

Issue 46

PS

1956 Series

**THE
PREVENTIVE
MAINTENANCE
MONTHLY**



WILL EISNER

WEAPONS INSPECTIONS

Dear Editor,

We here on the weapons inspection team of the 702nd Ordnance at Ft Lewis are proud of our method of serving our customers (the using units) while at the same time helping them keep on-the-ball with their maintenance.

Our inspection team goes out in a shop truck, with armorers and spare parts right with us. We find that there are a whole lot of minor repair and parts replacement that we can accomplish right along with our inspection.

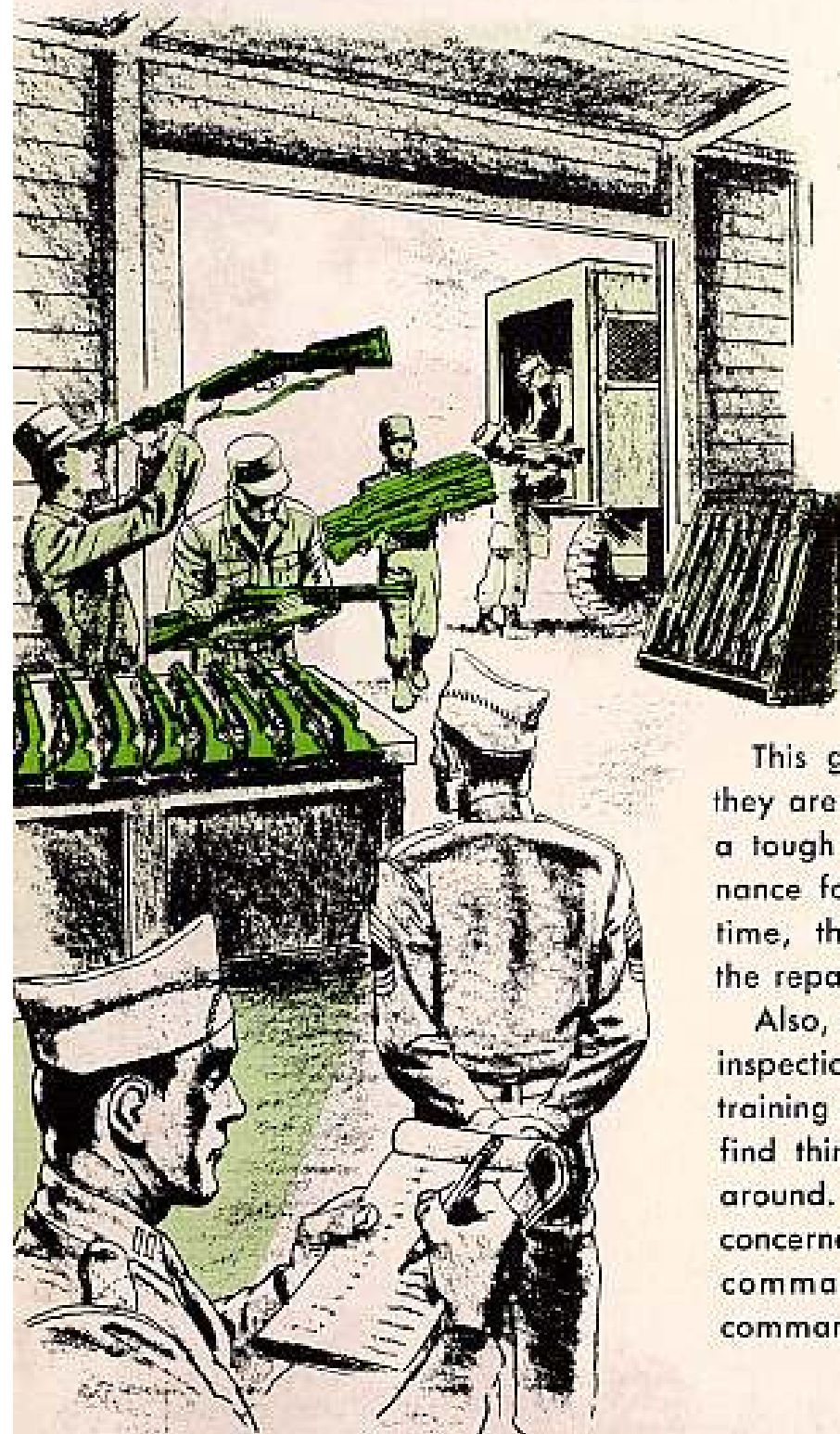
We take care of things that leave a weapon right on the borderline between usable and due for Ordnance repair.

In making our reports, while we're strict as hell about any neglect or abuse of the weapons, we don't pile up a huge gig sheet of minor deficiencies, because we don't gig for what we fix up at the unit.

This goes over big with the units, because they are on a hard training program and have a tough time getting a weapon back to Ordnance for all the little things. But at the same time, they're taking care of the cleaning and the repair work they can do.

Also, since we're dealing with new men, our inspection repair visits serve as good practical training sessions for the unit arms men, and we find things in better shape next time we get around. This program has the approval of all concerned—our Ordnance officers and the unit commanders all the way up to the Division commander.

Sgt F.P.L.
Ft Lewis, Washington



PS MAGAZINE

Issue No. 46

1956 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 limitations of availability, older issues may be obtained direct from Preventive Maintenance Agency, Raritan Arsenal, Metuchen, New Jersey.

IN THIS ISSUE

DEPARTMENTS

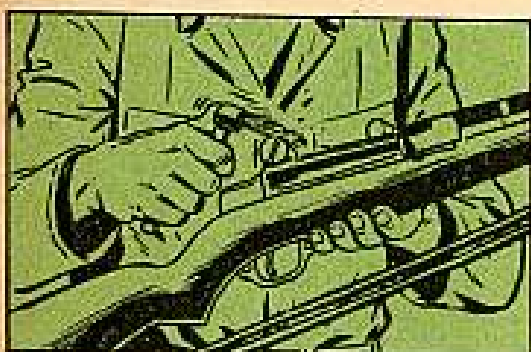
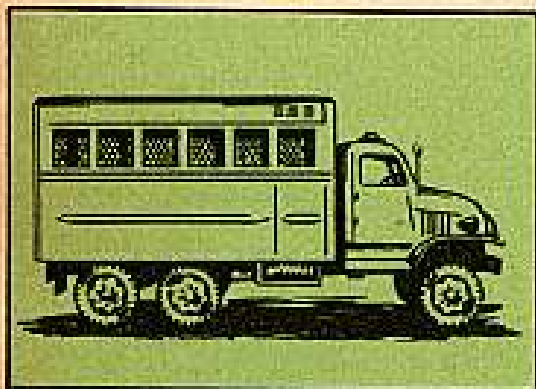
Introducing the M59 Armored Personnel Carrier	2
Echelon System (Cartoon Section)	21
Roadwheel Mud Shields	29
M33 Fire Control System	32
Nike Notes	34
Tool Set, 2nd Echelon, No. 2 Supplemental	36
Painting Vehicles	42

FEATURE ARTICLES

Connie Rodd	19
Half-Mast	29
Armament	32
Publications Lists	39
Engineer Equipment	41
Contributions	45
Connie Rodd's Briefs	49

PS Magazine wants your ideas and contributions, and is glad to answer your questions. Just write to: **Sgt Half-Mast, PS Magazine, 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 (4 Aug. 1953). DISTRIBUTION: Active Army: Gen Staff, DA (1) except DCSPER (2); SS, DA (1); Tec Svc, DA (5) except COFENGR (75), COFORD (275); Admin & Tec Svc Bd (5); Hq CONARC (100); OS Maj Comd (5); OS Base Comd (3); MDW (5); Armies (50); Corps (3); Div (2) except Armd Div (100); Tug Div (50); Brig (3); Regt/Gp (3); Bn (5); CD (18) except Cml Co (8), Med Co (8), QM Co (8); Ft & Cp (6); Gen & Br Svc Sch (5) except Engr Sch (100), Ord Sch (25); USMA (25); Joint Sch (5); Specialist Sch (5); PMST (3) except PMST Ord ROTC Units (25); Gen Depots (5); Sup Sec, Gen Depots (5); Depots (5); AH (5); WTC (100); Trans Terminal Comd (3); Army Terminal (3); OS Sup Agencies (2); PG (5); Arsenals (25); DB (25); Craft Main Sta (3); Div Engr (2); Dist Engr (20). NG: State AG Special List. USAR: Mil Dist Special List. For explanation of abbreviations used see SR 320-50-1.



LOOKS LIKE YOU'VE GOT A BETTER WAY TO KEEP THOSE WEAPONS MAINTAINED



INTRODUCING THE M59

ARMORED
INFANTRY VEHICLE

C'MON IN!
BOYS AND I'LL
SHOW YOU AROUND.
WE'RE MIGHTY
PROUD OF THIS
NEW MODEL!

Lots of you infantrymen'll be meeting the M59 full-tracked armored infantry vehicle shortly. This baby may not be exactly your dream car, but it takes the foot out of paddlefoot—and comes a lake or a river, it'll paddle for you, too.

What is it? It's a full-tracked armored vehicle powered by two GMC 302 engines with Hydra-Matic transmissions, almost the same power train that's used in the GMC 2½-ton trucks. Only in the M59, the two engines drive one controlled differential, which has steering brakes and drives the tracks.

It's not designed for ship-to-shore work, but it can swim across rivers and lakes of any depth.

The hull is armored against small arms and machine gun fire, but won't turn direct artillery hits. It has the new 100-ampere AC charging system which provides enough electricity to operate radios and other communications equipment.

BEFORE OPERATION

Operating the M59 is much the same as operating the old M24 tanks, if you remember them. It's sort of half-way between the old M4A3 and the new tanks with the cross-drive transmission. The gear-shifting is mostly done by the Hydro-Matic transmissions. Steering is by brakes in the differential, so you'll lose a little more speed on the turns than you do when driving a vehicle equipped with a cross-drive transmission.

WHILE I CHANGE INTO SOME-
THING MORE COMFORTABLE, WHY
DON'T YOU BOYS RUN THRU A CHECK
"BEFORE-OPERATION" CHECK
FIRST WALK AROUND THE
VEHICLE AND CASE THE
SUSPENSION SYSTEM... MAKE
SURE THERE ARE NO OBSTRUCTIONS
IN THE WAY... WATCH OUT FOR
THINGS Y' CANT SEE
FROM THE DRIVER'S
SEAT.

I GUESS YOU
WANT ME TO
CHECK ENGINES,
TRANSMISSIONS, OIL
LEVEL AND WATER.

The M59'll carry a payload of 3100 pounds, or roughly one squad with equipment. It has a ramp at the rear, so it can take a Jeep or small trailer.



You can tell that your alternator is working OK by the high whine it gives off. The battery indicator will slowly move up into the green.



When your left engine is running smoothly, check warning lights on left engine. They should go out—if not, check why. If everything's OK—



This is a little more difficult, since you can't hear it fire. But by watching your right-hand tachometer you can tell when it catches and get your thumb off the starter button. Also check warning lights—they should go out.

Be darn sure you have the master-switch and **not** the red fire-extinguisher handle which is below it. With the master-switch on, the battery indicator will come up into or real close to the yellow range unless you have dead batteries.





YOU'RE READY TO RAISE YOUR RAMP, IF IT'S DOWN.

11



Push in on the ramp-actuating-lever which is located on the hydraulic power pack at your left side.



9

Reach down beside your shift-lever-box and get hold of the auxiliary shift lever and pull it up.

This puts your transmissions in gear, but not your differential. You now run your engines up to about 2500-RPM, watching the tachometers. Don't get excited if the tachometer hands jump around a bit on the way up. It only means the transmissions are up-shifting.

10



You reach up behind your right shoulder and swing the ramp-lock down and back.

It releases with a thumb-latch. Now you look back to be sure the ramp is clear, and then—

Be sure the ramp-locking-lever is all the way back or you may bend the locking hooks. When the ramp is fully raised—

12



Bring the ramp-locking-lever forward until it catches its thumb-latch.

13



Put transmissions in neutral by pushing down on the auxiliary shift lever.

DRIVING

Now you're ready to move out. Except in combat conditions you'll probably want to run with the hatch open and the driver's seat raised. But be sure you're in the seat and that the hatch is open first. You see, there's a spring which helps raise the seat. If you aren't in it, it'll fly up too fast.

10 **12**



The seat is raised by releasing the latch-lever at your right side.



Pull back on the steering brake levers with your thumbs clear of the lock-buttons and release the brakes. They'll go forward and release the brakes.



To start, shift into the range you need.

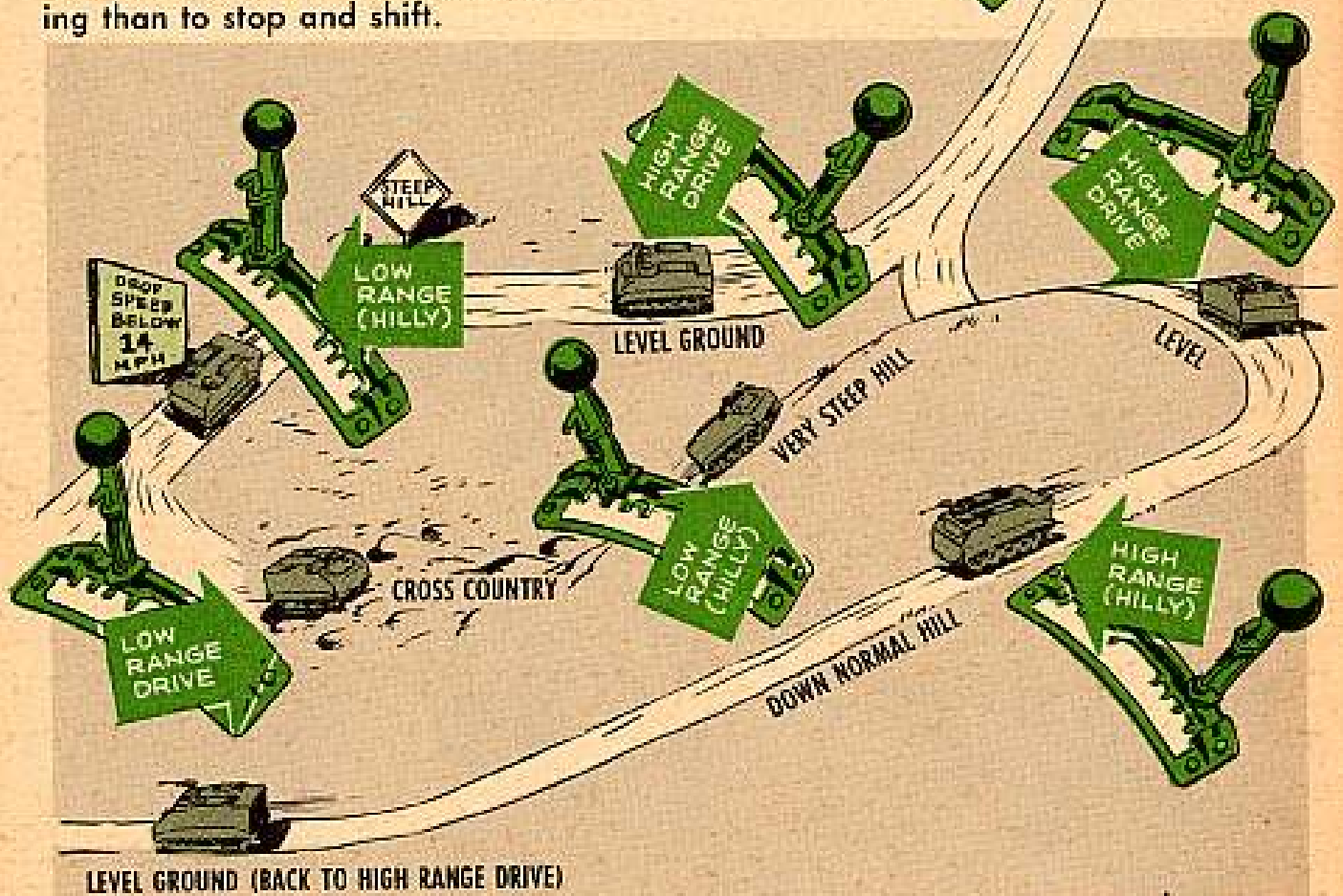
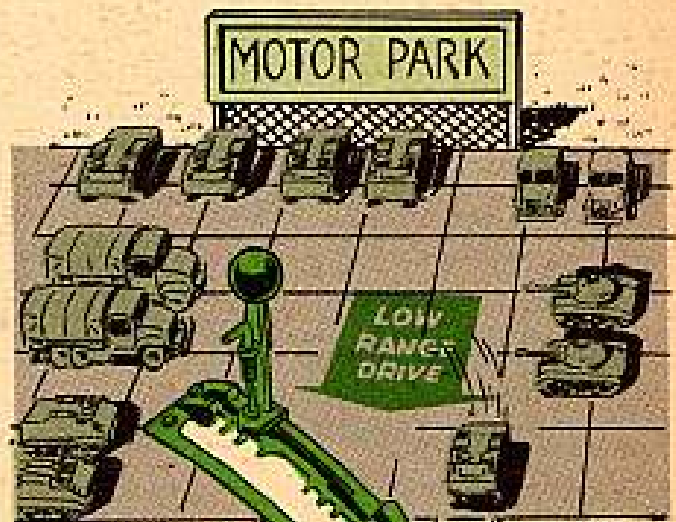


For braking, pull back both levers with pumping, jolting movements.

If you're in a crowded tank park, you'd better use low-range DRIVE to get clear, since it gives you better steering control at low speeds. Follow whatever rules your local commanders have set up about ground guides, o' course.

SHIFTING

A word about shifting: You can shift into any range **except** reverse while the vehicle is moving. When shifting, a **steady push** against the lever'll give you the best results. There's a built-in resistance to help keep you from clashing gears by jerking the handle, and there's a synchro-mesh device in the differential which'll help you shift if you'll just keep a steady strain on the lever. When the gears come to the same speed, they'll drop in gear. It's easier to shift while the vehicle is moving than to stop and shift.



OK so you start out in low-range, and get out onto the road or tank trail. You can go from high-range DRIVE to high-range HILLY at any speed, and you can shift down into low-range any time your vehicle speed is below 14-MPH.

The M59 has ample power to climb a 60 percent grade. Moreover, this baby will cross streams and lakes regardless of depth, and without any fording ducts. Besides, who needs to go more than 32 MPH?

