
Issue 56
PS
1957 Series
THE PREVENTIVE MAINTENANCE MONTHLY
SOCIAL
BENEFIT DANCE
DID YOU BLOW A FUSE OR CALL FOR A CIRCUIT TESTER?
(SEE PAGE 2)
JUST PS
COIN RETURN
INCOME TAX GUIDE
WILL EISNER

Connie Sez—

Hey, There...

You know, there are some guys around who just don't give a hoot how they spend their dough. Not that it's any skin off our noses, most times. But, there are times when these guys start throwing their bucks down the drain, they flush some of our loot, too.

For example, take these guys who start pulling cables off their vehicles when they show the slightest cracks. These are the "spit-and-polishers"—the guys who think they'll make an impression on their inspectors by having everything absolutely one hundred per cent.

The things these guys are doing are just downright, downcussed unauthorized. Para 9b of TM 9-2810 (Oct 53) makes 'em that way. It says there that as long as an assembly or part has usable life left in it, that part or assembly's to stay on the vehicle. It's only when a part or assembly can flub a vehicle that you're supposed to pull her and put another one on.

Further than that, it tells inspectors that they shouldn't expect a guy to replace a part while that part's still good, no matter how shlompy it might look. Here's what the words say—read 'em for yourself:

"Inspectors must be required to obtain the maximum useful life out of parts and assemblies and should be encouraged to continue serviceable but worn parts and assemblies in service when the risk can be justified by the remaining life expectancy of the part or assembly and the nature of anticipated operations."

PS ★ THE PREVENTIVE MAINTENANCE MONTHLY

Issue No. 56 **1957 Series**

Published by the Department of the Army for the information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limits of availability, older issues may be obtained direct from Preventive Maintenance Agency, Raritan Arsenal, Metuchen, New Jersey.

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.

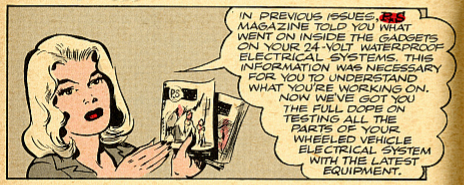
The printing of this publication has been approved by the Director of the Bureau of the Budget (27 Apr 56).

DISTRIBUTION: Active Army: DCSPER; ACSI; DCSOPS; DCSLOG; ACSRC; CAMG; COA; CARROTC; COFF; CINFO; TIG; TJAG; CLL; CMH; CNGB; COFSPWAR; Tec Svc, DA; Admin & Tec Svc Hd; Hq CONARC; OS Maj Comd; OS Base Comd; MDW; Armies; Corps; Div; Brig; Regt/Gp; Bn; Co/Btry; Ft & Cp; Gen & Br Svc Sch; Joint Sch; Specialist Sch; PMST Sr Div Units; PMST Jr Div Units; PMST Mil Sch Div Units; Gen Depots; Sup Sec, Gen Depots; Depots; Ord Tk Autmv Comd; AH; US Army Tng Cen; Sandia Base, AFSWP; POE (OS); Trans Terminal Comd; Army Terminals; OS Sup Agencies; PG; Arsenals; CMLCMATCOM; DB; Engr Maint Cen; Cruit Main Sta; Div Engr; Dist Engr. NG: State AG Special List. USAR: Mil Dist Special List. For Explanation of abbreviations used, see SR 320-50-1.

You've Got the Why—
Here's the How on—

TESTING THE 24-VOLT SYSTEMS (ON WHEELED VEHICLES)

This Is the
Low-Down on How To
Use Your Model 129 Load Bank
With Your Other Second Echelon
Testing Equipment



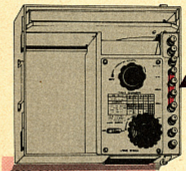
These tests will tell you just where your troubles are, and what units you must replace.

There are several different ways in which you can hook up test equipment and make satisfactory tests of your vehicles. The tests listed below have been carefully worked out and proved safe, easy and convenient. You can use them, or you can use the hookups devised in other systems. Either will be OK. But, for goshsakes, don't mix your drinks. If you use these tests, make 'em just **exactly** as they are laid down here and you will get good results and not louse up your equipment.

COMPLETE UNIT SHOP CHECK

As you know, the using-unit mechanics are supposed to be able to check all the separate assemblies of the electrical system and decide which ones to leave on the truck and which ones to replace. The only water-proof unit you open up is the distributor, where you swap ignition points and condensers if needed.

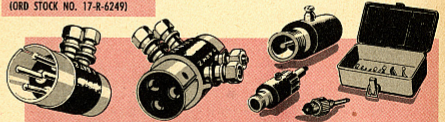
To do this checking right, you need the following equipment which is authorized for second-echelon shops:



All three links are closed for these tests

LOAD BANK FSN 5905-356-7995
(ORD STOCK NO. 17-R-6249)

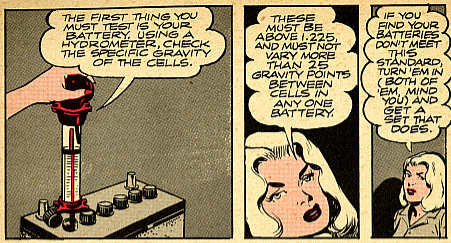
CIRCUIT TESTER
FSN 6625-356-8269
(ORD STOCK NO. 17-T-5575-50)



ADAPTER KIT FSN 4910-356-7511 (ORD STOCK NO. 17-A-3150)

This 'ere new Model 129 Load Bank is the latest gadget to hit the second-echelon equipment. It lets you load up your generator to check the output, and it gives you a field rheostat to control your generator while testing it. To use it for this series of tests, you want to use the 24-volt terminal with all three links closed.

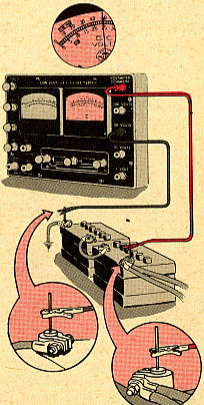
And, of course, your regular tool kit. You'll get better results if the driver and the shop electrician team up to test the truck.



Now connect the positive (+) lead from your low voltage circuit tester voltmeter to the positive (+) terminal of your second battery—the one the starter cable hooks to. Connect the negative (−) lead from the 50-volt terminal of the tester to the negative (−) post of the first battery—the one where the ground cable fastens.

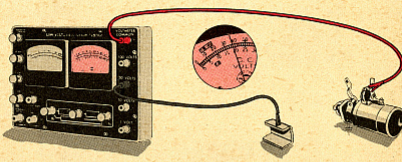
The best way to attach the leads to the battery posts is with a small sharp prod driven right into the post itself (it's made of lead). Tap gently so's not to bust things. If you haven't got such a prod, and can't make one, be extra sure your cable clamp is clean and tight on the battery post. Better take it off and be sure, and then put your voltmeter clips on the cable clamp tightening bolt—trouble is, you sometimes get a high resistance because of corrosion between the battery post and the cable clamp.

When you make this connection, your voltmeter should show somewhere between 23 and 26 volts. All this means is that you have the meter connected right.



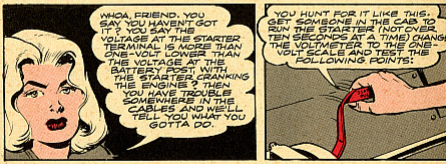
Now, crank your engine with the starter—for not more than ten seconds—with the ignition switch off. If your voltage falls below 18-volts while you're doing this, replace the batteries. This test will show up any trouble inside the battery which didn't show up when you checked the specific gravity—things like plates busted loose from the terminals.

Did you get at least 18 volts while the starter's cranking? OK, now shift your voltmeter positive lead over to the starter switch terminal, and the negative lead over to the vehicle frame and repeat the test.



If you still get within one volt of the voltage you got from the battery posts, and your total voltage is 18 or more, you are all right in the batteries and cable.

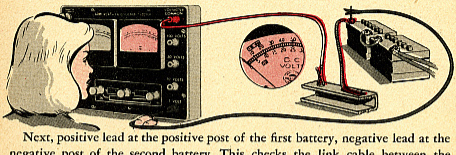
HOW TO RUN 'EM DOWN



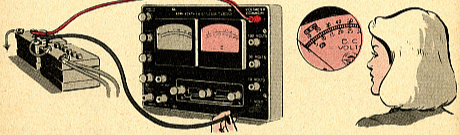
Caution: On these tests, if working with a helper, do not make a permanent hook up at both ends of the cable you are testing—fasten one end and then touch the other right to the source of current but touch it in such a way that if you do have a real bad cable and the meter hand goes right off the scale, you can turn it loose instantly to prevent harm to the meter. If you are working alone, you'll

have to make all these checks twice, once with the voltmeter lead on the 50 volt tap to see if you get more than one volt, and then again with the voltmeter lead on the 1-volt scale to measure the voltage in tenths of a volt.

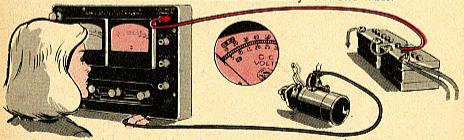
Positive lead at the vehicle frame, negative lead on the first battery negative post. This checks the ground cable.



Next, positive lead at the positive post of the first battery, negative lead at the negative post of the second battery. This checks the link cable between the batteries.

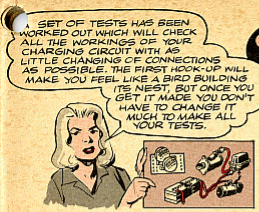


Then, positive lead on the positive post of the second battery, negative lead on the starter switch terminal. This checks the battery-to-starter cable.



In any one of these tests, does the voltmeter show over 5/10 of a volt with the starter cranking? If it does, remove the cable, clean and inspect, clean the battery posts and re-install—tight. Then retest. If the voltage drop is still there, replace the cable and again re-test.

When all this checks out, you're sure of your batteries and cables—and no system will work without 'em. Now you're ready to test the charging circuit.

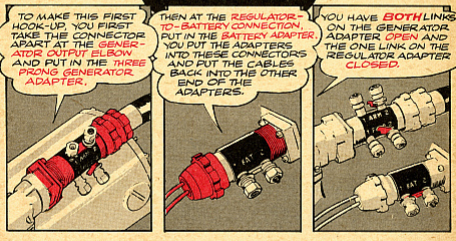


CHARGING CIRCUIT

It makes no difference which one of the new waterproof vehicles you are testing—the connections, tests and results are all the same. Of course, on different vehicles, the parts are in different places, but you treat 'em the same.

CAREFUL: Disconnect your battery ground while making your hookup!!

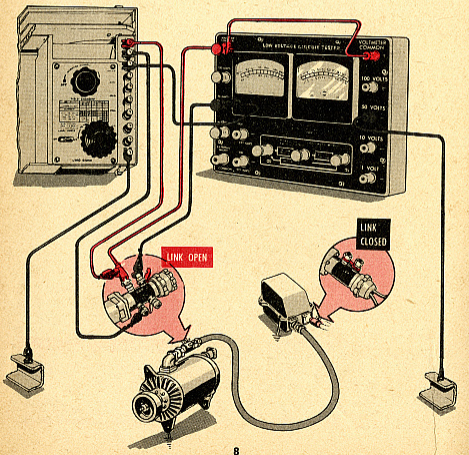
THE FIRST HOOK-UP



Now turn to your tester and pick out the ammeter cables. You can put this tester on the fender, or better still, roll a portable bench up to the side of the truck. You connect the ammeter positive (+) cable to the AMMETER COMMON terminal of the tester and put the clip on the **front** binding post of the "Arm" side of the generator adapter. The ammeter negative (−) cable is connected from the 50-amp terminal of the tester to the rear binding post of the "Arm" side of the generator adapter.

Next thing you need is the model 129 Load Bank. Pull out the field rheostat leads. One of these leads goes to the **front** binding post of the FIELD side of the generator adapter. The other (doesn't matter which one), goes to the **front** ammeter cable clip.

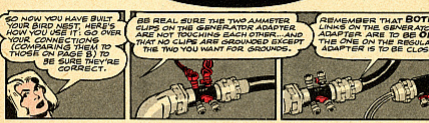
Now look at "First Hookup"; this will show you the rest of the connections you need. You bring the voltmeter positive lead on your tester from the VOLTMETER COMMON terminal over to the AMMETER COMMON post. Easiest place to hook it on is onto the end of the ammeter cable stud which sticks through the tester binding post. The voltmeter negative lead goes from the 50-volt terminal on the tester to a good ground on the vehicle frame. Then you put a lead from the common post of the load bank and bring it over to the 50-ampere negative post of the tester. The other lead from the load bank goes to a good ground on the vehicle frame from the 24 volt post.



H-O-T!!

Some of the early production Model 129 Load Banks got out to the field with an error in the manufacturer's instruction booklet. Pages 2 and 3 showed a hookup which was likely to burn up your generator. Make this test exactly as shown in this article and in no other way.

