ARMY MOTORS

VOLUME 4 DECEMBER 1943 NUMBER 8

Ratings for Drivers

When a man does a tough job well in the Army, you can reward him in any of 3 ways—pat him on the back, give him a medal, or get him a rating.

The first two are nice, but ratings talk. They touch a soft spot in your wallet. And we'd like to see deserving drivers get more of them.

Best part is, ratings are already outhorized. Take a look at your unit's Table of Organization and Equipment (T/O&E). If it's like most of them, it will carry authority for a 5th-grade technician's stripes ("corporal-T") on the sleeve of every regularly assigned driver of a heavy truck (more than 3 tons). A lot of regularly assigned light truck drivers are legally entitled to the same chevrons too—usually from ⅓ to ½ of them in a company, depending on the exact provisions of the T/O&E.

You earn these ratings, when you do your jobs right. It's a tough job to rassle with the controls of a big truck all day, fighting any kind of terrain and any kind of weather, and to do all the preventive maintenance and emergency repairs needed to keep it running. Here's hoping you get all you're entitled to.

P. S.—Obviously, the case for mechanics is even stronger. Need we say more?

Names for Vehicles

Remember the jalopy you used to own, and the name you gave it?

We called ours Desdemona after a girl we knew, who was unfaithful. The guy next door called his car Fanny, for reasons he never explained.

It isn't hard to get sentimental over a piece of machinery when you're constantly with it. You know its strength and weakness, its good moods and bad. You've babied it through sub-zero winters, spring floods, and dusty summers. And it still takes you there and brings you back.

So you give it a name.

Along with the practice of assigning each Army vehicle regularly to the same driver, the naming of GI vehicles has grown in popularity. Many COs have even prescribed methods of doing it, so the names could be painted on, and would have some significance. For instance, Camp Roberts uses names beginning with A and B for trucks permanently assigned to the Motor Pool, C through G for other Motor Pool vehicles, and the other letters for different regiments and battalions on the post.

A tank battalion at Fort Knox names its tanks according to the initials of the companies. Therefore, "Axis Buster" belongs to Company A, "Buffalo Bill" to Company B, and "Contagious" to Company C.

It's legal for the Old Man to authorize a system of painted vehicle names, provided gasoline-solvent paint is used in marking them (See AR 850-5, par. 11). And if it makes the boys love their vehicles, we're for it.

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ARMY MOTORS is published monthly in the interest of organizational maintenance by the Preventive Maintenance Section, Maintenance Branch, Ordnance Tank-Automotive Center, Detroit, Michigan. ARMY MOTORS is glad to get your ideas for articles or illustrations, and is glad to answer your questions. When you write, use this address: ARMY MOTORS MAGAZINE, Tank-Automotive Center, Detroit 26, Michigan.

ARE YOU SUFFERING FROM

Crankcase Ventilating System NERVES?

Poor fellow. Jack over there was once a normal guy. A guy who liked his beer dark—his women often—and his trucks running smooth and regular. But lately, his 2½-ton 6x6 jobs started acting spooky, like something from **Horror Stories Quarterly.** They'd throw quarts of oil out the crankcase breather and slop it all over the side of the engine. They'd stop dead right in the middle of somewhere, then start up a few moments later as though nothing had happened. Jack's struggles to dope out the reasons for those failures started the Medico measuring him for an olive-drab straight jacket.

Jack's mistake was that he kept looking for a big and important reason for the engine acting up. The trouble was **so** serious, he figured it had to be something like a carburetor, or a distributor. Nothing simple. Nope, nothing so obvious as that hunk of plumbing coming out the valve cover on the 2½-ton 6x6, or the crankcase breather (Fig.1). He didn't give the crankcase-ventilating-system a second thought. It's clear our friend didn't know why Army trucks have the ventilating system, or how it works. Once you do, you'll know that if the system isn't treated kindly, it can cause these troubles.

When the 2½-ton 6x6's were first coming off the production lines, the Army didn't believe the trucks needed any ventilating system for the crankcase. Plenty of commercial truckers had been getting along for years without this hardware, and now why shouldn't the Army. But the Army soon found out they operated their trucks differently. They specialized in stop-and-go driving. No pushing along hour after hour all day and night, the way commercial trucks do. A 2½-ton 6x6 is yanked out of motor pool—zing, rushed to a stop at the docks. It sits and cools its tires while being

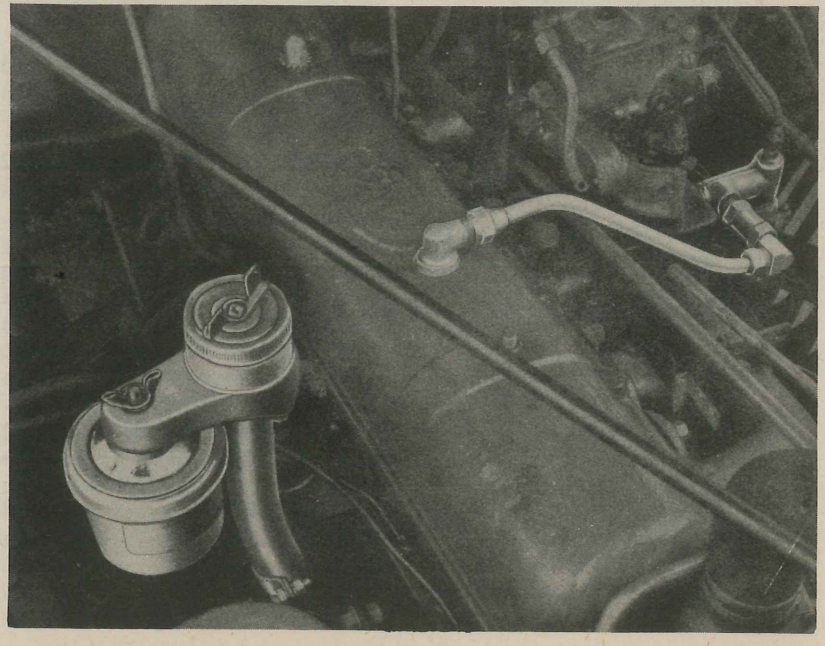


Figure 1. Tip up the hood and you get this view of the crankcase ventilating system. On the left: the crankcase breather and filler pipe. On the right: the tube from the valve cover to the ventilator valve to the intake manifold.

loaded. Then off to a supply dump. Another wait while unloading. Back again, go, wait, back, wait, wait, wait. This jerky operation never lets the engine get up a decent operating temperature. Now if you're good at seeing through engine blocks, you'll get the messy picture of water vapor being blown by the piston rings down into the crankcase. That's always happening. But since the engine's not up to normal operating temperatures, these vapors condense and form water when they touch cold metal in the crankcase. As water they start their dirty work of rusting and corroding those beautiful precision parts. More condensation drips down into the oil and eventually shows up as sludge, causing all those terrible things we mentioned in the last issue (November ARMY MOTORS, Pages 193-195).

Ever since the crankcase ventilating system was put on, the picture inside the engine became less gruesome. The system does the job of drawing off the water vapor before it can condense. Figure 2 shows you how. They're sucked out of the crankcase up to the valve chamber, through the ventilator valve, and over into the intake manifold. Cool sweet air pours into the crankcase through the breather and replaces the vapors vented out. That's the only way air is supposed to get in, so it is cleaned by a filter on the filler pipe before mixing with the moving parts. Air sneaking in through leaks in the valve cover, valve push-rod covers, or other places in the crankcase comes in loaded with dust and other corruption. Leaks in the system are bad for another reason. The ventilating system pulls in air through them instead of pulling out the vapors from the crankcase. You can see that the ventilating system can't do a good job unless the engine's sealed as tight as a Nazi's future.

How good a job the system does also depends on that little ventilator valve on the side of the manifold. The valve controls the amount of blowby that will be pulled out of the crankcase when

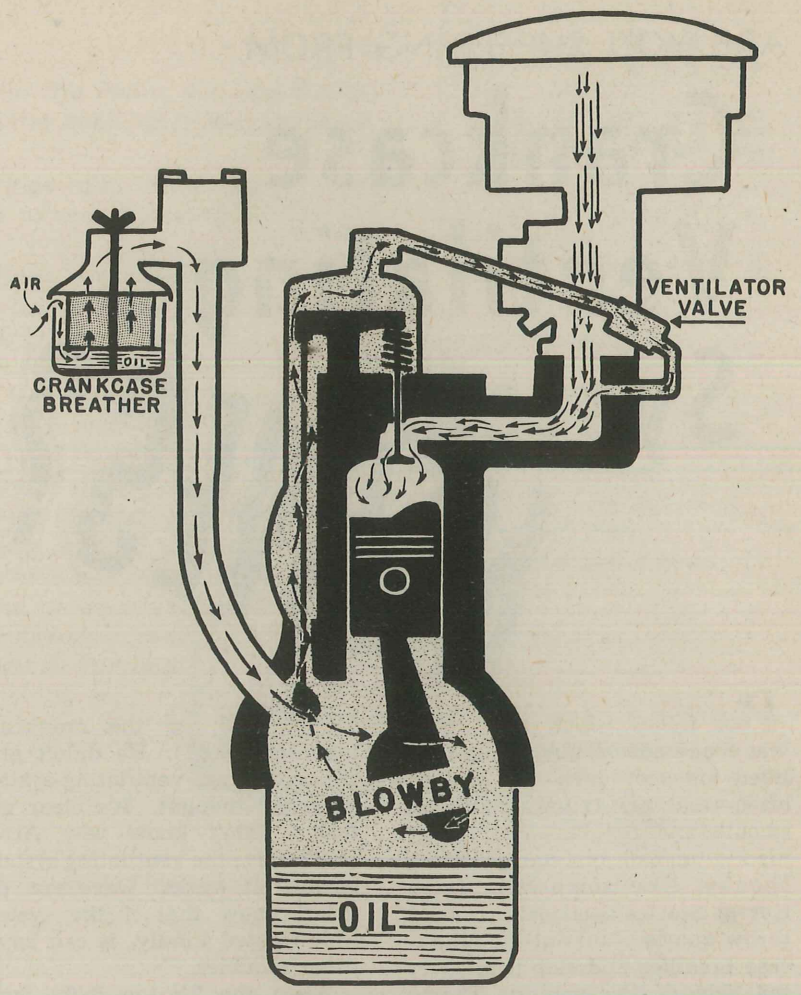


Figure 2. We sliced open the engine right smack in the middle of the intake stroke. The ventilating system's going full blast, drawing the blowby and air up out of the crankcase and into the intake manifold.

the engine's running. This valve in turn is controlled by the vacuum in the manifold.

When the engine's idling and the vacuum in the manifold is **strongest,** the valve stays **closed.** Just a fine sliver of air from the crankcase is pulled through the valve into the manifold. There isn't much ventilating to be done anyway when the engine's idling. Not much blowby is coming down past the rings into the crankcase. It's another story when the engine is at **full throttle.** Then the vacuum in the manifold is at its **weakest.** The crankcase is stuffed full of blowby. That's when the ventilating valve opens widest to take out as much of the blowby as it can. So no matter how you run your 2½-ton truck, the ventilating system gives you a sweet crankcase. And that spells a healthier engine.

It's only when something goes wrong with the crankcase ventilating system that the truck gets sick and starts to vomit oil out the breather, or to sputter and die out. Take the first one, where the

ENGINE THROWS OIL

It usually shows up when the truck's been on a tough pull, like up a cliff. The engine's in low and revving for all she's worth. You inch up to the top of the hill . . . whoosh, you're over and flying down the other side. Your foot eases off the gas. Just then you begin to see streams of oil trickle out under the hood onto the top

of the cowl. A couple quarts have let go out the crankcase breather.

Any one of four things (or a combination) could cause the flying oil. 1, Ventilator valve troubles, like a clogged valve, or an incorrect spring tension; 2, overfilling the crankcase; 3, overspeeding; and 4, excessive blowby.

1. A clogged ventilator valve shows up best on a tough pull. It really shines. There's plenty of blowby and plenty of work for the ventilating valve. All during the hard pull the valve **should be** wide open. If it's clogged, the blowby doesn't get pulled out by the system. It stays in the crankcase and builds up pressure. When you release your foot from the gas . . . look out! The pressure in the crankcase can't get out—remember that the valve closes when you take your foot off the gas and let the engine idle. So the blowby pressure takes the other way out—up through the breather tearing pints of oil out along with it.

Servicing the valve can save you this fate. The vehicle TM's call for taking the valve apart, dunking the parts in solvent, and blowing out the dirt with an air hose every 6000 miles. That's the official rule of thumb. You may find the valve gets clogged up sooner—say at 3000 miles. Hop to it. If after dunking, etc., you can't see through the valve—it's still clogged. Get a 1/16" drill. Hold it between your thumb and forefinger and twirl it around in the passage.

Even some clean valves can cause trouble. Especially when one of our inventin' mechanics gets to fooling around with the spring. He'll try s-t-r-e-t-c-hing it, or snipping off a few coils to get more draw or less draw from the system. But fellow, that spring's been engineered for a specific job. Changing it won't let the valve open at just the right time or close at just the right time. You won't get best ventilating efficiency. The spring that came from the factory is O. K. We'll vouch for it.

(Ed. Note—Back in the August issue—page 133—Connie Rodd gave her blessing to cutting one-half coil off the spring in the ventilator valve. Since then our sources all around have made further tests. Everybody agrees now not to do any cutting on the spring.)

2. Overfilling the crankcase is a good way to get the oil whooped out. Normally there's lots of circulation and agitation of the oil as the truck drives. Too much oil invites too much agitation. So when you get an extra dose of blowby in the crankcase and the pressure starts to go out the breather, it's more tempted to take the foam and whipped oil out with it. The remedy is to fill your crankcase **exactly** FULL. Even an ⅛" over the FULL mark is overfilling! Park your truck on level ground and give the oil a chance to run down for 5 or 10 minutes before you take a reading on the dipstick. (Or check the level before operation.) That's the accurate way. You may notice the oil pan has a new profile on some of the recent GMC 2½-ton trucks. It's a deeper pan (Figure 3).

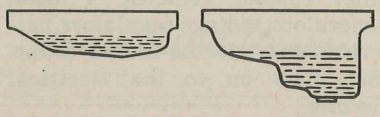


Figure 3. Ike and Mike, the two oil pans, fit the crankcase of the 2½-ton GMC. The dead pan on the left is on the older model trucks. The flashy new one (right) drops the oil level way down out of sight, far away from the crankshaft.

This new pan when FULL has an oil level nearly as low as the old oil pan did when EMPTY! Notice the extra space between the crankshaft and the oil. And so less agitation, and less chance of the oil whipping out. The new pan is being changed in production only. About the best you can do with the old pan is to keep an extra close watch on the oil level. Fill it exactly to the FULL mark and not an eyedropper over.

3. Overspeeding has the same effect as overfilling. Even though the oil's no higher than the FULL mark, when you run the vehicle faster than the Road Speed Plate says, you're setting up a violent agitation in the crankcase. All it takes then is a little blowby pressure in the crankcase, and blooie! the oil heaves. Go only as fast as the Road Speed Plate tells you for each gear. On level ground you shouldn't be able to go any faster than that. The governor won't let you. But on downgrades—it's a different story. Here the weight of the 2½-ton truck grabs hold and starts to roll the truck ahead. The governor steps out of the picture because the engine isn't controlling the speed any more. **The wheels are driving the engine.** Faster and faster . . . the engine whirrs around something fierce. The RPM'S go up and the engine's overspeeding. Things like this start to happen—the bearings go, they can't stand up under the super speed—the oil in the crankcase gets whipped into a frenzy and may go shooting out the crankcase breather. A little sense will stop this from happening to you. Follow this: Use the **same** gear **going down** a hill that you'd pick out to **climb** that **same hill.** The gear you select should hold the truck down to the figures on the Road Speed Caution plate for the gear you're in (Figure 4) when helped a little by applying the brakes off and on. That's the

(Continued on page 250)

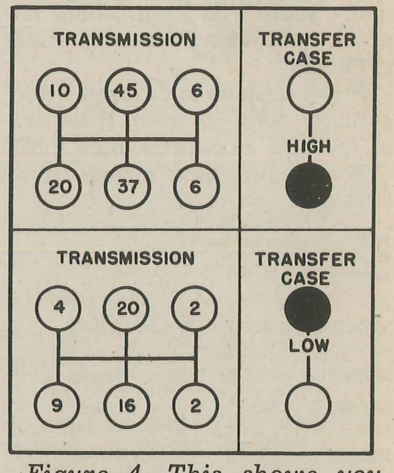


Figure 4. This shows you the right speed for the right gears. Keep your speed down to the numbers and your conscience won't accuse you of overspeeding.