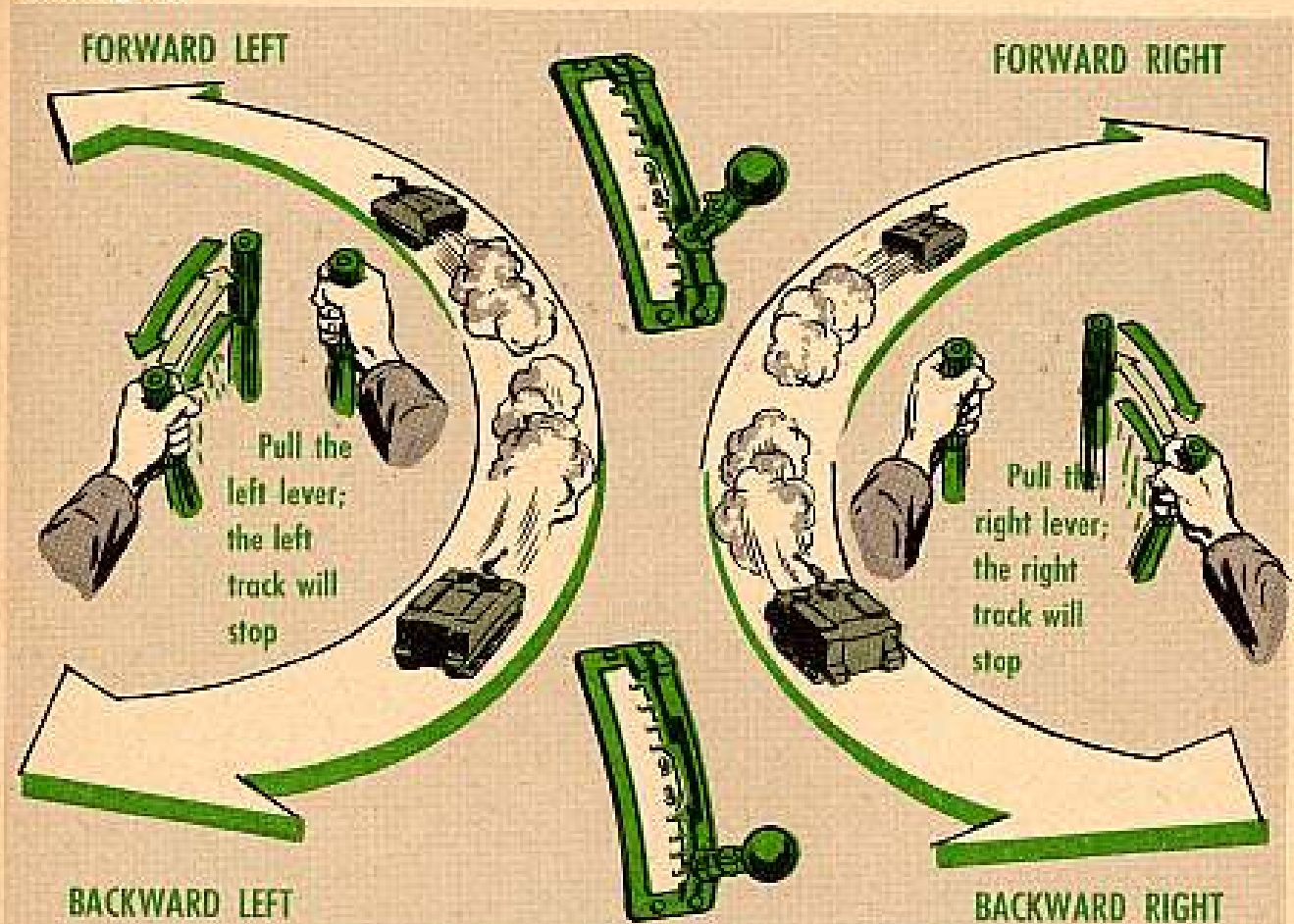
STEERING

Now, steering this vehicle is a bit different from driving the new tanks with the cross-drive transmissions. In the first place, your steering brakes are going to slow you down plenty on turns. If you keep any drag on them they'll wear out too soon and cause overheating.

On the other hand, since this baby is no hot-rod (top speed 32-MPH), you can handle it very nicely at any speed.

You'll find that it steers much better at higher speeds. Do your steering by quick, hard pulls on the levers, not by holding 'em back. In fact, you want to make your turn with two or three quick pulls rather than one long one. Let your steering lever go all the way forward between each quick jerk. This'll get you turned with a minimum loss of speed. Keep your engine up around 2200-2700-RPM.

You'll find that at slow speeds your vehicle'll steer better if it's in low range. Keep your RPM's up—shift down early when you see a hill or a sharp corner coming up.

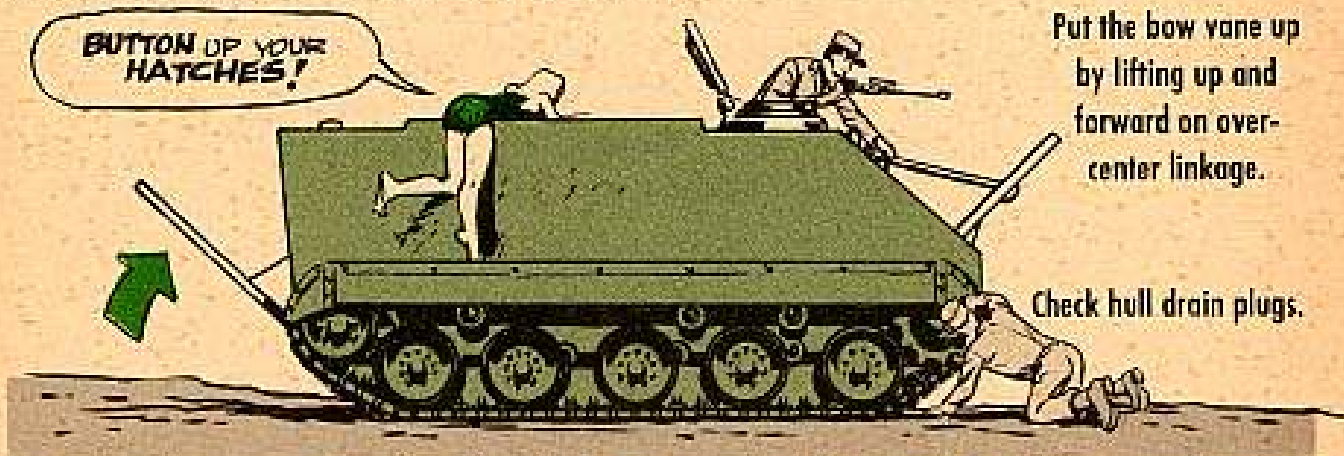


Now, there's one more important difference between this vehicle and the tanks with the cross-drive transmission. When you're backing this one, you don't have to cross your steering.

Just like any tracked vehicle, of course, you can't see back very well, and you should have a ground guide help you back it.

WATER OPERATION

How about water? Well, the M59 is propelled on the water by its tracks. You don't have any propellor and rudder assembly. Which simplifies going into the water. But there are some things you must do to be safe.

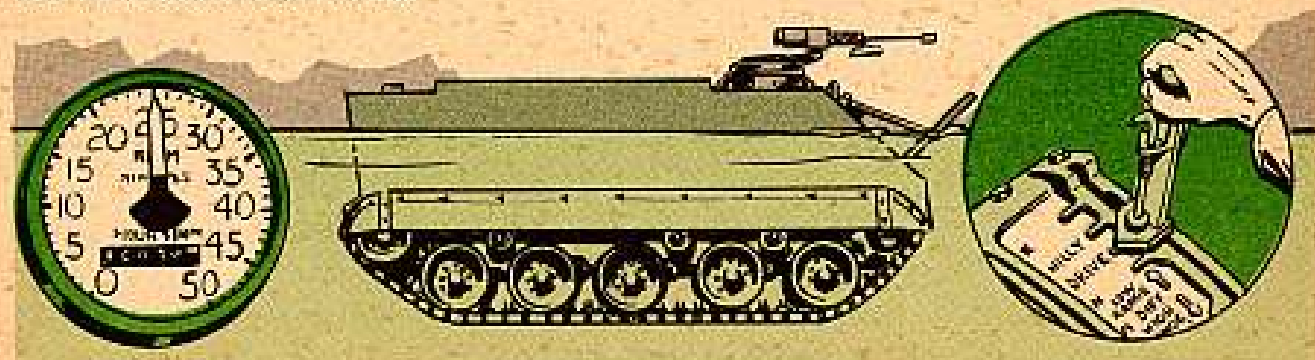


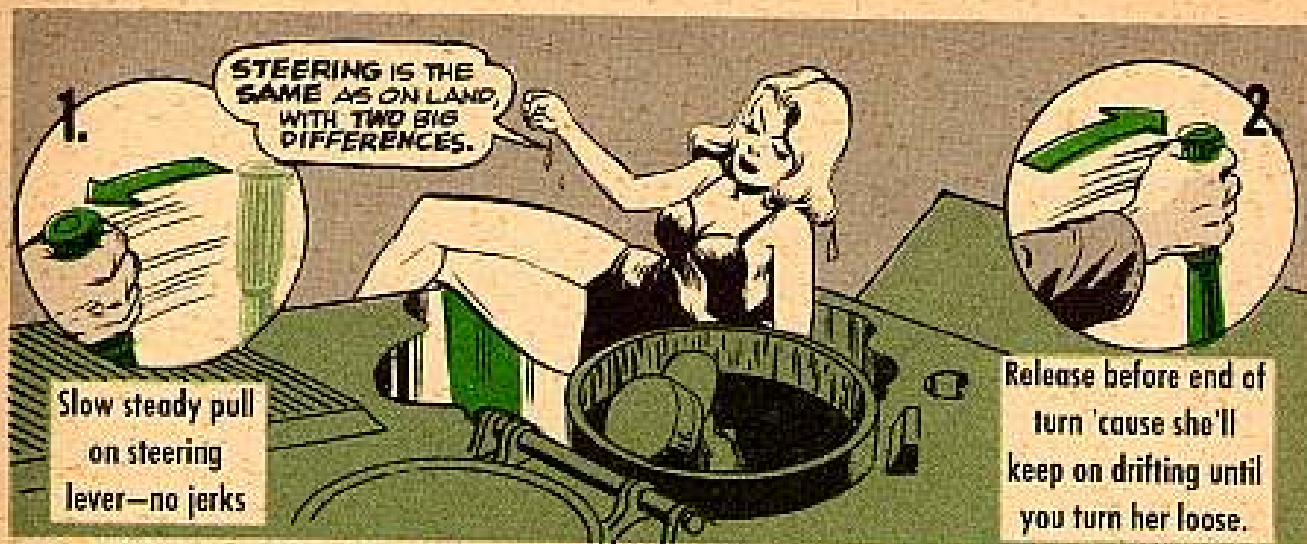
Now, close your hatches, both the cargo hatches and the driver and commander's hatches. In other words, button up. You do this because the M59 floats sorta low in the water, and you don't want to slosh her full when you go in. Naturally, it's far better to enter the water where you have a nice easy sloping beach and bottom, but if you can't pick your spot, go ahead anyhow, but go ahead easy.



If you dive in too fast, you'll bust the bow vanes. The periscope may go under water; don't worry, she'll come up. Under normal, cautious operation, you shouldn't get water down the engine air-louvers. You want to avoid that, tho she should come out OK. After all, your ignitions are waterproof, and you have a 140-gallon-per minutes bilge pump to bail you out. Just keep your RPM's up.

Once you have her into the water and floating level, operate in low-range, DRIVE (about 2500-RPM).





Fact is, any of you boat-handlers are going to have to forget all you know about boats before you can navigate this lady. F'r instance, you can not lay up alongside a dock and rely on your reverse to check your forward way.

It is possible to back the M59 while in the water, just by reversing it (use high range reverse), but it takes about three to four lengths of the vehicle before she stops and begins to go astern.

Within her limits, she does very nicely, but her practical limits are smooth water (not over 1-ft waves) and currents at the landing of less than her 4.3-MPH water speed. In fact, if you have to cross a river with even this much current, you want to pick your landing very carefully in some slack water eddy.

LANDING



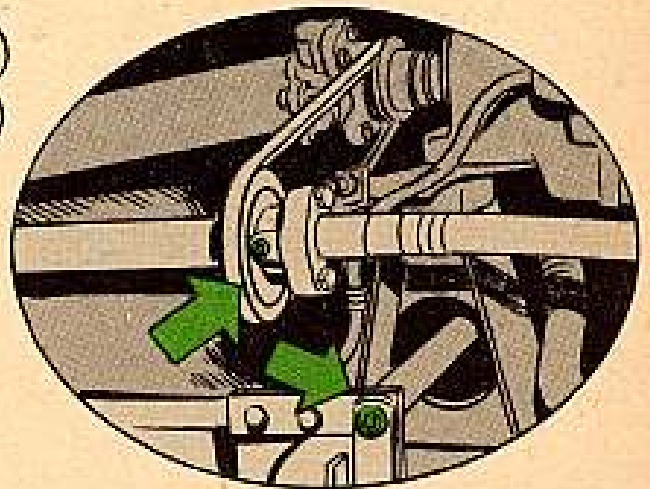
When coming out of the water, be careful to hit your bank square and easy, particularly easy if you can't tell what sort of footing you have under you. You can climb any reasonable bank, but remember, even if it isn't muddy, you'll make it muddy with the water spilling out from under your track shrouds. Hit the bank as square as you can, or the track that hits first will rear up and tilt you. Could turn you over if the bank was steep enough.

What if she gets sunk? You're in serious trouble, but it figures that if you don't flip your tip, you ought to get out OK. You won't be able to open any hatches until the hull fills with water, but you'll have air to breathe until it does, and the hatches can be opened when the pressure equalizes.

MAINTENANCE

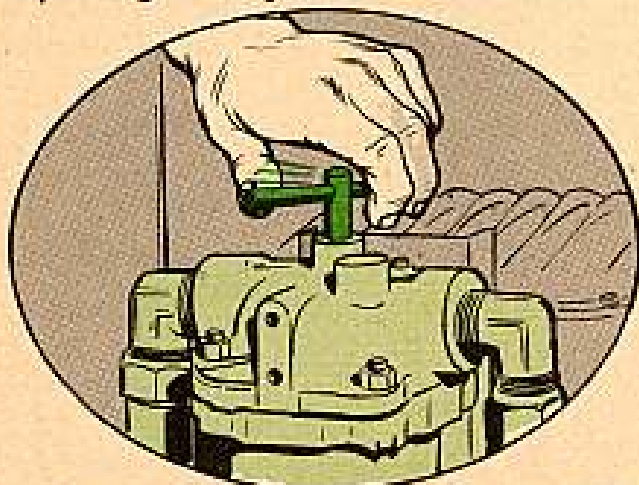


FOR MAINTENANCE FOLLOW ALL THESE LITTLE POINTS WE'VE PICTURED FOR YOU ON THE NEXT FEW PAGES

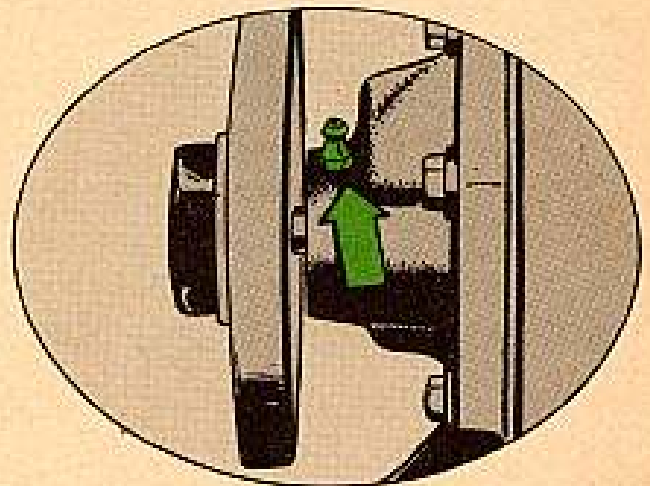


Oils—When you're servicing the engines, and particularly the transmissions, be extra careful to be sure that your oil, the measure and the container are all clean. This can be difficult in the sand-storm areas, and makes for extra work. But not as much extra work as replacing an engine or transmission.

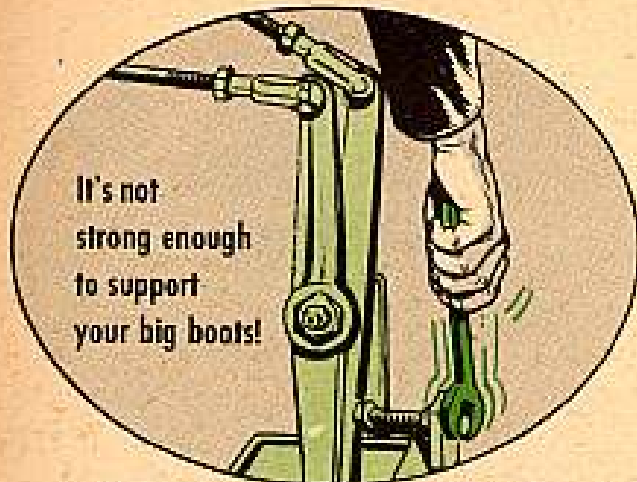
Now, some guys sorta forget those two grease fittings behind the engines on the fan-drive-shafts. And, of course, only an idiot would neglect his bilge pump grease fittings. You may never need that bilge pump, but like a parachute, if you need it, you need it bad and you need it now.



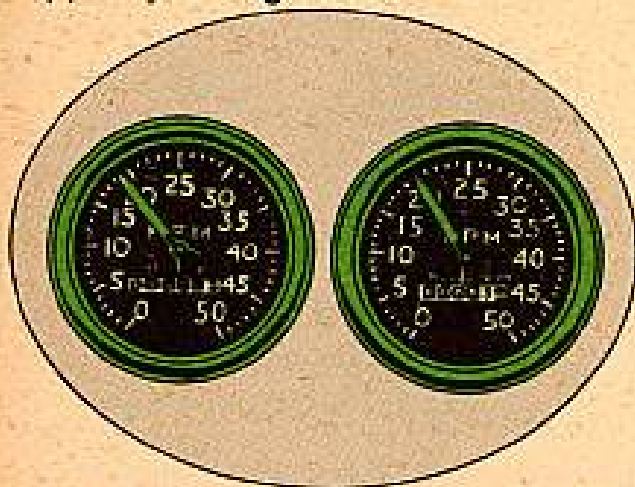
On your differential, the Cuno oil filter is sitting right up in front looking at you, twist its tail once a day, and again whenever you think of it. You won't wear it out. Drain the shell weekly, and dismount and clean the element monthly. Naturally if you find either metal chips or pieces of brake band in the filter, you'll tell Ordnance—but fast.