DOUBLE-CHECK

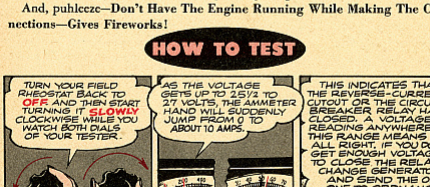


Now look at the field rheostat knob on the load bank box. Be sure it is in the DECREASE position (counter clockwise all the way). Also, since the carbon pile is always supposed to be screwed down tight for carrying, turn the load control knob counterclockwise two or three turns.

Start your engine, and set the hand throttle to keep it a little above idle (850-1100 RPM). Turn the field rheostat clockwise, slowly till the ammeter indicates about 10 amperes (if your system is charging), and let it warm up the electrical system for about ten minutes—longer if you're working in the cold. If the truck has been on a trip just before testing, this may not be necessary, but be darn sure your electrical system is at normal operating temperature.

And, puhleeze—**Don't Have The Engine Running While Making The Connections—Gives Fireworks!**

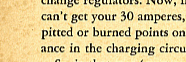
HOW TO TEST



But, if your relay points do close, continue to turn your field rheostat clockwise until the amperage rises to 30, not over 35, and IMMEDIATELY back the rheostat down again. This will show you that you have the full rated output of the generator (The regulator holds this output to about 27 amps in service, so 30 amps on the test is plenty). In making this test, the generator output voltage will go up to 30, maybe 35 volts, so you don't want to leave it up there a second longer than it takes you to read 30 amps on the ammeter.

Generally speaking, if you don't get 30 amperes or more on this test, the fault is in the generator. However, you've got to use your head. If you get no voltage indication, or don't get at least 30 volts with the field rheostat fully clockwise, change generators. But, if you get plenty of voltage but the cutout doesn't close, change regulators. Now, if you get over 30 volts and the cutout closes, but you can't get your 30 amperes, it might be a defective generator, or it might be badly pitted or burned points on the reverse current cutout, or it might be high resistance in the charging circuit, either the positive side or the ground side.

So, in that case (most unlikely, but possible) where you have over 30 volts, the cutout has closed (as shown by some amperage, 5 or 10 say) but you can't get 30 amperes of output, you make two more tests.

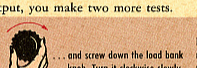


First flip on the load switch on the load bank . . .

. . . and screw down the load bank knob. Turn it clockwise slowly.

At the same time you must watch both your ammeter and your voltmeter, using the field rheostat to keep the voltage up to about 25-30 volts.

If this test allows you to get 30 amperes on the ammeter, your generator is OK. If you don't get the 30 amperes, the generator is at fault. Replace and re-test.



As soon as your ammeter indicates 30 amps, back off the field rheostat . . .

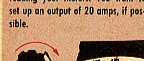
. . . flip off the load switch and . . .

. . . unscrew the load bank knob.

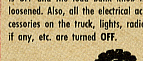
At this point you know your generator is OK . . . it will produce its rated output and a little more. But, since you haven't been able to get this output through the regulator and into the battery, you have two possibilities of trouble. You may have high resistance somewhere in the charging circuit, or you may have a defective regulator, probably burned points on the reverse current relay.

You check the charging circuit first, like this:

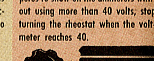
Turn your field rheostat clockwise, reading your meters. You want to set up an output of 20 amps, if possible.



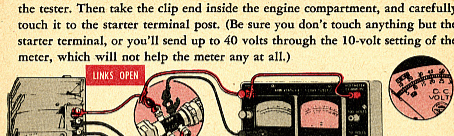
(Remember, your load bank switch is OFF and the load bank knob is loosened. Also, all the electrical accessories on the truck, lights, radio if any, etc. are turned OFF.



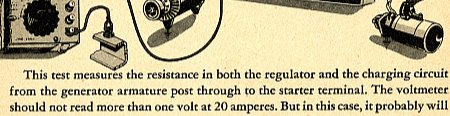
But in case you can't get 20 amperes to show on the ammeters without using more than 40 volts, stop turning the rheostat when the voltmeter reaches 40.



Now you remove your voltmeter negative lead, first from its ground and then from the 50-volt jack on the tester. Holding the clip end of the voltmeter negative lead carefully away from any grounds, plug the other end into the 10-volt post of the tester. Then take the clip end inside the engine compartment, and carefully touch it to the starter terminal post. (Be sure you don't touch anything but the starter terminal, or you'll send up to 40 volts through the 10-volt setting of the meter, which will not help the meter any at all.)



This test measures the resistance in both the regulator and the charging circuit from the generator armature post through to the starter terminal. The voltmeter should not read more than one volt at 20 amperes. But in this case, it probably will show a higher reading, or the previous test would have shown you 30 amps of charge, and you wouldn't be making this one. So, you now carefully move the voltmeter negative lead clip up to the post of the regulator—to battery adapter.

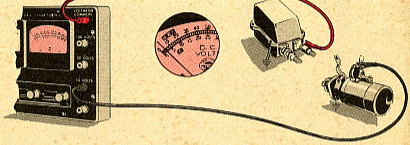


If you still show a reading of more than one volt, you have a loose connection or dirty contact points in the regulator or the connecting cables. Replace the generator-to-regulator cable with a known good one and test again. If this doesn't cure it, replace the regulator and test once more.

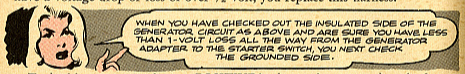
But, if replacing the regulator eliminates the voltage drop, put your original cable back on and test a third time. (No sense using a new cable when you don't need it.)

And little as you like it, if you replace a regulator you've got to run through this series of tests again to be sure the new regulator is correctly set to work with your generator.

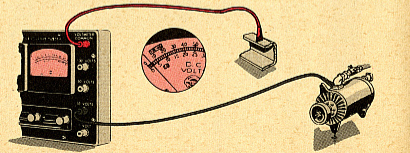
On the other hand, if your voltmeter falls back to less than one volt when you move the negative lead to the BATTERY link on the regulator adapter, it means that your loss must be between the regulator and the starter terminal. So you move your voltmeter POSITIVE lead over to the BATTERY link, and try the NEGATIVE lead on the starter switch terminal.



If you get more than a ½-volt loss between these points you pull the connection off at the starter switch terminal and clean it, inspect for broken wires where the lug attaches to the cable, replace it, and tighten her down. Test again. If you still have a voltage drop or loss of over ½-volt, you replace this harness.

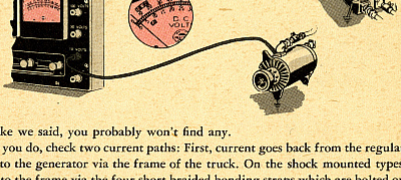


To do this, put your voltmeter POSITIVE lead on a clean ground on the frame and put the negative lead on the frame of the generator. (Notice that in this case the current being measured runs **from** the ground **to** the generator.) Here again you must not have more than ½ volt.



If you do, look at the generator attaching bolts to be sure they are tight, and that there is not a film of paint or dirt between the generator and the engine block. Also look at the ground strap between the engine block and the vehicle frame. Again, repeat your test to be sure you have corrected the trouble.

There's one last check. You won't get a rise out of this one but once in a million years, but since you're all set anyway, you might as well make it. Touch your voltmeter POSITIVE lead to the box of your regulator, and the negative lead to the frame of the generator. Here, once more, not over ½ volt or you got troubles.

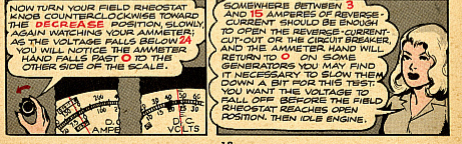


Like we said, you probably won't find any.

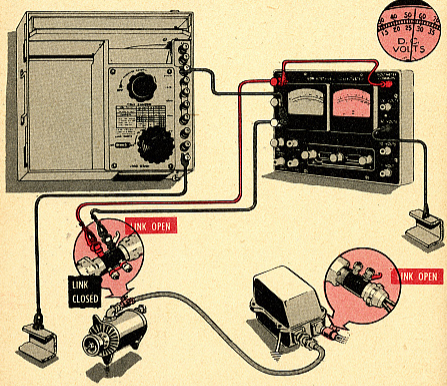
If you do, check two current paths: First, current goes back from the regulator box to the generator via the frame of the truck. On the shock mounted types it gets to the frame via the four short braided bonding straps which are bolted over the rubber shock mounts.

At the same time, some current goes down the metallic shielding inside the rubber cable between the generator and the regulator. In the rare case that you find a drop here, check the regulator mountings for dirt, looseness, and broken or missing bonding straps.

Somewhere in this series of tests you should have found and remedied some trouble. Putting your voltmeter leads back as they were in the first hook up (Page 8), you go back and start in again with test 1 (Page 9). This time you should have no trouble getting an ammeter reading of 30 amperes of actual charge.

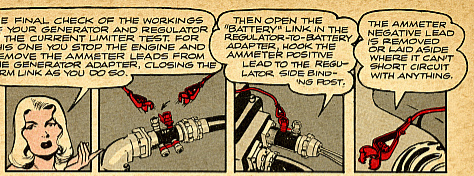


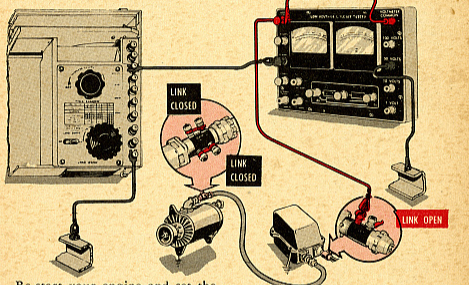
Now, while the tester dials are both near O, open the BATTERY link in the regulator adapter. Take the field rheostat leads off the generator adapter. Might as well coil 'em back in their box, 'cause you're done with 'em for now. Close the FIELD link on the generator adapter. The rest of the hookup stays the same. Then bring the engine back up to 850-1100 RPM.



When you closed the FIELD link, the voltage most likely went up to 27½ volts, plus-or-minus one volt. What you want to know now is if the regulator will hold it there at all engine speeds. So you slip into the cab or call to the driver and have the engine goosed up by the foot throttle. Run it up to 2000-RPM or so—no sense in knocking the rods out—and watch your voltmeter. It should stay right about 27½ volts. This is one of your most important tests. If you find your voltage regulator is off more than one volt, replace the regulator and send the old one back for overhaul.

CAREFUL: Don't run this test longer than one minute as dangerous voltage surges may result.



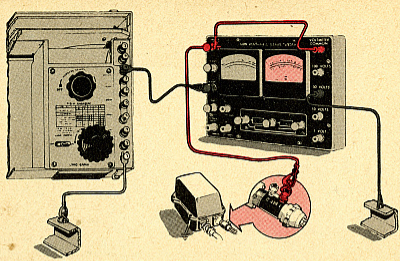


Re-start your engine and set the throttle to about 1500-RPM. Now flip on your load switch and screw down the load bank knob until the voltage falls to 25 volts or less. The ammeter should rise to between 24 and 27 amperes and level out there. This tells you that the current limiter of the voltage regulator is working OK.

Now shut down your engine.

These tests you've made will show up any trouble you might be having in the generator or the regulator. There are some other connections it would be wise to check on, to be sure they are clean and tight, and to detect possible trouble before it happens. So you change the hookup a bit.

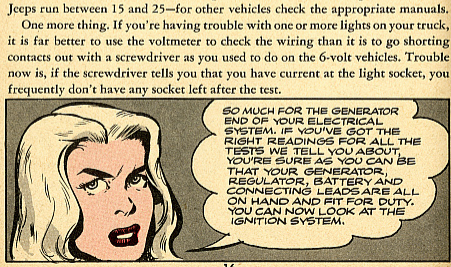
First, move the ammeter positive lead from the regulator side of the regulator adapter to the battery side of the same adapter, and close the link. Then crank the engine for not over 30 seconds with the ignition off, reading the voltmeter as you do so. (This is just like your first battery test, and you should have something over 18 volts showing.)



Next, you flip on the load switch and slowly screw in on the load bank knob until the voltage indicated is exactly the same as that which remained when the starter was cranking. At this point you read your ammeter and open the load bank switch.

What you have done is to substitute the draw of the load bank for the draw of the starter. This is a very simple thing to do with the hook up you already had, and is accurate enough for all practical purposes. On your 2½-ton trucks, the draw should be between 45 and 60 amps. If much more or less, replace the starter. Jeeps run between 15 and 25—for other vehicles check the appropriate manuals.

One more thing. If you're having trouble with one or more lights on your truck, it is far better to use the voltmeter to check the wiring than it is to go shorting contacts out with a screwdriver as you used to do on the 6-volt vehicles. Trouble now is, if the screwdriver tells you that you have current at the light socket, you frequently don't have any socket left after the test.

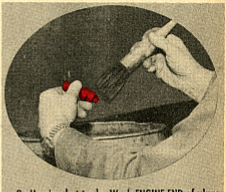


IGNITION SYSTEM TESTING

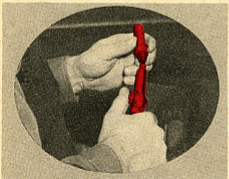
In giving your ignition system a going over, you'll have to have clean spark plugs. So here's how to clean a spark plug—

There is no point in cleaning your plugs unless you have available one of the abrasive-blast cleaner-testers.