Plated Wheel Cylinders

I got a warm feeling all over as I read a new GMC service bulletin, explaining that the **whole outer surface** of the brake wheel-cylinders, end-covers and adjusting-screws on 2½-ton GM's in current production are being plated to prevent rust. Up until now, only the end covers and adjusting screws got the plating.

This may be the answer to those many souls who keep telling me about end covers freezing to wheel cylinders.

If you're slave to a frozen wheel cylinder, why not swap it for one of the new zinc-dichromate jobs?

The manufacturer's parts numbers are:

Previous Part No.	Zinc-di-chromated Part No.	Description
5450553	5451214	Rear Brake Wheel Cylinder Assembly
5450619	5451212	Front Brake Wheel Cylinder Assembly
5300892	5451215	Rear Wheel Cylinder Only
5300888	5300888	Rear Wheel Cylinder End Cover
5300922	5300922	Rear Wheel Cylinder Adjusting Screw
5450620	5451213	Front Wheel Cylinder Only
1074909	1074909	Front Wheel Cylinder End Cover
1074915	1074915	Front Wheel Cylinder Adjusting Screw

Bouquet Department

Of the stacks of letters I've received in the past year or so, **almost none** have reported any trouble in the electrical systems of tanks, gun motor carriages, and other combat vehicles. I mean generators, voltage regulators, batteries, and all the other things that hook on to the electrical circuits.

That's an amazing record. I can't tell whether the factories are building them perfect, or you're doing such a swell preventive maintenance job on them that they never go wrong.

But somebody deserves a big, luscious kiss.

New! Tables of Ordnance Publications

Wanna tailor-made list of all the publications **your** outfit needs for maintenance reference on its automotive and other Ordnance materiel?

Raritan Arsenal has begun publishing such lists under the title of Tables of Ordnance Publications (T/OP) and is distributing them through regional Ordnance Publications Depots. Each T/OP bears the same number as the T/O or T/O&E of the organization it fits.

Eventually they hope to have T/OP's available for **all** units using Ordnance Materiel but those in the first batch are for Ordnance units, namely—

T/OP 9-7. Ord. Medium Maintenance Co.

T/OP 9-9. Ord. Heavy Maintenance Co.

T/OP 9-17. Ord. Ammunition Co.

T/OP 9-127. Ord. Medium Automotive Maintenance Co.

T/OP 9-177. Ord. Bomb Disposal Co.

T/OP 9-187 Ord. Evacuation Co.

T/OP 9-317. Ord. Base Armored Veh. Maintenance Co.

T/OP 9-318. Ord. Base Arty. & Fire Control Maintenance Co.

T/OP 9-319. Ord. Base Small Arms Maintenance Co.

T/OP 9-417. Ord. Supply & Maintenance Co. (Aviation)

Towing Pintles

The towing pintle on the tail end of light and medium tanks and most of the full-track gun carriages is **not** intended to tow tanks or any other vehicles that weight more than 5 tons. If you try it, you're likely to lose the towed vehicle and part of the towing pintle.

The real reason for the towing pintle is to pull the M8 ammunition trailer.

So if you have to do a towing job and the job you're pulling weighs more than 5 tons (or if you don't know its weight)—use the towing shackles.

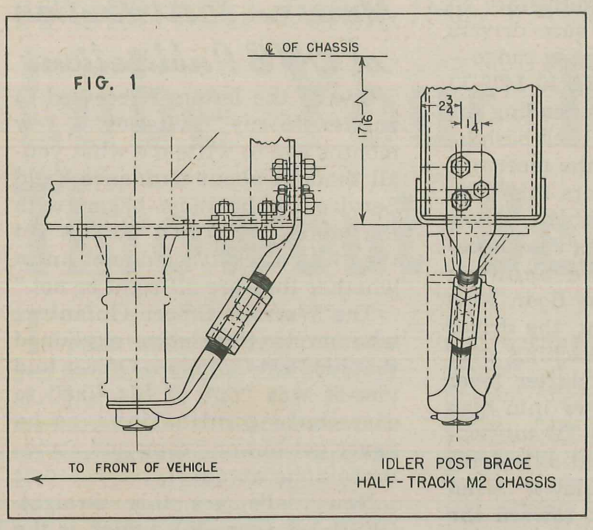
Band-Track Chains for Half-Tracks

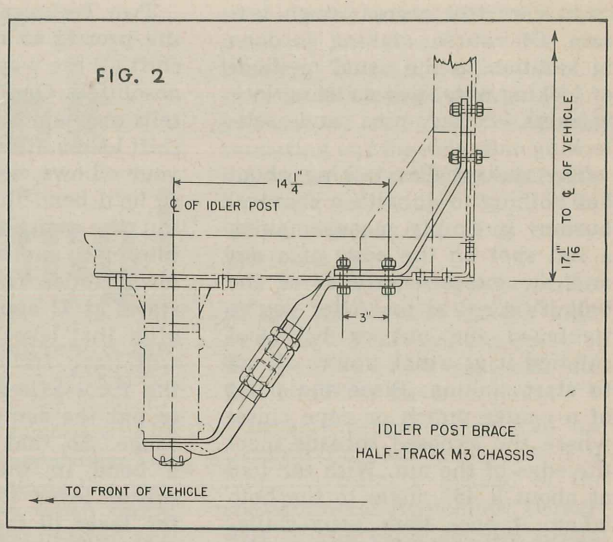
If you half-trackers ever get stuck in mud or snow, don't say that I didn't tell you band-track chains for half tracks are now available at the Rossford Ordnance Depot, Toledo, Ohio. The Ordnance piece mark number for the chains and appliers (used to install the chains) are:

Chains, Band Track C100750
Appliers, Chain Band Track B209262

Don't forget you need 2 chains and 2 appliers for each vehicle.

There are two things you'll have





to look for before installing the chains: 1) Grouser lugs on the band tracks, and 2) position of the idler-post braces.

The old-style band tracks (C55432) have grouser lugs which must be removed before installing the chains. You have your choice of grinding or cutting the lugs off.

The later-style band tracks (C100400) are manufactured without lugs, so when you get these you won't have to worry about removing the lugs.

Gaze upon Figures 1 and 2. If your half-tracks have either of these types of idler-post braces—it's O. K. to install the chains. If you have another type post brace, get your vehicle modified like FSMWO G-102—W38 says.

Turret Lock

Before you replace the turret traversing lock (C91562) on the M8 howitzer motor carriage because the casting has spread, you better reinforce it or you'll be having the same trouble all over again. The early model castings aren't rigid enough to take the slamming around they get—so the thing to do is add some new metal.

Dig a piece of 3/16" steel out of your scrap pile and shape it down to 1-¾" x 2⅝". Drill a ⅜" hole as shown at right so you can remove the lock-bolt pin when you've got to take the lock apart. Now, get this. Put a 1/16" shim under the two long sides of the plate and **braze** all three sides of the plate to the casting.

I don't have to **tell** you not to weld it—the lock housing is cast iron.

M8's now in production are getting an improved type turret lock, (C114259) so if you get any of these no fix is needed.

Hood Side Panels

Here's something so obvious that lots of guys don't know it. The engine hood-side-panels are put on your vehicles for more reasons than to keep the engine in the dark. The main purpose is to form an air tunnel that directs a cooling blast of air past the engine and accessories.

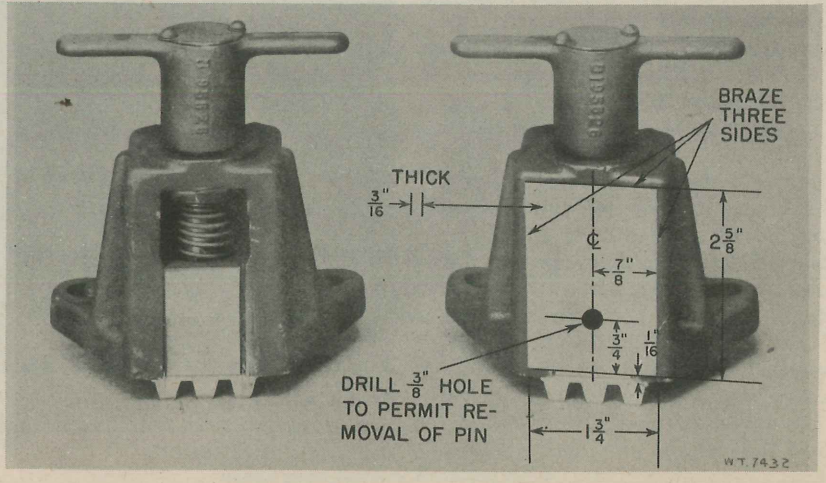
Remove these side panels and you ruin this planned air-circuit. Air drawn through the radiator by the fan flies directly out of the engine compartment without doing half its job of cooling. Result—raised engine temperature.

If your engine is overheating, find the real cause—and fix it.

Don't remove the hood side-panels.

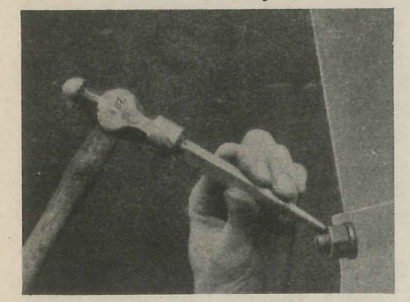
Staking Nuts and Bolts

According to TB 700-93 it's O. K. for you to stake front and bogie suspension nuts and bolts on half-tracks and scout cars. This will save you from having to tighten these nuts and bolts each time your half-tracks or



scout cars trot across rough terrain. Of course, staking is done in **addition** to the usual methods of locking nuts such as using lock washers, cotter pins and self-locking nuts.

The staking I'm talking about has nothing to do with a charcoal burner. It simply means making a flat spot on the edge of a nut and the exposed threads of the bolt it's screwed on. After you've tightened the nut or bolt and safetied it as usual, you're all set to start staking. Place the point of a center punch or cape chisel where the exposed threads meet the edge of the nut. With the tool at about a 45° angle to the bolt, wham it once with your shillelagh. Now don't go crazy and beat the threads into a pulp. Remember that somebody (and it may be you) will want to remove the nut or bolt some day. All it takes it a small flat spot to keep the nut or bolt from loosening.



Shifting on the 7½-Ton 6x6

Those drivers of the 7½-ton Mack Prime Mover who've been walking around with bloody elbows are due for a better break. They've been hitting the fire extinguisher on the rear wall of the cab when shifting the range gear-shifter lever (center one of the three, right of the driver's seat) into low. After bashing their elbows a few times, the drivers have become sensitive and they've shifted by just moving the lever back till their elbow cleared the extinguisher. This often meant the gears wouldn't completely mesh. Later, while driving, the low range walked out, making nice new scrap out of old workable gears. The driver noticed a noisy thump, and the vehicle stopped.

Two Technical Bulletins are on the presses to make sure drivers shift all the way into low range—absolutely. One TB (TB 10-1479-1) tells mechanics about bending the shift levers. If you've been bashing your elbows, needle the mechanic so he'll bend the levers this way: Put the range gear-shifter lever into high, and bend as shown below. Notice that the bending starts at 7" above the floor. Now after that lever's bent, the driver will have trouble reaching over the front-axle-drive shifter lever to put the center lever into high range. So, that same TB suggests a bend in the front-axle-drive shifter lever (fig. below). **Bend the lever to the left, toward the driver's seat,** two inches.

The other Technical Bulletin on the 7½-ton job helps hammer home the correct way to shift into low (TB 814-2). Just before getting into tough territory, shift into front drive. Put the main transmission into first or second—whichever is needed. Put the range gear-shifter lever into low. Now the caution I've been working up to: BE SURE THE LOW RANGE GEAR IS **FULLY MESHED** BEFORE LETTING THE CLUTCH OUT.

More on Distribution of OFS Publications

One of the letters I received in answer to my invitation a few months ago to write me what you-all thought about Ordnance Field Service Publications began with the words: "No! We do not get them! As a result we do not know whether they are all right or not."

The Warrant Officer (Infantry) who wrote this letter explained that his Post Ordnance Officer told him it was "out of his line" to distribute publications, as he never got but one copy and sometimes none at all.

Now, let's get this straight. OFSB 1-8 (par. 36), which is the Chief of Ordnance's official order on distribution of Ordnance publications, and is backed up by WD Circular 248 of the 1943 series, provides for distribution through Ordnance Officers to those non-Ordnance outfits that want them. Generally, it's the Unit Ordnance Officer's job when there is a Unit Ordnance Officer, otherwise the Post Ordnance Officer. Ordnance outfits, of course, get direct distribution.

I don't suppose there are many

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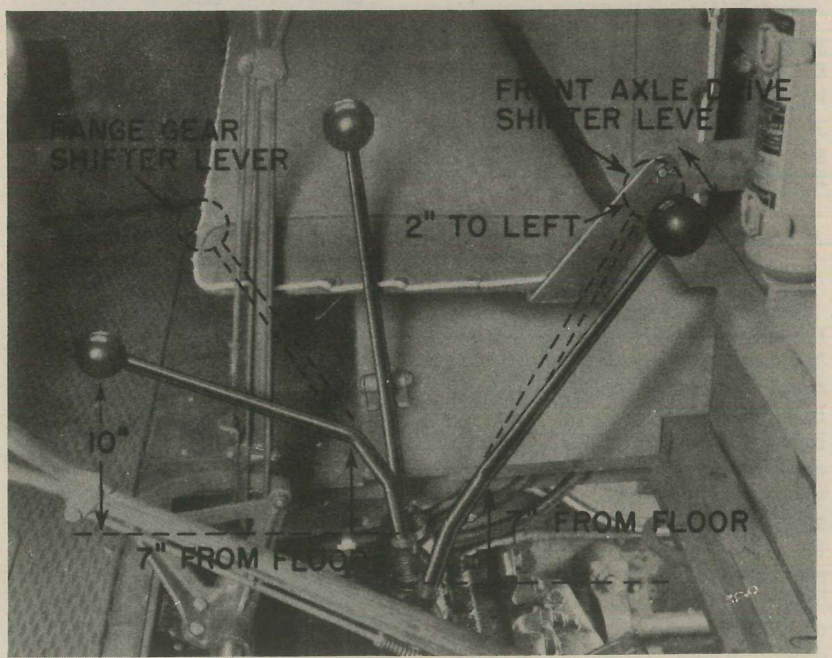


The scene after the crime. The bloodstains have been carefully removed from the fire extinguisher and the mechanic has bent the two shift levers.

BEFORE YOU TURN THIS PAGE—

Lube Your Tank Throwout Bearing!

If your outfit has any tanks or gun motor carriages with the type clutch shown in Fig. 1 (M4, M4A1, medium tanks; M7, Howitzer motor carriage; gun motor carriage M12; cargo carrier M30), you better lubricate the clutch throwout bearing **right away.** Don't go looking it up on the lube chart—it ain't there. The grease in this bearing was intended to last until the time of engine overhaul without you squirting any in it. But because "there's many a slip twixt the cup and the lip" a lot of them got out without their initial load of grease. So it's up to you to get the grease in there—just once. After that you can forget about them.