There's a fitting on the front of the ramp operating hydraulic power pack which needs grease, too. It's hard to see, and often is overlooked. Maintenance on this baby'll take time. You can't find all the 90-odd grease fittings inside her at once.

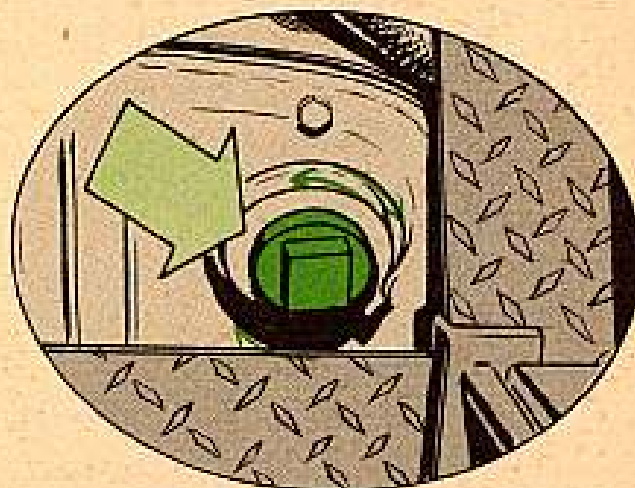


Linkage—Just like in the M135 trucks, it's important to keep your linkages correctly adjusted. Follow the TM, but be sure the throttle stop is high enough that it takes effect just a fine hair before the transmission TV linkage reaches the end of its stroke. That little transmission-throttle-lever is not strong enough to support your big boots.

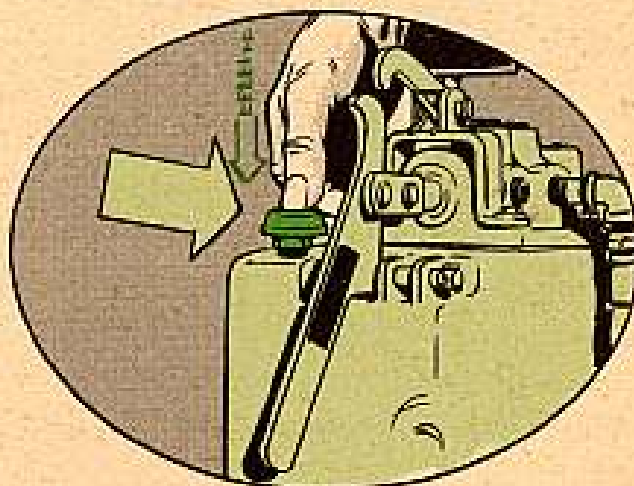


Synchronization—The engines should be synchronized so that they are within 100 revs of each other at 2000-RPM with the engines hot and the transmissions in neutral. It's not serious if they're as much as 500-RPM off. Once a week should do it, and have your vehicle on the level when you check it. Those engines are flexibly mounted, and if you're on a slant, the sag of the engine mounts can be enough to affect throttle and throw 'em off a little.

Some of the torsion bar anchor pins which hold the inside fitting to the floor plate may vibrate around enough to shear their cotter pins. Later vehicles have heavier cotter pins. Older models can be drilled to take a bigger pin.



On brake adjustment, you should be feeling brake when the lever reaches the third notch of the quadrant, but get your adjustment on the brake-adjusting-nut inside the plug of the differential, not by changing the length of the link to the lever.



When you're filling your ramp operating hydraulic-pump, have the ramp up, that way you won't find hydraulic oil running out the breather next time you raise it.

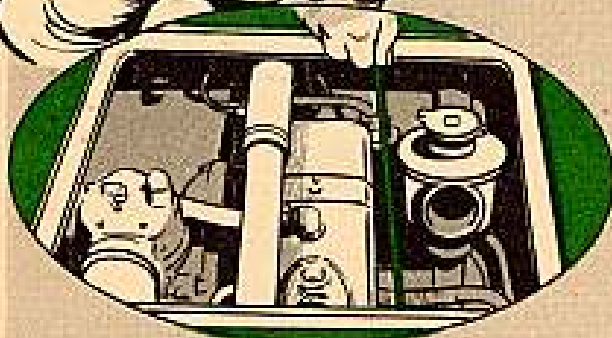


...THAT JUST ABOUT COVERS THE IMPORTANT POINTS OF MAINTENANCE ... BUT BEFORE OPERATING BE SURE TO CHECK THESE 5 "LEVELS" IN BOTH ENGINES.



WATER LEVELS

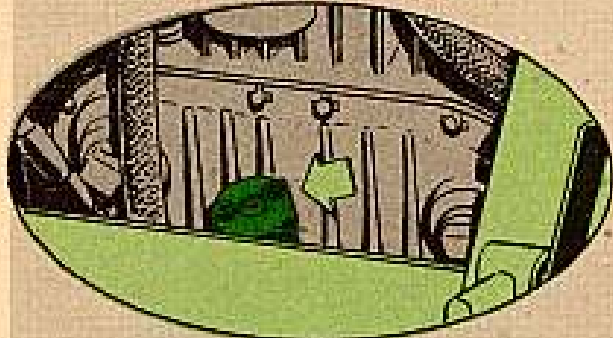
Radiators—The only check you have on this cooling system is to fill your radiators until you can see the coolant in the filler neck.



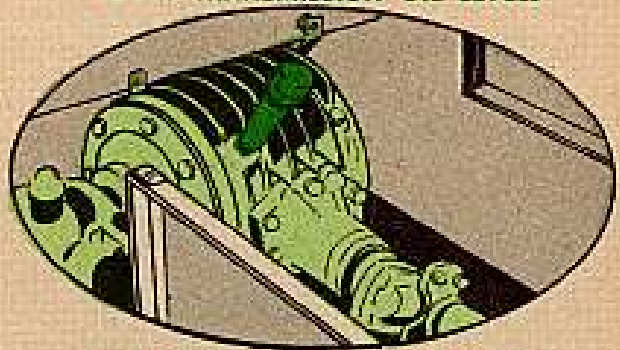
BOTH ENGINE OIL LEVELS



BOTH TRANSMISSION OIL LEVELS



DIFFERENTIAL OIL LEVEL



BOTH ANGLE DRIVE OIL LEVELS

The only things you stow in the engine compartment are the stowage straps, which go in the wire mesh basket in the left fan compartment. Be sure they're strapped down. Spare fan belts are stowed in the fan compartment, in straps, except for the ones that operate the bilge pump and the hydraulic power pack.

These belts are already slipped over the shafts to save you breaking a U-joint; they're stowed on the bulkheads in clips—a neat trick.

Another thing about fan belts—they come in pairs, and you've got to replace them in pairs, otherwise the tight one'll carry the load while the loose one rides idle.



THAT SHOULD KEEP YOU MOVING ALONG SMOOTHLY. JUST ONE MORE REMINDER ... A CLEAN TANK IS NOT ALWAYS WELL MAINTAINED.. BUT A WELL MAINTAINED TANK IS ALWAYS CLEAN.

HOOKUP-MIXUP

Watch yourself when you hook up the batteries in your M59 APC. This vehicle has a negative ground electrical system, just like all your new vehicles. **But** it has sorta screwy looking battery cables. The **positive** cable (the one put on at the factory) is a short flat braided strap. Looks just like the ground lead on your car, except that it has a thin plastic cover on it. This cable runs from the battery to a junction block on the bulkhead, and is less than a foot long.

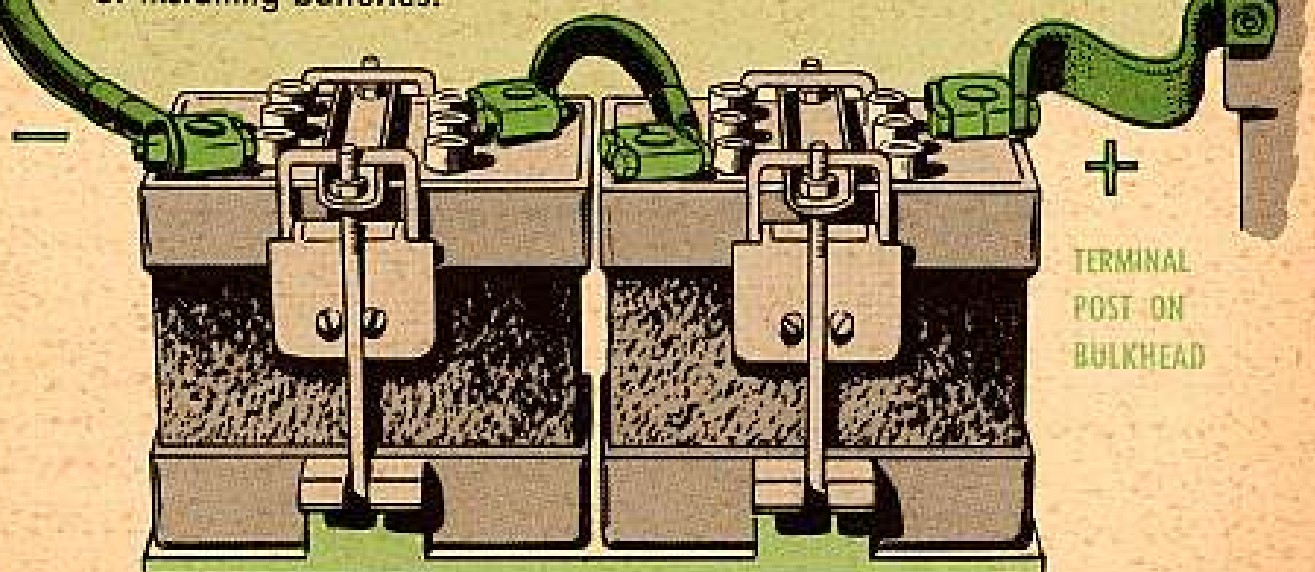
The **negative** cable, on the other hand, is a long round insulated cable which looks just like the positive cable on your car. This one runs around behind the batteries and up to the master switch.

Now, if you let appearances fool you, you'll hook up your battery backwards and this will burn up your rectifier pronto when you turn on the master switch.

Remember then: The short flat cable is the **positive** lead. The long round cable is the **negative** lead. Be sure to connect 'em this way.

Remember this, though: The replacement cables you'll get from supply will be round. So, you'll have to rely on the size of the terminal clamp and the fact that the positive post is toward the front of the vehicle.

And be sure you turn the master switch **off** when removing or installing batteries.

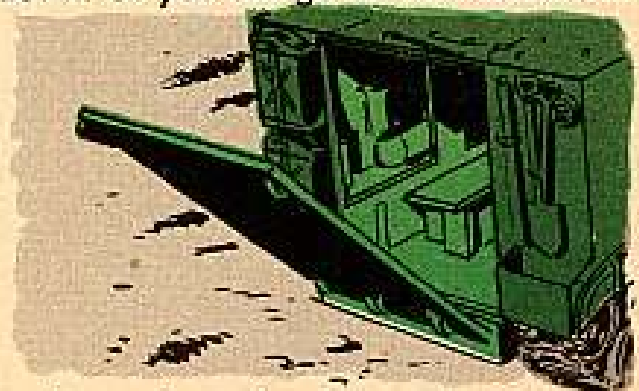


SOME TABOOS



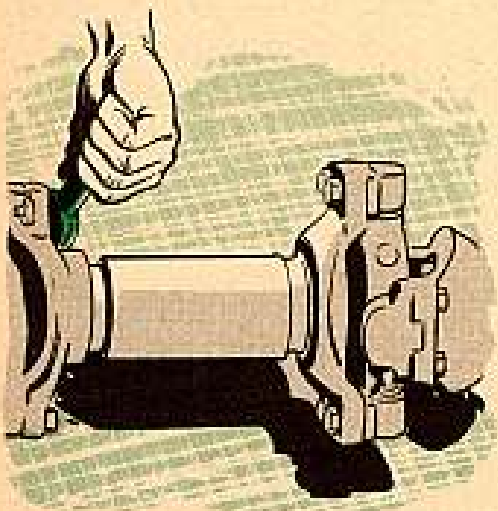
Here are a few points to remember: First, let's look at the question of tow starting, single engine operation and starting one engine from the other. Admittedly, all of these things can be done. But don't do 'em. You can tow 'em, but it's not safe. You'll bust up the transmissions. Get a live vehicle, M59 or other, alongside to slave start yours if your batteries are down. Or you can go for new batteries.

Running on one engine would be OK if somebody was shooting at you, and the TM tells you how. But you can bet on needing at least one new transmission if you do, and those things are expensive. So except in combat, forget it. And for gossake use both engines to raise your ramp.



Tow starting and starting one engine from the other are in the same category. Your chances of hurting the transmission are so great that it doesn't pay to take a chance against a statement of charges.

Another thing, for straight towing, like if Ordnance comes to pull you in, the book says you can tow for 20 miles with the differential in neutral. You can, if you've got to. Your differential may not get all the lubrication it should, and since it only takes a little time to unhook the universal joints, it'll pay you to do it.



If you're going over 15 miles, disconnect the differential output shafts between the differential and the final drives. If the trouble is a broken or frozen differential, take these shafts loose anyhow, regardless of distance.

Well, that's about it, this gimmick is like most any military vehicle, sort of an ugly duckling. But, like the rest of 'em, it's designed to take care of a difficult job that's different from anything else. And it'll do it. It'll haul you forward with your weapons and gear, and you'll arrive at the trouble with a lot better chance of coming out on top.

Connie Rodd's "SHORT 'N' SWEET DEPT"



Capping vapor-lock

You all know that the internal-vent valve of your new fuel-tank filler-cap (Ord Stock No. G744-8333722) has two positions—opened and closed. When you're going fording, that valve is put in the closed position. You turn her to open when you're operating under normal conditions.

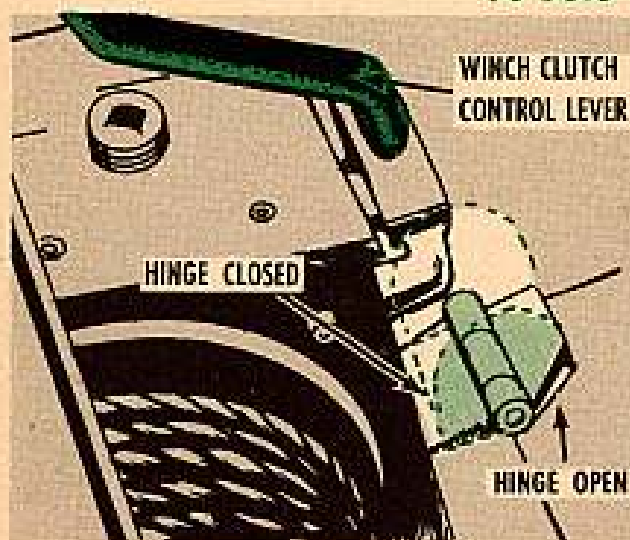
But there's something else about your new cap which very few guys know. If you're operating in a hot area—like in the southern half of the US or in the desert—that interval-vent valve should

be kept closed. This will help stop vapor-lock from sticking her hot fingers up your fuel system.

One word of caution, tho. That pressure inside your gas tank should be relieved. So, when you're stopped, open up that filler cap—but be careful or you may get doused with gasoline. Back that cap off one notch to get the air out of your tank. Then, you can tighten it up again.

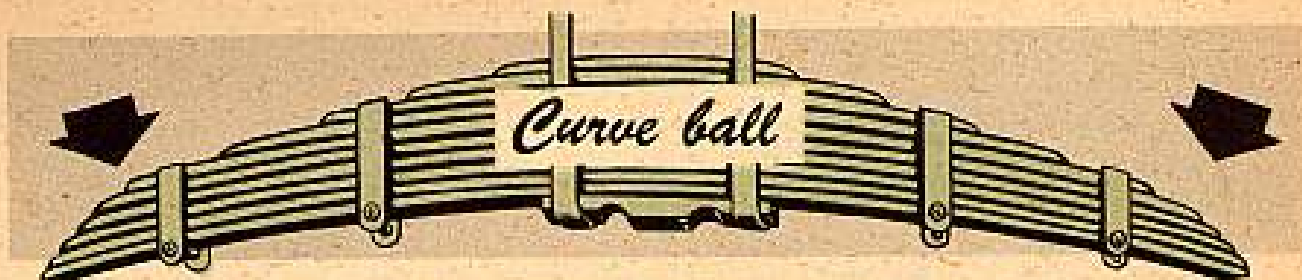
Be sure to read TB 9-837-8.

Hold it, man



There's a new MWO out which tells all you deuce-and-a-half truck drivers who have winches on your vehicles to get a winch-clutch control-lever lock put on to hold that lever in the disengaged position. This'll prevent the winch from accidentally engaging.

The MWO goes under the number of MWO Ord G1-W71 (31 Oct 55). When you get a little time, go ahead and do it.

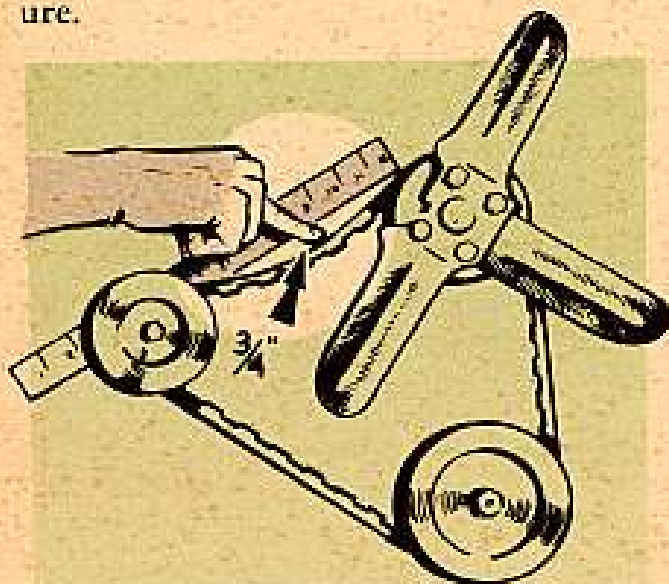


Seems that there're some rumors floating around that a few guys aren't replacing the rear springs on their M62 and M246 5-ton wreckers the right way. This can make for one hard situation.

