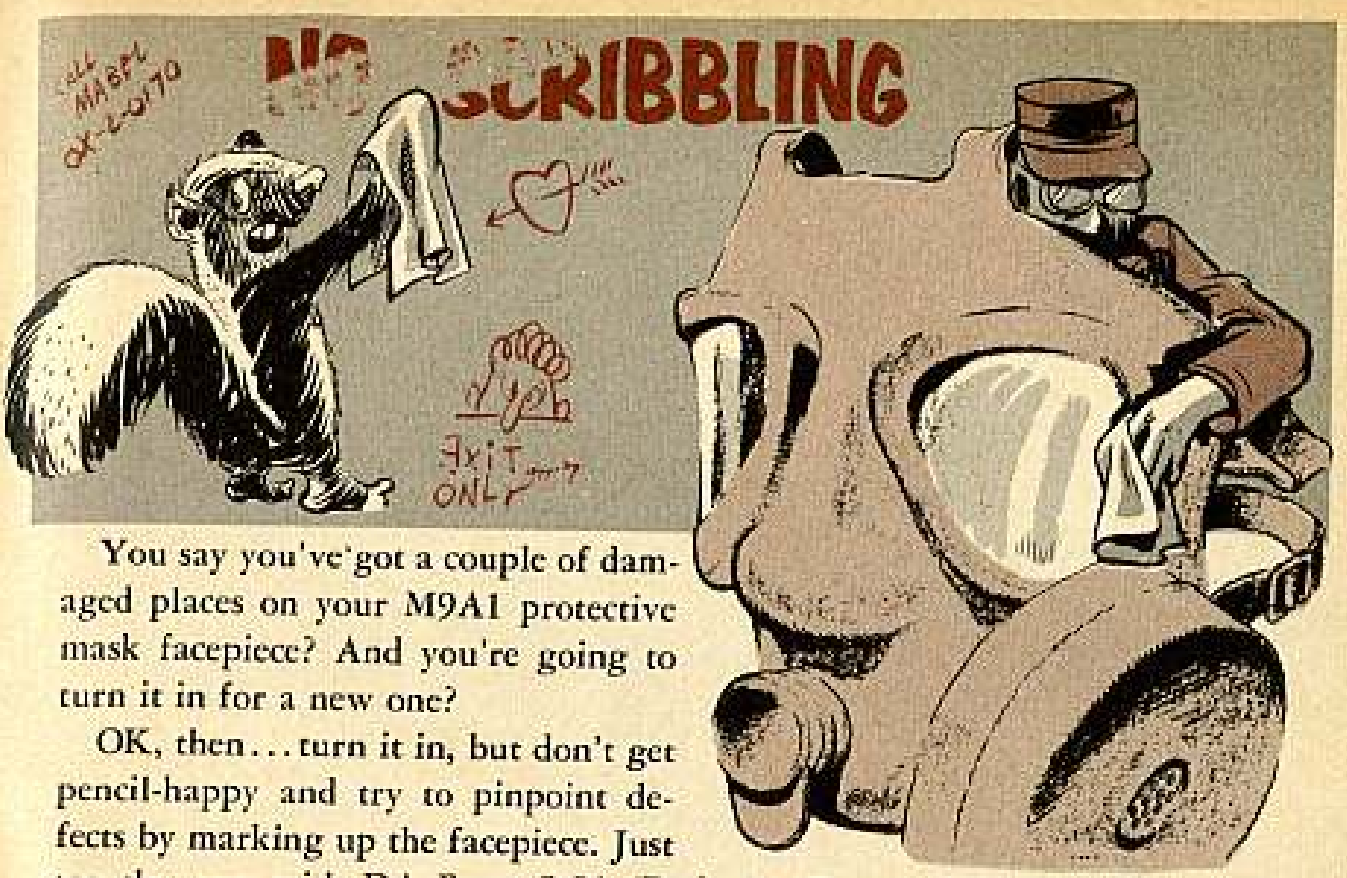
Here are some other possible hot spots to look for: Make sure your vehicle's heat exchanger and air heater are OFF and not throwing hot air back into the engine compartment;



see if there are any loose electrical cables or connections that might be throwing an extra load on the generator;

and make sure Joe's spark plug isn't cracked, dirty, or badly gapped.

TO GET THE FULL STORY FOR YOUR TANK, SEE ITS TM.

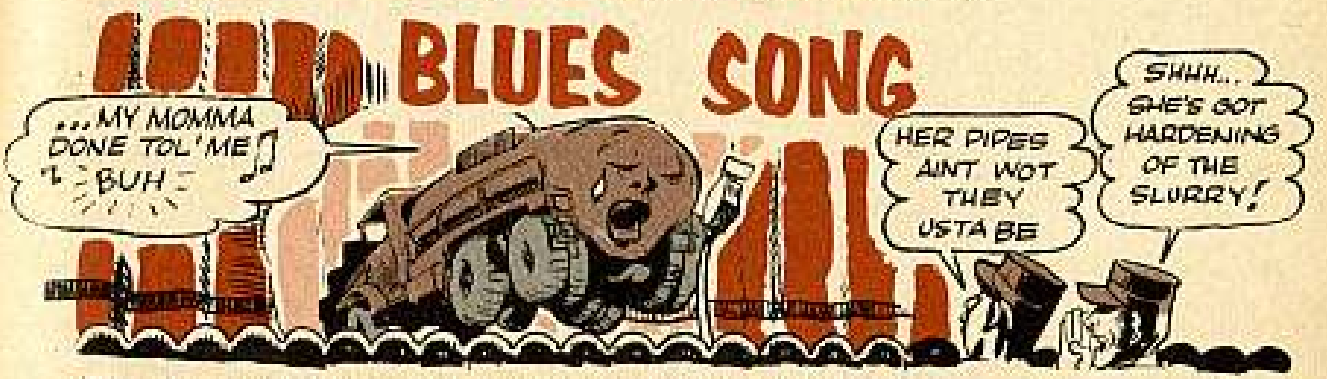


You say you've got a couple of damaged places on your M9A1 protective mask facepiece? And you're going to turn it in for a new one?

OK, then... turn it in, but don't get pencil-happy and try to pinpoint defects by marking up the facepiece. Just tag the part with DA Form 9-81 (Exchange Part or Unit Identification Tag) giving all the particulars, and turn it in.