1. Poking around in a spark plug with a knife or screwdriver is more likely to ruin a plug than help it.

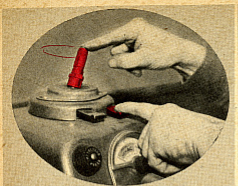


2. Here's what to do. Wash ENGINE END of plugs with solvent Ord Stock No. 51-S-4385-1. Don't get solvent into WIRING END.

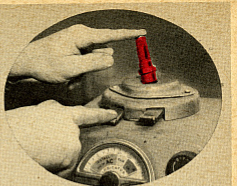


3. Dry with compressed air—be sure plugs are free of oil. Putting an oily plug in machine will either CLOG UP the plug with abrasive or CLOG UP the abrasive with oil. BOTH ARE BAD.

4. Place DRY plug in rubber adapter of cleaner. Be sure adapter is RIGHT SIZE for plug. Too large an adapter causes dust to blow all over shop. (CAUTION: the right adapter is a tight fit, and the 18-mm adapter appears to be for 14-mm plug. Look at size mark on rubber.)

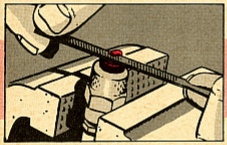


5. Plug in correct adapter, place finger on top of plug and swing top in a one-inch circle, allowing adapter to flex, while pressing "Abrasive Blast" valve on cleaner.



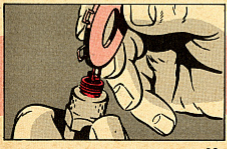
6. After each "Abrasive Blast" (three three-second blasts are plenty), press AIR BLAST valve for about a second, and then remove and inspect plug.

7. CAREFUL NOT TO TWIST THE PLUG IN THE ADAPTER.
The threads on the plug will rapidly ruin the rubber adapter.



8. When plug is CLEAN, open gap enough to get an ignition point file or stone in and file center electrode square and bright. Clean inside of side electrode.

There are two reasons for this. First of all, a square electrode will release a spark at a lower voltage than a round one. Secondly, the sparks across a gap eventually deposit a high resistance coating on the electrodes which also calls for a higher voltage to make the spark. Naturally, the higher voltage required to jump the gap, the more chance of a failure in the insulation on the wires or in the distributor.



9. After cleaning up the electrodes, gap the plug as called for in your TM (generally 0.030"). The plug is now ready to test.

TESTING SPARK-PLUGS

The commonest error in testing spark plugs on a compression type tester is to disregard the comparison feature of the tester and try to relate the tester pressure to the cylinder pressure. This is foolish. First of all, a combustible mixture in a cylinder is a much better path for current than the dry air in the tester.

As a result, a plug will frequently fire every time in the cylinder at a pressure of 110 lbs per square inch when it might not fire in the tester at 80 lbs. Another thing, if your line voltage in the shop should happen to be down just a little (perhaps the air compressor motor is running) it can cause you to reject excellent plugs for no reason.

So get a new spark plug of the type you are testing and use it to set the comparison indicator in the tester. On the AC tester, this is a movable quadrant inside the pressure gage. On the Champion tester, it's a rotating ring around the outside of the gage. It serves the same purpose in both testers.

Place NEW plug, correctly gapped, in tester. Close other hole with plug you wish to TEST. Set tester electrode on new plug (with adapter provided if it's a waterproof type plug). Turn on air, press PUSH button. Increase air till plug stops sparking and then back it down to highest pressure at which plug fires with STEADY spark. Set COMPARISON INDICATOR AT THIS PRESSURE (black arrowhead on AC, or "NEW" mark on the Champion). Plugs are now ready to be tested.

Leave the comparison indicator set, and test your engine plugs in the same manner—run the pressure up till they stop firing, and then back it off till you get a steady spark. The pressure hand will then fall in the GOOD-FAIR-REPLACE section of the comparator as it is called.

GOOD plugs you use again, of course. FAIR plugs you can use if new plugs are scarce, and plugs which fall in the REPLACE section you should replace if at all possible.

Remember to check all new plugs for the correct gap before installing, and check and clean your entire ignition system at the same time. Your buggy will show her appreciation with a nice smooth purr.

One point of caution—don't use a wrench in installing either the spark plug or the threaded adapter in the tester. Use the correct gaskets, but only turn them up finger tight. Aside from possible damage to the unit or the plug, you **want** some slight leakage of air around the plugs.

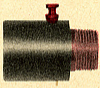
This is because a spark tends to ionize the air in the tester, and ionized air has a lower resistance to electricity than fresh air, and will upset your tests. You don't need a gale, but a little leakage is necessary.

When testing a plug, listen for the sound of internal shorts or flashovers, particularly on FAIR plugs. If you think you hear a snapping inside the plug when the spark goes out, replace it.

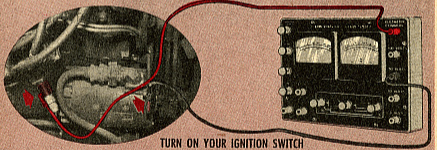
WIRING, POINTS TEST

Having cleaned and tested your spark-plugs, set them aside while you check out the primary wiring of your ignition system and the condition of your points by means of a couple of adapters for the distributor. (Without spark plugs your engine won't start while you make these tests—and you don't want it to.)

FIRST of all, you want the ignition primary adapter, which is to be installed between the switch lead and the distributor (on the M37's you may find it easier to get at this fitting by removing the dust pan and coming up from underneath the truck).



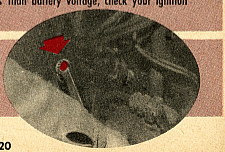
With the adapter in place, you connect the POSITIVE lead of your voltmeter to the brass stud on the adapter. The NEGATIVE voltmeter lead goes from the 50-VOLT top to a good ground:

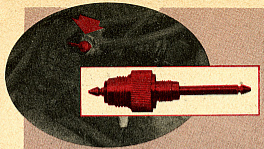


TURN ON YOUR IGNITION SWITCH AND WATCH YOUR METER.

You should get a voltage so near your battery voltage that you can't tell the difference on the 50-volt scale. If the voltage is any less than battery voltage, check your ignition switch and wiring for loose connections.

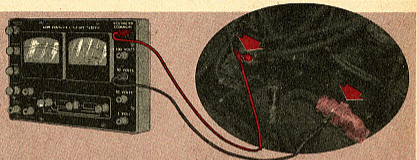
Remove the plug from the top of your distributor housing. This calls for a screwdriver on Delco-Remy igniters and a wrench on Auto-Lite types.





Install the long spring adapter. One end fits the small threads of Delco-Remy igniters—the other end fits larger threads of the Auto-Lite's.

Connect the POSITIVE lead of your voltmeter to the adapter and the NEGATIVE lead from the 50-volt tap to ground. Turn on your ignition switch and observe your meter.



If your battery voltage is indicated, your points are OPEN, and the circuits inside the igniter are OK; tickle your starter until the voltmeter drops to zero. Then change your NEGATIVE lead from the 50-volt tap to the one-volt tap and read the meter. If you show an indication of over two tenths (.2) volts on this test it indicates burned or dirty points.

If you **don't** find battery voltage indicated at the adapter when you start the above test, it means one of two things: Either your points are already closed, or possibly you have an open circuit or shorted condenser inside the igniter.

There are two ways you can check this. You can move your voltmeter negative lead down from the 50-volt tap to the one-volt tap and look for some indication of voltage. This will be between zero and two tenths of a volt, but any indication would show you the circuit wasn't broken. The other, and perhaps easier way to check this, while the lead is connected to the 50-volt tap, is to tickle your starter until the points open—indicated by a jump up on the meter needle —and then tickle it again until they close. If you do not get a jump on the meter, you'll have to open the igniter and check the points, condenser, coil and so on.

A later article in this series will describe the use of the secondary testing equipment for those who have it. If you don't have this equipment you substitute new points, condensers (capacitors) and coils if necessary until you have arrived at a good hot spark.

Connie Rodd's

"SHORT 'N SWEET DEPT"

Flubbed flywheel housings

When you replace the engine in your G749 2½-ton series truck, you've got to make sure you pull the **whole** flywheel housing. And put back in a **whole** flywheel housing that comes with the new engine.

Things can get mighty troublesome if you happen to have the wrong flywheel housing in your truck. So much so that you can completely foul up your transmission.

So what's a wrong flywheel housing? It's one that hasn't been mated with the engine. In other words, every G749 engine has its own flywheel housing.

What you'll get from supply is a new engine and its matched flywheel housing. Never settle for a new engine and just half a housing—make sure you get both the front and rear halves.

No guesswork to find out if you've got the right housing for your engine—just look at the metal plates on both halves of the housing. The two numbers—the one on the front half and the one on the rear—must match up. These numbers must be the same as your engine serial number.

Jot 'er down

In case you haven't been getting your requisitioned parts and MWO kits as fast as you'd like 'em, could be you're leaving one important bit of info off your requisition form. That info is your vehicle's or major component's serial number.

With that bit of poop staring them in the face, supply is able to fill your

order fast—but real fast. You can also be sure that you'll get the right part for your particular vehicle.

When it comes to MWO's, some of these call for fixes on specific serial numbered vehicles or items. Others don't, but apply to all the vehicles in a series. Even if your MWO doesn't state a serial number, it'd be best to put your major part's number down on the requisition anyway—it'll speed up delivery.

One more reminder—whatever you do, don't make a boob and jot down your vehicle's registration number instead of the serial number. This'll really throw things into a cocked hat.

That's my guy

So, you've got an M62 5-ton wrecker that doesn't have a cable (guy line) to hold its boom down, eh? No reason why this should be—they're listed in Section I of your Ord 7 SNL G-744 under FSN 2520-040-2297 (Ord Stock No. G744-8330151).

What's been happening is that some guys are dragging out the rear winch cable, threading it through the eyes in the back bumpers and on through to the snatch block. Doing this raises hob with the bumpers till they resemble an accordion.

When you can get the guy lines so easy, why take a chance on ruining those bumpers? Save 'em for the job they're needed for.

It's the nuts

Is there a chatter coming from the rear of your Model 424 2½-ton GMC truck? Word has it that some of these trucks left the factory with their rear axle pinion nuts kind of loose.

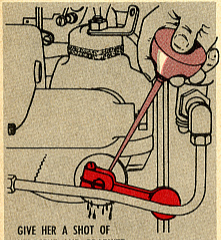
This kind of stuff can only lead to your pinion shaft support bearings knocking themselves to pieces. So, if you have any inkling of loose nuts, get your truck back to Ordnance and have them check it out. The nuts should be torqued up to between 160 and 280 foot pounds.

UER's from you guys having this trouble can help the design people pin-point and correct it. Please drop 'em to Office Chief of Ordnance, Department of the Army, Washington 25, D. C., Attn: ORDFM.

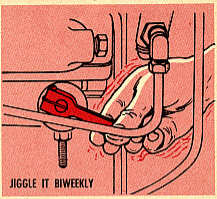
Works better dry...

That manifold heat-control counterweight shaft on your M38 Jeep, that is.

If that thing's frozen tight, loosen it with a shot of kerosene mixed with graphite. Put the "loosener-upper" on the shaft... let it stand for a while... then, tap the shaft with a hammer or block of wood.



GIVE HER A SHOT OF KEROSENE AND GRAPHITE



JIGGLE IT BIWEEKLY

When the shaft is worked free, heat up your truck and make sure all that kerosene is burned away. Never put any oil product on that part after the kerosene's burned away, or it'll cause carbon and make the shaft freeze stiff.

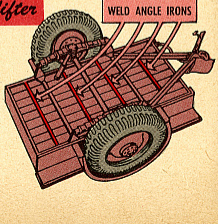
Once it's free, give that shaft a li'l jiggle every biweekly service, just to make sure she's turning freely and to work out any rust or corrosion.

And remember: In this case, a dry shaft works best.

Belly lifter

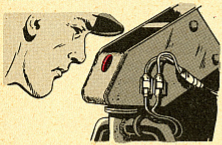
It may be that you've got some M100 ¼-ton trailers running around with their bottoms sagging because of buckled floor-boards. To give them support, try this—

Weld four lengths of 1½-in by ⅛-in angle iron across the underside of the trailer—right across the buckled sections. This'll help keep that belly in.

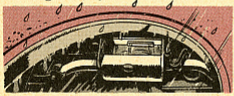


M 42 "Duster" bearing wearing

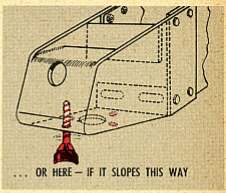
Want to go hunting water fowl? You might start by looking in the steering crossbar upper bearing support bracket.

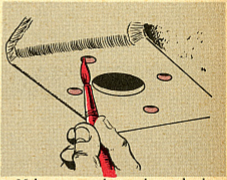


It gets full of water when the driver's hatch door is left open in the rain. Result? You may get a bum steer when that rusty puddle starts working on the bearing assembly.

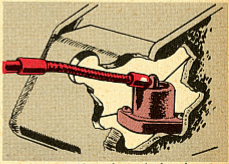


A good remedy is to bore a 13/32-in hole in the bottom of the bracket on the down-slope end. If the bracket bottom slopes toward the bow you'll have to take the bracket off to do your drilling.