From what's been said, a lot of these springs are going back on the wreckers with their curved ends pointing up. The right way is with the curve ends pointing down.

Tighten your belt

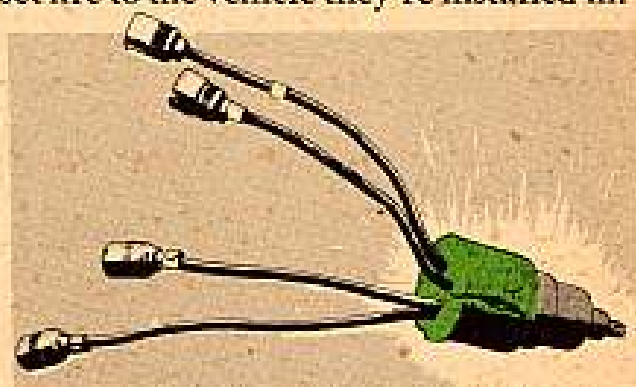
Most of you have come upon the startling observation that the fan belt deflections for the M38A1 and the M38 don't jive, altho both Jeeps use the same belts, water pumps, generators and pulleys. TM 9-8014 on the A1 says to adjust that belt to $\frac{3}{4}$ -in deflection, while TM 9-8012 says to use a 1-in figure.



Cease your wonder. A change is out which tells you to tighten that M38 belt to $\frac{3}{4}$ of an inch, like the A1. From here on out, your publications for the M38 will show this.

Hot switches

I hear tell that some ignition switches, Stock No. G742-7760409, have been going to pot. What's worse, they could set fire to the vehicle they're installed in.



Seems like the sealer, called "potting material," around the battery terminal lead has been cracking. This lets moisture into the switch. Gives oxidation, poor contact, arcing or short circuiting. Finally she burns up, and maybe the truck with it.

So keep your eyes open for cracks in the potting material, scorched insulation, or signs that water is getting into the switch.

Replace any bad switches immediately, like it tells you in TB Ord 634 (23 Mar 56) and get in a UER.



**Snow White
AND THE
Five Little
Echelons**

Once upon a time there was a beautiful army instructress, named Connie Rodd, whose outfit's maintenance record was so "clean" that she was called SNOW WHITE...but

there came a time when things were not going so well for her. Vehicles and other equipment began to pile up in a long dead-line. Not only that, but within a month they were going on a long maneuver which, if successful, would mean promotions to many...and you know how soldiers simply love promotions...

Well, sir, the first thing Snow White did was get her soldiers together and say sweetly...

ALL RIGHT MEN... LET'S GET ON THE BALL... WE HAD IT MADE UNTIL SOMETHING STARTED A GIANT GOOF.. WHY??

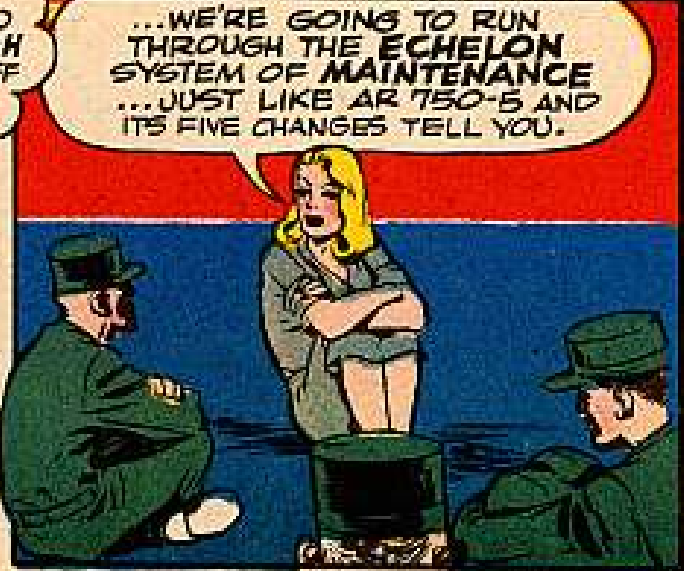
THEM JOKERS IN COMPANY 'B' THEY SHOULDA DONE THEIR PREVENTIVE MAINTENANCE PROPERLY!

AHHH... HIS MARBLES ARE RATTLING. WE'RE 2ND ECHELON. WE DON'T DO THAT STUFF!



GUESS THERE'S ONLY ONE DRASTIC THING TO DO!

NO...NO ROUGH STUFF!



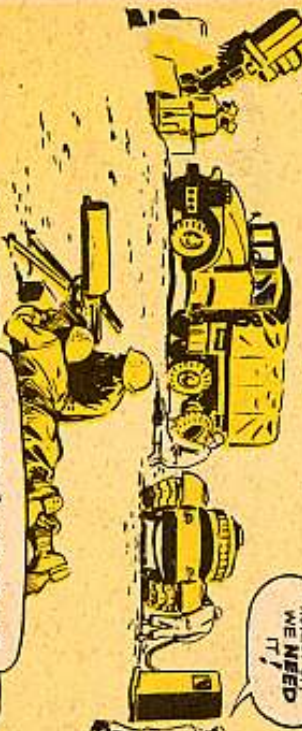
...WE'RE GOING TO RUN THROUGH THE ECHELON SYSTEM OF MAINTENANCE ...JUST LIKE AR 750-B AND ITS FIVE CHANGES TELL YOU.

ORGANIZATIONAL MAINTENANCE

DONE BY: USER... DRIVER, GUNNER, CREW

HURRY UP WE NEED IT!

IF YOU MAINTAINED THIS BETTER... WE COULD DELIVER FASTER!



FIRST ECHELON

THE PRIME JOB OF THE MEN IN THIS ECHELON IS TO DRIVE, SHOOT OR BUILD DEPENDING ON YOUR BRANCH OF SERVICE... THE OTHER ECHELONS ARE SET UP TO RELIEVE YOU THE USER FROM EVERYTHING BUT THE MOST ELEMENTARY MAINTENANCE!! THE TOOLS YOU ARE ISSUED ARE FOR THE ESSENTIAL SERVICING OF EQUIPMENT WHILE IN USE!

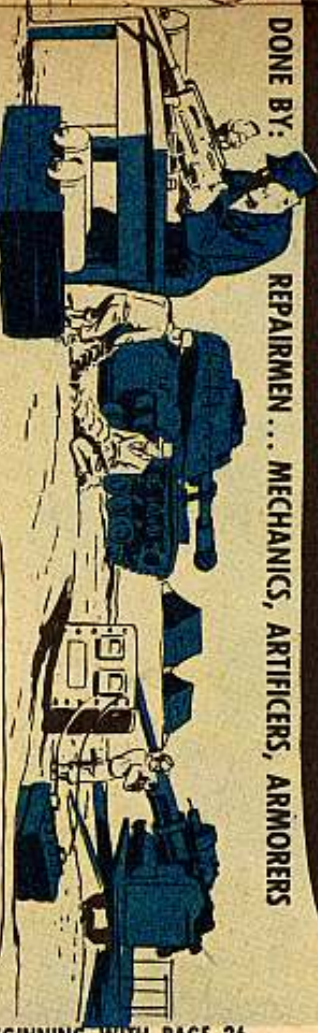


RESPONSIBILITIES

PREVENTIVE MAINTENANCE BEFORE, DURING, AFTER OPERATIONS ON VEHICLES, FOR EXAMPLE "A" (DAILY) "B" (WEEKLY OR BI-WEEKLY), ON WEAPONS, DO WEEKLY, MONTHLY AND DAILY SERVICES, INCLUDING VISUAL INSPECTION, PICKING AND USING THE PROPER LUBES. TESTING, MINOR ADJUSTING DEPENDS ON KNOW-HOW AN AUTHORIZED TOPS. REPORTING, SPOTTING SMALL SIGNS OF TROUBLE... REPORTING THEM FAST TO SECOND ECHELON

WHEN YOUR SHARE OF THE DAILY INSPECTION AND CARE IS DONE, IT'S IMPORTANT THAT YOU REPORT... BUT FAST... ANY OPERATIONS WHICH YOU CANNOT TAKE CARE OF OR WHICH AFFECT YOUR JOB! TO YOUR MATRONS ON THE ORGANIZATIONAL MAINTENANCE TEAM... YOUR OWN UNIT'S MECHANICS, THEY'VE GOT THE TOOLS AND EQUIPMENT TO REPAIR PARTS, TIME AND KNOW-HOW TO HELP YOU KEEP THE EQUIPMENT ROLLING, IF THEY CAN'T HELP YOU, THERE ARE OTHER PEOPLE STANDING BACK OF THEM WHO CAN. SIMPLE AS THAT!

DONE BY: REPAIRMEN... MECHANICS, ARTIFICERS, ARMORERS



SECOND ECHELON (ORGANIZATIONAL REPAIRMENT)

THE PRIME JOB IN THIS ECHELON IS TO KEEP THE FIGHTERS, USERS, OPERATORS AND THEIR EQUIPMENT ROLLING... TO EXPEDITE REPAIR JOBS GOING TO HIGHER ECHELONS... HANDLE SMALL REPLACEMENT PARTS!



RESPONSIBILITIES

PREVENTIVE MAINTENANCE PICK UP WHERE FIRST ECHELON OPERATOR LEAVES OFF... AUTHORIZED TO: REPLACE, REPAIR AND MAKE MINOR ADJUSTMENTS. SERVICING, GIVE MORE THOROUGH INSPECTION AND PERFORM SPECIALIZED MAINTENANCE REQUIRED BY DA FORMS 461, 462, 463, AND 464... STAND BY TO LEND A HAND WHEN FIRST ECHELON PULLS ITS VEHICLE WEEKLY AND BI-WEEKLY CHORES... THE MECHANICS ALSO PULL "C" AND "D" SERVICES. ON WEAPONS, THE MECHANICS GET IN ON THE WEEKLY, MONTHLY, QUARTERLY AND SEMI-ANNUAL SERVICES... SOMETIMES IN AN EMERGENCY

!!Buck!! WE CAN'T SPARE IT AT THIS!

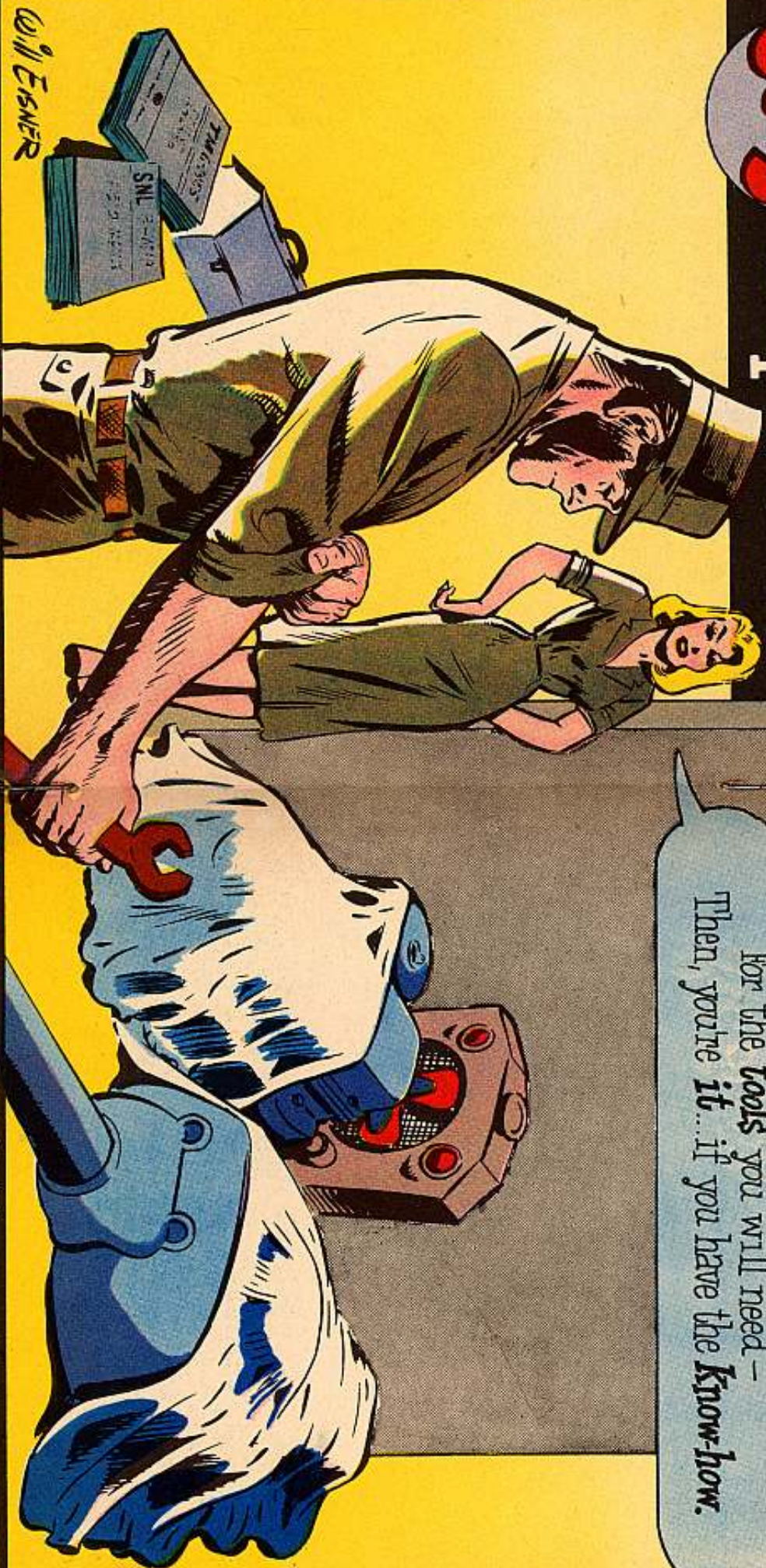
MY GANG KNOWS HOW TO DO IT... BUT IT'S REALLY 3RD ECHELON'S JOB!

OKAY YOU'VE GOT THE KNOW-HOW... WE'LL LEND YOU THE TOOLS AND GIVE YOU THE PARTS.

Joe's

Dope Sheet

If your items' T^M tells you *how*,
And the S^M, the *parts* will allow;
If you are V/O and E-ed
For the *tools* you will need -
Then, you're *it*... if you have the *Know-how*.



Will Eisner

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



FIELD

THIRD ECHELON

(YOUR TECHNICAL SERVICES DIRECT SUPPORT)



MAINTENANCE

FOURTH ECHELON

(BACK UP FOR YOUR DIRECT SUPPORT)



DEPOT

FIFTH ECHELON

(MANUFACTURERS AND ARSENALS)

MAINTENANCE

INSPECTS PROCEDURE OF FIRST AND SECOND ECHELONS



REPAIR

AND REPLACEMENT OF MAJOR ASSEMBLIES AND SUB ASSEMBLIES



SERVICE

IN SHOP AND IN THE FIELD. MOBILE CREWS AND USING UNITS.



FOR "WALL CHART" EFFECT ATTACH TO PAGE 23.



REPAIR

... MAJOR ITEMS



REPLACE ASSEMBLIES AND SUB ASSEMBLIES



SERVICE

OVERFLOW STATION FOR THIRD ECHELON



PLANNING

AND DIRECTING OVERALL TECHNICAL SUPPORT IN A MAJOR AREA

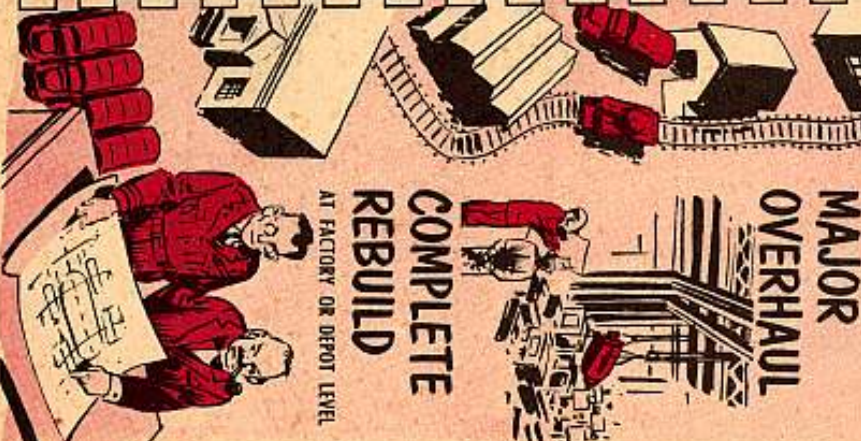


MAJOR OVERHAUL

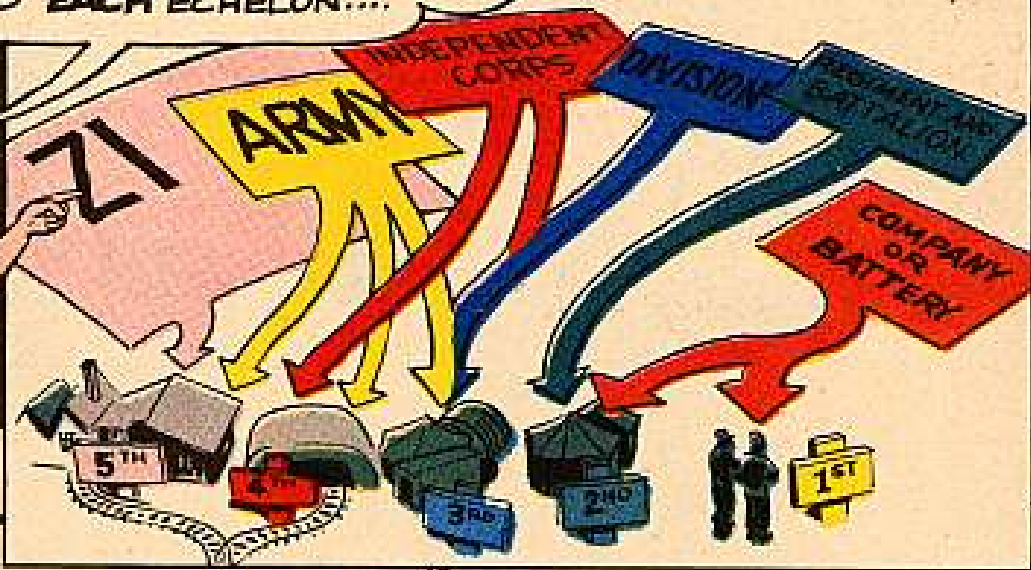


COMPLETE REBUILD

AT FACTORY OR DEPOT LEVEL



... AND ONE MORE THING... YOU SHOULD KNOW THE ARMY COMMAND-LEVEL WHERE YOU FIND EACH ECHELON...