Using ballpoint pens, pencils, grease pencils, paint and stamps on facepieces is strictly **NO GO**. That stuff can sometimes cause more damage than the defects.

If you think the hole's too small and might be missed when the mask's being repaired, just stick a small piece of masking tape over it.



The decon problem that heads all gripes is the hardening of slurry within the pipes. So the important thing in handling slurry is to flush out the stuff—and in a hurry!

These are just different words to the same old tune—flush out your decon after you have slurry in it. That slurry can cause you a lot of trouble. Once it hardens inside your decon it'll clog the pipes and about the only thing you can do is to replace them.

So remember... next time you use your decon, remember to flush it out good ... right away... 'cause the slurry sets fast. Use lots of water and keep running it through your rig until it comes out nice and clear—no more milky-looking water.

SMALL ARMS CLEANERS, LUBES AND PRESERVATIVES

PART OF COMBAT-READY'S MEANING: PROPER CARE AND STEADY CLEANING

HERE THEY ARE: NOTE: Check returning issue slips for future name changes.	FOR REQUISITIONING: FSN	UNIT OF ISSUE	TECH SERVICE	.30 CAL: RIFLES & CARBINES	.30 CAL: GRENADE LAUNCHERS	.30 CAL: AUTO RIFLES	.30 CAL: PISTOL	.45 CAL: SUB MACHINE GUNS	.45 CAL: .30 CAL	MACHINE GUNS: .50 CAL	MACHINE GUNS: MORTARS & ROCKET LAUNCHERS	OTHERS: SHOTGUNS	HOW TO USE: NOTE: Can change in future LO's or FM's
SOAP, LAUNDRY, Fed-P-S-591C and **HOT WATER**	7930-129-0801	1-LB	QMC	B	B	B	B	B	B	B	B	B	Only if bore cleaner is not on hand—but lube right after using. For webbing—lukewarm.
SWAB, SMALL ARMS CLEANING: cotton, 2½ in sq (Formerly patches)	1005-288-2868 1005-288-3565	20-EA 200-EA	ORD	B	B	B	B	B	B	B			Keep it up until one comes out clean.
CLOTH, COTTON FLANNEL: bore cleaning, 4 in x 50 yd to roll	8305-254-4828	ROLL	QMC							B		B	Cut to size needed. May substitute for SWAB.
CLOTH, WIPING COTTON, WHITE, BLEACHED: Fed DDD-W-415a, Type 1, Class 1 or 2 (Formerly RAG)	7920-234-8465 7920-234-8467	5-LB 100-LB	QMC	C	C	C	C	C	C	C	C	C	Light pressure is enough.
CLOTH, ABRASIVE: CROCUS: Ferric oxide and quartz, jean-cloth-backing, closed-coat, 9 x 11 sheet (P-C-458)	5350-192-5052	50-SHEET SLEEVE	ORD	G	G	G	G	G	G	G	G	G	For armorer artificer's use only.
GREASE, RIFLE: Lub (RG)	9150-246-3480	5-CC TUBE	QMC	A									Use light coat on receiver group in wet climates.
THINNER, PAINT, MINERAL SPIRITS: Petroleum distillate (Fed TT-T-2912)	8010-242-2089 8010-242-2086	1-GAL 5-GAL	ENG	D	D	D	D	D	D	D	D	D	Or use: DRY-CLEANING SOLVENT. LUBE right after use of either.
CLEANING COMPOUND, SOLVENT: Rifle-bore cleaner (CR) (JAN-C-372)	6850-224-6656 6850-224-6657 6850-224-6658	2-OZ 6-OZ 1-QT	ORD	B	B	B	B	B	B	B	B	B	For gas system and bolt assy also. See SOAP and HOT WATER.
LUBRICATING OIL: Weapons (LAW) MIL-L-14107	9150-664-0038 9150-292-9689	4-OZ 1-QT	QMC	A	A	A	A	A	A	A	A	A	For all small arms at temperatures below 0° F; for all aircraft weapons at all temperatures.
LUBRICATING OIL, GENERAL PURPOSE: Preservative, special, (PL-SP) (MIL-L-644A)	9150-185-0629 9150-273-2389 9150-231-6689	2-OZ 4-OZ 1-QT	QMC	A	A	A	A	A	A	A	A	A	For all small arms at temperatures above 0° F.
LINSEED OIL, RAW: FS TT-O-369	8010-224-6556 8010-221-0611	1-QT 1-GAL	ENG	E		E		E		E		E	Put on with fingers.
NEAT'S—FOOT OIL, Fed C-N-200	8030-244-1033	1-GAL	QMC	F		F	F				F	F	Go easy on this stuff. Use depends on weapon model. For carrying cases, too.

A=To Lube B=Bore Only C=Whole Weapon D=To Clean After Storage E=Preserve Wood Parts F=Preserve Leather G=Polish, Remove Rust Stains

More Than Ammo Might Make Noise Around . . .

Your 90-mm AA Gun

You can get a real bang outta cleaning the 90-mm AA gun. But it sure won't be the kind you expect—not if you do the cleaning with solvent.

When you get to slopping around with the solvents, some of its fumes may get into the regulators or power control units, which isn't bad until a spark pops from the synchronizer ring or synchro brushes.

A spark . . . and WHAM—you may have an explosion. This can be real bad in the regulator 'cause the window may blow out. Supposin' somebody is looking head-on at the regulator when she blows?