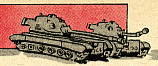


Make sure you clean, prime and paint the drilled area when you're through.



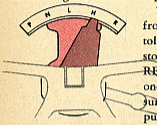
It'll help too if you keep the bearing assembly well greased, but don't let it ooze out and plug your brand new drain hole.

TANK TALK



No Mo' Shifty Shiftin'

Been hearing that the shifting levers that do the shifting for you on your SP Gun M53 (T97) and SP Howitzer M55 (T108) are taking a beating. This only happens to those vehicles with the steering wheel and the speed range shifter.

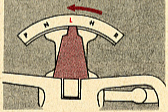


The damage is done when you shift from HIGH to REVERSE. You've been told to bring your vehicle to a complete stop before you shift from HIGH to REVERSE, but they should have gone one step further and told you to be sure and shift back into LOW before putting 'er into REVERSE.

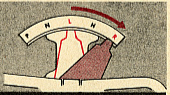
This way's the only way to Shift into Reverse

FIRST: Bring vehicle to a complete

SECOND: Always shift into LOW.



THIRD: Pull toward driver and down (right) to shift into REVERSE (R) position.



REMEMBER: Never, never make a direct shift from HIGH position into REVERSE position or you'll do dirt to that shifting lever.

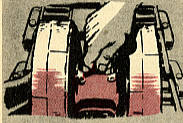
Greasy Assignment

Start draining—it's time for the big change-over.

Clean the oil out of the hubs on the M48 and M48A1 track tension idler wheels. Grease is what we need, lads, GREASE, like it says in LO 9-7012, dated 31 Oct 56.

Chances are the oil'll be dripping anyway, considering how those tension idler wheels bounce around. That means burned-out bearings . . . which mean deadlined vehicles.

Use a ¼-in Allen wrench to remove the two lubrication plugs on the hub.



Turn the hub so the oil drains freely. Catch the oil to avoid slimy hubs, tracks and elbows.

Let it drain real good. Go away . . . read 20 or 30 issues of PS . . . and then come back to it.

The new GAA you'll be shooting in there is strictly a lone ranger. It won't mix with anything. So the cleaner the hub the better.

After it's empty, turn the hub around so the lube hole (outer) is an easy target for the grease gun.

Let your trigger finger rest only when the grease starts peeking out the inner hole. Then plug that inner hole again.

Screw a lube fitting (¼-in NPT H016-0504709) into the outer hole—and fire away with the grease gun.

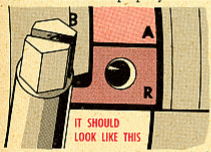
One more thing. If there was a lube fitting on the hub cap, replace it with a pipe plug (Ord Stock No. H106-0444692). Mother Ordnance thinks the end of the hub's a mighty unsafe spot for one of her fittings. Might get bumped or banged too easy. But if the fitting's still healthy, make a present of it to supply. Same with the inner hole plug.

Gremlins At Work

Some gremlins have put their grubby mitts on some tank CD-500 transmissions—and queered the brake apply cam rings.

How'd they do it? By reversing the **A** and **R** stamp markings on the cam rings. That means the letter **A** is on the brake release line . . . and the **R** is on the apply line.

As you know, the **A** line stretches across the cam ring about half an inch above the **R** line when properly marked.



If your transmission is mis-marked, continue to follow the adjustment procedure outlined in your TM . . . bearing in mind that the **A** and **R** are reversed.

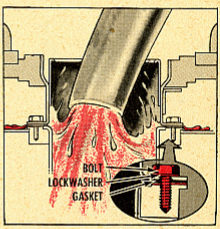
Nobody knows for sure which transmissions are snafued, except that they may lie somewhere between S/N 12050 and S/N 12264.

If yours is among them, get Ordnance to use a vibrating-type etching tool to make a note of it on the unit near the adjuster screw. Lay off a steel stamp and hammer when making this "memo." Or, have Ordnance make the actual correction.

Bolt Change

Raw gas and a hot muffler can get together and . . . WHOOSH!

Trouble flares around the fuel-tank filler-collar on your M44 self-propelled howitzer. The bolts there have been working loose. When gassin' up fuel can gurgle out from under that loose collar and trickle onto the hot muffler.

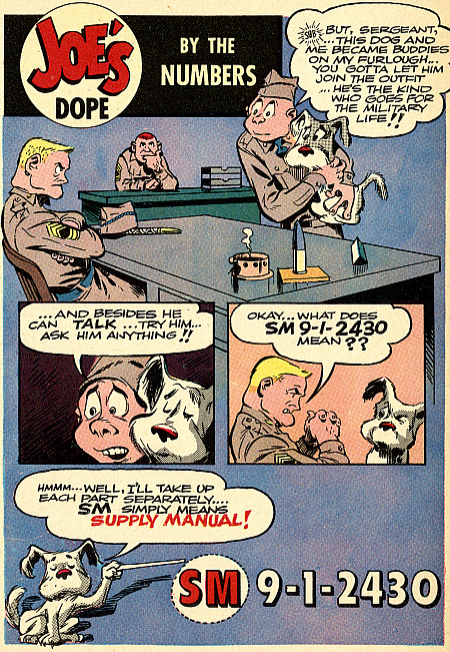


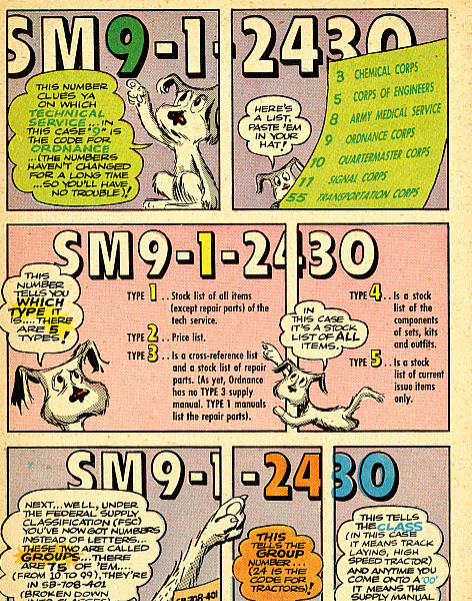
Get rid of the old bolts and lockwashers and neck collar gasket—then get these from supply:

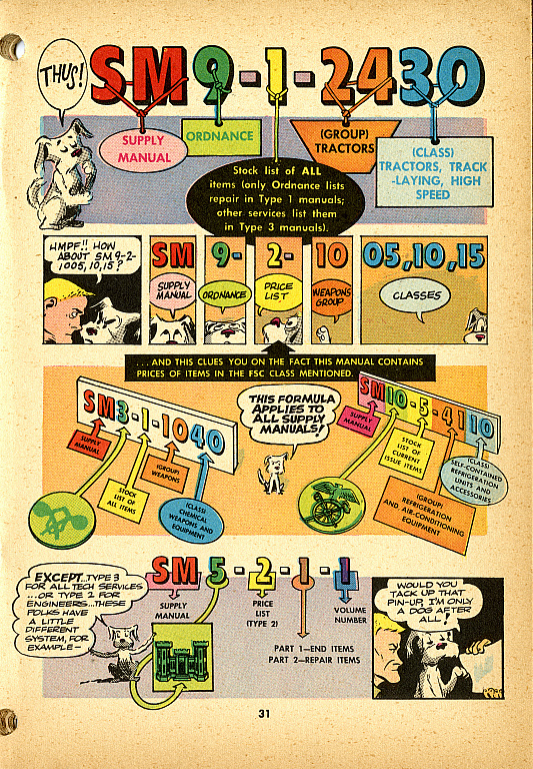
Bolt, FSN 5230-042-6940.
Lockwasher, FSN 5310-012-0423.
Collar, Gasket, FSN 5330-699-8071 (G279).

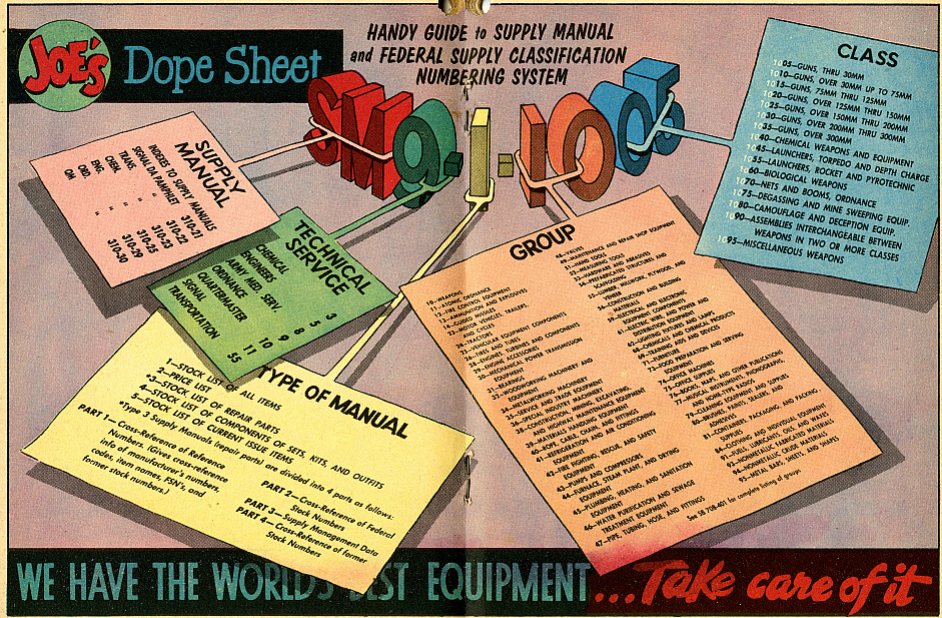
The heads of these bolts are drilled to allow a lock-wire to pass through.

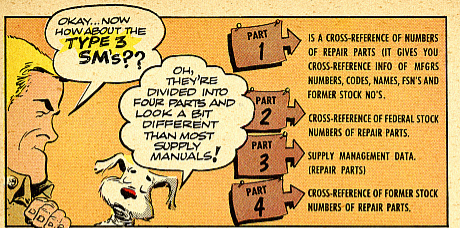
After snugging 'em up with an open-end wrench, get the fingers working and tie the six bolts with safety wire. Do it in groups of two. That way tension on the wire keeps all bolts secured.


JOE'S DOPE
BY THE NUMBERS
BUT, SERGEANT, ...THIS DOG AND ME BECAME BUDDIES ON MY FURLOUGH... YOU GOTTA LET HIM JOIN THE OUTFIT ...HE'S THE KIND WHO GOES FOR THE MILITARY LIFE!!
...AND BESIDES HE CAN TALK ...TRY HIM.. ASK HIM ANYTHING!!
OKAY... WHAT DOES SM 9-1-2430 MEAN??
HMMM...WELL, I'LL TAKE UP EACH PART SEPARATELY... SM SIMPLY MEANS SUPPLY MANUAL!
SM 9-1-2430


SM9-1-2430
THIS NUMBER CLUES YA ON WHICH TECHNICAL SERVICE... IN THIS CASE "9" IS THE CODE FOR ORDNANCE ...(THE NUMBERS HAVEN'T CHANGED FOR A LONG TIME ...SO YOU'LL HAVE NO TROUBLE!)
HERE'S A LIST. PASTE 'EM IN YOUR HAT!
3 CHEMICAL CORPS
5 CORPS OF ENGINEERS
8 ARMY MEDICAL SERVICE
9 ORDNANCE CORPS
10 QUARTERMASTER CORPS
11 SIGNAL CORPS
55 TRANSPORTATION CORPS
SM9-1-2430
THIS NUMBER TELLS YOU WHICH TYPE IT IS....THERE ARE 5 TYPES!
TYPE 1 . . Stock list of all items (except repair parts) of the tech service.
TYPE 2 . . Price list.
TYPE 3 . . Is a cross-reference list and a stock list of repair parts. (As yet, Ordnance has no TYPE 3 supply manual. TYPE 1 manuals list the repair parts).
IN THIS CASE IT'S A STOCK LIST OF ALL ITEMS.
TYPE 4 . . Is a stock list of the components of sets, kits and outfits.
TYPE 5 . . Is a stock list of current issue items only.
SM9-1-2430
NEXT... WELL, UNDER THE FEDERAL SUPPLY CLASSIFICATION (FSC) YOU'VE NOW GOT NUMBERS INSTEAD OF LETTERS... THESE TWO ARE CALLED GROUPS...THERE ARE 76 OF 'EM... (FROM 10 TO 99), THEY'RE IN SB-708-401 (BROKEN DOWN INTO CLASSES)
SB-708-401
THIS TELLS THE GROUP NUMBER... (24 IS THE CODE FOR TRACTORS)!
THIS TELLS THE CLASS (IN THIS CASE IT MEANS TRACK LAYING, HIGH SPEED TRACTOR) AND ANYTIME YOU COME ONTO A "30" IT MEANS THE SUPPLY MANUAL COVERS ALL ITEMS!