And so, by the end of that month, the outfit was back on the ball.

Yes, maintenance is everybody's business ...in the whole army.

It begins with the user who must maintain

his equipment and report to a higher echelon all malfunctions and required repairs.

Each echelon has the support of the one above it and owes a responsibility to the one it supports.

♪ HOW EASY ♪
♪ IS OUR
WORKATHON ♪
♪ ♪

♪ WHEN ♪
WE OPERATE
♪ IN ♪
ECHELON ♪

FOR EACH
JOB THERE'S
♪ A PLACE
♪ WHICH ♪
SMOOTHS THE
WORKING PACE

...WHEN
WE ♪ OP
ERATE
♪ IN ♪
ECHELON

**SGT
HALF-MAST
McCANICK'S**

ANSWER

DEPT



"MULTI-METER" BATTERIES

Dear Half-Mast,

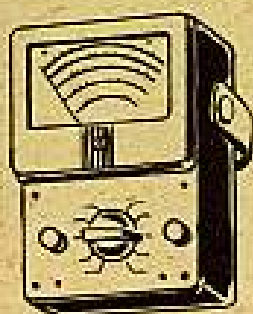
We've just been issued our new volt-ohm-milliammeter, 17-V-808, which has recently been added to the 2nd Echelon Tool Set No. 1 Common, supplemental. What batteries do we use in this meter?

Mr. H. W. L.

Dear Mr. H. W. L.,

It depends; both the Weston Model 697 and the Simpson Electric Model 260 multi-meters are issued under the stock number 17-V-808. Both meters will do the same job, but they call for different batteries.

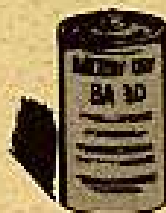
Half-Mast



The Simpson Electric Model 260 uses one BA30 or four BA58's.



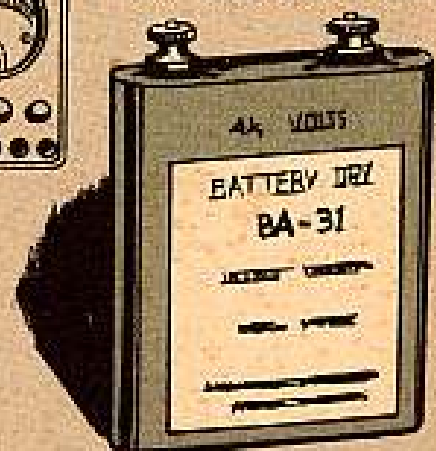
BA-58's
FSN6135-120-1030



BA-30
FSN6135-120-1020



The Weston Model 697 uses one BA31.



BA-31 FSN6135-120-1019

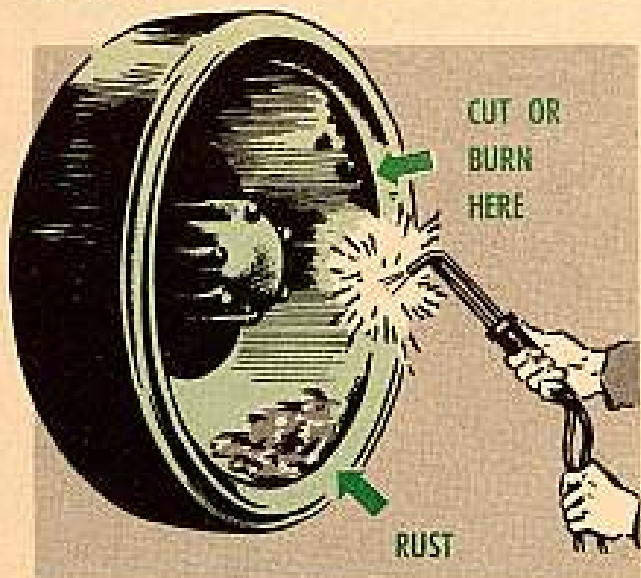
ROADWHEEL MUD SHIELDS

Dear Half-Mast,

We're still getting tracked vehicles (M47 tanks and M44 howitzers) that have mud shields on the roadwheels.

According to TB Ord 403 (with Change 1, 24 Sept 51), the shields are supposed to be removed when they "have become defective."

It's been our experience that by the time the shield has become defective (from water collecting under it and causing rust and corrosion) it's also caused the wheel itself to rust and corrode.



Since the shield serves "no useful purpose"—as the TB says—why not cut the shield off while the wheel is still in good shape and not wait until all the damage is already done?

Sgt S. E. B.

Dear Sgt S. E. B.,

A very good point, Sarge. As a matter of fact, a lot of people have been doing just that. The shields do serve to keep the mud from piling up in your wheels and really loading your vehicle down.

So—you'll want to keep 'em as long as they're in good shape.

The TB doesn't spell out just how you're supposed to tell when a shield's "defective," nor just who's supposed to say. So—looks like it's up to your Ordnance officer.

And, if he feels that a shield is defective to begin with—there's no reason why he shouldn't give the word to remove 'em. Right?

Half-Mast

GENERATOR CABLES

Dear Half-Mast,

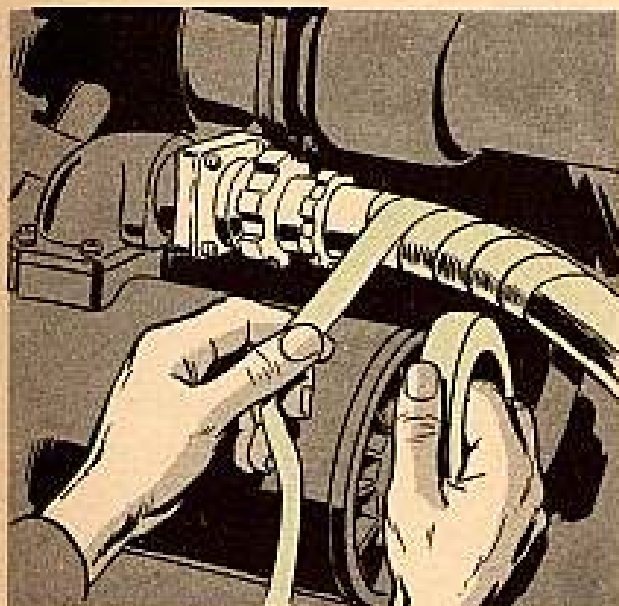
How about the generator-to-regulator cables on our trucks? Ours are beginning to check and crack. When do we have to replace 'em? I hate to put on a new \$15 cable until I have to, but I don't want to hang a truck up if we ford it, and I don't want to get myself gigged. What's the score?

*CWO C. W. H.
National Guard*

Dear Mr. C. W. H.,

You've got a good point on those generator-to-regulator cables. The rubber covering on them is only to protect the cable from wear and abrasion. The rubber conduit inside that rubber sheath is waterproof in itself, so water which gets through cracks in the rubber sheath can't get into the wiring.

So—you don't have to replace the cables when they check. You can repair any worn spots with rubber electrician's



tape (Ord Stock No. H005-0875855) and go right on using the cable.

The specifications on these cables have been changed to call for ozone-resistant rubber, and the later ones will be identified by the letters "OZ" stamped into the rubber cover. They're not supposed to check like the old rubber does.

Half-Mast

A GOOD TWIST

Dear Half-Mast,

We hit a little trouble with our M63 mounts for the M2 heavy-barrel .50-cal machine guns. The trigger side plate comes with the mount, but we found the stud was so far back that we could not adjust the trigger linkage to let the gun be fired by the trigger handle on the lower set of the mount handles. (The top set worked OK).

Do you know of any method or fix that'll put this trouble straight . . . other than removing the lower trigger handle and bending the lug up about 1/4 inch?

Sgt W. E. P.

Dear Sgt W. E. P.,

Best method is to adjust your linkage according to paragraph 83.5, Change 1 (Sept 44) to TM 9-226. Should you still have trouble, take it off and send in a UER on it.

Bending may work, all right, but it works too well. The gun will fire with a very light pressure on the handle, too hair-triggered if you follow me.

Half-Mast

MISSIN' A TOOL CHEST?



Dear Sgt Half-Mast,

I have a question regarding Chest, tool, empty, Ord Stock No. 41-C-853. In Ord 7 SNL A-6 (29 June 55) the chest is deleted from the allowance column but a picture appears in Fig 10, page 17.

Is this an error in printing? If not, how are the spare parts of the weapon to be carried?

Sgt G. M. L.

Dear Sgt G. M. L.

You rate one tool chest per major item . . . the next revision to Ord 7 SNL A-6 (Gun Machine, cal. .30 Browning, M1919A4 fixed and flexible, M1919A4E1 flexible, M1919A5 fixed and M1919A6) will authorize it.

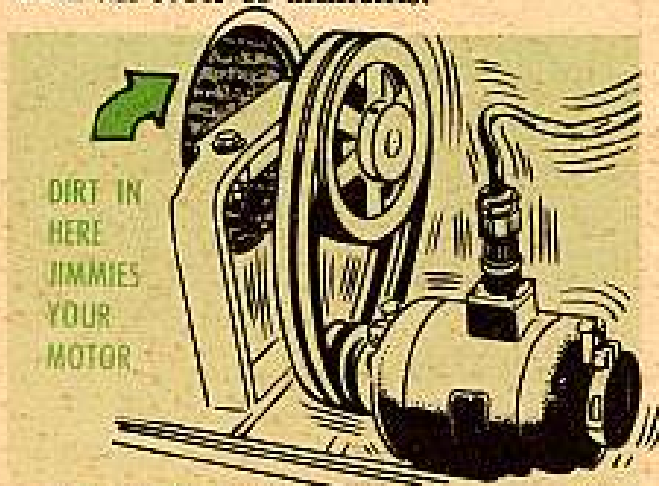
Half-Mast

ARMAMENT



AH...AH...KA-CH-000!

When you're responsible for the care and comfort of the M33's operating equipment you have to make like a snoopy mother-in-law when it comes to checking for dust. Let the stuff gather unmolested for any time on your operating units and you'll soon be plagued with all sorts of ailments.



Clogged air filters, for instance. Nobody has to remind you that when you interfere with its ventilation, your equipment's all set to burn up electrical components—especially the acquisition magnetron.

And dust that's permitted to gather in the radar and computer cabinets blocks the normal release of heat from those units. In short order the equipment'll be suffering the same symptoms and effects as excessive heating brought on by actual equipment failure.

If the stuff's allowed to collect on the vanes of ventilation blowers it'll unbalance the blowers, and from this mishap comes vibration and excessive wear of bearings in the blower motors. Vibration will also cause bum operation of other units, and you can look for the acquisition automatic frequency control unit to be especially disturbed by vibration.

The only way you can avoid this kind of grief is to keep operating equipment as dust-free as possible... chase dust... just follow the cleaning instructions in the preventive maintenance section of your TM's... it'll save you and your equipment a lot of irritation.

BRAKE BUZZER

I SAID
POLISH UP
YOUR STRAP
AND IT'LL
WORK.



I THOUGHT
SURE HE SAID
I SHOULD
POLISH MY
STRAPS...

Man sez that while he was testing the electric emergency brake on his acquisition antenna trailer (M243) as per TM 9-6092-1, he couldn't get the warning buzzer to sound off. But the brakes worked.

Found out that it was a poor buzzer ground. Took the better part of a day to find the trouble. Everything was hooked up tight, but corrosion had slipped in and spoiled the connection.

You can save yourself this trouble by pulling loose your buzzer ground strap and brightening everything up with a little emery cloth. Then bolt up good and tight again. Check it every now and then.

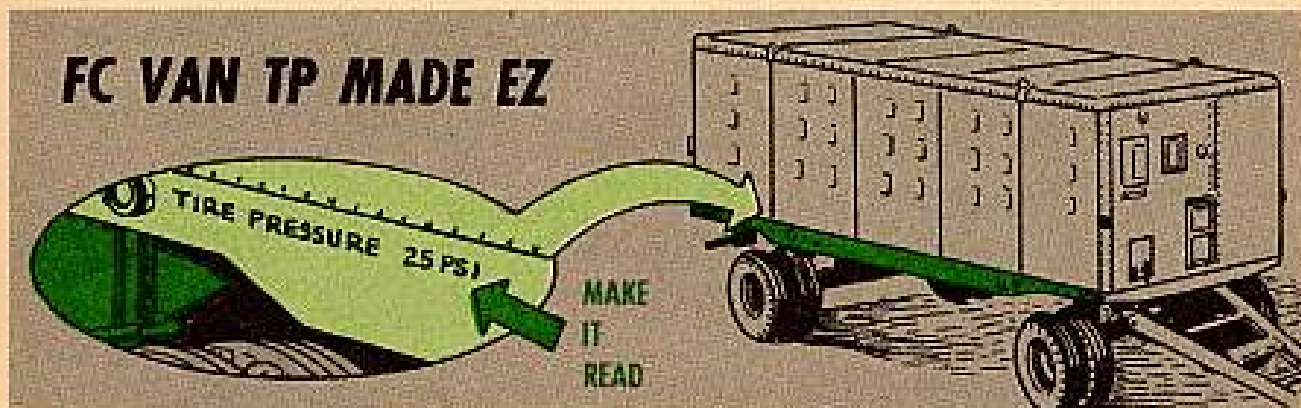
HOLD THAT MOISTURE

To prevent condensation inside the cover of the R. F. coupler on M33 systems, use non-hygroscopic tape to put bags of silica gel inside the cover. Just remember that the crystals need replacing when they're saturated.

6083A IS OK

Acquisition antenna control units in the T/M33 FCS should be oiled with OHC (MIL-O-6083A) Stock No. 14-O-2832-51 instead of OHA (MIL-O-5606). The 6083A is better 'cause it contains a rust inhibitor.

FC VAN TP MADE EZ



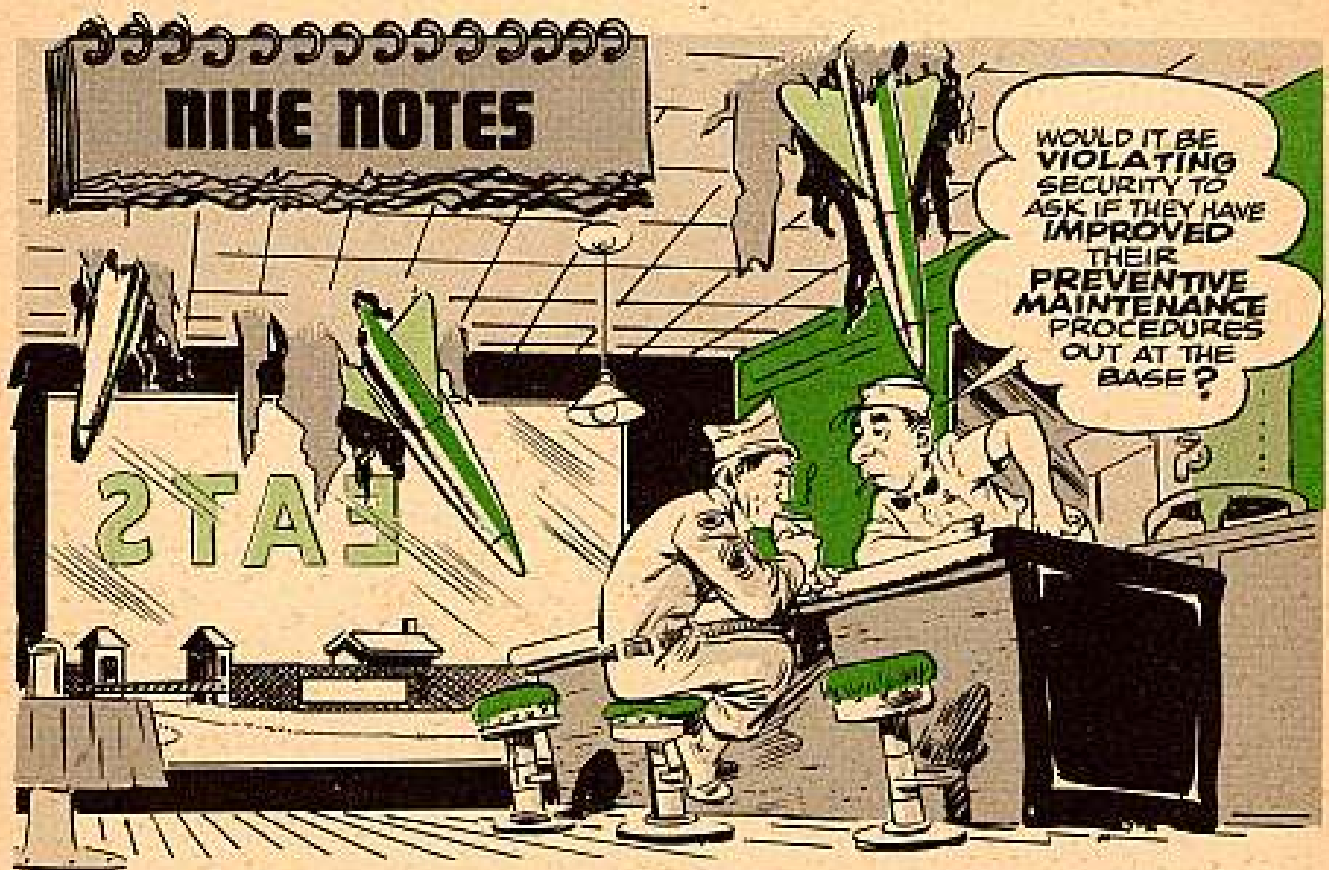
It's confusin' but not amusin' the way some guys are popping their safety valves about tire pressure for M242, M243 and M244 Fire Control Vans.

In TM 9-6092-1, para 40-b says the pressure should be between 21-27 PSI. But if a guy happens to see Fig 70 and has keen enough eyeballs to read that stencil on the side of the van, it says "Tire Pressure 30."

But don't fret 'cause it's no sweat if you keep cool—the tires, that is.

Here's the scoop: When the tires are cool, pressure should be 25-PSI.

The load carried by those vans doesn't vary much, so there's no need for variance in the TP. Get the tires cool—like you on payday night—and make the pressure 25 PSI. That's it.



READY TO LAUNCH?

Connie ran across a new one the other day that just goes to show you how the little things can foul you up.