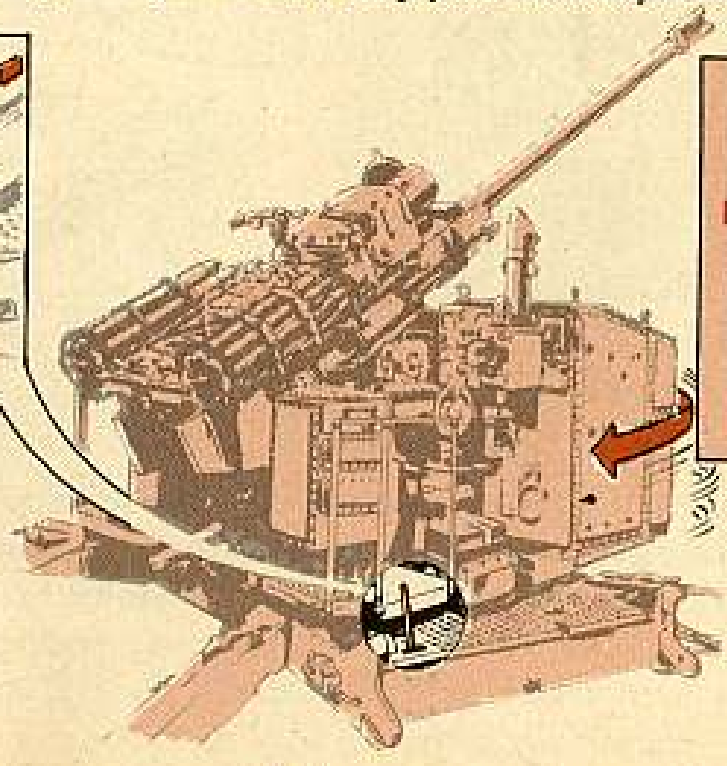
SO

Stick with soap and water when you're cleaning around the regulators and power control units.

Handle With Care

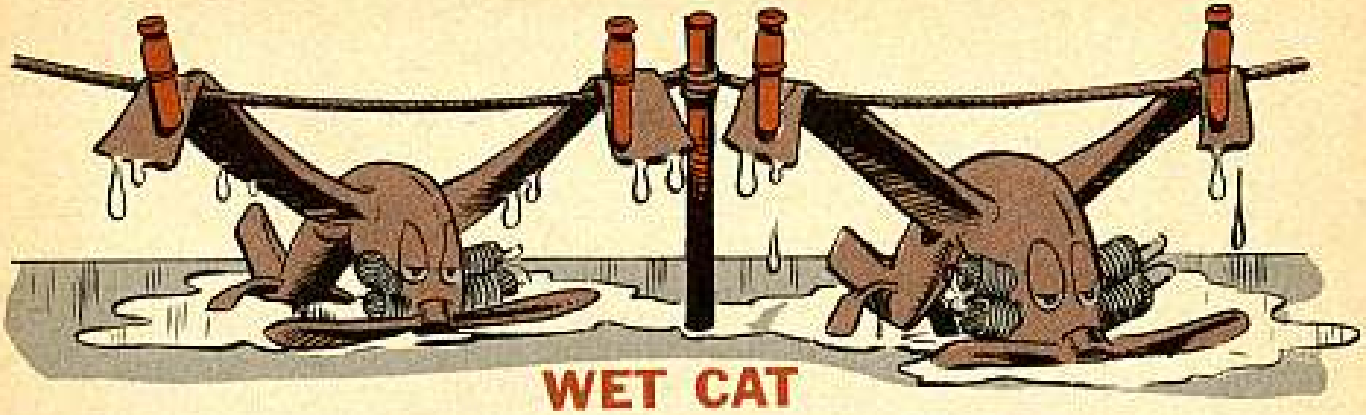
Unless you know TM 9-361 like the back of your trigger finger, it'll pay to look it over now and again if you wanna keep your M51 Skysweeper in shape.

A HANDLE LEFT IN VALVE JUST WAITS FOR UPPER CARRIAGE OF TRAVERSING SWEEPER TO HIT IT AND CRACK MOUNTING YOKE OF HYDRAULIC HAND PUMP



THE TM SAYS REMOVE EXTENSION HANDLES FROM VALVES AFTER PUMPING . . . STOW NEAR CENTER OF PEDESTAL.

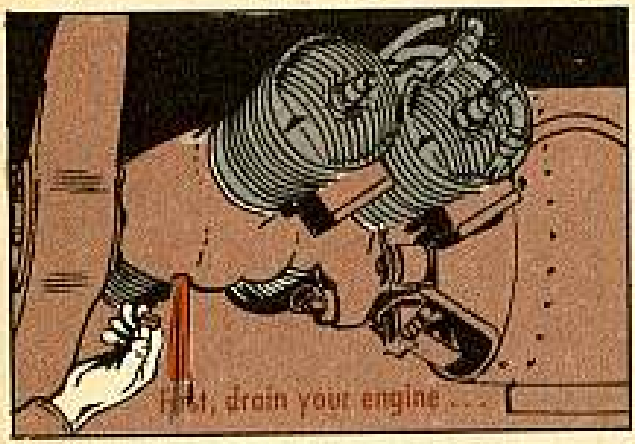
YOUR FLYING TARGETS

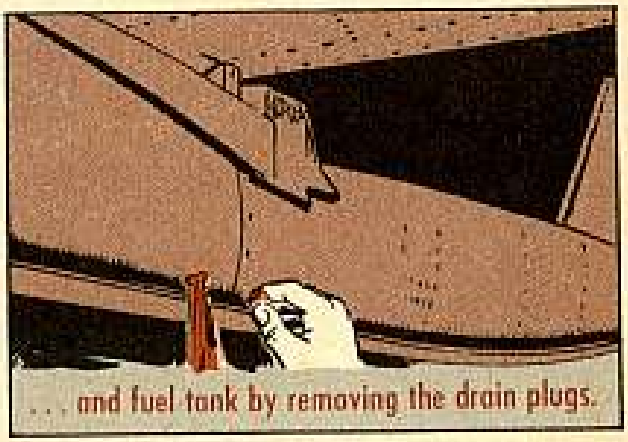


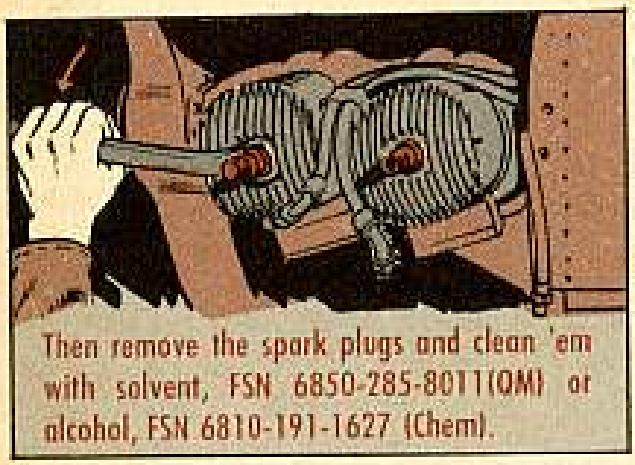
WET CAT

Salt water's no good for anybody's innards—yours or your RCAT's.