THUS!
SM 9-1-2430
SUPPLY MANUAL
ORDNANCE
(GROUP) TRACTORS
(CLASS) TRACTORS, TRACK-LAYING, HIGH SPEED
Stock list of ALL items (only Ordnance lists repair in Type 1 manuals; other services list them in Type 3 manuals).
HMPF!! HOW ABOUT SM 9-2-1005, 10, 15?
SM
SUPPLY MANUAL
9-
ORDNANCE
2-
PRICE LIST
10
WEAPONS GROUP
05, 10, 15
CLASSES
...AND THIS CLUES YOU ON THE FACT THIS MANUAL CONTAINS PRICES OF ITEMS IN THE FSC CLASS MENTIONED.
SM 3-1-1040
SUPPLY MANUAL
(GROUP) WEAPONS
STOCK LIST OF ALL ITEMS
(CLASS) MECHANICAL WEAPONS AND EQUIPMENT
THIS FORMULA APPLIES TO ALL SUPPLY MANUALS!
SM 10-5-4110
SUPPLY MANUAL
STOCK LIST OF CURRENT ISSUE ITEMS
(CLASS) SELF-CONTAINED REFRIGERATION UNITS AND AIR-CONDITIONING ACCESSORIES
(GROUP) REFRIGERATION AND AIR-CONDITIONING EQUIPMENT
EXCEPT, TYPE 3 FOR ALL TECH SERVICES ...OR TYPE 2 FOR ENGINEERS...THESE FOLKS HAVE A LITTLE DIFFERENT SYSTEM, FOR EXAMPLE—
SM 5-2-1-4
SUPPLY MANUAL
PRICE LIST (TYPE 2)
VOLUME NUMBER
PART 1—END ITEMS
PART 2—REPAIR ITEMS
WOULD YOU TACK UP THAT PIN-UP, TIM, ONLY A DOG AFTER ALL?


JOE'S Dope Sheet
HANDY GUIDE to SUPPLY MANUAL and FEDERAL SUPPLY CLASSIFICATION NUMBERING SYSTEM
SM-I-100
SUPPLY MANUAL
INDEXES TO SUPPLY MANUALS
SIGNAL CA MANUEL
TM-11-21
TM-11-22
TM-11-25
TM-11-29
TM-11-30
TECHNICAL SERVICE
CHEMICAL
ENGINEER
ARMY MED. SERV.
ORDNANCE
QUARTERMASTER
SIGNAL
TRANSPORTATION
5
6
9
10
11
55
TYPE OF MANUAL
1—STOCK LIST OF ALL ITEMS
2—PARTS LIST OF REPAIR PARTS
3—PRICE LIST OF COMPONENTS OF SETS, KITS, AND OUTFITS
4—STOCK LIST OF CURRENT ISSUE ITEMS
5—STOCK LIST OF COMPONENTS OF SETS, KITS, AND OUTFITS
*type 3 Supply Manuals (repair parts) are divided into 4 parts as follows.
PART 1—Cross-Reference of Reference Numbers. (Gives cross-reference info. on manufacturer's numbers, code, item names, P.N.'s, and former stock numbers.)
PART 2—Cross-Reference of Federal Stock Numbers
PART 3—Supply Management Data
PART 4—Cross-Reference of former Stock Numbers
GROUP
19—WEAPONS
11—FIRE CONTROL EQUIPMENT
12—AMMUNITION AND EXPLOSIVES
13—MINES AND (MISSILES, REMOTE)
14—GUIDED
15—AIRCRAFT
16—AIRCRAFT EQUIPMENT (COMPONENT)
17—SHIPS AND SMALL CRAFT
18—SHIPBOARD EQUIPMENT AND COMPONENT
19—RAILWAY EQUIPMENT
20—MECHANICAL POWER TRANSMISSION EQUIPMENT
21—BEARINGS
22—WOODWORKING MACHINERY AND EQUIPMENT
23—METALWORKING MACHINERY
24—SERVICE AND TRADE EQUIPMENT
25—SPECIAL INDUSTRY MACHINERY
26—CONSTRUCTION, MINING, EXCAVATING, AND HIGHWAY MAINTENANCE EQUIPMENT
27—MATERIALS HANDLING EQUIPMENT
28—ROPE, CABLE, CHAIN, AND FITTINGS
29—EXPLOSIVES
30—REFRIGERATION AND AIR CONDITIONING EQUIPMENT
31—PIPE, TUBING, HOSE, AND VALVES
32—PLUMBING, HEATING, AND SANITATION EQUIPMENT
33—FURNACES, STEAM PLANT, AND DRYING EQUIPMENT
34—PUMPS AND COMPRESSORS
35—EQUIPMENT FOR ENGINES AND TURBINES
36—WATER PURIFICATION AND SEWAGE TREATMENT EQUIPMENT
37—PIPE, TUBING, HOSE, AND FITTINGS
38—MAINTENANCE AND REPAIR SHOP EQUIPMENT
39—HAND TOOLS
40—MEASURING TOOLS
41—REFRIGERATION EQUIPMENT
42—FIRE FIGHTING, RESCUE, AND SAFETY EQUIPMENT
43—PUMPS AND COMPRESSORS
44—FURNACES, STEAM PLANTS, AND DRYING EQUIPMENT
45—PLUMBING, HEATING, AND SANITATION EQUIPMENT
46—WATER PURIFICATION AND SEWAGE TREATMENT EQUIPMENT
47—PIPE, TUBING, HOSE, AND FITTINGS
See TB 708-401 for complete listing of groups
CLASS
1005—GUNS, THRU 30MM
1010—GUNS, OVER 30MM UP TO 75MM
1015—GUNS, OVER 75MM THRU 125MM
1020—GUNS, OVER 125MM THRU 150MM
1025—GUNS, OVER 150MM THRU 200MM
1030—GUNS, OVER 200MM THRU 300MM
1040—CHEMICAL WEAPONS AND EQUIPMENT
1045—LAUNCHERS, TORPEDO AND DEPTH CHARGE
1055—LAUNCHERS, ROCKET AND PYROTECHNIC
1060—BIOLOGICAL WEAPONS
1070—NETS AND BOOMS, ORDNANCE
1075—DECEASING AND MINE SWEEPING EQUIP.
1080—CAMOUFLAGE AND DECEPTION EQUIP.
1090—ASSEMBLIES INTERCHANGEABLE BETWEEN WEAPONS IN TWO OR MORE CLASSES
1095—MISCELLANEOUS WEAPONS
WE HAVE THE WORLD'S BEST EQUIPMENT...Take care of it



FOR EXAMPLE

SM 10 - 3 - 1 - 1

SUPPLY MANUAL | (TYPE) STOCK LIST OF REPAIR PARTS | VOLUME | (PART) CROSS-REFERENCE OF REFERENCE NUMBERS

SM 5 - 3 - 2 - 1

SUPPLY MANUAL | TYPE 3 | VOLUME | (PART) CROSS-REFERENCE OF FEDERAL STOCK NUMBERS

NOW, TO FEDERAL STOCK NUMBERS ...AS YOU KNOW MOST STOCK NUMBERS ARE BEING CONVERTED TO FEDERAL STOCK NUMBERS.

EACH TECH. SERVICE PUBLISHES ITS OWN SUPPLY MANUAL OF ITS ITEMS

MORE THAN ONE TECH. SERVICE CAN HAVE ITEMS IN AN FSC GROUP OR CLASS···SO IT'S HANDY-ANT FOR YOU TO KEEP SUPPLY MANUALS FOR ALL SERVICES HANDY!

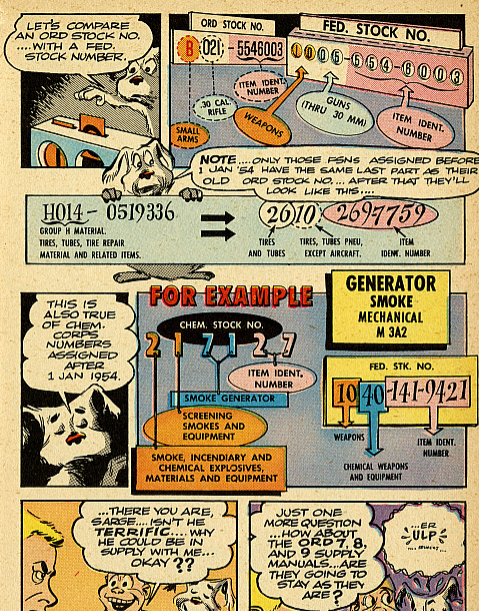
SO, IN THE FUTURE, EVERY AUTHORIZED ITEM WILL HAVE AN FSN.... HERE'S HOW THEY'LL LOOK... IT'LL BE A TWO-PART NUMBER.

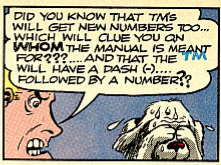
GROUP AND CLASS | ITEM IDENT. NUMBER

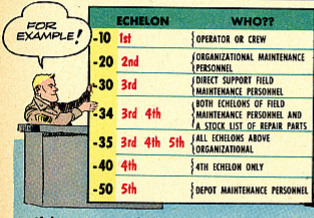
THE PART IS MADE UP OF THE GROUP AND CLASS NUMBER. IT'S CODED FEDERAL SUPPLY CLASSIFICATION (FSC) CLASS CODE NUMBER.

THIS PART CONSISTS OF NUMBERS ASSIGNED TO THIS ITEM ONLY! AND IS GIVEN WITHOUT REGARD TO ITEM NAME, DESIGNATION OR FSC GROUP OR CLASS. AND IS ASSIGNED TO ONLY ONE ITEM OF SUPPLY WITHIN THE FEDERAL GOVERNMENT SUPPLY SYSTEM.

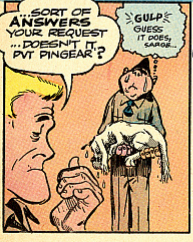
In the past, many of your Ordnance Stock Numbers had the SNL number in front of it. (0251—followed by the rest of the stock number, would tell you that it belonged to the 76MM gun tank M41 or was originally assigned to that vehicle.)

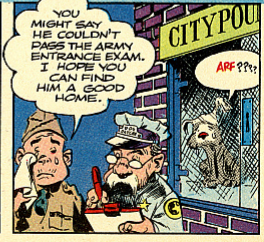

LET'S COMPARE AN ORD STOCK NO. ....WITH A FED. STOCK NUMBER.
ORD STOCK NO.
B 021 - 5546003
FED. STOCK NO.
0006-654-8003
30 CAL. RIFLE
SMALL ARMS
ITEM IDENT. NUMBER
WEAPONS
GUNS (THRU 30 MM)
ITEM IDENT. NUMBER
NOTE.... ONLY THOSE PSNS ASSIGNED BEFORE 1 JAN '54 HAVE THE SAME LAST PART AS THEIR OLD ORD STOCK NO.... AFTER THAT THEY'LL LOOK LIKE THIS....
H014 - 0519336
GROUP 'H' MATERIAL. TIRES, TUBES, TIRE REPAIR MATERIAL AND RELATED ITEMS.
2610 2697759
TIRES AND TUBES
TIRES, TUBES PNEU, EXCEPT AIRCRAFT.
ITEM IDENT. NUMBER
THIS IS ALSO TRUE OF CHEM. CORPS NUMBERS ASSIGNED AFTER 1 JAN 1954.
FOR EXAMPLE
CHEM. STOCK NO.
2 1 7 1 2 7
ITEM IDENT. NUMBER
SMOKE GENERATOR
SCREENING SMOKES AND EQUIPMENT
SMOKE, INCENDIARY AND CHEMICAL EXPLOSIVES, MATERIALS AND EQUIPMENT
GENERATOR SMOKE MECHANICAL M 3A2
FED. STK. NO.
1040-141-9421
WEAPONS
ITEM IDENT. NUMBER
CHEMICAL WEAPONS AND EQUIPMENT
...THERE YOU ARE, SARGE... ISN'T HE TERRIFIC.... WHY HE COULD BE IN SUPPLY WITH ME... OKAY ??
JUST ONE MORE QUESTION ...HOW ABOUT THE ORD'T. B, AND 9 SUPPLY MANUALS...ARE THEY GOING TO STAY AS THEY ARE?
...ER ULP





If the repair parts list is published separately, it'll have the same number as the TM, but there will be a letter P at the end of the number.





TIRE MEASURERS

Dear Half-Mast,

On page 34 of TM 9-1870-1 (Feb 55), on "Care and Maintenance of Pneumatic Tires," are pictures of a tape and square used to measure a tire. That's all well and good—a tire should be checked before it's mounted, just to make sure it matches up with its mate.

But, there's one trouble. That tape and square aren't in the second echelon tool kits. So, what do we do?

SP2 J. L. P.

Dear Specialist J. L. P.,

Sure can lose a lot of tire life if that tire isn't measured for size before mounting. Mismatched tires are one of the greatest tire killers.

For this reason, that measuring tape (Ord Stock No. 41-T-197-300, FSN 5210-092-9033), used to measure the circumference of the tire, is going to be included in the second echelon tool kits from here on out.

As far as the square goes, it's right betwixt and between at the moment. There will be two squares included in the second echelon tool kits—one 48 inches for regular-sized tires and the other 72 inches for larger-sized tires. Only trouble is that these haven't been assigned federal stock numbers yet. One way to get 'em, tho, is to use their new right name—calipers. Drop down to supply and see if yours is there.