Nike sitting on the rail, all ready to go. Only, the round electric-power-plug dust-cover was lying under the plug instead of being clamped into its proper holes. Also, the round hydraulic-power-bayonet dust-cover was lying loose under the bayonet mechanism instead of

being on the post where it belonged.

If they had flown that round neither plug mechanism could have latched down out of the way as it should. Even if it didn't foul up the shot, the thrust structure would have knocked the blazes out of the bayonet and the power plug, which would have put the launching rail out of service for sure.

Watch that stuff, will you?

ON ITS WAY

Cleaning Nike GS-15462 zero set switches which were lubed with grease or are real gummy and dirty—or both—is a rough job without a solvent.

Ord 7 SNL Y-4 is going to include Varsol, Stoddard solution or mineral spirits on an "as required" basis, so

you'll be able to get them.

But don't use cleaning solution unless the switch has been lubricated with grease or is dirty enough to warrant it. Ordinary care and cleaning just calls for P-38 (Mil-6085A) oil.

NEED A SUB, BUB?

You've got substitutes now for the Nike antenna waveguide coupling Y018-8015675, which has been breaking because of strain at the screw-points.

They're couplings Y018-8021249 or Y018-8170738, and Y018-8021263 or Y018-8170739.

If couplings Y018-8021249 or Y018-8170738 are the ones you'll be using, these modifications are needed:

Remove the big aluminum flange and rubber dust cover. Use the dust cover already installed on the GS-15709 Saddle.

Use four 6-32x $\frac{1}{8}$ -in machine screws with nuts and lock washers to mount to the conversion waveguide section within the saddle.

Because breakage of the poly-iron component of antenna waveguide coupling Y018-8015675 has been common, a design modification has been made. Be on the lookout for coupling Y018-8171082. To repair any coupling except Y018-8015675 when the failure is only with the poly-iron block, use coupling Y018-8170734 and pad Y018-8170736.

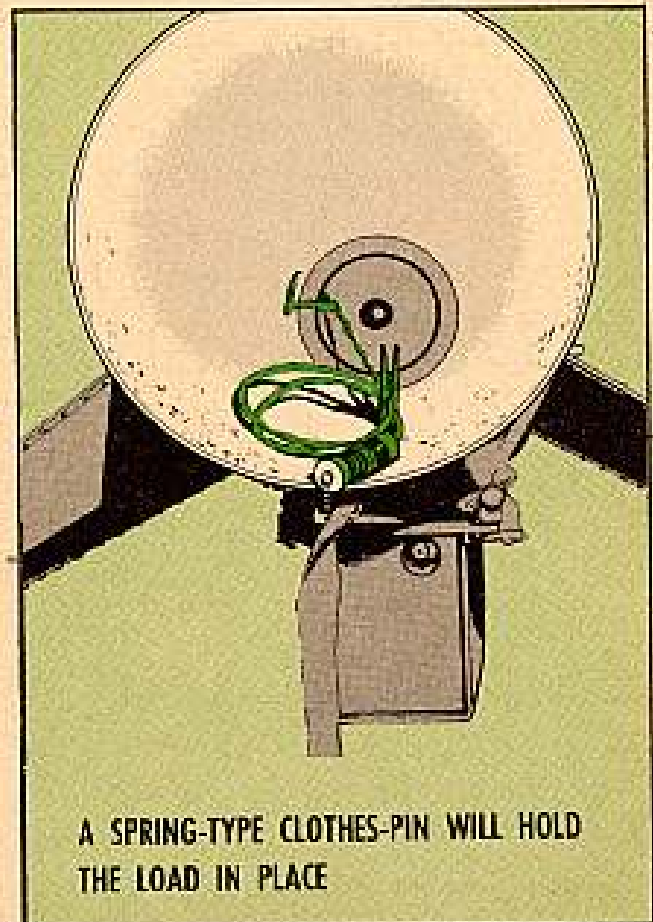
NIKE IGNITER CORDS

Connie saw a real sharpie on Nike the other day.

This outfit had the booster igniter cords all coiled up inside the booster nozzles so the sunlight wouldn't get to the plastic cord cover, and so the plug and grounding cap wouldn't dangle and drag the cord across the sharp edge of the nozzle, maybe wearing it out.

This you may have seen. But what was sharp about this one, the boys had the cord held in the coil with a spring-type clothespin instead of taping it. One easy pull and they're in business. No fumbling with ten wraps of cold plastic tape some night in a rainstorm trying to get hooked up.

Happy thing was, two bits worth of clothespins fixed every missile in the battery. Real neat.



THERE'LL BE

NO MORE FLUBBING ...



WITH THIS HERE 2ND ECHELON TOOL SET... (SUPPLEMENTAL) TOOL'S PICTURES ... NAMES AND NUMBERS!

If your tool's bending or breaking when you use it, could be you're using the wrong tool for the job you're trying to do. There's a tool for every job, and you'll not flub when you've got the right tool for that job.

This'll give you an idea what your Tool Set, Organizational Maintenance (2nd Echelon), Set No. 2, Supplemental looks like. If you get on item that doesn't look exactly like the picture—don't blow your top. Chances are they're made by two different manufacturers, and they'll do the same job and just as well.

The Ordnance Stock No. for the whole set is 41-T-3538-870. The Federal Stock No. is 5180-754-0743.

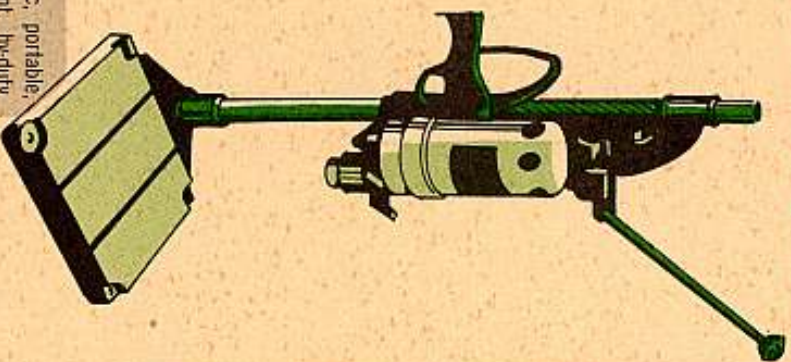
TOOL SET, Organizational Maintenance (2nd Echelon) Set

No. 2, Supplemental **ORD 41-T-3538-870** FSN 5180-754-0743

DRILL, twist, HSS, slight shank, long series, fractional size.



ORD 40-D-1830	33/64 in	FSN 3455-266-9461
ORD 40-D-1831	17/32 in	FSN 3455-266-9462
ORD 40-D-1832	35/64 in	FSN 3455-266-9463
ORD 40-D-1833	9/16 in 2 auth	FSN 3455-266-9464
ORD 40-D-1834	37/64 in	FSN 3455-232-2867
ORD 40-D-1835	19/32 in	FSN 3455-233-8455
ORD 40-D-1836	39/64 in	FSN 3455-266-9465
ORD 40-D-1837	5/8 in 2 auth	FSN 3455-266-9466
ORD 40-D-1838	41/64 in	FSN 3455-233-6395
ORD 40-D-1839	21/32 in	FSN 3455-266-9467
ORD 40-D-1840	43/64 in	FSN 3455-232-2868
ORD 40-D-1841	11/16 in	FSN 3455-266-9468
ORD 40-D-1842	45/64 in	FSN 3455-266-9469
ORD 40-D-1843	23/32 in	FSN 3455-266-9470
ORD 40-D-1844	47/64 in	None
ORD 40-D-1845	3/4 in 2 auth	FSN 3445-266-9471



DRILL, elec, portable, univ current, hv-duty, w/vert stand, 3/4-in capacity, 115-v.

ORD 40-0-357 FSN 5130-473-6228

GOOGLES, eyecut, protective, chippers and grinder's impact resisting flat lens.



ENG 37-4458-300-100 FSN

GRINDER, elec, portable, 1/2-hp, 115-v, univ current w/stand, wheel size 6 in.



ORD 40-G-129-110 FSN

HELMET, welders, shade No. 10, 2 auth



ENG 37-4822-500-500 FSN

JACK, automobile and motor truck, hydraulic, w/handle, 30-ton cap, 11 in contracted height, 17-1/4 in extended height, 2 auth.



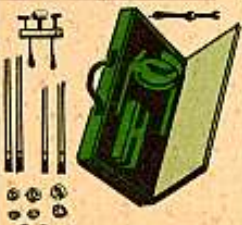
ORD 41-1-109 FSN

MEASURE, S, w/flex spout, cap, 8 qt.



ORD 41-M-992 FSN 7240-233-6016

PULLER (set), bearings, gears, etc., yoke type, push and pull, w/9-1/2 in legs, complete with attachments, in metal case.



ORD 41-P-2905-60 FSN

SCREEN, welding, col-lapsible.



ORD 41-S-1015 FSN 3375-357-7111

TACHOMETER, engine, elec 0-4000-rpm range, w/o batteries.

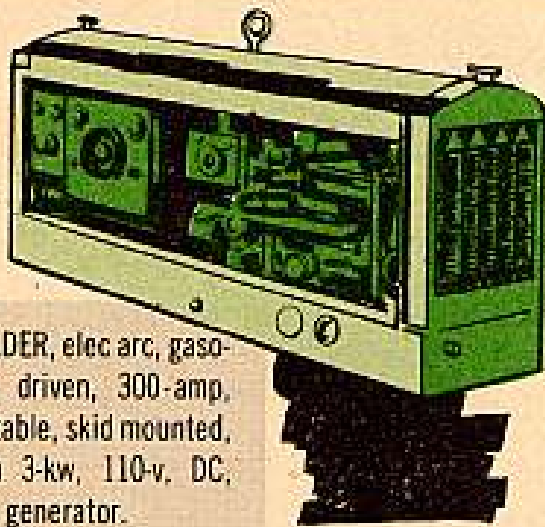


ORD 18-T-231 FSN

TESTER, set, ignition coil-capacitor resistor.



ORD 17-1-5520-50 FSN 4910-300-1305



WELDER, elec arc, gaso-
line driven, 300-amp,
portable, skid mounted,
with 3-kw, 110-v, DC,
aux generator.

ORD 17-W-1715

FSN 3375-255-9991

WHEEL, wire, S, w/std
2 in opng, w/o adapter,
diam of wheel 6 in,
thickness thru arbor
hole 1-1/8 in.



ORD 40-W-995-30

FSN

WRENCH, brake adj,
sgle end, tubr, hex, size
of opng 1-1/16 in.



ORD 41-W-642-200

FSN

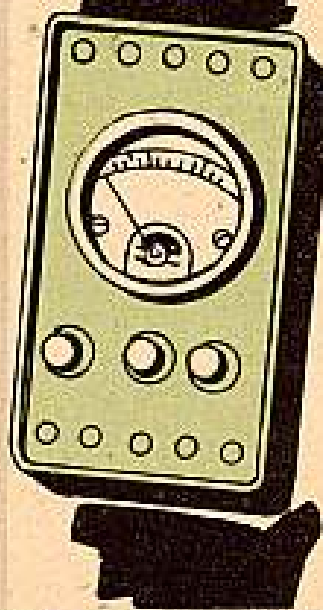
WRENCH, flare nut,
sgle-hd, open box, 12
point, 1-3/8-in opng.



ORD 41-W-637-455

FSN

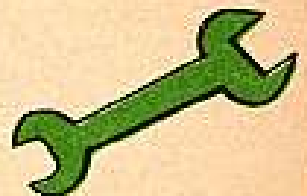
VOLT-OHM-MILLI-
AMETER, portable, AC or
DC, voltage ranges 0 to
7.5-15-150-750, (1000
ohms per volt) DC cur-
rent ranges 0 to 7.5-75
milliamperes, ohm-
meter ranges 0-5000
ohms (35 ohm center),
accuracy 2% DC, 5%
AC, w/test lead and
leather carrying case,
Weston Electrical Corp
Model 697, less bat-
teries or equal.



ORD 17-V-808

FSN

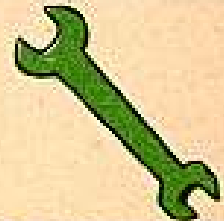
WRENCH, engrs, angle
15-degree, dble open
end, spear head, size of
opngs 1-1/2 and 1-3/4
in.



ORD 41-W-1036-10

FSN

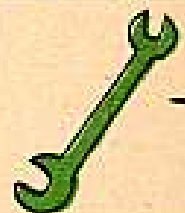
WRENCH, engrs, angle
15-degree, dble open
end, size of opngs
1-5/16 and 1-11/16 in.



ORD 41-W-1065-80

FSN

WRENCH, obstruction,
angle 45-degree and 90-
degree, dble open end,
size of opngs 9/16 in.

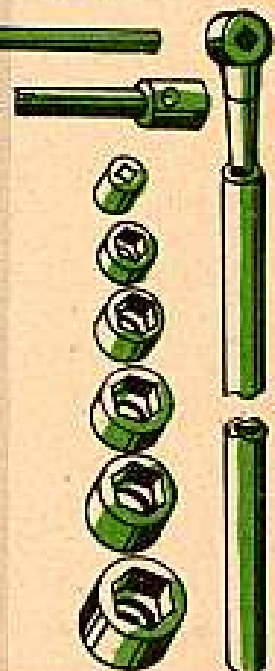


ORD 41-W-1059

FSN

WRENCH SET, socket, 1
in square drive, 6 point
openings, set of 10
pieces

41-B-310 bar
41-B-312-200 bar
41-H-1498-50 handle
41-H-1838 head
41-H-1445-50 head
41-W-3058-200 wrench
41-W-3058-300 wrench
41-W-3058-430 wrench
41-W-3058-450 wrench
41-W-3058-480 wrench



ORD 41-W-2622

FSN

WRENCH, torque indi-
cating, 3/4 in square
drive, capacity 0-600
foot pounds, Snap-on
No. TQ-602A or equal



ORD 41-W-3635

FSN



HERE'S A LIST OF ADDITIONAL OFFICIAL PUBLICATIONS ON ORD- NANCE EQUIPMENT WHICH ARE OF INTEREST TO A LOT OF YOU.

DA PAM 310-29 Mil Pub Index SM's Ord
Corps, Dec 55

SUPPLY MANUALS

ORD 7 SHL A-50 Vol 1, C2 Gun auto 40-mm M1,
crrg; gun AA 40-mm M2A1; mt gun 40-mm M3;
lrl; radar equip V62/MPQ-10 Feb 56

ORD 7 SHL D-49 Gun auto 75-mm T8165, T83E7;
mech recoil T47E2, T47E3; loader-rammer T33;
mt gun AA 75-mm T69 (incl FCS T38) Jan 56

ORD 8 SHL F-242 C1 M1 sight 7675757; sight
M35; sight reflex M18 Jan 56

ORD 8 SHL F-296 M1 'scope M65, M82 Jan 56

ORD 8 SHL F-301 M1 'scope M59 Jan 56

ORD 8 SHL F-358 Sec 2, C1 Range finder T42E1
Jan 56

ORD 8 SHL F-358 C1 Mt peris' M88, M19, M93
(T176E1), T176E2, M94 (T177E1) Feb 56

ORD 9 SHL G-142 C1 Tractor L3-ten H5, M5,
M5A1, M5A4 Dec 55

ORD 7 SHL G-263 155-mm gun SP T97; howitzer
8-in SP T105 Jan 56

ORD 7 SHL G-262 G2 M47 tank, tank gunnery
trainer, 90-mm gun M18 Dec 55

ORD 7 SHL G-279 155-mm howitzer SP M44
(T394) Dec 55

ORD 8 SHL G-742 Truck 2 1/2-T M34, M35, M44,
M45, M46, M47, M48, M49, M50, M55, M108,
M109, M275, V17A, MTQ (Sig Corps), V18A/MTQ
(Sig Corps) Nov 55

ORD 9 SHL G-749 Truck 2 1/2-t. M135, M211,
M215, M217, M222, M221, M220 Oct 55

ORD 8 SHL J-7 Sec 3 C1 Tool set organic maint
(2d act) Set No. 1 supplemental (41-T-3538-
895) Feb 56

ORD 8 SHL J-8 Sec 2, C1 Tool set fld maint Ord
Coll pt co (41-T-3537-40) Feb 56

ORD 6 SHL J-10 Sec 1, C2 Tool set, armorers'
(41-T-3495-69) Feb 56

ORD 6 SHL J-10 Sec 3, C1 Tool set arty repair-
man (Ord) (41-T-3499-110) Feb 56

ORD 6 SHL J-10 Sec 11, C1 Tool set tire rebldr,
inspector (41-T-3542-88) Feb 56

ORD 8 SHL J-10 Sec 13, C1 Tool set, fire contr
repairman (41-T-3534-5) Feb 56

ORD 8 SHL J-10 Sec 14, C1 Tool set, instau
repairman (MOS 3922) (41-T-3536-21) Feb 56

ORD 3 SHL J-22 Spec tools for sighting, fire
contr materiel used w/small arms, auto guns,
mortars, FA (SHL Group F) Jan 56

ORD 7-8 SHL J-275 Grinding mach, valve face;
110-v, only cur, wet type, W to 3/4-in cap,
w/equip (Aberlton mod 657 UM) (4910-261-
7848) Feb 56

SM 9-1-1210, 28, 34, 40, 50, 60, 90 Stock list
all items, except rep parts—FSC Group 12—Fire
contr equip; class 1210—Fire contr directors;
1220—Fire contr comput sights, devices; 1230—
FCS complete; 1240—Optical sight, range equip
1250—Fire contr stabilizing mechanisms; 1260
—Fire contr designate, indicate equip; 1290—
Misc fire contr equip Dec 55

SM 9-1-1338 Stock list and items, alpha list—
FSC Group 13—Ammo, explos, Class 1338—
Guided miss warheads, explosive comps Jan 56

SM 9-1-5975 Stock list and items, alpha list
FSC Group 59—Elec electron equip comps Class
5975—Elec hardw, supplies Jan 56

SM 9-1-1336 Stock list all items, price list
FSC Group 13 Ammo, explos Class 1336—
Guided miss warheads, explos comps Jan 56

SM 9-1-1410 Stock list all items, price list
FSC Group 14 Guided miss Class 1410—Guided
miss Jan 56

SM 9-2-5975 Stock list all items, price list
FSC Group 59—Elec electron equip comps Class
5975—Elec hardw supplies Jan 56

SM 9-2-5977 Stock list all items, price list
FSC Group 59—Elec electron equip comps Class
5977—Elec contact brushes, electrodes Jan 56