Here's the word on giving that engine on your RCAT some artificial respiration and first aid should it get dunked in the salty drink. This is what you do right fast, if there'll be any delay before taking it back to the shop.







Next, if you have fresh water handy flush the engine thoroughly and drain it again. Pull it through several times while you're flushing it.

Then put the drain plugs back in the engine and fuel tank, pour a gallon of alcohol into the fuel tank, open the needle valve wide and pull the engine through until you have alcohol running out the exhaust ports. Y'see, alcohol mixes with water, so it'll suck out any drops that may be hiding in the engine.

Now open your magneto and see if it got wet. If it did, you can rinse it out with alcohol, too. Then give it time to dry. Your magneto coils are waterproof all right, but you can't run it with water in the point assemblies.

Now, fill your fuel tank with a standard fuel and oil mixture and replace the spark plugs. Run the engine for five minutes.

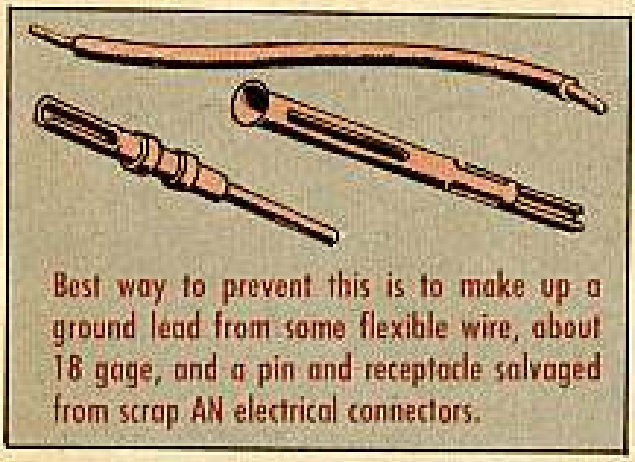
You are now ready to run a pre-flight check and fly your target.

Remember, the key to the whole business is speed. The sooner you can drain, flush and dry your engine, the less salt-water corrosion you'll get.

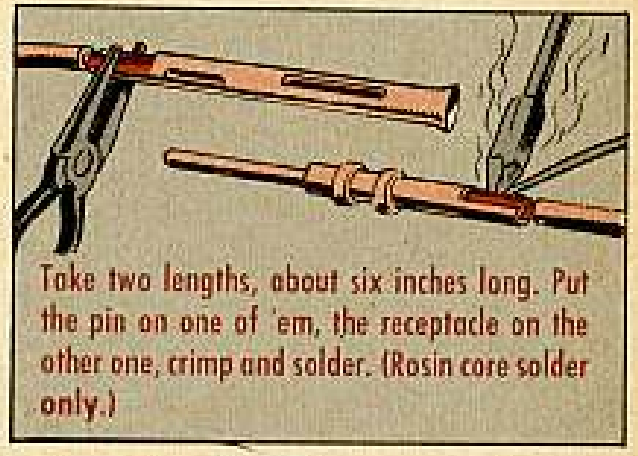
The job *is* the same for fresh water, except that if your target fell into good clean water, you needn't rinse it—just drain and give it the alcohol treatment.

SERVO GROUND LEAD

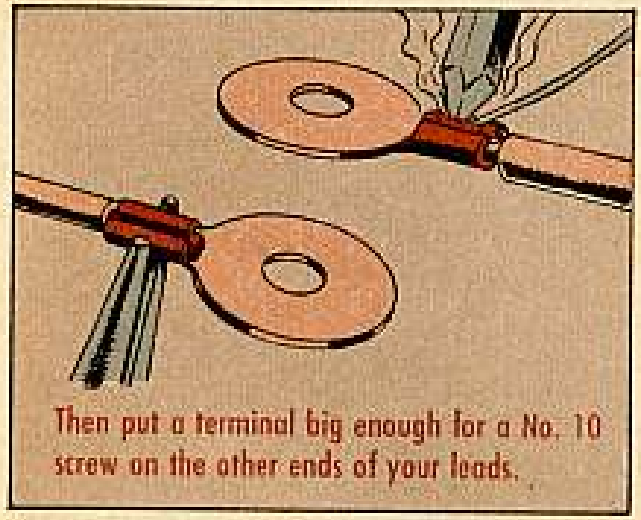
Normal ground for the D-8 roll servo on the OQ-19B RCATS is through the wing-to-fuselage attaching bolt. However, sometimes corrosion or dirt prevents a good ground there, so there's no roll control in flight.



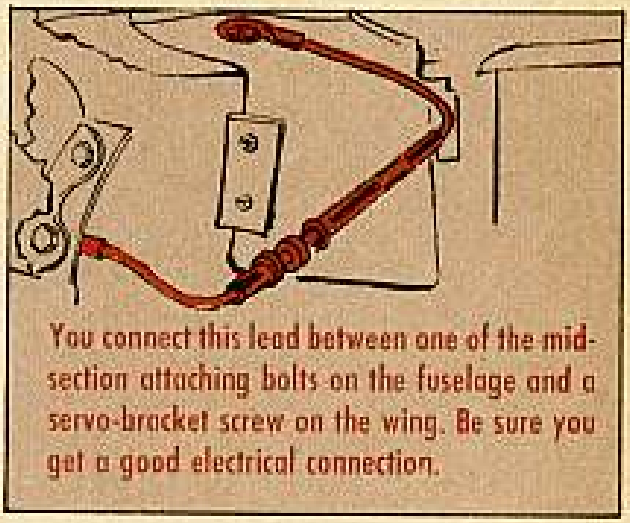
Best way to prevent this is to make up a ground lead from some flexible wire, about 18 gage, and a pin and receptacle salvaged from scrap AN electrical connectors.



Take two lengths, about six inches long. Put the pin on one of 'em, the receptacle on the other one, crimp and solder. (Rosin core solder only.)



Then put a terminal big enough for a No. 10 screw on the other ends of your leads.



You connect this lead between one of the mid-section attaching bolts on the fuselage and a servo-bracket screw on the wing. Be sure you get a good electrical connection.

That's all there is to it. The lead assures you that your servos will have a good ground, and the disconnect makes servicing easy, and also prevents any possible damage if the wing shears off on landing.