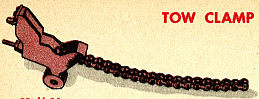
Until you can get the squares and tape, that tire can be measured like this—

Wrap a long piece of string around the outside of the tire. Mark the string where it comes together.

Laying a ruler along the marked string will give you the circumference of the tire.

Half-Mast

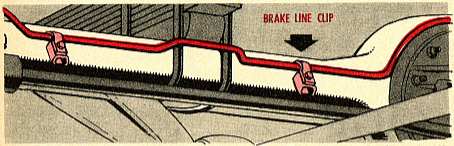
TOW CLAMP



Dear Half-Mast,

I want some information as to the use of the clamp issued with our M62 wrecker for fastening the tow bar to the axle of a vehicle.

To use this clamp on the long (left) side of the axles on the G749-series trucks, we find we have to loosen the brake line clip . . .

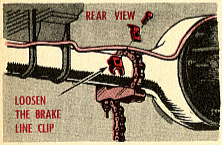


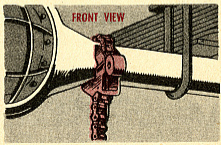
. . . And slip the chain of the clamp underneath. Otherwise the brake line will be crushed. What gives??

Lt L. T. E.

Dear Lt L. T. E.,

You're right, sir—to use the axle clamp on the M135 trucks you do have to take loose the brake line and slip the clamp chain under it. But this is not so bad, 'cause you only use that clamp on a vehicle axle if both the towing eyes and the front bumper are torn up or missing. Otherwise you fasten your tow-bar right to the towing eyes, or if they are loused up, use the chain clamp on the front bumper.





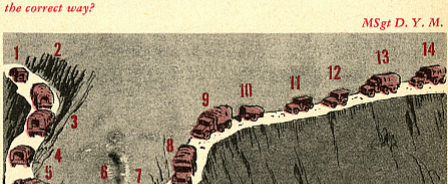
So, you'll not have to take a brake line loose once in a month of Sundays.

Half-Mast

Dear Half-Mast,

Can you give me the correct reference data that tells how our trailers are marked with unit numbers? Some units mark a trailer the same number as its towing vehicle; others the same way, except they add a "-T." So just what is the correct way?

MSgt D. Y. M.



Dear Sgt D. Y. M.,

You probably haven't seen AR 746-2300-1 (29 Dec 55), so I'll quote a little for you: "The vehicle number will be the sequence number of the vehicle in the normal order of march within the unit to which it is assigned . . ."

So, if you call your trailer a vehicle (which it is), then you'd number your trailer the next number after the number of the truck that's pulling it.

With all of your vehicles lined up in proper order for a road march, you successively number the vehicles from 1 until all vehicles, including trailers, are numbered. All your vehicles should be numbered in that sequence. You'll find the proper order of march in the FM's for most types of organizations.

Half-Mast

A FEW TRICKS WITH THE 106

Been having trouble figuring out when you have low or high power with the 106-mm recoilless .50-cal spotting rifle?

If so—remember these two points . . .

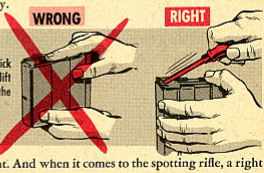
If the nose of the top round in the magazine bangs against the forward wall of the magazine or receiver, that's a sign of high power.

And, when the top round doesn't come out of the magazine or the empty cartridge case isn't ejected from the rifle, chances are you have low power.

Just loosen the gas needle wing nut and turn the gas regulator needle—in the direction of decreasing index numbers to lower the power . . . and toward increasing numbers to jack up the power.

You can push until your index finger is white in the tip, but you won't remove the magazine base from the magazine—not if you try to slide the base toward the rounded end of the magazine. The flange gets in your way, and you're sure not supposed to bend it out of the way.

When you wanna remove the base, stick a screwdriver in the hole in the base . . . lift up . . . and slide the other way—toward the flat end of the magazine.

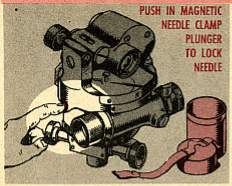


Two wrongs don't make a right. And when it comes to the spotting rifle, a right and a wrong can add up to lots of trouble, too.

You're supposed to clean the spotting rifle. That's right. But when you forget to replace a part, that's wrong—big wrong.

As a f'rinstance . . . if the firing pin retractor is left out of the bolt assembly, the spotting rifle'll fire before it's supposed to. That could leave you and your weapon feeling mighty low.

AIM TO PLEASE



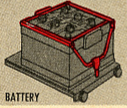
You guys who use the M1 aiming circle wanna keep a coupla reminders tucked in the hind end of the old noggin.

For one thing... remember to lock the compass needle when you're not using it. And... be sure the compass needle is locked before you put the aiming circle in its case.

Doing these things will go a long way toward keeping the pivot point of the compass needle in one piece.

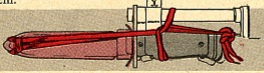
SHORTCOMINGS?

Been having shorting troubles when you install or remove batteries from the personnel ventilation unit in the M33 radar cabinet? You know, the battery terminals hit the battery tray or bracket. Wham... the current goes wild and maybe damages the battery charger meter and the emergency lights. As a juice stopper, wrap insulating tape (FSN 5970-231-6213) around the battery hold-down hooks.



KEEP IT ON

Anybody who's ever been clobbered with a flying bayonet scabbard (M8A1) during assault tactics training will welcome a way to bring a quick halt to the mayhem.



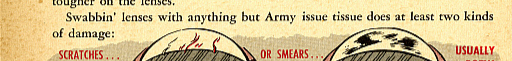
Do it the way the picture shows and you'll have the problem of bruised knuckles and noggins licked. Your best bet is to use the shoestring-like lace because it'll be a lot easier to push through the hole at the pointed end of the scabbard.

QUARTERMASTER

Lens Tissue Tussle

Squintin' through a lens that hasn't felt the tender touch of a lens tissue can be tough on any GI's eyeballs. But incorrect cleaning operations can be a lot tougher on the lenses.

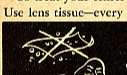
Swabbin' lenses with anything but Army issue tissue does at least two kinds of damage:



Take your handkerchief for example. No matter how clean it looks to you, there'll be some rough particles on it. You can't see 'em. But they'll scratch any glass they touch. "Abrasive material" the TM's call it.

As for smearing the lens, your handkerchief'll do it every time. It's built to soak up water and assorted dirt. Yet, rubbing it on an optical surface just spreads the smear. Same goes for any ordinary cloth, rag, paper, or coat sleeve.

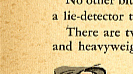
So treat your lenses like a beauty queen pampers the camera side of her face. Use lens tissue—every time. Check these four reasons:



LENS TISSUE . . . Has no lint (dandruff) like on facial tissues.
Has the right guts to do its job. Made of high grade wood pulp processed so's to stay soft.
Wraps itself around and absorbs the smallest speck of grease, mud, oil and dust because it's got super-blotter absorbent qualities.
Can't scratch. Totally free from abrasives.

No other bits of cloth or paper can make those four statements without giving a lie-detector the shakes.

There are two basic textures of lens tissue in the system today: lightweight and heavyweight. So who cares? You might.



Heavy Weight

Let's say you want to clean your binoculars after they've slipped out of your mitts and flopped into some first-grade mud. That's the time to whip out some heavyweight tissue.

It's a little thicker and heavier . . . with a slight shine caused by a faster drying process. Makes it better suited for damp wiping tasks.

Light Weight

The scene changes. The sun is blistcrin' your knuckles and you're ready to wipe the periscopes on your tank. Or maybe your own specs have some specks. Clearly a job for the lightweight edition.

Dry conditions cry for thinner, more delicate paper. This tissue gets that way during a longer, slow-drying process designed to produce a fluffier finish.

The contents are the same, only the drying is different. To give you a little variety, so to speak. There are tissues that perform even in a rainstorm, but they're used mostly for lab or shop work.

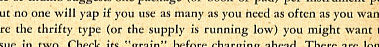
This chart might help you when ordering tissue from the QM Corps:
PAPER, LENS, tissue (FCD UU-P-313c) SM 10-1-6500

Federal Stock No.	Length	Width	Sheets per book	Classification
6540-393-2090	3	5	100	Lightweight
6540-597-6745	4	6	50	Heavyweight
6540-162-2993	4¼	5	100	Lightweight/Heavyweight
6540-162-2994	7	11	100	Lightweight/Heavyweight

Be on the lookout for some paper that slipped into the system not too long ago. Although OK for some optical chores, it just won't make the grade as a lens wiper. It's known as FSN 6540-224-7762 (7 x 11 in, 100 sheets per envelope).

Since lens tissue is thinner than a skinny flounder after a 20-day fast, keep your oily, sweaty, sticky fingers from touching it as much as possible. And don't wipe with the part of the tissue your fingers touched.

CRUMPLE IT UP INTO A LOOSE BALL WHEN USING... OR BREAK OUT A SWAB STICK OR PENCIL.



The rule-of-thumb suggests one package (or book or pad) per instrument per month. But no one will yap if you use as many as you need as often as you want.

If you're the thrifty type (or the supply is running low) you might want to tear a tissue in two. Check its "grain" before charging ahead. There are long strands running in the same direction—visible to the undressed eye. Tear the tissue along those strands. Ripping it against the "grain" will result in one ruined tissue.

So, next time you're set to squint through a binocular, range finder, periscope, mirror, sight or eyeglass... tear off a tissue and see.

Leaky Lift

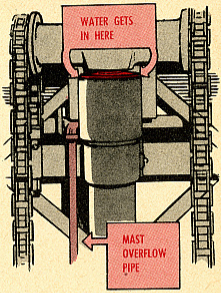
Water has a way of getting inside the hydraulic system of some Clark Planeloaders and gummin' up the works. Sneaks in between the retainer ring and the cylinder wall of the lift cylinder assembly.

Once that happens, the buggy chatters like a scared skeleton and runs the costly risk of scarring its piston and cylinder wall.

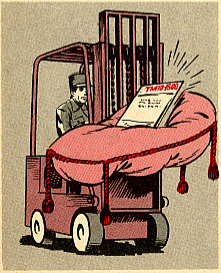
MWO 10-1602D-1 (29 Nov 56) sets things right by inserting preform packing (FSN 5330-194-3740) on the retainer ring.

It's marked Urgent, so hustle your hack back to field maintenance soonest.

Affected models are: 52-RS, MHE 141; 53-RS, MHE 149—and any other Clark Planeloader with lift cylinder FSN 3930-359-2990.



PM Pal



Along with being up-to-date about the TM, LO, SM and other publications that go with your particular piece of Materials Handling Equipment, you'll do well to get chummy with one other bit of writin'.

It's the "bible" of MHE operators: TM 10-1600 "Organizational Preventive Maintenance Services and Technical Inspection of Materials Handling Equipment."

When you pick up this publication, make sure it's got Changes 1, 2 & 3 in it.

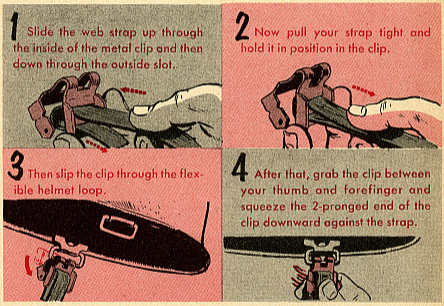
This TM is really loaded with solid knowledge and good preventive maintenance know-how. You just can't do right by your MHE without it.

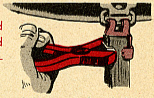
Quick Clip

Shaggy chin straps on your M1 helmet can lead to wobbly skull gear... scraped chins... and maybe a gig or three.

Big headache is direct contact between the canvas web strap itself and the flexible loop of the helmet. In the hour-by-hour rubbing of canvas on metal, the metal gets shined up and the canvas gets worn out.

Quartermaster now has a handy clip (FSN 8415-360-0211) that solves your problem. It goes on easy.





5 Finally, take a pair of pliers and bend the two prongs inward and downward. Use a hammer if somebody walked off with your pliers.

You have to make sure the prongs are pressed down good and tight so's they hold the strap firmly. And that's it.

Both the long and short chin straps go on this way.

Stop Agitatin'

Does foam overflow foul up your Decon from top to bottom during hot weather operation?

If so, listen close. Here's a switch from the normal agitation SOP that'll help you lick that messy problem on any truck-mounted Decon. In hot weather when you're not going to spray immediately after loading up you can work your batch of bleach this way:

1. After antiset and bleach have been added agitate the slurry for only 15 minutes.

2. When you're all set to start spraying run the agitator for two minutes before you start the pump.

3. Once you start spraying keep the agitator going steady as usual. Easing up on pre-operation agitation cuts down on excess foaming which means you'll end up with happier helpers and cleaner equipment.

This special info on hot weather agitation applies to all truck-mounted Decons (M3A1, M3A2, M3A3, M4, etc.)