The first thing to do is get in touch with your Ordnance officer and arrange to borrow a few pounds of Grease, Lubricating, Special (Item Stock No. K001-10-34890). About five pounds will be plenty for 18 or 20 bearings. The throwout bearing needs this special grease because when under load, the bearing gets plenty hot. This special grease won't melt and run at high temperatures.

Next, clean out your regular grease gun and fill it with the special grease. Before you use the gun, pump it until you see the special stuff oozing out. This will mean that the grease hose is cleared of the old grease. Open the engine air-inlet cover behind the turret, reach down and remove the plug shown in Fig. 2. Install a grease fitting and you're all set to shoot the works. While you're pumping the grease, revolve the bearing. This allows the bearing to get a full load of grease. When you see or can feel the grease squeezing out the side of the bearing facing the propeller shaft, the bearing's got enough. Remove the fitting and put the plug back—the job is done.

If you find that it's **impossible** to get the special grease right away and your vehicles **have** to be operated—then you can call this situation an emergency.

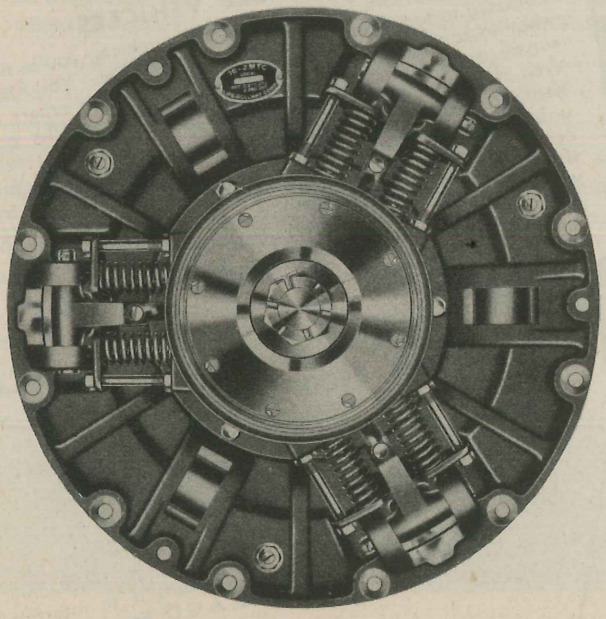
In an emergency you can use General Purpose grease No. 1 to lube the bearing instead of the special grease. Remember, though, **only if you can't get the special grease.** Though general purpose grease is ordinarily no good for this job, because it melts at high temperature and will run out—it's better than no grease at all. If you have to use G. P. grease make sure you regrease the bearings with the special stuff as soon as possible. Otherwise, the throwout bearing will grind itself into a fine dust.

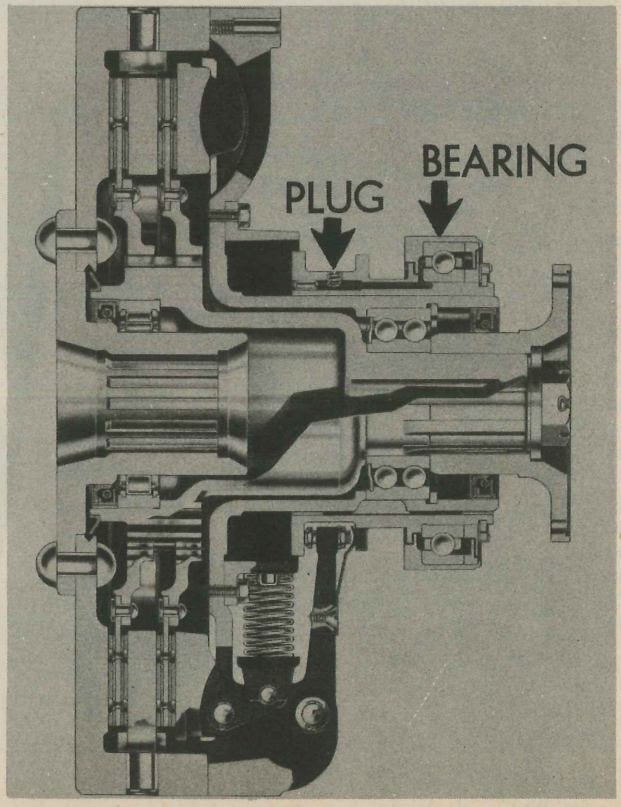
Incidentally, if your vehicles don't have the throwout bearing we're talking about, you better let

(Continued on page 256)

Fig. 1 (Below) — Parts-man's-eyeview of the clutch in question.

Fig. 2 (Right)—Arrows point to plug and bearing that need attention.





It's the LAW!

—if the latest version of AR 850-15 says so

What's the basic law governing all motor vehicle operation, maintenance and supply?

The **new** AR 850-15, teacher?

Right, Murphy—go straight to the head of the class.

Field Manuals, Technical Manuals, Ordnance Field Service Publications, and your own local directives are all built on that foundation. If AR 850-15 changes, they change. They're nothing more than detailed interpretations and explanations of the general principles set forth in the AR.

The mere changing of a couple of words in the AR, or the adding of a sentence, may be of **great** significance. For instance, as the editorial in the November ARMY MOTORS pointed out, four slight changes in the regulations are proof that the pressure for **more and better preventive maintenance** is on.

We'd now like to point out a few other far-reaching phrases from the latest 850-15, dated 28 August 1943, which should be in your binder of AR's by now.

ONE DRIVER, ONE VEHICLE

The latest 850-15 really puts the screws on Commanding Officers to assign each vehicle to a regular driver. Failure to comply with the spirit of this regulation, says the AR, will be considered "vehicle abuse." It goes on to explain that responsibility for preventing vehicle abuse rests with the CO, and that such abuse is "cause for disciplinary action." The regulation doesn't say who gets disciplined. (Par. 14-16)

ECHELONS OF MAINTENANCE

A smart lawyer can find a loophole in practically any law, and it didn't take the guardhouse lawyers long to find the phrase "as a minimum" in the explanation of duties of the echelons in the **old** (1942) issue of 850-15. This, they swore, gave each echelon plenty of authority for doing higher-echelon work to its heart's content. "At least," they'd say, "the AR don't say we **can't**."

The 1943 edition of 850-15 turns things around the other way. The duties of each echelon are now listed without those three words, "as a minimum." Added, however, under the duties of each echelon, is a directive to handle the overflow of work from lower echelons.

Added up, it means: "Do your own job better within the limits of your parts, time, tools, tactical situation and personnel. If the echelon below you is having a tough time, give them a lift, but don't go around hogging jobs that higher echelons are better equipped to handle." (Par. 25c)

PARTS AND EQUIPMENT SUPPLY

Seems as though somebody that helped to rewrite this regulation thinks somebody else is being too stiffnecked about sticking to the supply channels, come hell or high water. There was a word "normally" in the description of supply procedures in the old regulations, but now they've put it in italic letters ***like this*** so you wouldn't miss it. Meaning: That channels are to be followed as long as they help you, but when things get really desperate, you can skip channels and legally get your supplies by other means. (Par. 33a)

When you get a part by direct exchange, you don't have to fill out any certificate if the part is obviously unserviceable through fair wear and tear. If you can't present it for exchange, or it isn't a clearcut case of fair-wear-and-tear, your CO has to sign one of the following certificates, whichever fits: "The part, assembly, or tool listed hereon was lost or rendered unserviceable through fair wear and tear," or "Responsibility is being determined in accordance with existing regulations. Replacement will not result in assemblies, parts, or tools in excess of authorized allowances." Again, no waiting for a board of survey. Par. 33c)

Don't hoard parts. It gyps the other guy who can't get them, and besides, the AR says: "Authorized stocks are for use and need not be at maximum authorized stock level at all times." In short, if you don't need it, don't ask for it. (Par. 33c)

UNSERVICEABLE VEHICLES

When you turn in an unserviceable vehicle, you're now supposed to tag it with why it's not fit to drive. You know what to say. And you don't have to wait for a report of survey any more to turn in an unserviceable vehicle; not even if the reason for unserviceability obviously isn't fair wear and tear. A certificate stating "Responsibility for unserviceability and for shortages is being determined in accordance with existing regulations" will be enough. If the cause of unserviceability is obviously fair wear and tear, you don't need any certificate at all. Also, you don't need any certificates in an active theater of operations. (Par. 32e)

FORMS, RECORDS, AND REPORTS

That Accident Report Form 26A that was listed in Changes No. 3 to the old 850-15 was all a mistake. The required Accident Report in the new AR is Form 26, same as it always was. (Par. 37c)

The Locator and Inventory Control Card (WD, O.O. Form 7356) is now specified as for tactical units only. Looks as though the big shots don't want it to interfere with the big Stock Record Card, WD, A.G.O. Form No. 421. (Par. 37n)

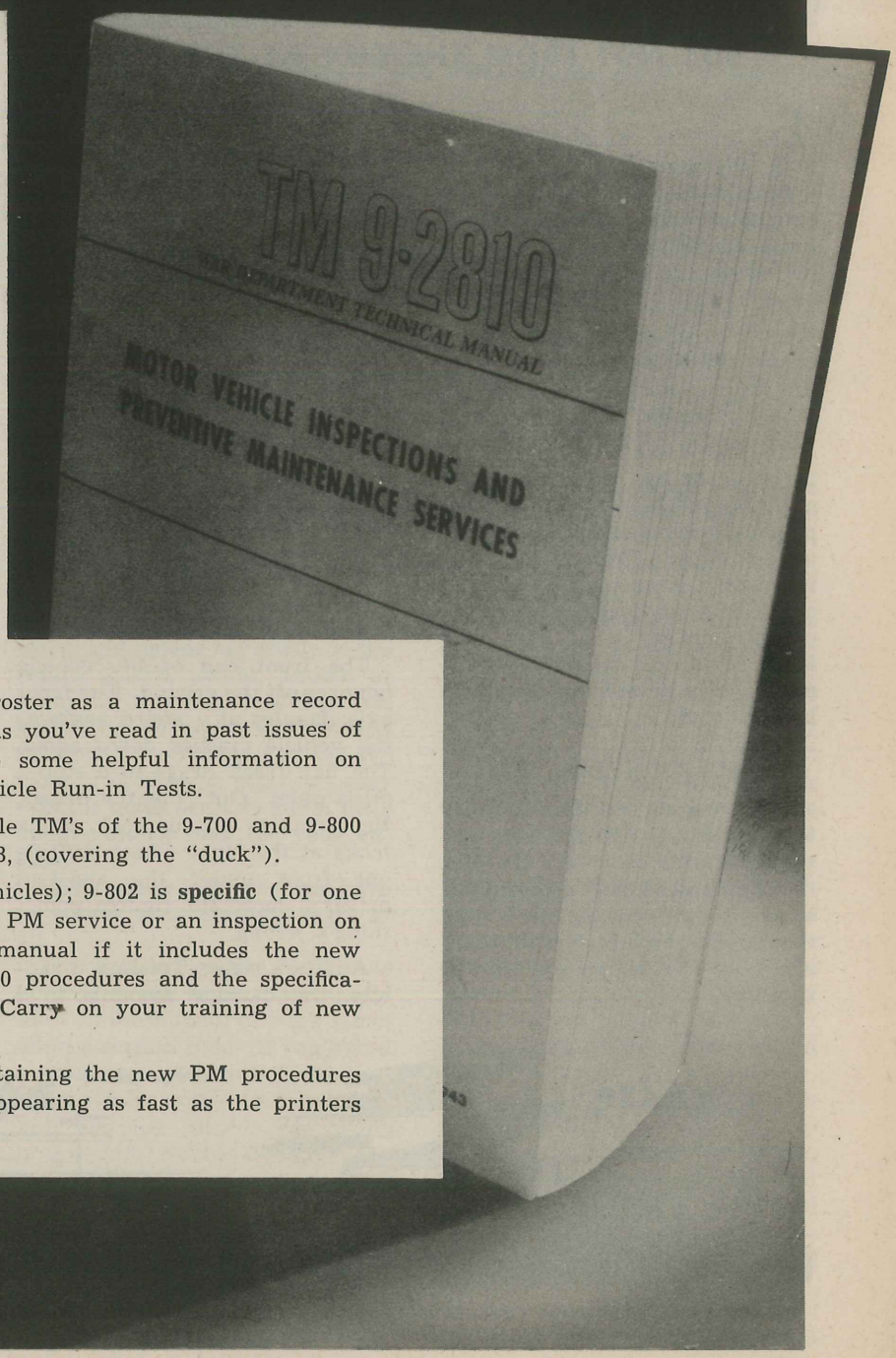
Just Out!

Here it is, men!

It's official—it's in writing—and best of all, it's in print!

TM 9-2810 has been a long time coming—but it's been worth waiting for. A copy is authorized for every company and similar unit.

This manual fully explains how to use the new Driver's Trip Ticket and Preventive Maintenance Record (WD Form 48) and the Worksheets (frequently referred to as the "Preventive Maintenance Service and Technical Inspection Worksheets, WD AGO Forms 461, 462, and 463"). Each item listed is explained in detail—what to do on the 1000-mile and 6000-mile PM Services and on Technical Inspections. The driver's daily PM duties are also given in full.



Directions for using the duty roster as a maintenance record are included (practically the same as you've read in past issues of ARMY MOTORS), and there's also some helpful information on Command Inspections and New Vehicle Run-in Tests.

Here's how it fits in with vehicle TM's of the 9-700 and 9-800 series, such as TM 9-802, 1 Sept. 1943, (covering the "duck").

TM 9-2810 is **general** (for all vehicles); 9-802 is **specific** (for one type of vehicle only). When doing a PM service or an inspection on a specific vehicle, use the vehicle manual if it includes the new procedures; otherwise, use TM 9-2810 procedures and the specifications from the old vehicle manual. Carry on your training of new men along the same plan.

About 8 or 10 vehicle TM's containing the new PM procedures are now available, and others are appearing as fast as the printers can get them ready.

MEET YOUR HALF-TRACK HALF-WAY!

THAT BUGGY'S BUILT TO TAKE A BEATING —BUT NOT FROM THE GUY AT THE WHEEL

The thrill of charging across a field; the wide-open roar of unleashed horsepower; of smashing through ditches and over abutments can be yours—if you drive a half-track.

But under treatment like that, your once-powerful fighting machine will be waiting its turn at the 3rd-echelon shop—waiting to have its torn-out innards replaced.

The half-track was designed as a cross-country, rough-and-tough multiple-purpose vehicle. It rushes men and equipment safely through a storm of gun fire and shrapnel; it mounts weapons that'll clean out enemy emplacements or stop charging tanks; it can fight off a Focke-Wulf or a Jap Zero—**but it can't beat a driver that hammers hell out of it!**

SPEED, CONTROL, FEEL

When we say speeding is a way to hammer a half-track into salvage material, don't get the idea that half-tracks can't cruise along at 45 without breaking up. It's not the speed **alone** that does the damage . . . it's where you do the **speeding.**

When you're pursuing the enemy or delivering the goods over a hard-surface road, you can roll at 40 or 45. But if you drive over gouged-out fields at wide-open throttle, the odds are you won't arrive at all.

If you were a worm, sunning yourself at the bottom of a crater 2 feet deep as a wild-eyed half-tracker drives his vehicle over you at a high speed—what would you see?

You'd see 8 to 10 tons of half-track rushing along, the front wheels and band tracks on a fairly even keel. Then suddenly the right front wheel drops into the 2-foot hole. Wham!

The front end of the vehicle bounces off the ground. The front axle dangles at a weird angle as the vehicle crashes down again. The half-track drags to a stop—all is quiet. Out pops the driver. He wrinkles up his face as he looks at the right wheel sticking out from under the assistant driver's door. He figures something's wrong.

And he's right. Totaling it rapidly, the damage amounts to a broken right front spring, bent propeller shaft, broken transfer case.

Here's what happened.