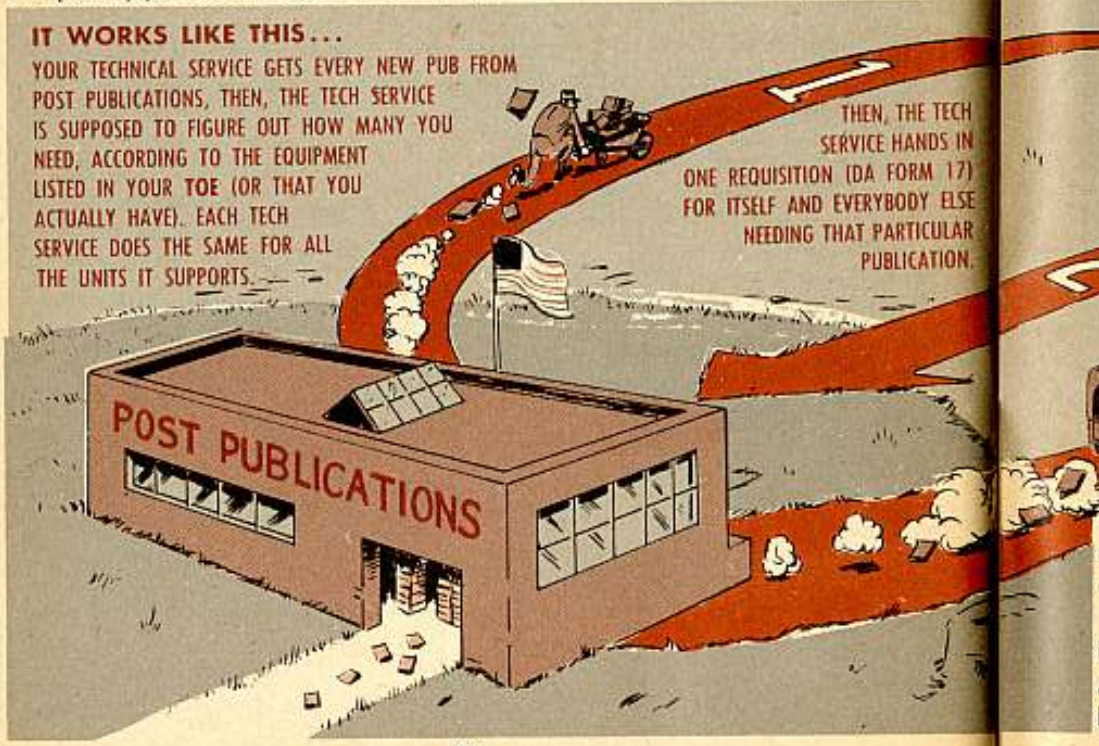
It's a Publication Formula

Seems like some folks aren't "hep" to the workings of the new initial distribution formulas for publications.

Pick up one of the latest TM's, for example, and you'll notice the formula in the back no longer says how many of that TM your unit is supposed to get automatically. The reason is that you get as many as you need for your unit at one clip the first time around . . . no more getting one or two copies of a new pub and requisitioning for the rest.

This new deal was born way back . . . 2 Dec 1955, in fact. This is the date the Army sent out an important letter: File AGAM-P (M) 461 (25 Nov 55) LOG; SUBJECT: **Distribution of Supply and Maintenance Publications.**

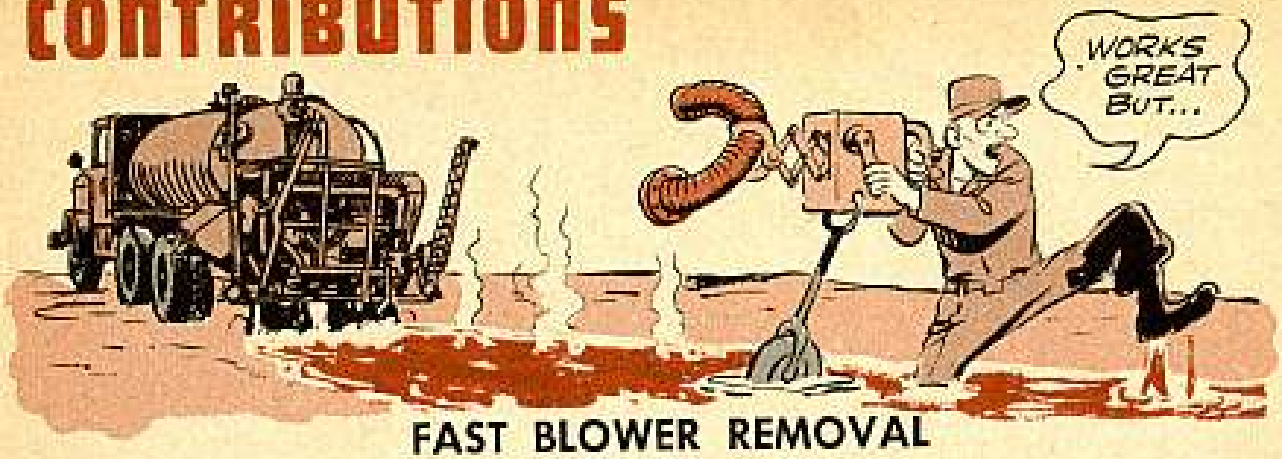
This letter says that each technical service's installation property officer will see to it that your outfit gets automatic distribution of **each** SM, TB, SB, LO, MWO and TM that's put out for **each** piece of equipment issued to you. Boiled down, the letter gives your tech service the go-ahead to get you each manual you need—in the quantity you need—so you can properly maintain and operate the equipment.



This system is slanted to leave you more time for taking care of your own mission—and it cuts down the paperwork by having each technical service requisition all the publications it and the using units need—at one time.

With a tech service carrying the ball, you shouldn't have to worry about keeping up-to-date with pubs. But if you feel an urge to see all the latest manuals the Army's putting out, stop over at post publications and ask to see the distribution bulletins printed up by the Adjutant General publications center.