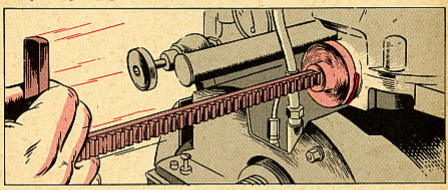
Ease Up on the Back Stroke

Be firm—but fair, when you're firing up an M3A2 smoke generator.

Just one hard, careless yank on the air pump handle can put the magneto-air pump out of business for keeps.

Here's what happens when you strong-arm the pull stroke:

The stops on the pump's rack get jammed into the boss on the magneto housing clamp. The grinding shock cracks the boss clear off the clamp.



The pump's designed to work smooth and easy-like, and with reasonable care she'll go on faithfully firing your smoker for a long time to come...and you can save your muscle-power for your hard jobs.

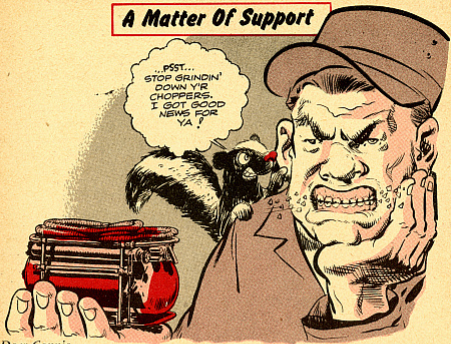
For Faster Service

Here's a tip that's bound to speed up your requisitions for the M9A2 Chemical Agent Detector Kit and components. Send 'em to:

Your SM3-4-6665-A12 tells you to send 'em to the Army Chemical Center, Maryland. But that was before Change 1 came out in October 1956.

You might want to jot this down some place so you'll remember.

A Matter Of Support



Dear Connie,

Things sure get frustratin' around here sometimes. Ch 1 to TM 3-390 lists a number of repair operations for our M3A1 smoke generators. But our supply manual won't allow the parts. Other than gnash our teeth, what can we do?

MSgt H. L. N.

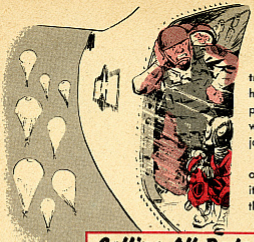
Dear Sgt H. L. N.,

Change 3 (20 Nov 56) tells you that using organizational units are generally qualified to do some of the operations usually done by field maintenance. In such cases, third and fourth echelon parts will be issued to using organizational maintenance units from field maintenance stock.

This was set up so that the using units can do higher echelon work when the need arises, without having to stock a lot of slow-moving or bulky repair parts. This makes for better mobility on the part of the using units.

So, when you feel you need to replace some of those parts, check with your maintenance support company. Chances are, it'll give you the go-ahead and the parts.

Connie



Geronimo!

There's the one about the paratrooper who took the canister off of his gas mask and put it inside the facepiece. Wanted to make it smaller. But when he landed he busted the bejabers out of his glass lenses.

So the moral is: Leave the canister on the facepiece. It not only makes it easier on the lenses, but saves the threads on the canister, too.

Calling All Radar Repairmen

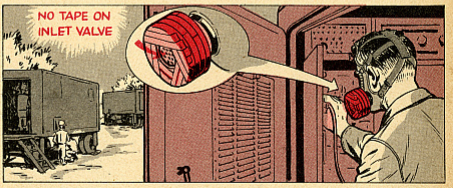
When you're working in or around those fire control vans and cabinets for the M33 or M38, or guided missiles, and have to wear your M9A1 protective mask, might be a good idea to insulate the metal canister.

How? Any good grade of adhesive tape will do the trick. Take, for instance, the following Signal Corps tapes:

INSULATION TAPE, ELECTRICAL, COTTON FSN 5970-184-2003.

INSULATION TAPE, ELECTRICAL POLYVINYLCHLORIDE, FSN 5970-644-2635.

INSULATION TAPE, ELECTRICAL, RUBBER, FSN 5910-184-2002.



No matter which one you use, just cut strips and stick 'em on the canister cartwheel fashion. Make sure you've got the sides taped that're most likely to touch electrical components. This'll keep your equipment from getting a short.

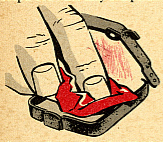
Course now, you've gotta remember the canister's inlet opening stays untaped.

AN EYE IN THE NIGHT

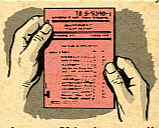
With infrared equipment getting to be as common as waiting in line, that little old metascope is getting more important every day.

'Specially with all the night training going on and mainly with the infantry soldier who uses the little night eye. That 'scope is real handy for picking up infrared used by the other side or for seeing your own signals. But it could be dangerous if you're not careful, and it needs care and protection.

First of all, never fool with the innards of a metascope. It's what they call precision-made, sealed, and self-contained. Something like a pin-ball machine. There's radioactive stuff inside. Messing with that is like playing with fire in a napalm factory. But it won't hurt you unless you go in after it.

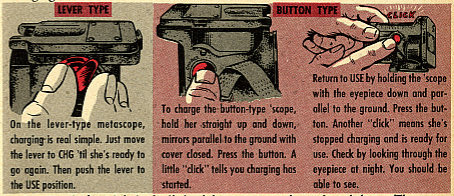


About the only maintenance you can perform is keeping the mirrors, eyepiece, and red filter clean and ready for use. It's OK to use a soft cloth on 'em because the glass surface isn't coated—like a camera lens. But to get that glass the cleanest . . . and kill any chance of scratching it with tiny bits of dirt in a cloth . . . use lens tissue, FSN 6540-162-2993. Clean eyepiece, mirror and red filter with tissue before and after using the 'scope.



Except when using or charging the 'scope, keep her in the rubberized-cloth bag. When carrying her in a "ready" situation, keep the cover closed except when viewing.

She needs recharging after use or after coming out of storage. Using her normally, or a few times during a night's work, calls for anywhere from 30 minutes to two hours of charging. If the 'scope's just come out of standby storage (up to 90 days), give her an hour. If you use up all the charge, recharge at least four hours. Could be it'll take up to eight hours to bring her back to full power. The cover is always closed during charging.



It not only doesn't help the little night eye to overcharge her—it hurts. The metascope is as sensitive as a good touch on a cue-stick. Keep a close eye on the charging operation and the clock.

Be careful with the 'scope, because she's delicate. She'll operate, though, even if the mirror breaks. Just pull the mirror frame out of the way, and point the filter toward the area you want to view. A little unhandy, because you've gotta bend over or turn sideways, but the eye still sees.

Remember to keep the cover closed except when using, keep her charged—but not overcharged, handle with care, keep the mirrors clean . . . and you won't get caught blind at night.

If the metascope breaks or won't work after she's charged, wrap her in aluminum foil and turn her in for repairs. To let the guys who'll handle her know, attach a tag that reads like this. . .

Getting A Good One On...
Hauling It...
Getting Rid Of It...

HANDLING YOUR LOAD

It takes savvy to pick up a good load, haul it around, and dump it the right way. Ask any old-time operator.

Seems easy to pick it up. You'd think any Joe could haul it around. And a sad sack could dump it. But operating a wheel scraper just ain't that easy.

Good operation means faster and bigger pay loads, and less wear and breakdown of equipment. Which is why that green stuff is handed out every month.

First thing the operator stuffs in his skull is that he works as a team with his pusher. There're two ways to do it wrong, but only one right way.

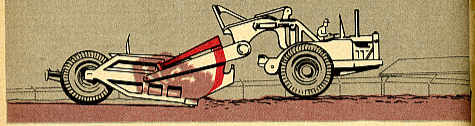
Don't load—and let the pusher do all the work.

Don't try to do all the work yourself—spinning the wheels and making like a hot-rod.

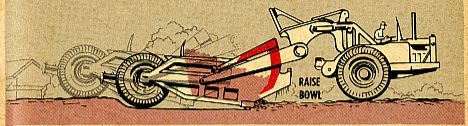
Do keep the wheel unit moving under its own power and use the rest of the pull to help load the scraper.

TIGHT BOWLS

As you enter the cut, watch your bowl control. Nothing's worse on a job than bowl's moving every which way. Shallow cuts load faster and get more dirt in the bowl.



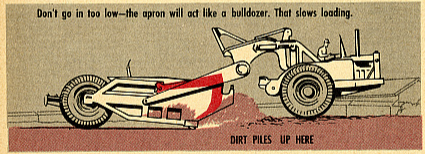
As the scraper wheels enter the cut, the scraper drops... and the cutting edge with it. Raise the bowl or you'll be cutting too deep.



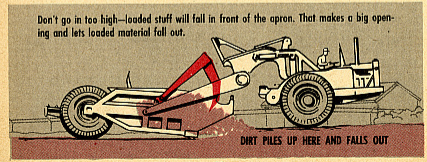
APRON CONTROL

All the time, you've gotta keep strings on your apron. The way the apron's handled means the difference in how fast you load and how big the load is.

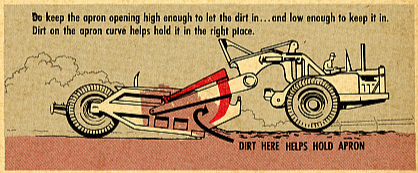
Don't go in too low—the apron will act like a bulldozer. That slows loading.



Don't go in too high—loaded stuff will fall in front of the apron. That makes a big opening and lets loaded material fall out.



Do keep the apron opening high enough to let the dirt in... and low enough to keep it in. Dirt on the apron curve helps hold it in the right place.



DIRT STUFF

Different kinds of dirt take different tricks:

Clay or Loam—Cut deep with a small apron opening.

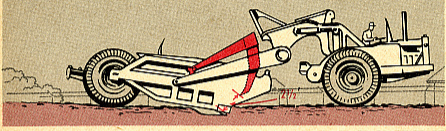
Sandy Material—Cut shallow with a large apron opening.

Sand and Gravel—You've got to pump to get somewhere.

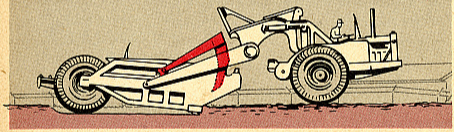
LOADING SAND and GRAVEL

Getting a good pay load of sand or gravel in a scraper is like stacking bee-bees. You've got to know how and have a lot of practice. Here 'tis:

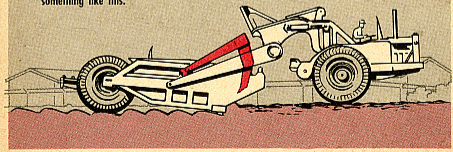
1. Using SECOND gear to cut down wheel slippage, come in fast with a thin cut. Have apron up about 2½ feet. Get as much in the bowl as you can before the tractor stops.



2. Allow pusher to make contact. Start with a shallow cut to get up speed. When the stuff starts to pile up in front of the apron, pump.

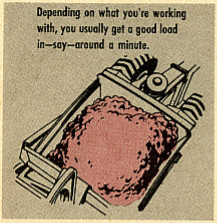


3. Pump by dropping the bowl real quick and raising it again when the wheels start to slip. The stuff's loaded in the bowl on the drop. Raising the apron cuts down the bulldozing. Pumping her up and down will get the biggest load of sand or gravel and leave the cut something like this.

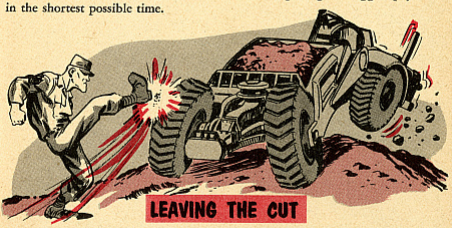


FASTEST WITH THE MOSTEST

In loading know-how, there's a thing called the law of diminishing returns, loading optimum, maximum efficiency, or a lot of other names by armchair engineers. It all means this:



The officer or NCOIC will decide how full to get the bowls according to the type of dirt you're moving. It all boils down to getting the biggest pay loads in the shortest possible time.



LEAVING THE CUT

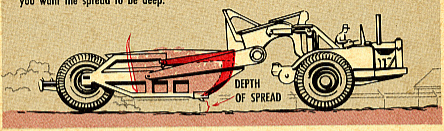
When you get a load on, push the apron lever forward to free-spool to close the apron. Roll a few feet before bringing the bowl up to carrying position. That'll spread the dirt piled against the cutting edge and leave a smooth cut.

Haul the load in the highest gear that's safe on the haul road. Carry the bowl as close to the ground as you can.

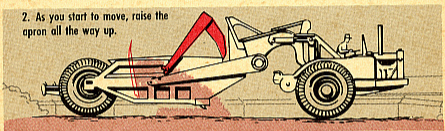
DUMPING

Enter the dump area in the gear you'll use all the way through unloading.

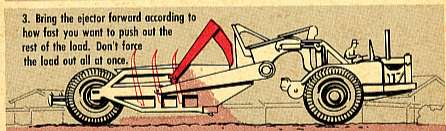
1. Lower the bowl as close to the ground as you want the spread to be deep.



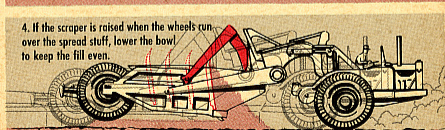
2. As you start to move, raise the apron all the way up.