SM 9-1-1336 Stock list curr issue items—Ammo
guided miss warheads, explos comps FSC 1336
Jan 56

SM 9-1-1410 Stock list curr issue items—Ammo
guided miss FSC 1410 Jan 56

SM 9-1-2109 Stock list curr issue items—FSC
Group 23—Motor veh trns, cycles Dec 55

ORD 8 SHL A-75 (TO 11W3-2-21-4) M1 mach
gun cal. 30 or cal. 50 (7669694), Feb 56

ORD 8 SHL D-52 Gun, 90-mm M16 (T118E1),
Mar 56

ORD 7 SHL F-88 Instr obsv, AA, DC, M1, Feb 56

ORD 8 SHL F-103 Tele M7, Mar 56

ORD 8 SHL G-249 Vol 24 Winterization Equipl
kit for tractor, fall trkd, high spd; 13-ton,
M4 series (SHL G-350), Feb 56

ORD 9 SHL G-254, C1 M48 tank, Jan 56

ORD 7-8 SHL G-802, C1 Semitrailer, low bed,
whecker, 12-ton, 4-wht, M269, M270, M276A1,
Feb 56

ORD 6 SHL J-8 Sec 4, C1 Tool Set, maint (fld),
ammo rems plat (41-T-3499-85), Feb 56

ORD 6 SHL J-8 Sec 24, C1 Shop Set, fld maint,
Ord ball, tech spec team (41-S-2990-163), Feb
56

ORD 6 SHL J-8 Sec 28, C2 Tool Set, fld, Ord
Ammo Co. (Army or Comd) (41-T-3536-25), Feb
56

ORD 6 SHL J-8 Sec 29, C1 Tool Set, fld, Ord
fld supply or depot Co. (Army or Comd) (41-T-
3538-75), Feb 56

ORD 6 SHL J-8 Sec 31, C1 Shop Set, fld maint,
elec FCS (41-S-2990-178), Feb 56

ORD 6 SHL J-9 Sec 1, C1 Shop Sets, power
train rebld co (Auto) depot giant, Feb 56

ORD 6 SHL J-10 Sec 1, C1 Tool Set, arty
mechanic, minor maint (41-T-3499-100), Mar 56

ORD 6 SHL J-10 Sec 22, C2 Tool Set, guided
miss repairman (Corporal) (MOS 1281) (41-T-
3534-420), Feb 56

ORD 6 SHL J-10 Sec 23, C1 Tool Set, guided
miss elec component repairman (Corporal)
(MOS 1302, 3362) (41-T-3534-400), Feb 56

ORD 6 SHL J-21 Sec 1 Tool Set, sol, expl ord
displ sqd (41-T-3542-205), Apr 55

ORD 7-8 SHL J-192 (TO 34F2-2-16-14) Hosing
Unit, cyl bare, part: 2-11/16 to 5-5/8 in dia
cap range (for use w/water drill) (Waterbury
Tool Div, Mod B) (4910-473-4236), Feb 56

ORD 7-8 SHL J-254 Hammer, pneu, body and
fender straightening (Cornwell Quality Tools,
Model H-109) (40-H-260), Mar 56

ORD 7-8 SHL J-381 Undercutter, armature
mica, elec operated; 115 V, AC, DC, size 9x18
in, w/equip (Lanigan & Howe Mod 431) (4940-
270-1594), Feb 56

ORD 7 SHL Y-37 Test-box equip, elec operated,
Feb 56

ORD 7 SHL Y-70 Control Selector—C-1267/
GRW-6, Feb 56

TECHNICAL MANUALS

TM 9-292, C2 40-mm auto guns M1, M1A1; 40-
mm AA gun charges M3A1, M3A3; 40-mm gun ml
M3 Jan 56

TM 9-375, C2 Aux sight, fire contr equip Jan 56

TM 9-1919 C1 (TO 11A-1-34) M1 explos Feb 56

TM 9-1990, C2 Small arms ammo Feb 56

TM 9-2624, C2 20-mm auto gun M24A1 Jan 56

TM 9-2113 Cal. 50 spotting rifle M8 (T46E2)
Jan 56

TM 9-2808-1, C2 (TO 36-1-2) Mil vehs (Ord Corps
Respl) Jan 56

TM 9-5086 Four whl ant group trlr XM328 (Cor-
poral) Type II guided miss sysl Dec 55

TM 9-6032 'Scopes T159, T159E1 Dec 55

TM 9-6088 Local contr sys M16A1E1 Nov 55

TM 9-6012 (TO 36A5-2-41) 1/4-1 4wd util trk M38
Jan 56

TM 9-8222 (TO 36A9-2-6-1) 25-t 4-wht low-bed
semitrllr M172 Dec 55

TM 9-4651 (TO 18Y7-1-132) Power brake sys
(Beardie BK) Jan 56

TM 9-9006-3 (90 deg angle 1/4-in cap only curr
110-v elec drill (Mall tool mod 141) (40-D-310)
Jan 56

TM 9-9006-4 H-d 110-v ac/dc 1/4-in cap port elec
drill (Mall Tool mod 145TP) (40-D-341) Jan 56

TM 9-5070 Duplexer station w/ XM324, com-
puter station w/ XM325 (Corporal) Type II
Guided Miss Sysl, Jan 56

TM 9-6083-3 AAA FCS M33C, M33D inspection,
Jan 56

TM 9-6138, C1 Fuse setter M26, Feb 56

TM 9-8080 (TO 36A-1-76) Principles of auto veh,
Jan 56

TM 9-6012, C1 (TO 36A5-2-41) 1/4-t util truck
M38, Mar 56

TM 9-9002-2 Horizontal buck sawing mach 6x6
in cap sol-tr 60-cy 115/730-v 3/4-HP dry-cut
(Armstrong-Blum Mod Marvel No. 2) (40-S-
1325), Feb 56

TM 9-9888-1 Valve reseating outfit (air cooled
engine) w/equip wet eccentric type sgle-ph
60-cy 110-v (Waterbury Tool Division of Wick-
ers Mod AW0) (40-Y-527), Feb 56

6749-W28 Trucks M135, M211, M217, M220,
M222: Install spare tire heat shield F, Feb 56

6749-W30 Trucks M135, M211, Truck Tract
M221: Install longer tail pipe extension F,
Mar 56

6784-W2 17-pass Bus (Integral Type) (ACF-
Brill Model C-3776): Install of low air press
alarm buzzer, D, Mar 56

6788-W6 16-pass (Integral Type) Bus (Ewin
Coach Model F-32-F): Provide drainage of
water between body panels, D, Feb 56

SUPPLY BULLETINS

SB 9-115 Storage, issue spare cannon, tubes
of limited use life, Feb 56

SB 9-129 Cross-ref list of AIC stock numbers
to approv tech spec stock numbers, Feb 56

ORDNANCE MWO'S

A89-W1 Cal. 30 machinegun M37: To prevent
uncontrolled fire, D Feb 56

B8-W1 Convert bayonet-knife scabbard M8 to
M8A1 D Feb 56

G260-W20 M75 (F18E1): Install exhaust air
lower deflectors, exhaust exten pipe F Feb 56

G340-W3 1/4-t util trk M38: Waterproof steering
gear, drain steering jacket D Feb 56

G742-W19 C1 7 1/2-t trks M44, M45, M46, M34,
M35, M108, M47, M55, V-18A/MTQ (Sig Corps),
M169, M50, V-17A/MTQ (Sig Corps), M48:
Install spec muffler for exhaust noise contr
D Feb 56

G744-W15 C2 5-t trks M40, M61, M63, M139,
M41, M54, M55, M64, M51, M62, M246, M52:
Install lock nuts ss prev loosening of clutch-
release-lever adjusting-nuts F Feb 56

G744-W16 C2 5-t trks (same as above): Provide
means of prev stream lobe from enter clutch
housing F Feb 56

G744-W20 5-t trks M39, M40, M63, M139, M41,
M54, M55, M51, M62, M246, M52: Eliminate
hand-brake-cable slippage F Feb 56

Some Cool Dope For... **DESERT PAINTING**



Dear Sgt Dozer,

Our unit is having a tough time finding a suitable OD semi-gloss paint for general use in desert conditions like we have here in Arizona. Our average temperatures range from 50 degrees F. in winter to 108 degrees in summer. We have very low humidity.

We have only a temporary paint and preparation area that's far from dust-proof and we really need a rapid-drying paint. We've found two types of paint that meet most requirements. They are Enamel, OD No. 2430, FS TT-E-485, Eng SN 52-3433.700.050 and Enamel, OD, gloss No. 1405, FS TT-C-595, Eng SN 52-3473.500.050.

Paint No. 2430 is generally satisfactory, but excessive overspray film seems to accumulate when we use it. We also tried Paint, OD No. 3412, FS TT-C-595 Engineer SN 52-3415.650.700. This one prevents the overspray, but the finish is lusterless and very light in color. Paint No. 1405 is entirely satisfactory as far as application and drying qualities are concerned, but it is full gloss and not in accordance with Change 5 to AR 700-105. It's also a very dark green and not too desirable.

Can you give us some advice as to what kind of paint we ought to use for this operation?

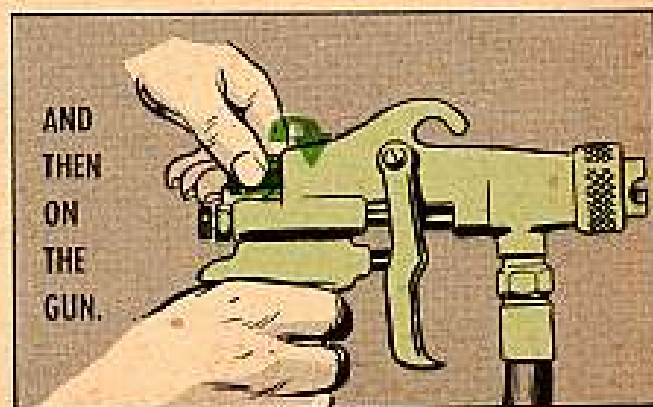
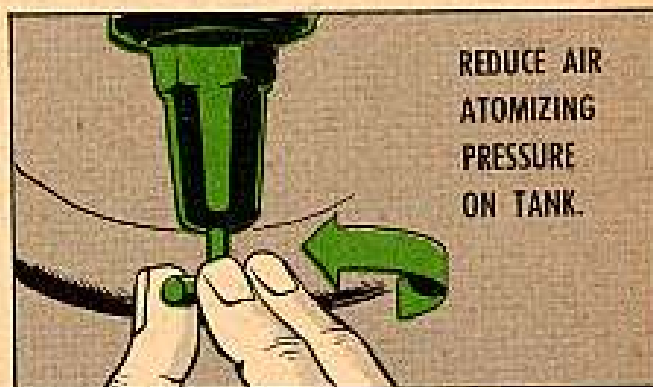
Lt D. D. R.

Dear Lt D. D. R.,

Yep, you do have a problem, but it's easily remedied. OD 2430, Type IV should do the job for you. For painting Engineer equipment, the Corps of Engineers recommend using Type II of FS TT-E-485 in lieu of Type IV. They say Type II will work as well if not better than Type IV and will give you better durability.

It's my opinion, though, that your trouble might be in the application of the paint rather than in the quality.

Have your painters try these steps and chances are your painting problems'll disappear:





YOU'LL PROBABLY HAVE TO REDUCE THE MATERIAL FOR SPRAY WITH A SLOW-DRYING THINNER. YOU CAN DO THIS BY USING THINNER, PAINT, VOLATILE MINERAL SPIRITS, FS TT-T-291A, GRADE 1, ENG STOCK NO 52-7879.700.705

Do this and you ought to get a good, all-round paint job and good drying qualities.

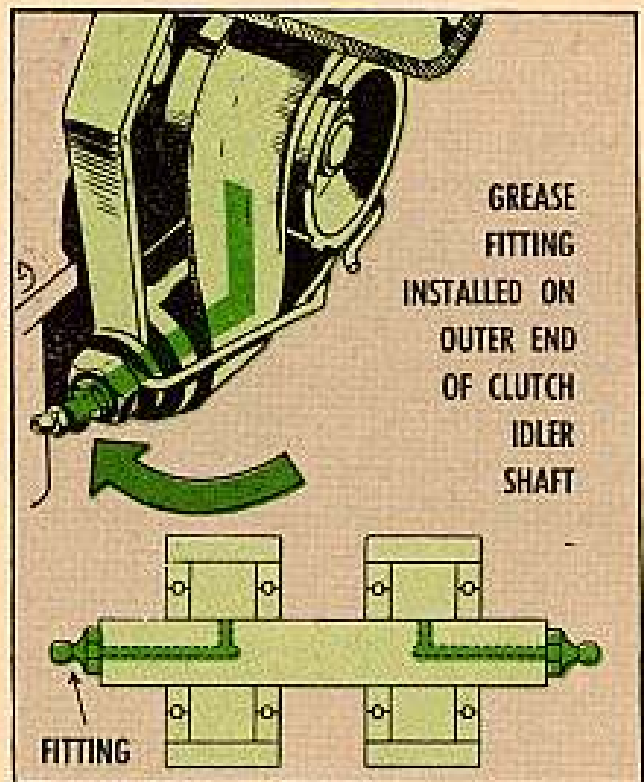
If this doesn't work, there's one other method you can try. Since semi-gloss and full gloss are compatible, mix one gallon of No. 1405 with about four gallons of No. 2430. Don't overthin this mixture. For every five gallons of paint, use no more than 3/4 gallon of the Thinner, FS TT-T-291A, Grade I, Eng Stock No. 52-7879.700.705.

We know one outfit that had the same kind of trouble you're having. They tried the first method we've told you about and their painting's been smooth as silk ever since.

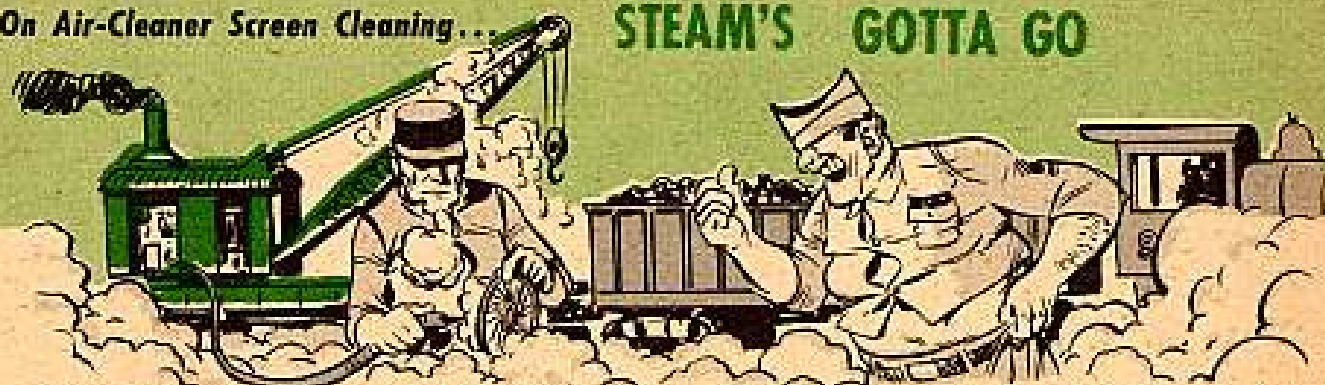
Sgt Dozer

GET YOUR BEARINGS

The Post Engineers at Yakima Firing Center in Washington were having lots of failures in the sealed ball bearings on the clutch idler shafts of their "Whirlwind" rotary lawn mowers. When the boys washed the mowers off at the end of the day, it seemed that the water was getting into the bearings and washing out the grease.



They solved the problem by drilling a grease passage in from each end of the shaft and bringing it out between the bearings like in the drawing. They installed a grease fitting on the outer end of each side of the shaft. A couple of shots from the grease gun relubricates the bearings. Since installing the grease fittings, the boys at Yakima haven't lost a bearing. You can take a look at the finished product above.



You might be doing more harm than good if you're using steam to clean the air-cleaner screens on your Engineer equipment. Sure, a lot of people have been using steam on this job for a long time—but there're always new and better ways of doing things.

It's a fact that steam cleaning doesn't flush dirt out of air cleaner screens. What it really does is allow the dirt in the screens to form into little balls of dirt that're as hard as concrete. You see, there's a small amount of oil in this dirt. When the steam hits the dirt, they mix together and form a hard dirt ball. These dirt balls can't be washed out through the mesh of the screen, because they're too hard and large. The balls of dirt generally hide away in the crimps between the screens, and eventually they pick up more dirt and plug the cleaner.

If you want to do a real thorough job when you clean those screens, you can dissolve that small amount of oil in the dirt by soaking the screens in kerosene, diesel oil or cleaning solvents. Once the dirt's loosened up, just give the screens a good flushing, shake 'em off, and they're ready for trouble-free service.



NAME CALLING

Lack of good names and numbers are as disappointing to Sgt Dozer as they are to your little black book.

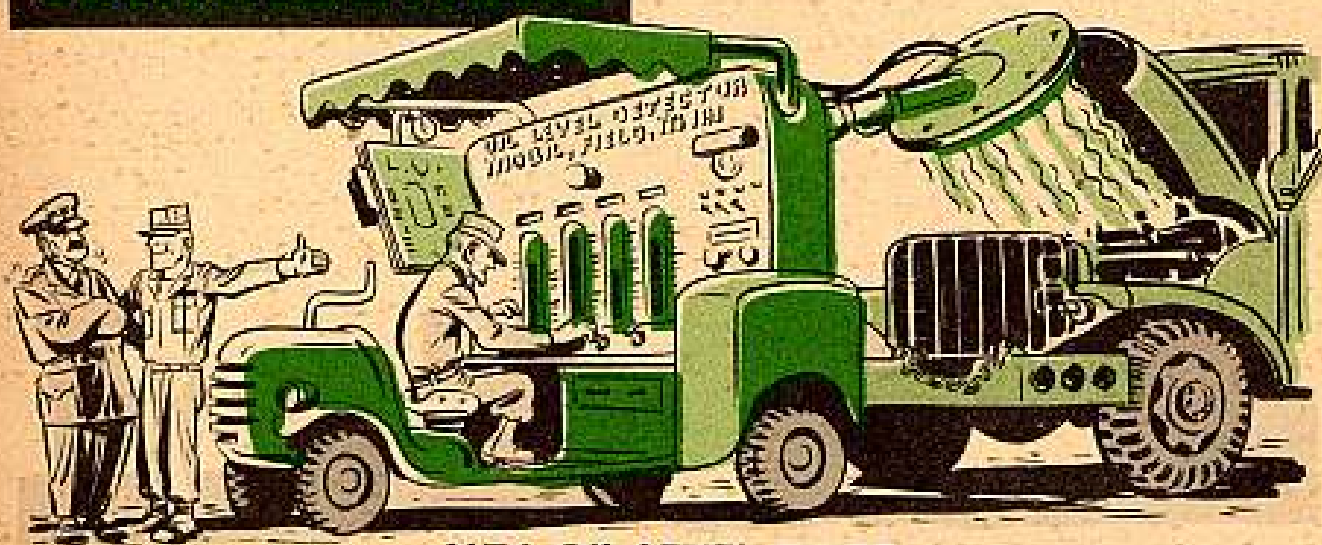
With all the various sizes, kinds and brands of Engineer equipment all over the world, he's gotta have the exact facts and figures to spot the right items and give you the straight dope.