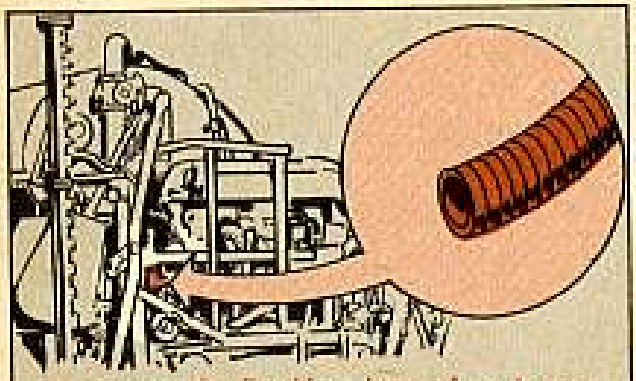
CONTRIBUTIONS



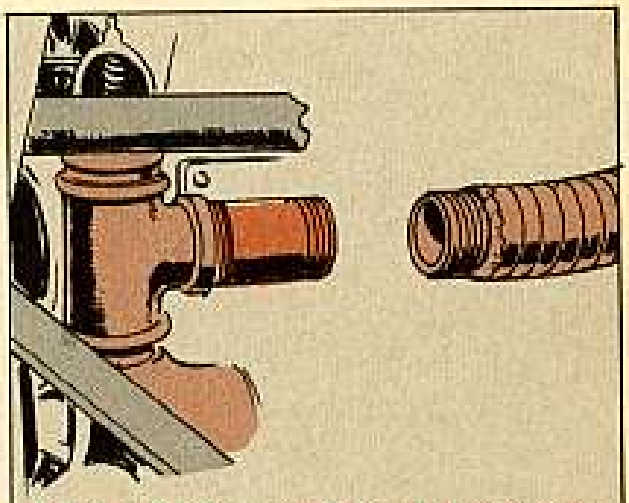
FAST BLOWER REMOVAL

Dear Editor,

Found a way to make things easier when removing the blower on the General Steel Tank Asphalt Distributor, Model SDC. Change things around like this, and you won't have to remove the engine hood, control panel, and wiring when taking off the blower.

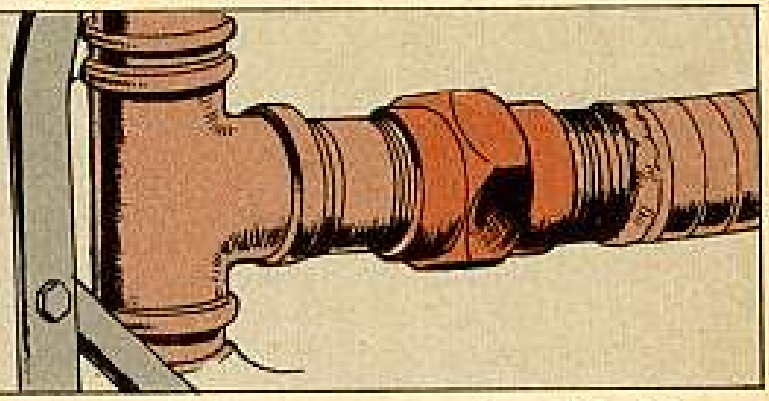


1. Remove the flexible tubing where it connects to the blower. If you can't pull it out, cut the tubing at the tee connection. (If you cut it, remove the nipple from the tee and braze it to the flexible tubing.)



2. Put a 2½-in pipe nipple, FSN 4730-252-7156 (ENG) in the tee.

3. Separate a 2½-in pipe union, FSN 4730-248-9359 (ENG) and install half of it on the tee nipple and the other half on the tubing nipple. Connect the union, and she's all set to go.



With this setup, you just have to disconnect the union to take off the blower. No removing the engine hood, control panel, and wiring.

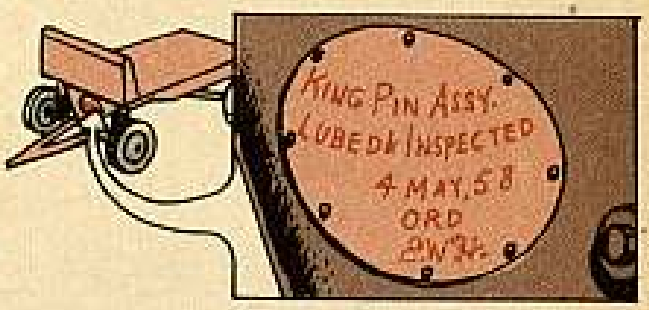
Cpl L. C. L.

INSPECTION NOTE

Dear Editor,

Both in the shop and on the sites, we found that we were having a lot of duplicated effort in inspecting the king-pin lock nuts on our M33 FCS trailers and bogies that have been removed from Nike-Ajax trailers.

Now any inspector checking these king-pins chalks or paints a little note "King-pin lubricated and inspected___ date" and his initials on the inspection hole cover.



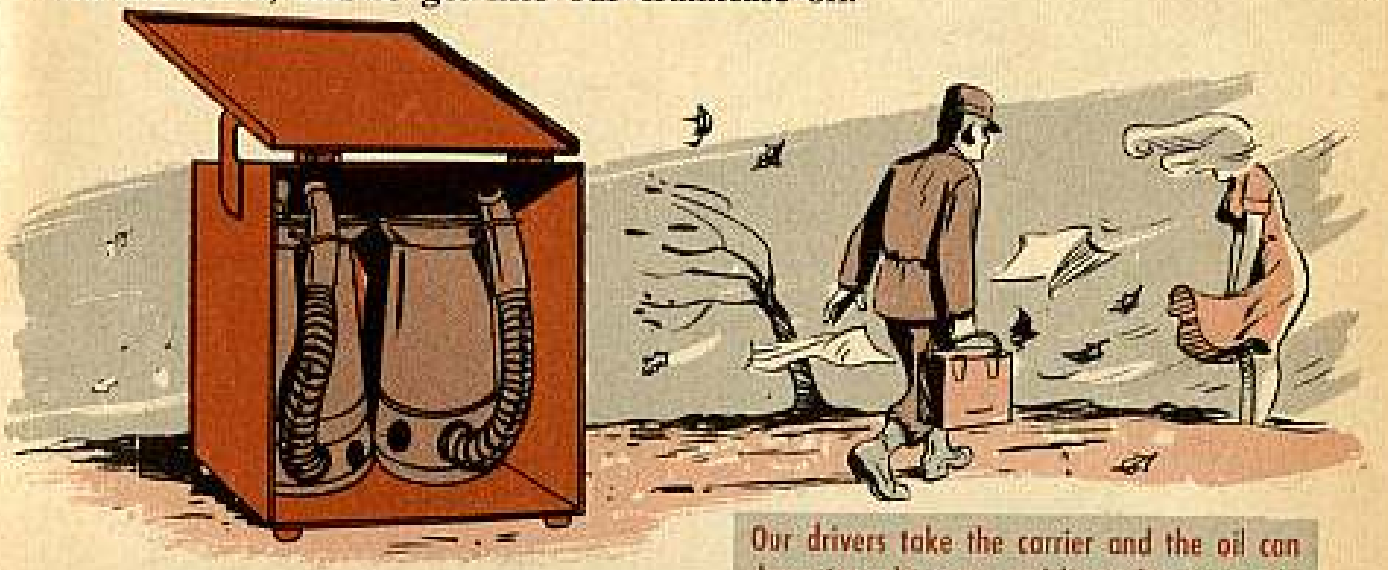
So, the next man along knows just when and by whom it was done. We got the idea from the stencils on railroad freight cars.