As the vehicle started to cross the hole, it was going so fast **the wheel never touched the bottom**—it didn't have time to drop that far into the hole (Fig. 1). Instead, is arced across and smashed against the opposite face of the crater (Fig. 2). It's the same as if the wheel rammed into a brick wall at 30 miles an hour. The front wheel was stopped dead by the edge of the hole, **but the other 8 to 10 tons of vehicle continued on at express speed.** Since the wheel and axle were stopped and the chassis kept driving on—something had to separate. In this case the main spring leaf parted ways—it broke as neat as the part in your hair. Once freed from the frame, the right side of the front axle slammed back, telescoping the propeller shaft into the transfer case. A once-powerful fighting machine now lies slumped on its side, broken, its gear-oil bleeding in a steady stream—all without cost to the enemy.

Why was this driver in such a hurry?

Were there 88 mm. shells buzzing at him? Was he being strafed by a Stuka? No, he was going no place in particular. He was sent

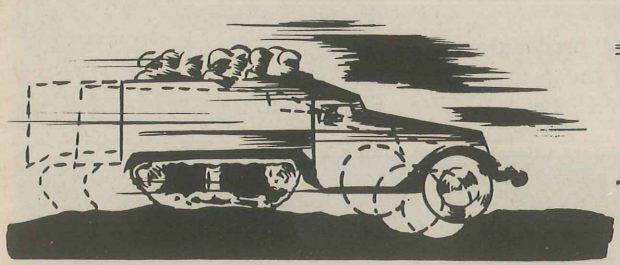


Fig. 1—As long as wheels are made round, roll 'em through the ruts.

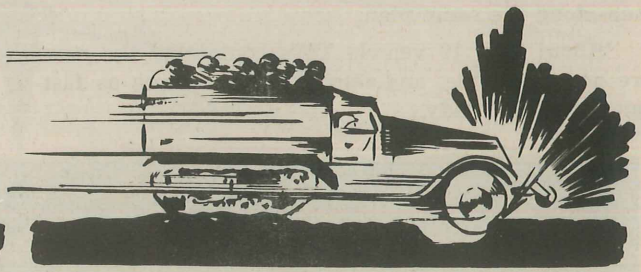


Fig. 2—Smashing into ruts is thrilling . . . but it plays hell with the front end.

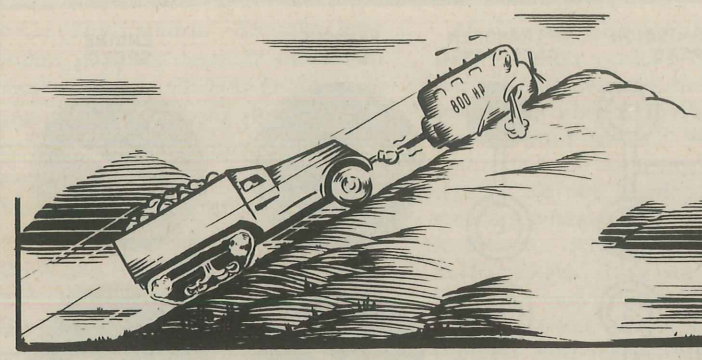


Fig. 3.—Before you try to lug that next 45% grade in high, better get an 800 hp engine.

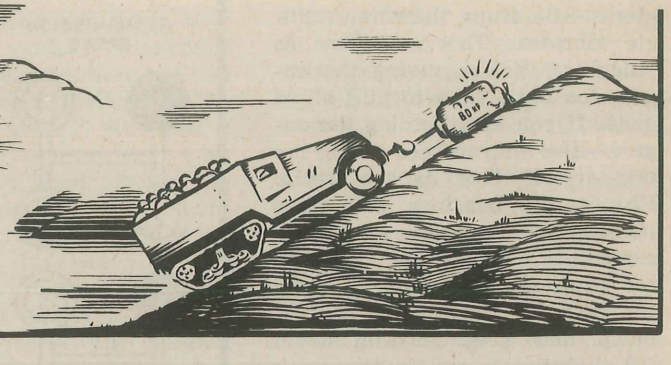


Fig 4—If you can't get one, shift down and you'll make it with the engine you've got.

out to practice driving over rough terrain and was practicing what he though was good half-track driving.

Good half-trackers don't drive this way—even under fire. They may **seem** to be blindly crashing their vehicles through obstacles. Actually they "feel" the vehicle through.

This means having the same control over your half-track as you have over your own body. Remember the last time you hot-footed across an open field? Do you recall how automatically you slowed up before you scrambled down the side of the ravine? Slowed **just enough** to avoid pitching yourself headlong down and breaking your neck. Or how you bent your body slightly forward and brought your back muscles into play as you ran up the other side. You were matching the actions of your legs and body to fit the terrain you were running over—and you weren't even conscious of doing it. Your legs and arms took care of themselves.

The control or "feel" you have over your body is the same as the feel a good half-tracker has for his vehicle as he maneuvers it over cross-country driving. He senses if the half-track is going too fast or too slow before it hits a rut—then corrects the speed. As the vehicle is roaring up a hill he senses when to shift. The rapid falling off of vehicle speed, the weakening of the engine's roar, the vibration of the body or other parts as the engine revs fall off—all tell him when to shift. When he wants high speed, he reaches it without overspeeding the engine. He's constantly using every driving control the vehicle has, to adjust the vehicle's operation to the ever-changing terrain.

SHIFTING GEARS

Of all the driving controls on a half-track, the gearshift lever is probably the one that gives the new half-tracker the most nightmares. Until he learns how to use it, he doesn't have that "feel" for his vehicle. The big problem is, when to shift gears. At 10 miles an hour? At 22 miles an hour? At 2038 RPM's? The new driver stares and listens nervously to the engine knock, pound, scream or grunt as the result of his last shift. The old-timers tell him that shifting is easy once you get the hang of it. They're right, it's easy **—but it takes practice and a little understanding love for your engine.**

First, figure out why we have to bother with shifting gears at all.

The gasoline engine is like we humans in one respect; each has a limit on the amount of work it can do in a certain time. If you asked a company yardbird to unload some 500-lb. crates by hand he'd pull and lift till his gee string broke—but wouldn't budge the crates. But if you smartened up and told the poor guy to open the crates and unload the packages inside—50 lbs. at a time—he'd sail through the job, even though the total job would take him longer. The engine that powers your half-track is just like the yardbird. It can't pull a load that's too big for it—all at once. But the engine **can** get the job done of you let it do the work a little at a time.

When you shift to lower gears you're allowing the engine to pull the load in small packages instead of forcing it to do the whole job at once. The lower you shift down, the smaller the packages of work become.

For example: Engineers have figured it would take over an 800 horsepower engine to pull a 10-ton half-track up a 45% grade in high gear at 30 miles an hour (Fig 3). It's no secret that our half-tracks don't have an 800 horsepower engine. Then how can we expect it to pull up a 45% grade? It can't —at **30 miles an hour.** But by shifting to a lower gear you put the load on the engine in smaller quantities (which may require a pull of only 80 h. p.) See Fig. 4.

By the time the half-track reaches the top of the hill, the engine will have done the same amount of work as an 800-horsepower engine—but put it out at the rate of 80 horsepower. Naturally the trip will take ten times longer than if the engine could have developed 800 horsepower.

What's all that got to do with shifting gears?

Only this. The more canny you get in selecting the size of the load packages your engine has to pull —by shifting to the proper gear—the more work you can get out of the half-track.

When you start up a hill that's too steep for the gear ratio you're

in, the engine knocks, the tachometer needle drops, the whole vehicle vibrates. This is known as "lugging." You're giving the engine too big a load to pull all at once. If you keep forcing the engine—like the yardbird lifting the box—it will bust its gee string. Pistons and bearings will wear themselves down to a frazzle, sometimes even break. Learn to recognize the first signs of overloading the engine—then shift down and keep shifting down till the engine can do the work in small enough quantities without tearing itself apart.

When you're able to shift down at the exact moment the engine is overloaded, you'll discover that the half-track will take to rough terrain like an old pack mule. Through craters, ditches and ravines—nothing stops it. The engine will give out with a steady, healthy drone, hardly missing a beat as you shift up or down. At first you'll have to concentrate on shifting; after awhile, you'll discover the shifting is done entirely without thought. That's how it should be.

We've heard of some half-trackers who were so sold on downshifting that they even did it when rolling down long hills. After doing a beautiful job of driving a half-track up a tough hill, they'd shift to a lower gear, curl up in a comfortable position, and let the vehicle roll down the other side. This was proper, they said—it used the engine as a brake to slow downhill speed, thus saving the brakes.

Sure the vehicle speed is kept down and the brakes aren't used —but what's happening to the engine? It's clawing its innards out. Connecting rod bearings let go, pistons fly apart; in general the engine is wrecked.

Why? When the vehicle is in any of the lower gear ratios the engine is turning over anywhere

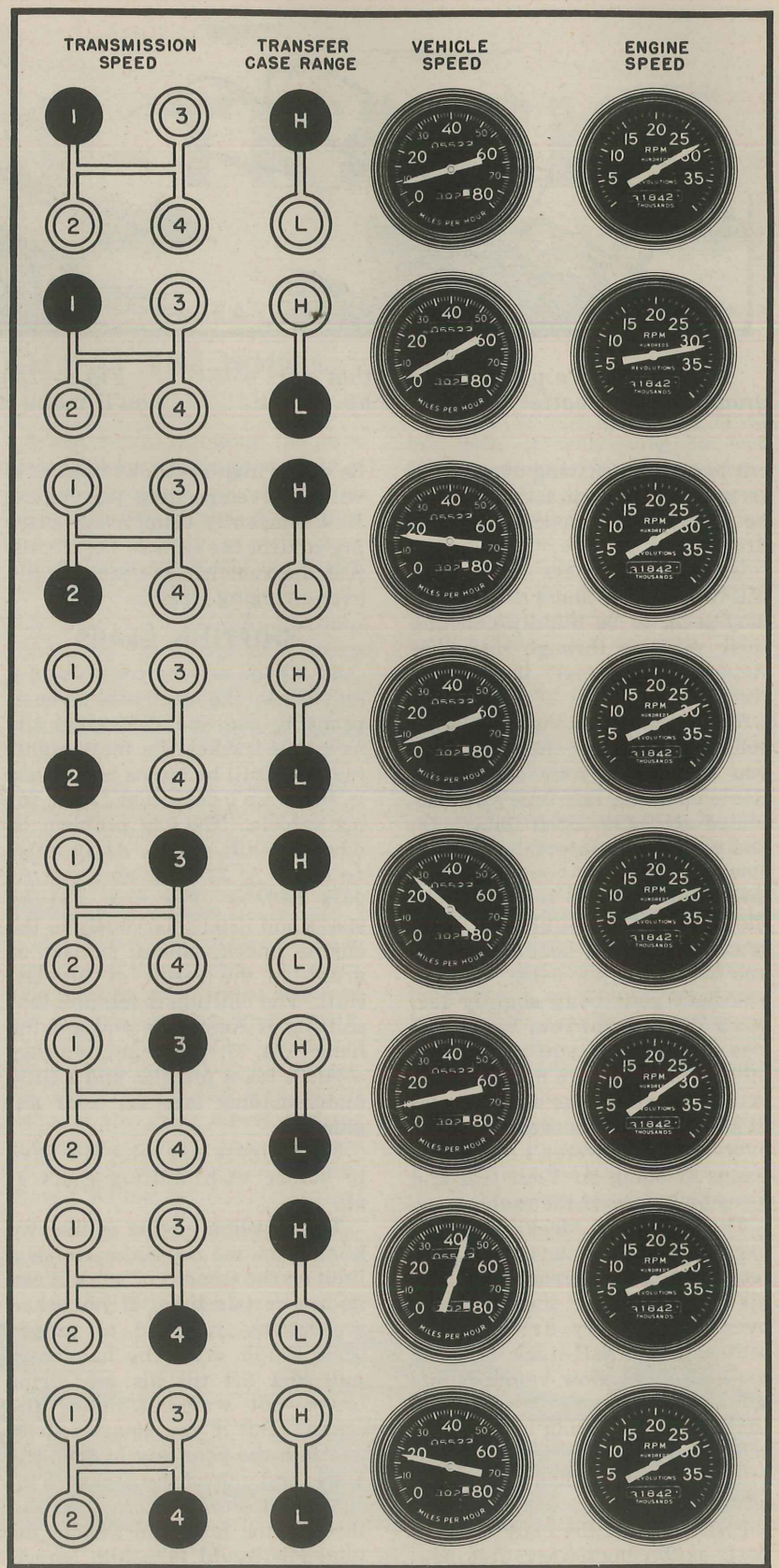


Fig. 5—Sure, any fool can rev the engine over these manufacturer's recommended maximum rpm's—but good drivers don't.

from 4 to 54 times to each single axle revolution. Exactly how much it turns depends on which gear you're in. This is O. K. when the engine is driving the axle. Because no matter how much gas you give it, the most the engine can rev up is around 3100. But when the axle is driving the engine, like when it's coasting downhill, the sky's the limit. The engine may be forced to rev up 4 or 5000 RPM's. Bearings and pistons designed to stand up under 3000 RPM's loads can't last when 4 or 5000 RPM's or higher loads are put on them.

It's O. K. to use the engine as a brake when going down steep hills, as long as you use the vehicle brakes to prevent the engine from going over recommended RPM's (Fig. 5).

STEERING

If you ask the old-timers how they get their vehicles cross-country without damage, they tell you something about "driving by the seat of your pants." We tried it and found the wear and tear a bit trying. So, we tried turning the steering wheel. To our amazement it turned. After watching some half-trackers driving into and through everything that happened to be in front of the vehicle, we thought half-tracks just couldn't be steered. Well, they can. And many of the obstacles you come across in rough terrain **can** be avoided. Of course there are times when you can't miss the ditch, log or what-have-you. In these cases, steer the vehicle so that the **two** front wheels hit the obstacle at the same time. This distributes the shock to each front wheel and spring equally. With each spring taking part of the shock it has a better chance of coming through without busting up.

If you have any doubts about it, try this little stunt. Pick out a nice 10-foot wall. Jump off it, landing on one foot only. The telescoping effect on the landing leg should give you an idea what your springs take when you strike obstacles with only one wheel at a time.

Your half-track is a fighting machine, designed by hard-headed engineers. They've given it enough power and strength to drive cross-country as well as to ride the open highways. They can't provide it with drivers that will get the most out of it. That's up to you. Whenever you drive, practice the right way.

A good driver and a fighting vehicle is a combination that's tough to beat.

DRIVERS—HERE'S YOUR CHANCE TO MEET YOUR

Organizational Mechanic

Pick a strong-backed man, one who'd rather work than eat; stuff his head full of engines, transmissions, axles, brakes, electricity, hydraulics, carburetion; teach him how to use a ton or two of tools; have him learn to identify 15 or 20 thousand vehicle parts on sight; teach him to ignore the smell of his flesh cooking on a hot manifold; provide him with X-ray eyes to see through cast iron at a glance —and you have the makings of an **organizational mechanic.**

On top of that, make the underside of the truck his shop. Season him to keep that jeweler's touch while his fingers are freezing, or when it's so hot his eyes dry in their sockets. Finally, teach him how to use the Preventive Maintenance Work Sheets, and you have the finished product.

Tough job? Yes.

Possible?

Not only possible, but being done. There are thousands of these rough and tough mechanics overseas as well as in the United States. Guys who are keeping their vehicles running in spite of obstacles and problems that would stop lesser men. Maybe you're wondering . . .

WHY AN ORGANIZATIONAL MECHANIC

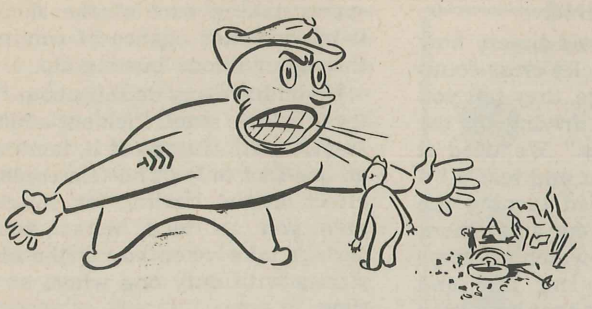
has to be so good when all you ever see him do is lube your truck or make a few adjustments or check over it once in awhile.