3. Bring the ejector forward according to how fast you want to push out the rest of the load. Don't force the load out all at once.



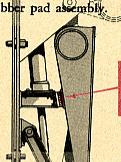
4. If the scraper is raised when the wheels run over the spread stuff, lower the bowl to keep the fill even.



Remember, the big idea in earth moving is SPEED . . . which comes from good operation . . . which also includes safe operation.

WHEN THE DOORS SWING DOWN

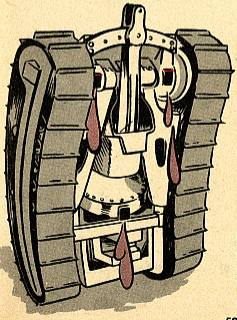
The doors swing up and the doors swing down, meaning the doors on the Nike elevator. Watch 'em swing down, and check the action on the backing plate and rubber pad assembly.



The rubber pads stop the downward travel of the doors. If the pads get worn, the doors swing down too far. That could be rough on the door-cyclinder linkages. If the doors swing down extra far, the linkages could operate in the opposite direction from what they're supposed to and whammo—gives troubles.

Take a look at the rubber pads. If they're worn down or getting beat up, replace 'em. The part number was left out of the elevator manual. Requisition the rubber pad assembly through repair parts channels—Part No. 494-NE 10793.

DRY COMPARTMENTS: KEEP 'EM PLUGGED



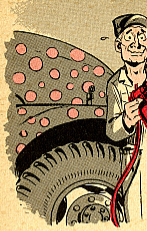
Every week you remove the drain plugs on dry compartments in Cat tractors to let out oil, water or whatever shouldn't be there. But even more important than draining 'em is replacing the plugs.

Steering clutch compartments on D6, D7 and D8 Cats are dry, and so are the flywheel clutch compartments on earlier models.

Some guys figure that since the compartments are dry, it's shrewd to leave the plugs out so they can drain all the time. They couldn't be more wrong.

You've got to keep those plugs in place—especially when working in mud, water, or a dusty place. A lot of muck can get in easy.

Drain dry compartments every week . . . and put the plugs right back in.

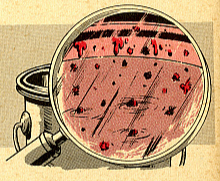


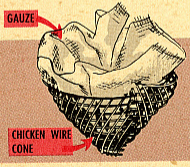
KEEP YOUR *Spray Gun* ON THE GO

Paint spray guns are mighty good for doing a job faster and easier than with a brush. But they also take more care and maintenance.

To keep your spray gun operating—and operating right—you've got to keep these points in mind:

1. Keep your paint containers sealed, except when you're actually filling the gun. Paint left open—even if it's only as long as it takes to salute—starts picking up dirt and stuff called "foreign matter," which gums it up. It only takes a few specks of dirt to foul up a spray gun.

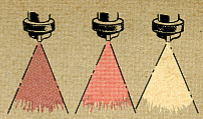




2. Strain all paint before you use it. Use several layers of gauze or cheesecloth. Get yourself a piece of mesh or chicken wire, and bend it into a cup. Then put the gauze in that and you've got a good strainer. Use the gauze just once.

If your gun keeps plugging up no matter how often you clean it or what you do with the adjustments . . . the paint's the thing. Maybe somebody let the paint get just a little gummy and dirty before you got hold of it. Just a little is enough to stop up a gun or give you a bad spray. If you've got any doubts about what shape the paint's in, strain it twice before using.

3. **Pronto** after using a gun, clean it by squirting through the same thinner you're using in the paint. Use pure thinner and run it through in three separate bursts, or until it comes out clean. Don't wait until the next day to clean her—you may have to take the gun apart to clear it completely.



4. If the gun jams, or you get a bad spray because a speck of dried paint's stuck in the nozzle, don't try to ream it out with anything harder than soft wood. Usually, you've got to take off the air cap and fluid tip and wash 'em out in thinner.

Keeping the paint clean, the gun clean, and clearing the gun at the first sign of trouble will keep her operating the right way a long time.

CLEAN FUEL AND CLEAN AIR

There's no fuel like clean fuel for heavy equipment.

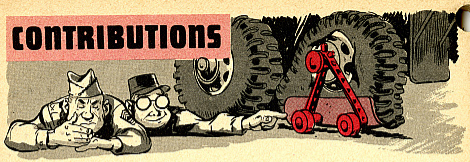
Maintenance doesn't end with making sure you get good fuel and handling it right until it goes in a tank. You've got to keep it clean getting it into the tank . . . and keep it clean after it's in.

Look at the fuel strainer before filling the tank. It could get punctured by the filler nozzle or damaged some other way. Be sure it's in good shape. Clean it now and then.

Something that's even easier to forget is the fuel cap filter. It takes the dirt out of air going into the fuel tank. It's possible for that filter to collect so much dirt that the air flow going into the tank is cut off completely . . . which could stop the engine.

That air filter needs a good cleaning once in a while. Do the job like your TM, TB and LO tell you, depending on the amount of dust in the air.

One other step for clean fuel—every couple of months or so, drain off part of the fuel to remove sediment or water that's collected in the tank.



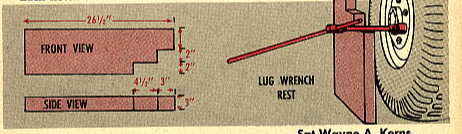
DRIVE IT HOME

Dear Editor,

The trouble we had with loose wheel studs on our G741 and G742-series trucks set me to thinking. I figured we could get 'em tight if we were able to put more pressure into turning the wrench. The way it was lots of elbow grease was lost trying to support the wrench.

The answer turned out to be a piece of wood I had notched out to support the wrench in a horizontal position at different levels.

Each notch takes care of two studs at a time.



Sgt Wayne A. Kerns
APO 154, New York, N. Y.

(Ed Note—Looks like the few minutes spent making the support were well worth it. You can use a similar support for other trucks by changing the measurements.)

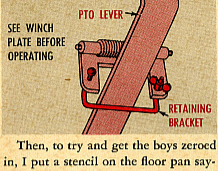
WINCH LOCK

Dear Editor,

It can't be that my drivers have their brains in their feet, 'cause it's their feet that have been givin' me trouble. By kicking the winch drive on the M37's and M42's into gear, I mean.

After yea long a time I got tired of puttin' on new winches. First I tried to put on a positive lock like an MWO put on other trucks. This didn't work out so I put on lock as shown in sketch. This is bent up out of ¼-in rod, runs from the winch lever latch around the winch lever and bolts up tight with a ¼-in 20 NC wing nut.

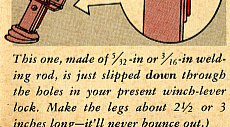
This holds her in neutral for sure, and it only takes a minute to loosen it when you need the winch.



Then, to try and get the boys zeroed in, I put a stencil on the floor pan saying, "See winch plate before operating." On accounta ¾-ton truck drivers don't get much practice on the winch—hardly ever need it.

WO Robert Phillips
Jefferson Barracks, Mo.

(Ed Note—Simple, effective, and a positive lock for the winch control, if you need it. However, since it just might be that you'd have some trouble getting that wing-nut off in cold weather, or in case it got rusted tight, why not use a sorta offset hairpin type of clamp



This one, made of 5/32-in or 3/16-in welding rod, is just slipped down through the holes in your present winch-lever lock. Make the legs about 2½ or 3 inches long—it'll never bounce out.)

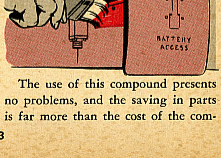
RAINCOATS FOR RCATS

Dear Editor,

Our AAA ranges are so situated that most of our RCAT's must be dropped into the sea. We were finding a large percentage of our batteries unserviceable when the target was recovered, due to salt water.

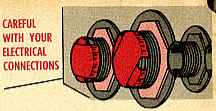
So we tried using Plastic, coating compound, strippable, adhering, (FSN 8030-264-5837, 5 gallons) as a supplementary seal to try and keep the sea water out of the batteries. We coated the battery case cover and cable plug before installing the case in the target.

This worked so well that we started using the compound on the receivers, servos, junction boxes and control boxes. In every case, the number of parts found serviceable after recovery was greatly increased.



The use of this compound presents no problems, and the saving in parts is far more than the cost of the com-

pound. A few simple precautions should be taken, however, to prevent troubles.



First, while the plastic compound won't burn, its thinner will. So, do the spraying in a well ventilated place away from open flame, same as any spray painting. Also, since the compound is an insulator, careful not to let it get onto the pins or sockets of electrical connectors. Either mask the connector, or better, assemble it and then spray.

Then, if you're brushing the compound on instead of spraying it, remember that you only get about two thousandths of an inch each coat, so you want two or three coats, and be sure to allow 15 to 20 minutes drying time between coats.

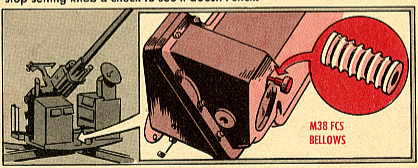
M. A. Armstrong
40th AAA Brigade

(Ed Note—An excellent idea for anyone who has to drop his RCAT's into water, fresh or salt.)

M38 TIP

About that bellows (F350-826028) on the M38 FCS (now get this) elevation limit stop setting knob shaft assembly...

It was put there to keep dirt off the assembly. But that bellows needs protection, too. Oil and grease eat the rubber—so keep 'em off and look her over now and then in case a clean job's needed. At the same time, give that limit stop setting knob a check to see it doesn't stick.



That bellows was put in during production on System Serial No. 461 through 750, and from 799 up. Field Ch 32 puts it on the others. Got yours?

Connie Rodd's BRIEFS

Tattletale grey

Maybe housewives are expected to have their laundries sparkling-bright—but nobody should demand a shiny M1 rifle, least of all the operating rod piston. The pistons are stainless steel. Clean em as it tells you to do in FM 23-5. And **please**...no abrasives. Start that spit-and-polish bit and you'll be taking enough metal off the piston to cause a short recoil.

Un-wise cracks

Some people think that those "blow-out" plugs (also called "core" or "freeze" plugs) are in their vehicle's engine to keep their blocks from cracking during a freeze-up. Not so—antifreeze is your best and only cold weather protection. Manufacturers use those holes to clean the block after it's cast—and Ordnance uses them at rebuild time.

Spindle spin?

You been in a spin trying to get your mitts on a spindle or a dirt shield for the compensating idler arm on your Bulldog tank? Here's the poop that'll pull you out and get you those parts. For vehicles with serial numbers above 103 specify: Spindle, track adjusting idler support arm FSN 2530-337-6476, (Ord Stock No. G251-8694561); Shield, dirt, arm inner bearing FSN 2530-741-9912, (Ord Stock No. G251-7419912).

Busted bellows

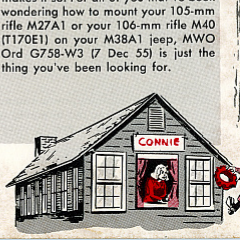
When you're hiking around the engine compartment of your M48-series tank, careful with your boots. They'll mash the bejabers out of the Li'l Joe exhaust bellows. That bellows weakens through wear anyway, and it doesn't take much of a jar to fracture it.

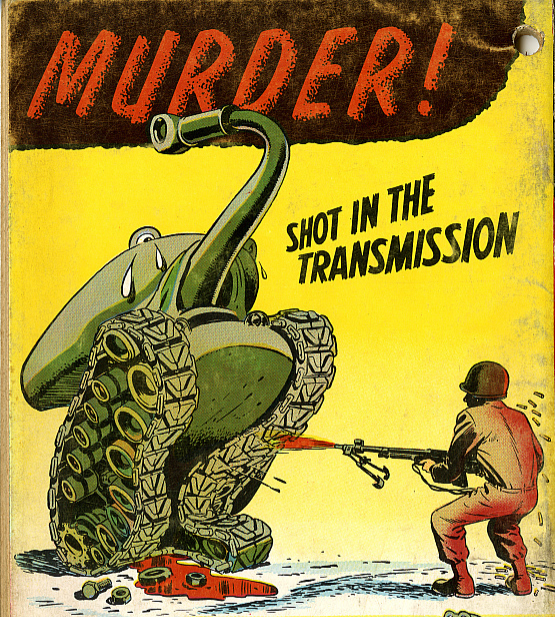
M59 driver dope

She'll drive safer and last longer when you have this ready information to go by. It's MWO Ord G280-W4 (29 Oct 56), and it tells you how to get and install the driver's instruction plate on your M59 armored personnel carrier. The plate shows how to shift, tow and drive when using one or both engines.

How to C your M38A1

'Fore you start saying "there ain't no such animal" as a ¼-ton 4x4 truck M38A1C better take a second guess, 'cause there is. And it's an MWO that makes it so. For all of you that've been wondering how to mount your 105-mm rifle M27A1 or your 106-mm rifle M40 (T170E1) on your M38A1 jeep, MWO Ord G758-W3 (7 Dec 55) is just the thing you've been looking for.





a tank's transmission is tough...
but it can only take so much...

PUH-LEEZE-!

- **STOP**—before shifting into reverse!
- **NEVER**—downshift at anything but low speeds! (see your TM for exact MPH)