Ellwood W. Hagen
Fort Niagara, N. Y.

CLEAN CAN CARRIER

Dear Editor,

Here at Fort Rucker our Combined Battalion pulls motor stables in a gravel parking lot. On windy days we found that the blowing dust would stick to our oil measures, and so get into our crankcase oil.



So, we built this little carrier out of scrap steel (1/8-in sheet).

Our drivers take the carrier and the oil can down into the area, and keep the measuring cans inside away from the dust, except when they are actually adding oil to their vehicles.

This has cut down on the dust a whole lot, and care in keeping the oil can wiped clean before pouring takes care of the rest of it.

CWO Delbert W. Roberts
Fort Rucker, Alabama

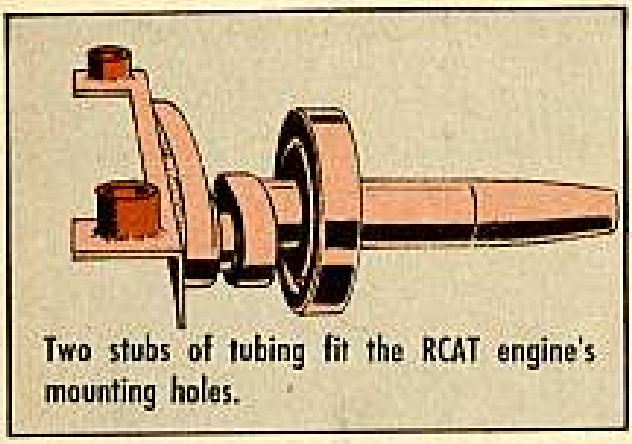
(Ed note—And if you're short on scrap steel, wood'll do the trick.)

RCAT ENGINE BENCH MOUNT

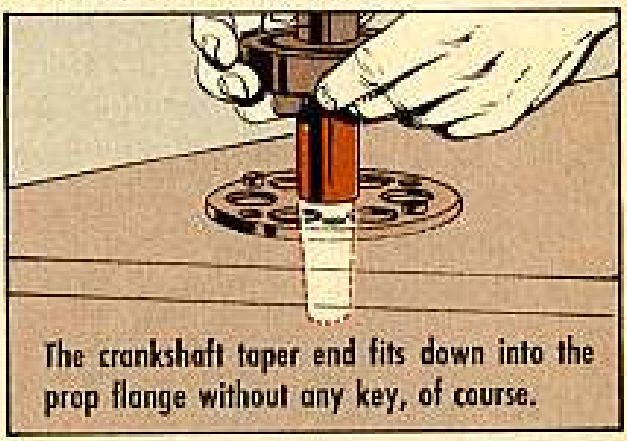
Dear Editor,

Here's an engine mount we have in our RCAT repair tent.

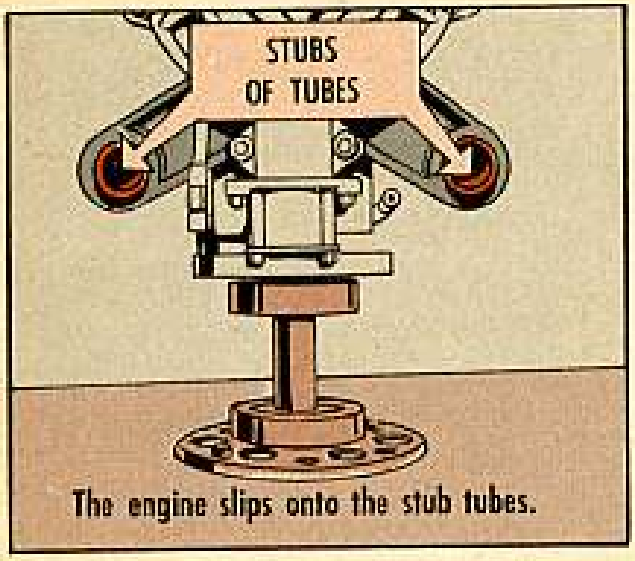
As you can see, we set a salvage propellor flange into the bench top, and then welded a cross bar to the cheek of an unserviceable crankshaft.



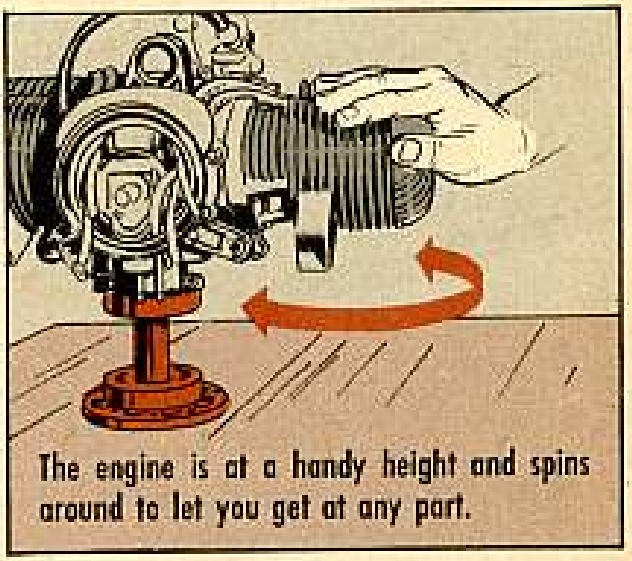
Two stubs of tubing fit the RCAT engine's mounting holes.



The crankshaft taper end fits down into the prop flange without any key, of course.