It's because the echelon system of maintenance fails if the organizational mechanic fails to do his job at any time or place.

That's a big failure for a little man.

Let's see how it's possible. When we're thinking about the echelon system of maintenance, there are only two types of outfits in the Army—the **fixers** and the **users.** The fixers are the Ordnance outfits—third, fourth, and fifth echelons. Their main job is to repair and rebuild equipment worn out or broken by the organizations that use it; jobs that take too much time or equipment for the using organizations to handle. The users are outfits like Quartermaster, Signal, Field Artillery, or Armored Command—first and second echelons. Each is trained in a specialty like supply or communication or in shooting. To carry out these specialties they have to use motor vehicles. That's why we've dubbed them the users.

You know whenever equipment is used, whether it's an electric shaver or a mechanical banana peeler, the guys using it have to service it, make certain small adjustments and inspections. When equipment gets these services "enough and on time," the need for fixing is prevented for a long time. That's why



your T/O has in it that cussing, but clear-headed little man—the organizational mechanic. His whole job is **to prevent the vehicles in his care from getting in a condition that requires fixing.** He keeps watch over his brood of vehicles like a sultan over his harem of sweet young things. He knows their weaknesses, their strong points, he curses and nurses them. Mistreat one of his vehicles and you'd better duck—fast. This may explain why your mechanic was hopping mad at you the time you forgot to check the oil level and nearly caused the bearings to throw. Or why he gave you the silent treatment when you failed to report no clutch-pedal clearance until the clutch started slipping. He knows that unless you keep up your end of the job, he's going to lose part of the brood. And who's in a better position to tell if you're doing your part of **preventing vehicle damage** than the mechanic?

JOE MECHANIC ALSO DOES PM

Along with occasionally slipping the needle to you, your organizational mechanic grabs each vehicle out of circulation every month (or every 1000 miles or 50 hours of operation) and gives them business you aren't equipped for. He casts his trained eye over the danger spots on your vehicle. He goes through them with the Preventive Maintenance Work Sheets. Of course he knows the inspection points by heart so it doesn't take him very long. You may hear him cuss when he finds loose U-bolts or a leaking fuel pump, but he gets a surge of pride as he corrects the trouble. Inside, Joe knows he's **prevented** another of his vehicles from going to the **fixers.**

When six months passes (or 6000 miles or 100 hours) Joe mechanic snatches your vehicle away from you again. (This time Joe may be part of battalion or regimental maintenance.) He puts it under a microscope; he not only inspects the points that he caught monthly, but lots more besides. He inspects every assembly between towing hooks and pintle. He uses the Preventive Maintenance Work Sheets to check off each part inspected. When Joe gives your vehicle back, it has no modesty left. Nor does it have any mechanical bugs, gremlins or anything else to bother you. The vehicle is now in fine shape. It's up to **you** then to keep it that way till the next monthly servicing.

JOE CAN BE CALLED A DIAGNOSTICIAN

In between these servicings, motor vehicles sometimes come down with a case of dead batteries, hard starting, locked brakes, or any of the thousand ailments that motor vehicles can get. The ailment may strike during a blackout convoy, while making a demonstration, or in rare cases when the vehicle's not needed immediately for anything. This is when your organizational mechanic really swings into action. It doesn't matter whether there's an arctic blizzard blowing, or it's so hot your whiskers singe —your mechanic is Johnny-on-the-spot. It may be an entirely new trouble to him. So what. That doesn't stop him. He'll make a few basic tests. He stops, rubs his chin a bit—and there, he's located the reason your vehicle was balky. A few repairs and you and the truck can leave him in the dust.

Why was Joe able to locate a vehicle ailment that was entirely new to him in a short time? Because Joe, your organizational mechanic **is not just a parts changer—he's a doctor of vehicles.** This means when a vehicle goes haywire he doesn't start madly to hack off every assembly and part in sight and replace them. Instead, he starts grinding gears in his head—**he thinks.** In his mind he crosses off certain assemblies that couldn't possibly be causing the trouble. The way the vehicle broke down tells him they couldn't have been to blame. Still thinking, he narrows the possible places down to one or two, or a few. Any one might be causing the vehicle to ail. He makes practical tests and dismisses the OK assemblies. Then he points a thick finger—"that's the guilty part."

Fixing or replacing it then becomes a routine job. Sure, sure, Joe misses the boat once in awhile. But—since he's always trying to determine **what's wrong with the vehicle before condemning certain parts,** he comes out right most of the time. At this point you may be thinking "So What? After all, Joe has 20 years experience." That's wrong. Most of our Joes didn't have 20 years, or 10 years—or even 5 years experience as mechanics before they came into the Army. Joe mechanic learned by taking a serious look at the cards on the table. He knew

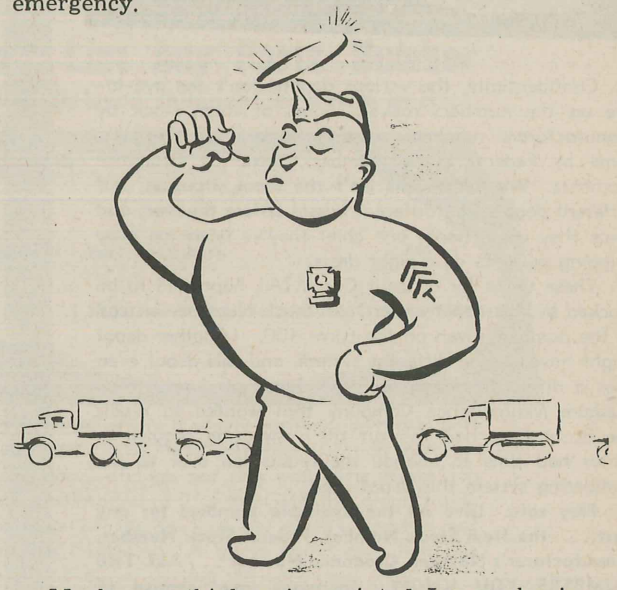
his responsibility was to take care of a group of vehicles, come hell or the enemy. The best he could do would be to prepare himself for any situation that might possibly come up while carrying on that job. Some of our organizational mechanics were sent to Automotive Schools and taught the rudiments of the trade. Others had to learn the hard way, and get along without the benefits of a school. In either case the organizational mechanics that became **good,** were the fellows who realized they didn't learn it all in school, or on the first few jobs they took care of. These fellows grabbed every opportunity to learn a little more than they already knew. This took them out of the "parts changer" class and put them up with the mechanics who could **find out what's wrong with a vehicle before starting to repair it.**

These boys sat down and read their maintenance manuals, other TM's, and all the slew of vehicle literature the Army hands out. They weren't afraid to let on to the next guy that they didn't know, by asking him questions. When vehicles lay down on the job, these Joes weren't satisfied until they found why the vehicle went bad. Joe mechanic never stopped learning about his big responsibility—his organization's motor vehicles.

It's been pointed out by some of the "lesser men" that the organizational mechanic doesn't have to get this good at diagnosing vehicle troubles. After all, these men say, organizational mechanics are only supposed to make **minor** adjustments and replacements in addition to lubing, adjusting, and tightening. Can't they get along with just knowing how to turn nuts and bolts? But Joe mechanic doesn't bother answering these boys—he figures they'll learn. Joe realizes that in order for him to know where to make the minor adjustment or to know which minor part needs replacement, he's got to understand the function and operation of **all** assemblies on the vehicle. Knowing this, he's able to diagnose troubles by picking out parts or assemblies that couldn't be causing the troubles and putting his finger on the guilty one. If Joe just blindly went ahead replacing parts by the trial and error method, he'd be wasting everybody's time—from his own to the workers back in the factories. And that's not the worst that will happen. Look back to the fixer organizations. They'll get more assemblies to rebuild if your mechanic friend starts slapping three or four new ones in a vehicle everytime one goes bad. The fixers will need more parts to rebuild the assemblies—the factories will use more materials to build the parts—and worst of all, when the parts would be really needed in a life-or-death situation, they might not be available.

HE DOESN'T HAVE TIME FOR 3RD-ECHELON JOBS

Sometimes you may doubt if your Joe really knows his stuff about vehicles. You'll watch him send a vehicle back to the fixer outfit (3rd-echelon) just to get a new transmission installed. You're thinking he should be able to install the transmission himself. Well, he can. Your Joe can install transmissions as well as anybody and do lots of the other jobs he normally sends to higher echelons. What you don't know is that the organizational mechanic has just enough time to do his preventive maintenance work along with small repairs and replacements, and **nothing more.** The Army has allotted him enough vehicles to keep him plenty busy with this alone. If he takes time out from his lubing, his tightening, adjusting, and making small repairs just to make a higher echelon repair on one or two vehicles—then all the **rest** of his fleet will start coming down with all sorts of ailments. In a short time, a large part of your organization's transportation will be on the deadline. Even Joe mechanic can't be doing two things at the same time. When Joe sends assemblies or vehicles back to 3rd-echelon for rebuild, it's not because he can't do the jobs himself; it's because Joe knows that he can keep a larger number of vehicles rolling that way. Of course if a real emergency arises Joe will pitch in and do any job to keep his vehicles going. With a piece of wire, a plug of chewing gum and lots of sweat, your Joe can give most any vehicle a new lease on life. Remember though, we said a real emergency.



Maybe you think we've painted Joe mechanic as a wonderful guy—too wonderful. But Joe's as good as he's painted. You see, when we speak of Joe mechanic we are speaking of all the Joes in the Army. If your outfit happens to have a Joe that doesn't come up to standard, that is, if he doesn't step on you drivers when you forget to do your PM services; or who skips his own PM services; or if he doesn't learn all he can about the vehicles in his care; or brags about doing 3rd-echelon jobs (at the expense of PM work)—then you might try using a little psychology on him.

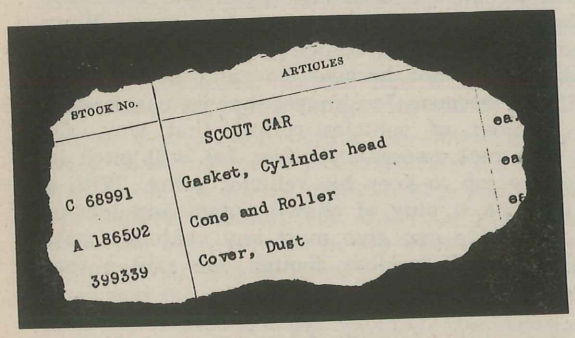
The next time he's got the best seat in the house and has nothing to do but stare at the blank wall, sort of stroll by and hand him this issue opened to this article.

Maybe he'll take the hint.

13 Reasons Why Requisitions G

Gave Wrong Kind of Stock Number

Result: Delayed Shipment.

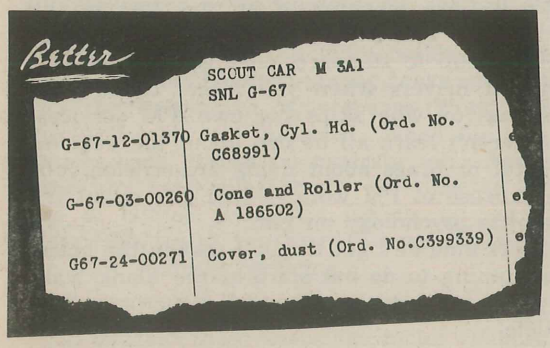


STOCK No.	ARTICLES	
	SCOUT CAR	ea
C 68991	Gasket, Cylinder head	ea
A 186502	Cone and Roller	ea
399339	Cover, Dust	

Confidentially, the various depots don't see eye-to-eye on the numbers racket. Some of them stock by manufacturers' numbers, some by Item Stock Numbers, some by Federal Stock Numbers, some by Ordnance Numbers. We admit this isn't the ideal situation, but different depots had different bosses before the war, and since they came under one chief they've been too busy shipping parts to do a right dress.

These items for a Scout Car M3A1 happened to be stocked by this depot under Item Stock Numbers instead of the numbers given on the Form 400. (Another depot might have used a different system, and **this** depot even uses a different system for other kinds of parts.) The Medium Maintenance Company that wanted to repair the Scout Cars had to wait till a sweating requisition editor had time to change the requisition over to the numbering system this depot used.

Play safe. Give all the available numbers for any part . . . the Item Stock Number, Federal Stock Number, Manufacturer's Number, Ordnance Number . . . ALL THE NUMBERS YOU KNOW. Increases your chance of hitting the Jackpot. (OFSB 1-1, Sept., 1943, par. 14d.)

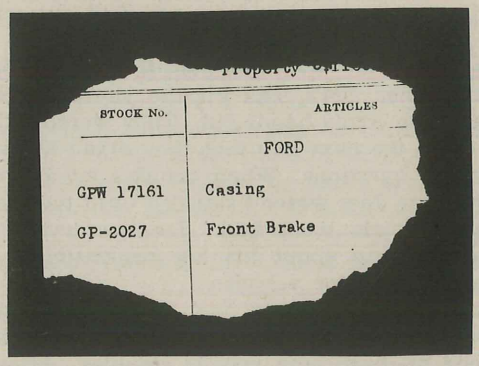


Better

	SCOUT CAR M 3A1 SNL G-67
G-67-12-01370	Gasket, Cyl. Hd. (Ord. No. C68991)
G-67-03-00260	Cone and Roller (Ord. No. A 186502)
G67-24-00271	Cover, dust (Ord. No.C399339)

Copied Wrong Stock Number from SNL

Result: Delayed shipment or wrong parts.

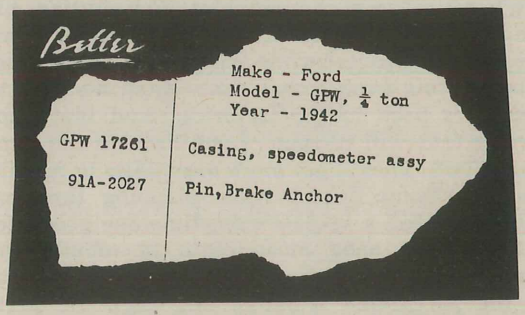


STOCK No.	ARTICLES
	FORD
GPW 17161	Casing
GP-2027	Front Brake

Somebody in Missouri wanted speedometer casings and brake-anchor pins for the ¼-ton Ford GPW, but didn't take time to write stock numbers and nomenclature correctly.

Now, if you were a parts clerk, what kind of casings would you send to Missouri, when you didn't have the correct parts number? And if you think that one's easy, would you ship brake-anchor pins (91A-2027) or front brake assemblies (GPW 2010 and GPW 2011)?

Double-check your requisition. Be sure the stock number and nomenclature agree and are correct.



Better

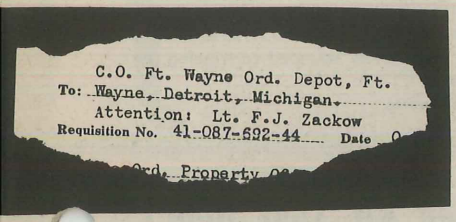
	Make - Ford Model - GPW, ¼ ton Year - 1942
GPW 17261	Casing, speedometer assy
91A-2027	Pin, Brake Anchor

Our thanks to the Stock Control Branch of Fort Wayne Ordnance Depot for providing true case histories on which we based these stories of requisitions that went wrong. You'll notice that some of the requisitions were submitted by 3rd echelon, which proves that they have the same troubles as you 2nd echelon nut-runners.

o Wrong

Friend Couldn't Help Him

Result: Delayed shipment.