You can help Sgt Dozer make like a

radar navigator if you give him the true and complete callin' names of all the parts and pieces of the item you write him about. For these facts and figures, take a gander at your manuals, LO's and data plates.

Then jot 'em down and fire away at Ol' Dozer—he's waiting to hear from you.

CONTRIBUTIONS



M74 OIL LEVEL GAGE

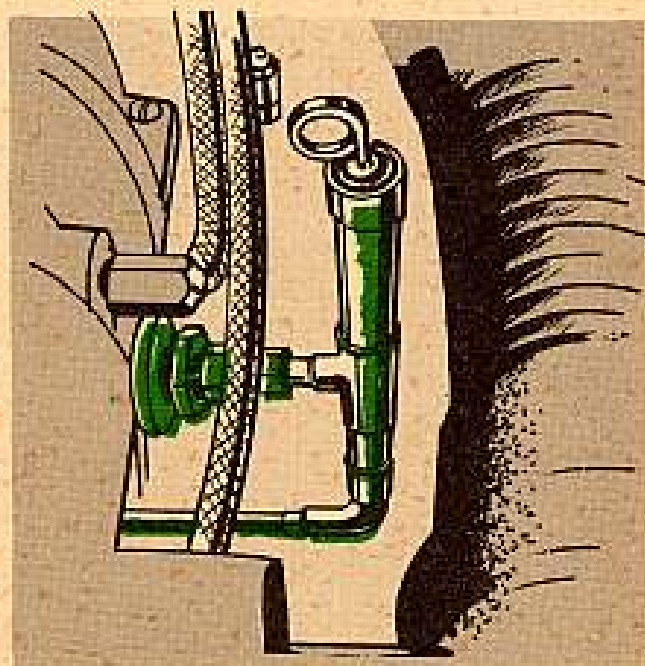
Dear Editor,

Our sharp M74 operators know all about that chain case between their main hydraulic pump and the winch-brake release pump . . . they keep an eye on it and don't let it run dry.

Unfortunately, I've seen some not-so-sharp operators or someone who has to take over in an emergency, overlook this case, and fail to check the oil in it. Which, of course, tears up the machine and costs much money. And even for the careful types, it is an awful job to get down in behind everything to attend to this oiling. The best men have to sorta check it by guess and by gosh.

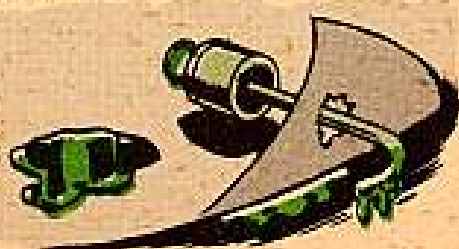
Sooooo, they've put on a dip-stick and holder which will make checking this case just as easy as checking oil in an engine. The drawing in the next column shows how it looks installed in our M74. The drawing above the parts list on next page shows what the gage looks like and the parts used in assembly.

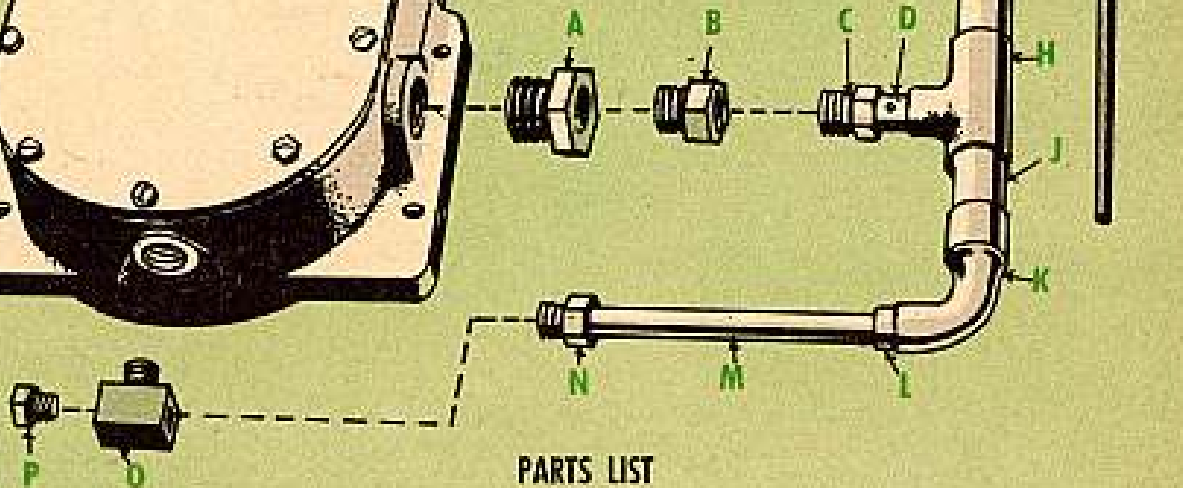
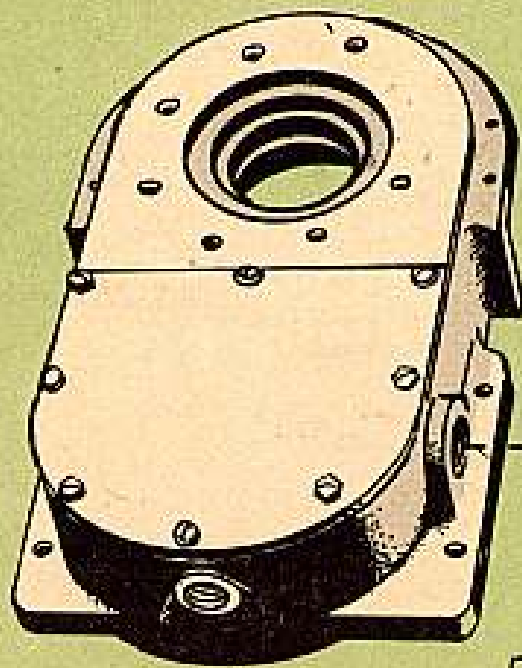
SFC William J. Ray
Ft Knox, Ky.



(Ed Note—You boys sure cured a sore spot. Looks like great minds work together . . . the design boys are working on an MWO along the same line as your field expedient.)


**TURN
PAGE**






PARTS LIST


A. PIPE SHOULDER BUSHING (Brass)

 Ord. No. 115226, 1" male taper pipe thd. x 3/8" female taper pipe thd.

B. MALE CONNECTOR (Brass) Ord. No. 137409, weatherhead No. 200X8, 3/8" male taper pipe thd. x 3/4"-18 st. thd. for 1/2" OD tube size.

C. NUT (Brass) Ord. No. 142435, weatherhead No. 100X8, 3/4"-18 st. thd. for 1/2" OD tube size.

D. COPPER TUBE (Type N), spec. WW-T-799,
 1/2" nominal, .500 actual OD

E. COPPER TUBE (Type N), spec. WW-T-799,
 7/8" nominal, .875 actual OD

F. COPPER TUBE CAP, 3/4" nominal.

G. STEEL STRIP STOCK, 3/32" x 3/16".

H. WROUGHT COPPER SOLDER JOINT REDUCING TEE, crane No. 611, nominal sizes 3/4" x 3/4" x 3/8"




J. COPPER TUBE (Type N), spec. WW-T-799,
7/8" nominal, .875 actual OD



K. WROUGHT COPPER SOLDER JOINT REDUCING 90° ELBOW, crane No. 607-2 nominal sizes, 3/4" x 3/8"



L. REDUCING BUSHING (Copper) crane No. 618,
 nominal sizes 3/8" x 1/4"

M. COPPER TUBE (Type N), spec. WW-T-799,
1/2" nominal, .500 actual OD




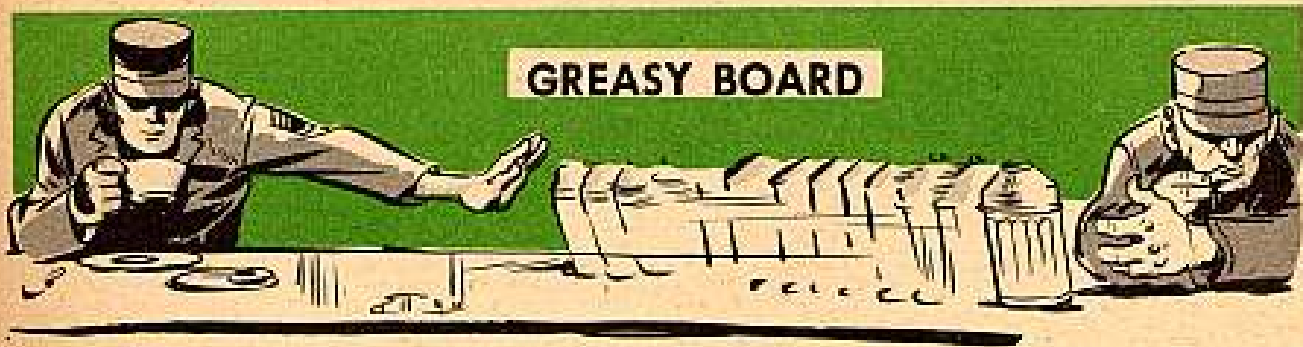
N. NUT (Brass) Ord. No. 142433, weatherhead No. 100X6, 3/8"-18 st. thd. for 3/8" OD tube size



O. MALE TEE (Brass) Ord. No. 143484, weatherhead No. 600X6, 1/4" male taper pipe thd. with (2) 3/8"-18 st. female thds. for use with 3/8" OD tube



P. PLUG (Steel) weatherhead No. 131X6,
 3/8"-18 st. thd. for 3/8" OD tube



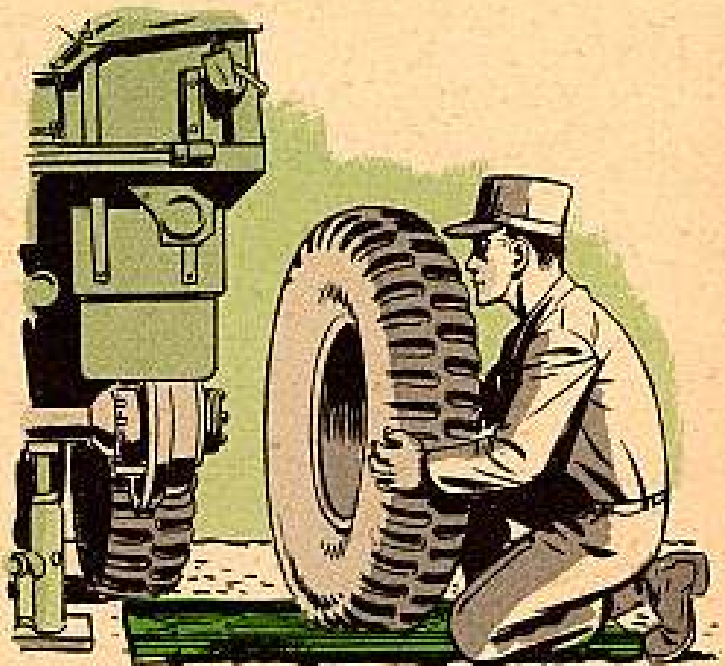
Dear Editor,

The thing that everyone's looking for in these modern days is "ease"—an easy way to do this, an easy way to do that.

OK, then, here's an easy way to pull the wheels off some of those big wheeled jobs that cause a lot of straining at the gut. Can also save a lot of those seals from being chewed up.

It's called the greasy-board method and it's kind of old—but a lot of guys have forgotten it.

Get a piece of 2x10 board about 4 feet long and mount it on some 2x4's for support. On each outer edge, put a piece of wood 1-inch x 1-inch x 4 feet to keep the tire on the board as you slide it along.



You coat the board with grease, then bring it up under the raised wheel. Lower the vehicle so the wheel is just touching the greased board.

Then, all you've got to do is loosen up the wheel and bring it straight out sliding it across the greased-up board. One man can handle the job that usually takes two.

**Sgt William Brown
APO-54**



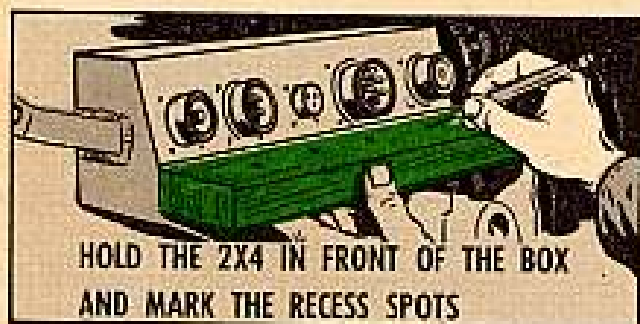
(Ed Note—May be an old trick, but it's a mighty good one. A word of caution, tho, to save you tire troubles. Make sure all that grease is wiped off any tire that board comes in contact with. Nothing'll eat rubber faster than stuff with oil in it.)

SAVE YOUR RECEPTACLES

Dear Editor,

When you pull the power plant on a tank with one of the later model AV-1790 Continental engines, sometimes it's pretty easy to bang up those receptacles on the engine wiring junction box. They're sitting high and dry there on the engine's front-side, with little protection from a careless swing of a wrench, a dangling hoist, etc.

We worked out a simple way to protect the receptacles. All you need is a piece of 2x4 and wood augur. (And maybe a piece of wire or string.)



If you bore the holes for a snug fit, the board will slip on and stay put as is. But if the fit's a little loose, better use a piece of wire or cord to secure it to the box.

782 Airborne Ord Bn
Fort Bragg, N. C.

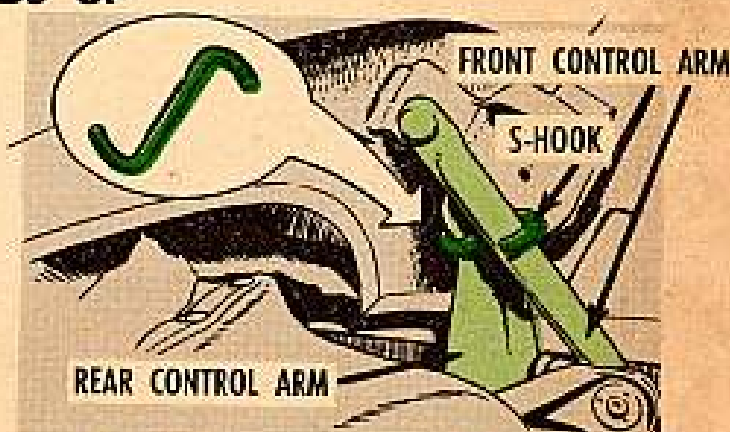
HOODS UP

Dear Editor,

On those Chevys...we used to have to squeeze under the hood and risk a bump on the noggin when working on the engine.

The reason: The hood springs get weaker with age and won't hold the hood all the way up.

The fix: We made a small S-shaped hook out of a 6-in piece of $\frac{3}{16}$ -in cold rolled steel rod by bending each end $1\frac{1}{4}$ inches in a vise. We hook the S-shaped rod on the outside of the rear hood control arm and the inside of the front hood control arm to hold the hood in place.



This makes sure you get the normal working space around the engine 'cause the hood is held up high and stays up until you remove the hook.

Henry J. Behr
Raritan Arsenal, N. J.



Tank-towing talk

Always keep in mind how useful those tank radios can be when you're on a towing job—when the tactical situation permits, o'course. They let you keep in close touch, so's each guy'll know just what to do and when to do it—like applying brakes, etc. Radio's 'specially helpful when you've hooked a third tank on for snubbing. You've got the sets—so use 'em, hey?

Watch that bulge

You M48 tankers—when you're stowing stuff in your turret bulge—keep it off that radio terminal box at the rear of the bulge. Bang this box around too much and first thing y'know it's snapped off the wall. And—you won't find it simple to get welded back on. So—watch it, hey?

Flow no more

Some G749-series trucks that are just lying around without being used are having their batteries run down by a current drain through their voltmeters. If you have a case, get your truck back to Ordnance and have them rewire the voltmeter like it says in MWO Ord G749-W33 (16 Jan 56).

Going soft

"Soft" is the key-word when it comes to getting the right type rubber radiator hose for your 2½-ton M-series trucks. Hard ones don't absorb the shock and vibration—soft ones do. Separate the hard ones from the soft by flexing 'em then turn the hard ones in.

Good info there

There's a new TM out which you guys will be interested in seeing. It's TM 9-8000 (Jan 56)—"Principles of Automotive Vehicles"—and it supersedes TM 9-2700 (18 Nov 47). The distribution formula says battalions are supposed to get one copy each. But if you fellers in the companies need it, put through your requisition and call on the "Need-to-Know" para 3 of AR 310-90 (1 Sept 55).

Don't jam it

When adjusting your carburetors, be extra-special careful not to jam that idle-adjusting-screw all the way up the carburetor seat—flaboozles the needle valve you know. If the screw's damaged, get a new one before making any adjustment.



PREVENTIVE
MAINTENANCE

CURES RUST,
DEADLINEITIS... YOUR
EXCESSIVE REPAIR...
ENGINE FAILURE...
LARGE DAILY DOSE



SPELL IT BACKWARDS...



**BUY IT,
SOLDIER,
BUT...**

REMEMBER
THAT PREVENTIVE
MAINTENANCE, NO
MATTER HOW YOU
SPELL IT, NEEDS
YOU TO MAKE
IT WORK... YES
PREVENTIVE
MAINTENANCE
PLUS ELBOW GREASE
AND YOUR FULL
ATTENTION IS A
SURE-CURE FOR
WHAT AILS YOUR
EQUIPMENT