The engine slips onto the stub tubes.



The engine is at a handy height and spins around to let you get at any part.

Shop Gang
40th AAA Det (RCAT)
Oswego Firing Range, N. Y.

Connie Rodd's BRIEFS

Turn the collar

MWO Ord G1-W110 (5 Nov 57), which has to do with replacing the fuel-tank filler-tube collar bolts on **most** of your tracked vehicles, is marked urgent. It seems that the old collar bolts let fuel leak out, causing a fire hazard. The fix wire-locks the collar bolts, so there's no leakage. This MWO is an Ordnance job, so why not give them a call and see if your tracker is scheduled.

Now you know

You know what to ask for and who gives it to you when your Nike-Ajax missile equipment says to use MIL-L-4343A? The stuff for you is Grease, aircraft, MIL-L-4343A, Amendment 1, dated 1 Sept 1954. FSN 9150-269-8255 is worth a 1-lb can. Your supporting depot can get it for you from the Air Force through a Military Interdepartmental Purchase Request—MIPR for short.

Number game

Don't get all shook up because your TB Ord numbers jump from 699 to 1000. You're not missing any—not right now, anyway. Page 235 of DA Pamphlet 310-4 (November 1957) clues you.

They're urgent

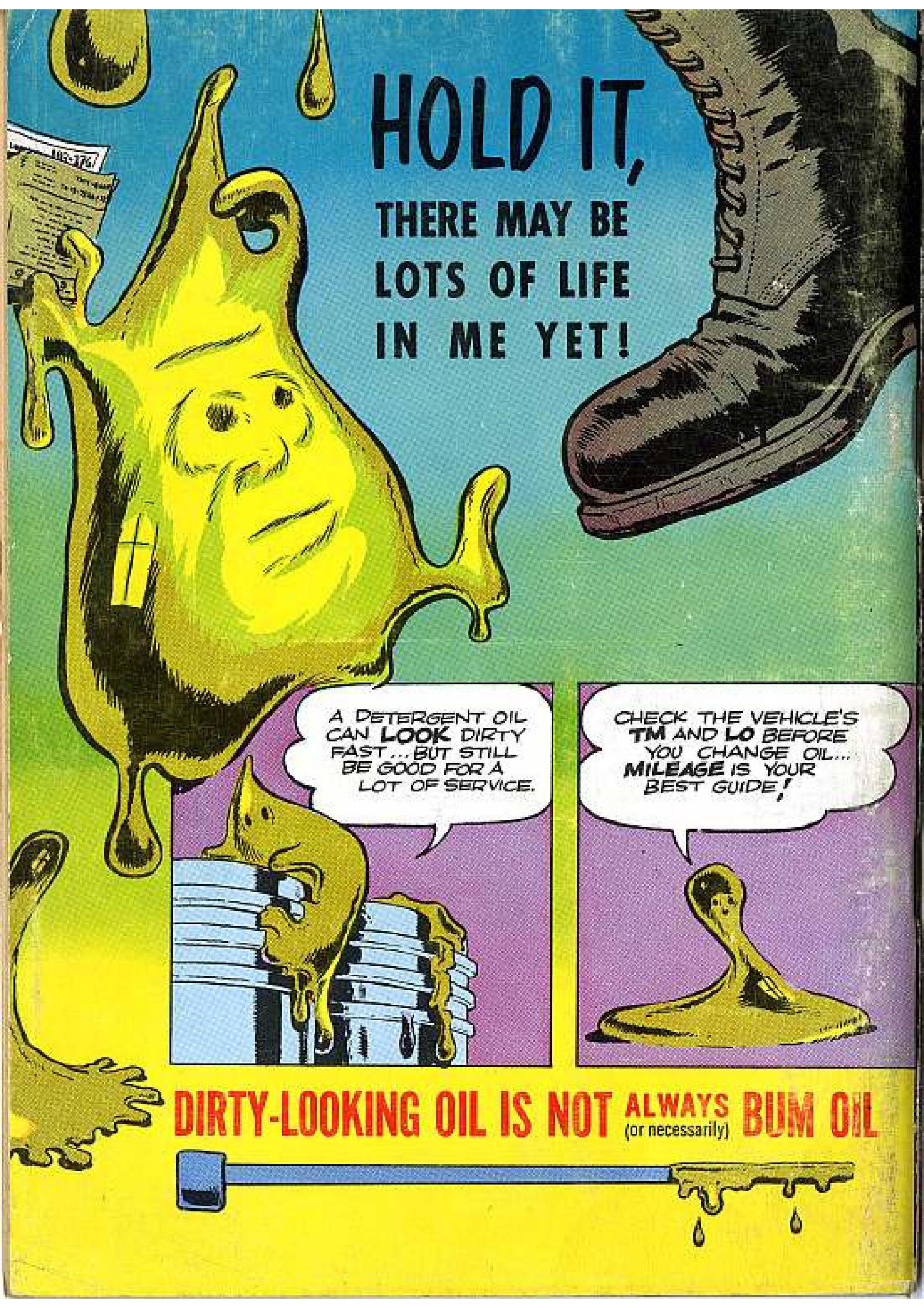
You might pass the word that the M289 rocket launcher for the Honest John missile needs four urgent MWO's. They're MWO D065-W14, W19, W22 and W23. Your support unit does the work.

Right title

You're right. There's no battery artillery mechanic in an Honest John outfit. Organizational maintenance is done by a guy called a heavy rocket crewman. He has a 147 MOS and his jobs are listed in Changes 4 to AR 611-201.

They've gotta be there

Don't do it! Never! Never run your M59 armored infantry vehicle without its engine compartment access panels in position. In the first place, you can get a fatal dose of carbon monoxide if a leak sprouts in the exhaust system. And second, your power plant'll overheat because the panels are part of the cooling system. Paste this in the back of your head and anyplace else that's handy. It could save your life.


HOLD IT,
THERE MAY BE LOTS OF LIFE IN ME YET!
A DETERGENT OIL CAN LOOK DIRTY FAST... BUT STILL BE GOOD FOR A LOT OF SERVICE.
CHECK THE VEHICLE'S TM AND LO BEFORE YOU CHANGE OIL... MILEAGE IS YOUR BEST GUIDE!
DIRTY-LOOKING OIL IS NOT ALWAYS (or necessarily) BUM OIL