C.O. Ft. Wayne Ord. Depot, Ft.
To: Wayne, Detroit, Michigan.
Attention: Lt. F.J. Zackow
Requisition No. 41-087-692-44 Date 0
Ord. Property Of

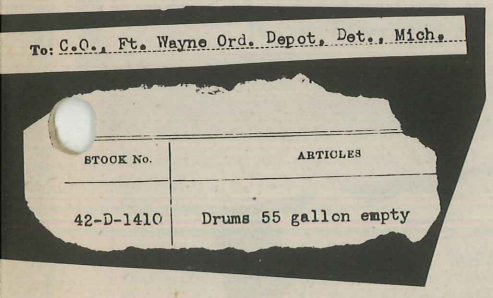
n officer down in Texas thought his friend, Lt. w at rt Wayne, Michigan, could help him get brake e in a hurry.

lowever, Lt. Zackow had to send the requisition to Normoyle, Texas, because Normoyle had the and Wayne didn't.

our regular depot can serve you best, under the nce Stock-Control Plan. Even your own brother give you speedier service if he's out of channels hey tell us).

rdered QM Supplies from Ordnance Depot

Result: Delayed shipment.



To: C.O., Ft. Wayne Ord. Depot, Det., Mich.

STOCK No.	ARTICLES
42-D-1410	Drums 55 gallon empty

This requisition for 71 empty 55-gallon drums came n Ordnance Depot, but it was all a mistake—they're tem of QM issue. (See W D Circular 137, 1943 s.) You'd be surprised how many people don't know h requisitions to send to Ordnance, and which to rtermaster, Engineer, Air Forces, or other supply blishments.

Somebody who wanted the drums in Indiana had to his heels several extra days while this piece of paper rerouted to the proper Quartermaster depot, even gh he'd labeled it IMMEDIATE in big, black letters.

Lear ur supply channels. Get Ordnance-issue s from dnance depots.

Next time the Old Man gets on his horse about the vehicles you've deadlined for lack of parts, do what you always do—blame the depots. The depots can take it, whether it's their fault or not.

But you're the guy who needs the parts. They're the life stream of your maintenance job, and no amount of blaming will get them for you any sooner. There's one important thing you can do, though, to speed them up:

SUBMIT BETTER REQUISITIONS.

Don't get excited—we're not throwing the book at anybody. We feel just as you do. No matter what the book says, the important thing is to get the parts—without robbing somebody else.

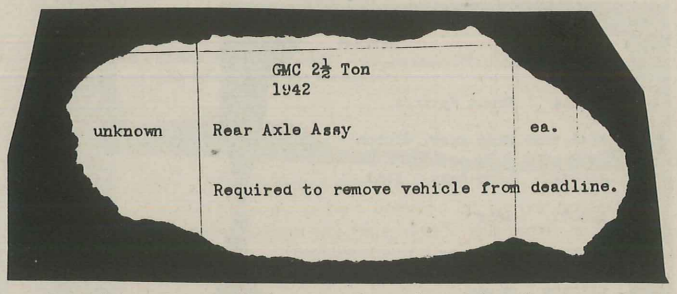
The 13 unlucky outfits that submitted the QMC Form 400's reproduced on these pages either got the wrong parts, got their parts late, or didn't get them at all—for reasons you'll clearly see.

Anyhow, it's certainly worth spending a few extra minutes to write out a foolproof requisition if it saves you a few weeks of vehicle deadline time.

(Of course, if you've got all the parts you need, you don't have to read this.)

Didn't List Any Parts Number

Result: Delayed shipment or wrong parts.



GMC 2½ Ton
1942

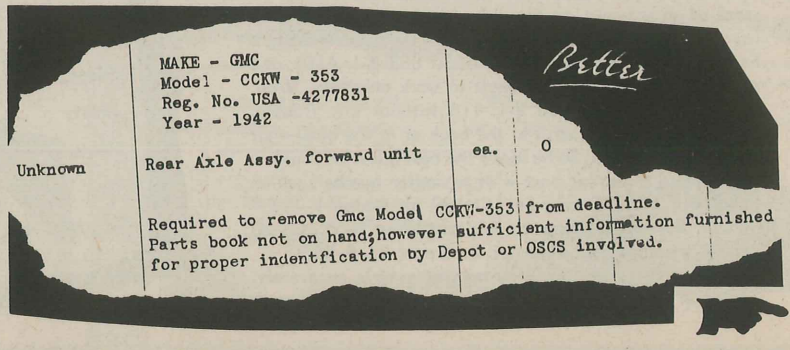
unknown	Rear Axle Assy	ea.

Required to remove vehicle from deadline.

It's pretty tough for a supply outfit to identify a part when you don't give them **any** identification number. It can be done—though not this way. The requisition doesn't say what kind of 2½-ton GMC this organization is trying to get off the deadline, nor which of the two rear axles needed replacing. A guess would give him one chance out of four of getting the right axle.

There wasn't anything to do but send this requisition back to Kentucky for more information. Meanwhile, somebody waits for the truck.

If you don't know the parts number, be sure the nomenclature is complete, and tell the vehicle's make, model, year, and registration number.



MAKE - GMC
Model - CCKW - 353
Reg. No. USA -4277831
Year - 1942

Better

Unknown	Rear Axle Assy. forward unit	ea.	0

Required to remove Gmc Model CCKW-353 from deadline.
Parts book not on hand;however sufficient information furnished for proper indentfication by Depot or OSCS involved.

Didn't Give Address

Result: Delayed or lost shipment.

No. [redacted]

[redacted]th Ord. Med. Aut. Maint. Co., [redacted]th Ord. BN., Stoney Field, S.C.

[redacted]

Fifty modification kits were packed and waiting for this company, but the Depot didn't know where to ship them. Stoney Field wasn't listed in the current Postal Guide, and its nearest railhead goes under another name.

Some shrewd detective work by the depot's expediter produced the name of the fort which handles shipments for Stoney Field, and the kits finally went through. Stoney Field was just lucky.

Give the railhead and post office address, especially if you're located at a new camp.

Better

TRANSPORTATION OFFICER, Ft. [redacted], S.C.
For: S.O. [redacted]th Ord. Med. Maint Co.,
[redacted]th Ord. Bn. Stoney Field.

Didn't Explain Unusual Request

Result: Reduced or delayed shipment.

	ARTICLES	UNIT	G.O. HAND AND DUE	CONSUMED	REQUIRED
9060	Tires 750 x 20, 8 ply mud and snow				900

Tires being as they are (see back cover!), not many supply organizations are going to dish out 900 of them, not even 900 "seconds," without a pretty good reason. So the requisition editor cut the quantity to 225.

The man who needed the tires should have explained why he needed 900. If his story sounded convincing, he might have gotten them.

Explain unusual requests.

Jumbled Parts for Different Vehicles on Same Requisition

Result: Delayed shipment or wrong part.

STOCK No.	ARTICLES
916554	Front Springs
81-B-7550	Disc Assy. Clutch
8-L-410	Lamp Assy., Tail
393077	Gear
556778	Retainer
2110109	Strap

How good are you at mind reading?

If **you** had received this requisition, could you have guessed what vehicles the parts were for? You'd have to, because these items have been ordered by manufacturer's number only, and naturally each manufacturer's system of numbering (being a hangover from prewar days) is his own, and overlaps other systems.

The editor that handled this one, did a pretty good job; he got 5 out of 6 right. If the parts had been grouped and labeled by make of vehicle, he'd have gotten all 6, and much quicker.

Here's what happened: After searching through a stack of parts books, he found 3 of the parts in the Dodge list and another in the GMC. The other 2 looked like Federal Stock Numbers (81-B-7550 and 8-L-410) and so the Parts Common man went to work on them. Well, Parts Common delivered 8-L-410 without any trouble, but the other part wasn't in the book or in the bins—not under that number. So he made the best guess he could—he supplied a similar part with a similar number, which happened to be "Facing Set, Clutch, for Dodge T-112," number 8-F-550. Come to find out later, he'd guessed wrong; the shop really wanted **Ford** part 81-B-7550.

Group the parts for each type of vehicle separately, and label them.

Requisitioned Kit That Didn't Exist

Result: Waste of time and labor.

STOCK No.	ARTICLES
G509-W2	Kits for Diamond T, 4 ton, 6x6 Truck

Seven Diamond T trucks down in Mississippi were waiting to be modified, while this requisition for FSMWO kits went merrily up to Fort Wayne and back.

If somebody had read FSMWO G509-W2 before sending for the kits, he'd have known it didn't require any parts—therefore, there wasn't any kit!

Read the Fizzmo.

STOCK No.	ARTICLES
	Parts Common
8-L-410	Lamp, Service Tail & Stop and Blackout Tail LH 12-volt
	Ford Bus
81-B-7550	Disc Assy. Clutch
	Dodge T-211
916554	Front Spring Assy.
393077	Flywheel Ring Gear
556778	Pinion Bearing Retainer
	GMC CCKWX-353
2110109	Strap--muffler

Better

Mixed Parts and Tools on Same Requisition

Result: Delayed shipment.

STOCK No.	ARTICLES
	TOOLS
38-B-3690	Brushes, hand scrubbing
21-R-418	Rope, manila
41-S-1638	Screwdriver, No. 2
41-W-603	Wrench, box, 11/16 x 3/4"
	STUDEBAKER
671994	Engine Assy.
667761	Axle Assy.

This officer obviously didn't realize that Ordnance Depots generally have separate units for handling parts and tools. Otherwise he wouldn't have asked for parts and tools on the same requisition.

He got everything he asked for, but it took one or two days longer. The requisition had to go first to the tool unit, then to the parts unit, before the shipment could be made.

Submit separate requisitions for parts and tools, so both units of the supply outfit can work for you at once. (Read TM 38-220, Sec. VIII.)

Didn't Number Requisition Properly

Result: Lost or delayed shipment.

To: C.O., Ft. Wayne Ord. Depot, Det., Mich.

Requisition No. 83 Date 9 / 23 / 43

SHIP TO 91st Service Group, Transportation Officer.

This outfit used a "simplified" system of its own for numbering its requisitions, instead of the standard method: STATION NUMBER **plus** REQUISITION NUMBER **plus** FISCAL YEAR.

Sometimes this wouldn't make much difference, but in this case the shipping address was also omitted. If the depot had known the station number (as given in Finance Circular C-2), it could have guessed the address.

Another benefit you get by numbering your requisitions correctly is that it gives you a better chance of getting an answer in case you send in questions or follow-ups. The Depot has a Chinaman's chance of finding a properly numbered requisition, otherwise no chance.

Number 'em right.

To: C.O., Ft. Wayne Ord. Depot, Det., Mich.

Requisition No. 128-83-44 Date 9 / 23 / 43

SHIP TO 91st Service Group, Transportation Officer.

Better

Overseas Outfit Tried to Shortcut POE

Result: Delayed or lost shipment.

SHIP TO Supply Officer, [redacted] Ordnance M.A.M. Company, APO #183
c/o Postmaster, Los Angeles, Calif.

REQUISITIONED BY (show Signature, Rank, Organization, Destination. If different from "SHIP TO" include address):

APPROVED BY:

The Ordnance Company that submitted this requisition from overseas thought they'd get faster service by ordering direct from the depot in continental U. S., for shipment through their APO.

That wasn't such a good idea. The 50 kits for reinforcing ¼-ton Ford and Willys rear body panels were too heavy, and the Post Office wouldn't accept the shipment. The kits were delayed while the Depot made arrangements with the POE for proper handling.

The POE is the overseas GI's Houdini. It can unlock doors in Continental U. S. that nobody else can open. When you're overseas, use your POE to the limit.

Didn't Give Authority for Issue

Result: Reduced or delayed shipment.

	ARTICLE	UNIT	ON HAND AND DUE	CONSUMED	REQUIRED
92	Element, oil filter (FM-GPW-18362 or WO-A1236)	ea			151

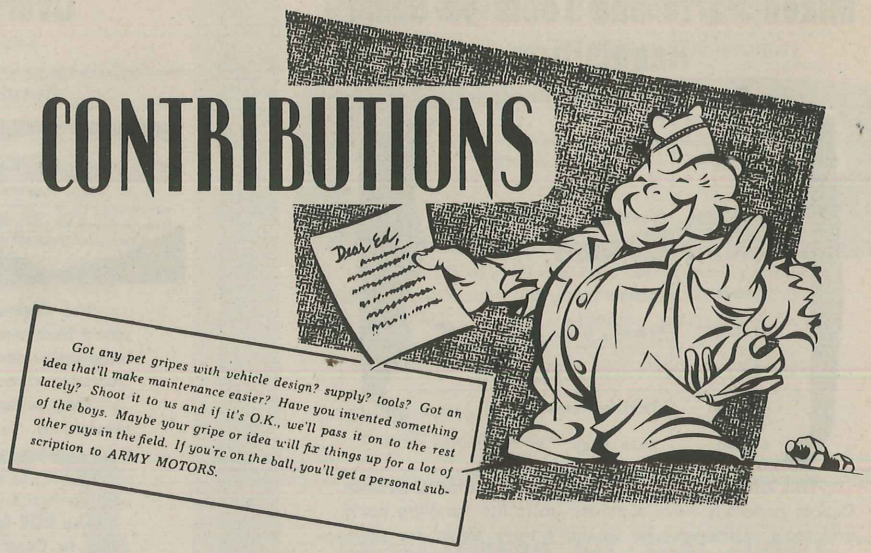
One hundred and fifty-one filter elements for quarter-ton jeeps would be a powerful lot for one organization to requisition at one time, and if this outfit had consulted the SNL "Organizational Spare Parts and Equipment" book, they'd have realized it. As it was, the depot cut them even below their actual needs—not knowing the circumstances.

Protect your interests. Always give the authority and basis of issue, that is, the T/O&E or SNL or both, which proves you are entitled to the parts or tools you've asked for. Give your authorized maximum level, balance on hand, and dues-in, so there's no question of the quantity you need. (For details, see "Enough and On Time" in the July, 1943, ARMY MOTORS, and TM 38-220. If, for some special reason you need more than your authorized maximum level, explain that need fully, using a separate requisition, so the one for your authorized allowances won't be held up.)

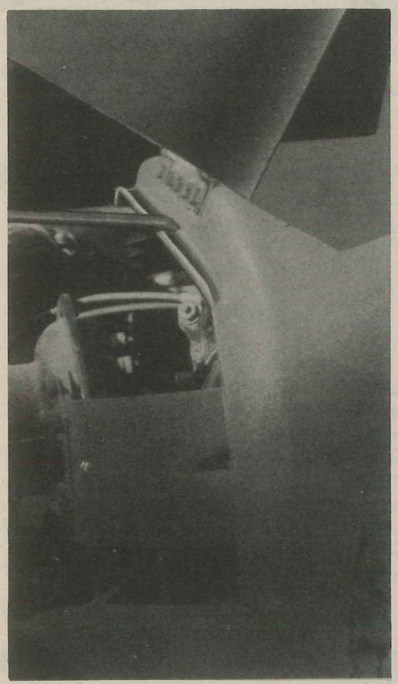
	Nomenclature and unit		Max. level	ON HAND	Due In	REQUIRED
92	Element, oil filter (FM-GPW-18632 or WO-A1236)	ea.	16	1	0	15
	Basis of issue: T/O&E 7-13. 2d ech. maintenance for 146 1/4-ton 4x4 trucks, SNL G-503.					

Better

CONTRIBUTIONS



After nearly every cloudburst, ¼-ton jeep drivers have looked under the hood and scowled to find the engine buried in water. And, we've been peppered with letters pleading with us about shorted plugs. Out of such a pile of letters, we were relieved to find a good suggestion on how to fix that trouble. **Civilian Automotive Advisor G. C. Blaisdell** of Camp Edwards, Massachusetts, while sleuthing around, noticed that the seam formed by the cowl meeting the fire wall, is a flat strip jutting out under the hood. When the clouds start to pour buckets, the rain flows down the cowl onto that strip and then smack down on the engine—generally fouling up the situation. Advisor Blaisdell took out his trusty adjustable wrench and bent up the edge of the strip (Figure below) to make a trough for the water. Being a careful guy, he also put some gasket cement (Federal Stock No. 52-C-650; or K001-10-13334) around the hole where the radiator stay rod fits into the strip. Now the water trickles down the little trough to both sides of the engine compartment, and the engine stays powder-dry.



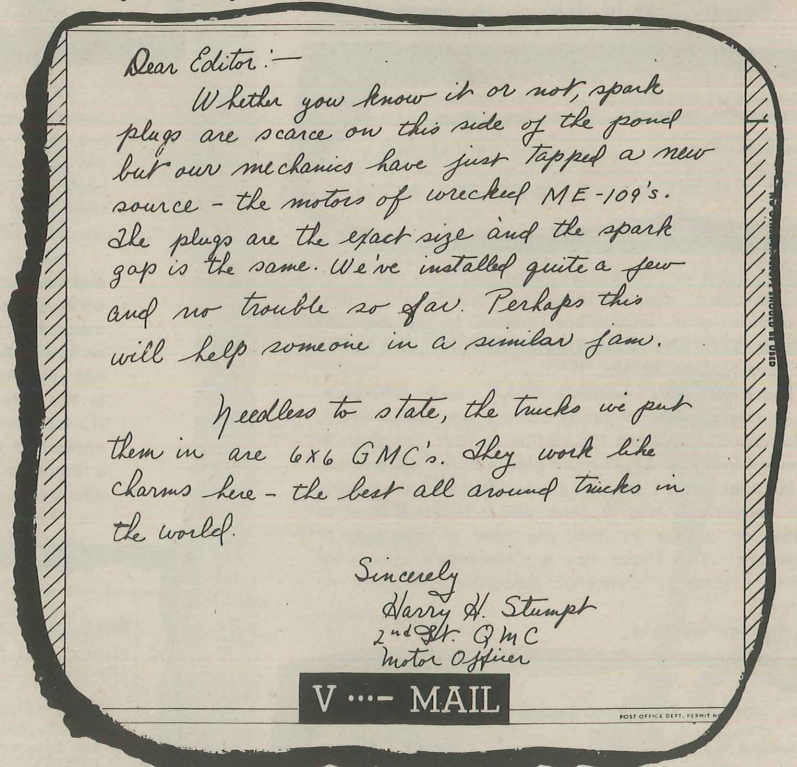
Dear Editor,

Here's a point for the men overseas.

It's true that the British names for some automotive parts are different from ours. However, parts for American vehicles have the same nomenclature the world over. Don't ask for a gudgeon through supply channels of the U. S. Army when you want a piston, or for a fender expecting to get a bumper—you'll probably get a gudgeon and a fender. The hood is still the hood on American requisitions, even though the British call it a bonnet.

SNL nomenclature is official wherever the American Army operates.

Lt. Col. A. C. Bigelow
ASF Headquarters



Dear Editor:—

Whether you know it or not, spark plugs are scarce on this side of the pond but our mechanics have just tapped a new source - the motors of wrecked ME-109's. The plugs are the exact size and the spark gap is the same. We've installed quite a few and no trouble so far. Perhaps this will help someone in a similar jam.

Needless to state, the trucks we put them in are 6x6 GMC's. They work like charms here - the best all around trucks in the world.

Sincerely
Harry H. Stumpf
2nd Lt. QMC
Motor Officer

V ···– MAIL

POST OFFICE DEPT. PERMIT

For our readers overseas who've been wondering what to do with Messerschmitt 109 Spark Plugs.

Dear Editor,

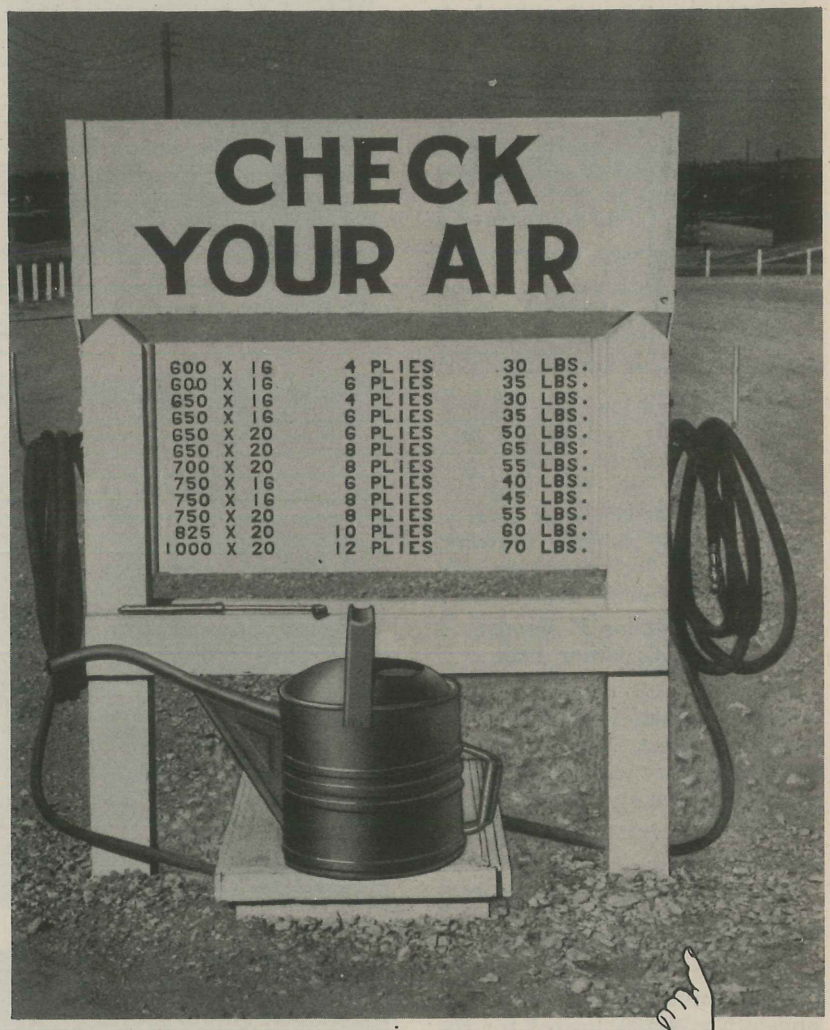
This is my first contribution to ARMY MOTORS and I'm not sure how to begin. I'm not on your tail; that is, don't put me on your usual list of headaches. I'm trying to be of help.

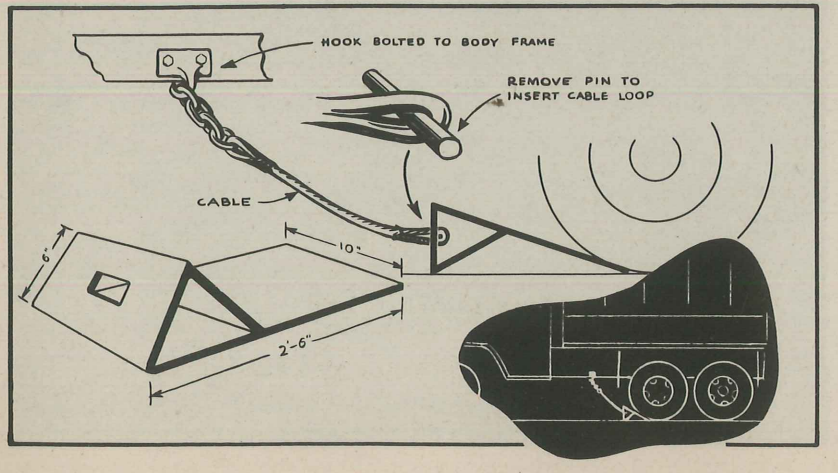
I have a gadget here that has helped our outfit a great deal. I've sort of stolen the idea from one of our allies and believe me, it's great. You have often seen some GI using his winch to pull out another truck. When he applied power to the winch, his vehicle started sliding all over hell. Now I guess you are going to say we are supposed to use a "dead man" to hold the truck that's doing the winching. Well, my snappy comeback is, the "dead man" is an old-fashioned device and takes too damn much time. This gadget (see Fig.) can be used by one man and set up in two minutes. When through it can be removed in less than that. Our unit is overseas so you can see why that business of time is so important.

The parts needed for each side of the vehicle are: A hook to be attached to the frame, length of cable with few links of chain at one end and an eye at the other, the plate, and pin. I've rigged it up as shown.

The idea is to slide the plate under the wheels. Next put the link of the cable to the hook on the frame. Put the eye of the cable into the hole on the plate, then slip the pin in behind the hole and through the eye of the cable. Leave a little slack in the cable. When the winch is engaged, the truck tends to pull forward toward the item being winched. The plate digs into the ground as the vehicle slides a little. The cable becomes taut—and the truck stays put.

M/S G. E. Donovan
APO 709



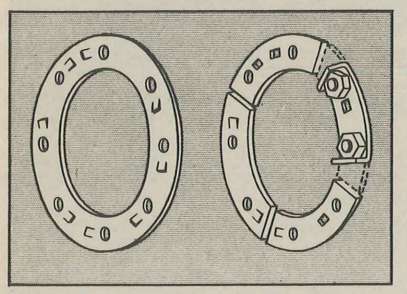


Billboards like this in the Eighth Service Command's motor pools shout a preventive maintenance message to drivers, to help cut down on tire wear. Everything the drivers need to maintain their tires stares them in the face—gage, air hose, tire pressures.

Lt. Jesse Kaplan,
Motor Officer,
QM Motor Pool

Dear Editor,

Here's a little idea for saving those lock rings that fit under the axle drive-flange nuts. *(Ed. Note*—also called: Drive flange bolt lock, or hub bolt lock, or drive flange lock plate.) It's hard to get new ones out here. After the little lock tabs have been bent back and forth a few times, they break off



very easily, and look like the first picture. So by cutting the lock ring in four different places, and then bending the free ends up around your drive-flange bolts as shown in the second drawing, you'll have a lock ring that will hold till hell freezes over.

T/5 Eugene F. Goodspeed
M.R.T.C. Motor Pool

(Ed. Note—Of course, you're *supposed* to install new lock plate, or lock washers. If you can't get them, then try out Goodspeed's good little idea.)

Dear Editor,

We have found a way to beat a parts shortage on the Diamond T, 4-ton wrecker. When we couldn't get the radiator mounting-bolt insulators (No. N3206, upper; No. N2206, lower) for the Diamond T, we discovered that the Ford engine insulators (B6038-C and 78-6039) would do the same job.

We also found that the Ford brake pedal (11A2454) could be used to replace the Diamond T pedal (7260).

Lt. G. R. Craft
1353rd Service Unit

Dear Editor,

Here's an item which may be of interest to you.

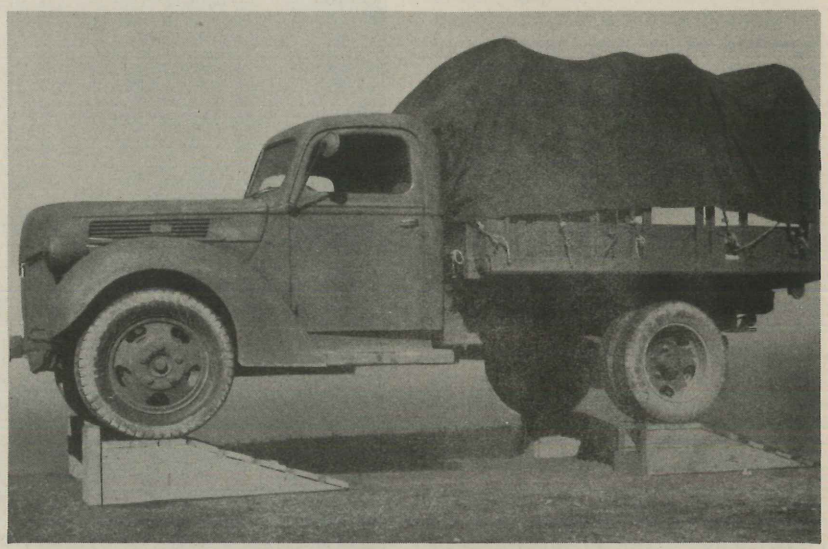
"Post Transportation mechanics at Ft. Dawes recently devoted some of their spare time to trying to solve the problem of cramped under-carriage working space, and emerged with an idea which has been labeled by transportation officers as one of the finest time savers devised for small Army units.

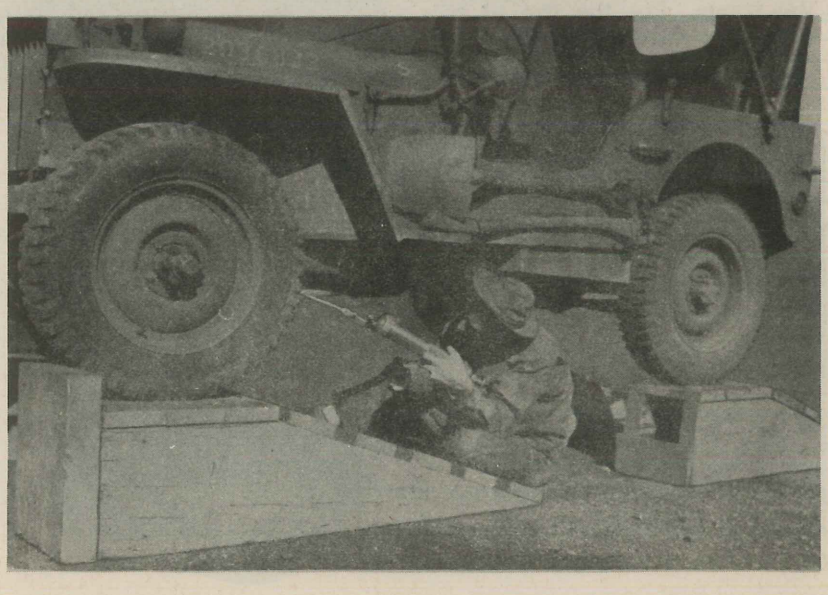
Privates Francis E. Mulcahy and **Tony Galcia** built the all wood portable ramps which, although simple in construction, are already being used extensively in the Harbor forts. See photos below.

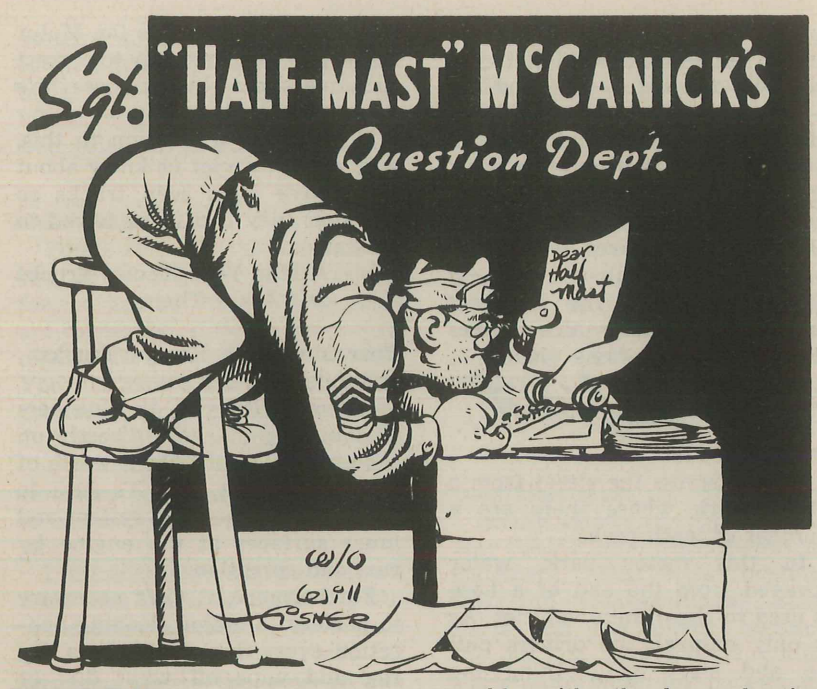
According to the Fort Dawes mechanics, the ramps have worked so well in the post garage, giving the men plenty of room to work unobstructed beneath the vehicles, and enabling them to accomplish much more work in a shorter period of time."

Public Relations Officer
HQ Harbor Defense of Boston

To be sure Army drivers have their GI permits when operating a motor vehicle, **Civilian Automotive Advisor George Hammond,** Camp Swift, Texas, recommends they be required to show the permit and have the permit number entered on the trip ticket whenever taking a vehicle out. Cuts out a lot of red tape in case of accident involving a driver who lost or forgot his permit, says Mr. Hammond.







Dear Half-Mast,

With the rubber shortage of today, can you tell me why it's necessary for the 2½-ton GMC S.W.B. to have two spares instead of one? The L.W.B.'s have only one spare. With one spare, Uncle Sam can save an awful lot of rubber.

I can see the necessity for a double spare in actual combat, but I'll be damned if I can see them being used for trucks that just gallavant around the country within a radius of a couple hundred miles. S/SGT. M. T. P.

Dear Sergeant,

The short wheelbase GMC carries two spare tires because dual tires can be used on the front wheels, which puts both spares to work at one time.

I understand that this model truck is assigned mainly to the Field Artillery as a prime mover and it needs the added traction of front-wheel duals.

Half-Mast

Dear Half-Mast,

Did you ever hear of putting a fuse in the ignition circuit? I never did, above all on combat vehicles, where there's a good chance of getting killed if one blows, on a slight overload.

Here's the point we are having trouble with: the horn shorting out and blowing continuously in rainy weather. We decided to wire it to the ignition circuit—lo and behold, we find the ignition on a 10-ampere fuse. We took the ignition off of the fuse circuit, put in a 20-ampere fuse and hooked the horn up from the ignition through a fuse in the ignition fuse-holder. The horn only blows when the ignition is on, and the horn circuit still is fused, but ignition is not (which we believe should not be fused in the first place). We only changed one vehicle, because we wanted your opinion first.

Why, oh, why—do they put a gasoline filter on a ¼-ton jeep that will hold about 1 teacup of sediment and water, etc., when they use so little gas? Then, on the other hand, on a half-track that uses gasoline like a tractor, they put a gasoline filter that holds exactly 2 tablespoonfuls—I don't get it. How about us installing some jeep filters on our half-tracks, because we have an awful time with carburetor floats rusting through because of water getting in the carburetor.

Also, there would be a lot less water in the gasoline if the filler cap was not recessed in the tanks.

Oh, yes, another trouble we have quite often. Just on one night problem we had trouble with at least 50% of our S. P. Mounts M3. The front drive shaft universal joint smacks the oil sump and on four of them it tore holes in the lower pan, the others it just bent in. We tried tightening the shocks, but no good. I think an extra leaf or two in the springs would do the trick. See what you can do on this also.

CIVILIAN AUTO. ADV. W. A. H.

Dear Mr. H.,

You almost bowled me over with that pile of questions, but here goes:

You'll find that the wiring diagram on page 162 of TM 9-710 (M2 half-track and others) shows no fuse in the primary circuit. If your vehicle has a fuse in the primary circuit, I'd say you should remove it and rewire the vehicles as shown in the manual.

Your horn-blowing trouble may be caused by insulation worn off the horn lead. This usually happens where the horn lead comes out of the steering-gear housing. If you find the wire bare, replace the whole lead. Taping won't usually hold long because the bare wire is in a position that's difficult to tape securely and there's frequently a lot of grease or oil on it.

As far as putting jeep filters on half-tracks, don't do it. Modifications are in progress now to enlarge this particular filter. Wait for the FSMWO.

I agree with you that the recess in the gas-tank filler-cap is a cozy place for water to stand, but if you follow the instructions of FSMWO G102W-37 you shouldn't have any more trouble on this count.

The only suggestion I offer you to keep the propeller shaft and universal joint from striking the oil pan is to make sure the shock absorbers are in tip-top condition and the linkage doesn't allow any up and down play. Don't add more spring leaves under any conditions. More leaves in the spring will cause the spring to become less flexible and instead of bottoming it will break. Also, with the additional leaves, the U-bolt nuts won't have sufficient thread

surface on the U-bolts to stand the gaff.

Your problem is being worked on right now and the engineers expect to have a solution in the form of a fizzmo (FSMWO) soon. So, keep your eye on the shocks and linkage and point out to your drivers that avoiding 6-ft. craters will help things out until the field fix is applied.

Keep firing your questions.

Half-Mast

Dear Half-Mast,

Are governors taken off at the port of embarkation or do they go through combat with the vehicle?

W/O J. T. B.

Dear Mr. B.,

Governors are **not** removed from vehicles before shipment overseas. The real purpose of governors is not to hold vehicles down to domestic speed limits, but to guard the engine against excessive rpm's.

After a vehicle has been shipped thousands of miles, it's even more essential to keep its engine in top condition. So the governor becomes more important—not less—in a theater of operation. One more word. Don't mess around with governors—AR 850-15 says "cause for disciplinary action."

Half-Mast

Dear Half-Mast,

According to GMC maintenance manual TM 10-1147, all shafts running from the transfer case to the center bearing on GMC 2½-ton 6x6 CCKWX should have ¼-turn off—on all banjo-type axles. GMC manual TM 10-1563 doesn't quote **any** shafts as having ¼-turn off. What's the answer—and why?

M/SGT. G. W. C.

Dear Sergeant,

You're putting your trust in a real oldtimer when you mention TM 10-1147. It says to put the yoke of the propeller shaft from transfer case to center bearing in a **different plane** from the slip joint yoke on banjo-type axles. That's wrong. The two yokes should be in the **same plane.** That advice goes for all GMC 2½-ton trucks. That's why the newer TM's—like the 10-1563 you mention, and TM 10-1269 and TM 9-801—were corrected. On some of the older GMC 2½-tons when the arrows on the propeller shaft and slip-joint are lined up, the two yokes may be in different planes. Put the yokes in the same plane and punch-mark new arrows. File off the incorrect arrows. Remember this: yokes should be in the same plane.

Half-Mast

Dear Half-Mast,

I work across the street from a Motor Park where there are a number of wash racks.

In this motor park, water sprayed from the end of a hose is used to clean these vehicles. As is only natural, the drivers pull up and start by cleaning the wheels which are usually the dirtiest, and then the hood, cab, and body. After they think it's clean enough, they pull up the hood and spray the motor. (Maybe it's GI, and maybe it's not, but I know that they are not to do this for 15 to 20 minutes, as I often see some drivers do.) After that, they try to start the motor and naturally find that it is drowned. They grind away on the starter for some time—finally it pops off on one or two cylinders. Then the driver will sit there and race the motor on that one cylinder until it works on all six. Whenever I hear that, I feel like tearing the driver apart like he's tearing that motor apart. You know as well as I do that running a motor in this condition will dilute the oil, dry the cylinder walls and wear the rings and walls. Not only that, but oftentimes it backfires and blows out the muffler. I know it's the Motor Transport Officer's duty to correct such measures—but suppose he's not on the ball.

If you have a solution to this, will you please let us know about it. I have even seen trucks so wet that they had to be towed to be started.

A Man Who Knows Trucks and Likes Them.

Dear Man Who Knows Trucks and Likes Them,

I agree with you, the business of squirting the hose directly on the engine is not only a waste of time and water, but it's sure to damage the electrical system and inner surfaces of the engine by rust and corrosion.

Furthermore, it ain't necessary to perform a major cleaning operation every day. Just take a dry rag and wipe off what dirt or oil has collected on the surfaces during the day's run.

If the engine is dirty enough to need a real cleaning, take precautions to lessen the danger of dirt and water being forced into the engine. Protect the electrical system by some means, and seal all engine openings, when water or steam is to be used for the cleaning job.

Give your engine its bath only when the engine and oil filter is ready for an oil change, so if any dirt or water does get in, it will drain out with the old oil.

Half-Mast

Dear Half-Mast,

In our Quartermaster Truck Company, we are constantly bothered with losses of tools in the first and second-echelon and mechanics tool sets. To remedy this we have decided to place a

What Half-Mast doesn't know you could put in a gnat's ear and, by the same token, what a gnat doesn't know you could put in Half-Mast's ear. Half-Mast is the answer man; he'll answer all those questions—technical, procurement, procedure—that have you up a tree. Write "Dear Half-Mast," Army Motors Magazine, Tank-Automotive Center, Detroit 26, Michigan. We promise he'll answer you.

Statement of Charges against careless truck drivers and greaseballs, but haven't been able to locate any price lists on said items. Can you help us out?

S/Sgt. K. H. B.

Dear Sergeant,

You'll find all the tool prices you could ever think of asking for, so far as 2nd-echelon tools are concerned, if you'll get a copy of SNL N-19 dated 20 April 1943. Your Ordnance Officer can obtain this for you from the Southern Ordnance Publications Depot, c/o San Antonio QM Depot, Fort Sam Houston, Texas (which happens to be the one serving your region).

I think you've hit on a first-class idea there, to make it plain to **careless** mechanics that tools are as vital to their jobs as weapons are to the boys in the front lines. Maybe when they learn that their midget socket set is worth 2 bucks, and the brake filler is worth $12.25, they'll take care of them. But do me a favor, bud—please make sure you soak the right guy.

The "Organizational Spare Parts and Equipment" pamphlets of the vehicle SNL's have a column for 1st-echelon tool prices, but in most of them this column is left blank. I imagine you could make a pretty shrewd guess, though, based on the prices of 2nd-echelon tools as published in N-19.

Half-Mast

Dear Half-Mast,

We're experiencing quite a bit of trouble on our 2½-ton GMC's due to the outlet fittings from the fuel filter being broken off by the distributor assembly—from vibration and cross-country driving. When a vehicle is in a twisting position, the distributor filter comes in contact with the outlet fitting on the fuel filter. Could the fuel filter be relocated in a more suitable position to eliminate this trouble?

W/O S. L. S.

Dear Mr. S.,

Let that fuel filter be—it belongs right where it's at. But if you've got to relocate something, you can relocate that radio-suppression filter clean out of your truck. On 30 January 1943, somebody discovered that radios worked just as well without the filter as with it—so the factory's been leaving 'em out of GMC's ever since. If yours is in the way, yank it out—both the ignition distributor filter assembly (1888714) and the distributor-filter to distributor wire assembly (1888787). Authority for this is contained in TB 801-4.

Half-Mast

Dear Half-Mast,

In the article on SNL's in the May ARMY MOTORS, there's the statement, "This book (meaning SNL on Organizational Spare Parts and Equipment) replaces the old QM Tables of Maximum Parts Allowances for 1st and 2nd Echelons."

The following questions arise:

1. Have the old QM Tables been rescinded or superseded, and if so, what is the official authority?

2. If these tables have been rescinded, what's a man to do when he gets a mess of vehicles for which an SNL has not yet been printed and wants organizational spare parts?

3. Will parts be requisitioned on the basis established in the QM Tables until such time as an SNL is printed?

Maybe I haven't looked far enough, but answers to the above questions will help straighten out a lot of things.

W/O (Jg) J. P. K.

Dear Mr. K.,

You're on the beam. Your shrewd question No. 3 shows that you have a pretty good hunch what my answer will be, and you're right.

No, the old QM tables haven't been officially rescinded, and won't be—at least, not for a while. But their present use is very limited.

The IOC (Introduction to the Ordnance Catalog, 1 May 1943) sets up the OSPE pamphlets as the law on 2nd-echelon parts allowances, and that ought to be official, because it's Ordnance that dishes out the automotive parts these days.

Practically all the OSPE's for standard vehicles are now published and you can get them through your Ordnance Officer from the regional Ordnance Publications Depot serving him. As for the "orphan" vehicles that don't have OSPE's, you might as well continue to use the old QM Tables for a general guide on 2nd-echelon parts stockage, because that's all the GI literature there is, that applies to them.

Half-Mast

Dear Half-Mast,

What are the existing regulations on replacing cracked windshields and door glasses when the crack does not create a hazardous condition?

We were called down by the technical inspector for having cracked windshields. However, I don't believe they should be replaced unless absolutely necessary due to the shortage of shatterproof glass. Am I right?

Lt. C. R. N.

Dear Lieutenant,

I didn't realize regulations were so foggy on when to replace glass, until I tried to find the answer in the books myself. Far as I could see there just wasn't any hard and fast answer.

So I pleaded with the editors of the new TM 9-2810 ("Motor Vehicle Inspections and Preventive Maintenance Servicing") to clear up the matter. Here's what they wrote:

"Glass, even if cracked, or if laminated layers are separated, need not be replaced as unserviceable unless its condition constitutes a safety hazard or obstructs the vision of the driver or crew."

You can take that as official.

Half-Mast

Dear Half-Mast,

In the September-October issue of ARMY MOTORS, you answered Lieutenant E.E.D.'s question about officers driving motor

(Continued on page 256)

CRANKCASE VENTILATING SYSTEM NERVES?

(Continued from page 227)

easy way to keep your truck running till a ripe old age—and with the oil safe inside the crankcase.

4. Usually doing one of those three will break your 2½-ton of its uncanny oil-throwing habit. But we've heard of drivers and mechanics who tried all three, yet the job **still** tossed oil. It was a serious case of **too much blowby.** The engines were old and worn and the cylinders were egg-shaped. So the blowby got pumped into the crankcase in such **large** volumes, the ventilator just couldn't handle it. It was a losing battle. The blowby built up pressure and ejected the oil—even though the ventilating system itself was all right.

Here's a little trick drivers can try to help the ventilating system clear the crankcase of excessive blowby. On a tough pull when the engine's revving over hard, let up on the accelerator every now and then. Just for a split second . . . ease your foot up, and then down. Not long enough to lose much speed. This lets the engine cause a stronger vacuum in the manifold. And, that stronger vacuum sucks more blowby out of the crankcase. If you need extra convincing, watch what happens to your windshield wipers when you're on a hard pull. With the gas pedal **down,** the wipers **slow down.** Ease **up** on the gas, the wipers **speed up.** That's because there's a stronger vacuum in the manifold when you let your foot up. Apply this to the ventilating system . . . ease up on the gas every now and then on a hard pull, and keep your crankcase free.

There's only one other remedy when excessive blowby's the reason for throwing oil. It's a higher echelon job—and it's serious. The engine may need replacement or overhaul. Wait though, don't go jumping to conclusions: just because the engine throws oil, you don't necessarily need a new engine. Try the other remedies we prescribe, then make **sure** there is excessive blowby. A compression test (done according to procedure in TM 9-801, par. 52) will indicate whether the blowby is abnormal. When you find it **is,** then timidly recommend higher echelons lay their hands on the truck.

That winds up the story of correcting the problem of over-enthusiastic oil. These angles will usually lick it, if followed by mechanics: clean the ventilator valve, oftener than 6000 miles (or semi-annually) if necessary; leave the ventilator valve spring alone —don't cut or stretch its golden coils; test to see if the engine's rolling in excessive blowby. Drivers can do their share by 1) not overfilling the crankcase; 2) not overspeeding; and 3) easing up on the gas for a split-second every now and then on a hard pull.

Then the only other headache you're liable to get from the crankcase ventilating system on the 2½-ton 6x6, is when the

ENGINE DIES ON YOU

mysteriously, but after a few seconds, you can start it up. It'll have the same old vigor too. Drivers tell those ghost stories about the truck slowing itself down. They hear a sucking sound, a wheeze, then a tired pftshsshsss. The engine dies cold. Just as the driver starts to sweat, he tries the starter, just for the hell of it. Spooks. The engine starts. Then that little routine happens all the way back—the truck stops and starts and stops.

Scotland Yard reports the trouble is in the crankcase breather . . . or closer still, with the drivers or mechanics who've been servicing the breather on the 2½-ton truck. According to the vehicle TM, the element in the breather should be taken out and dunked and blown dry and put back in every 1,000 miles (or sooner under dusty conditions). That last part—putting the element **back in** is where the trouble

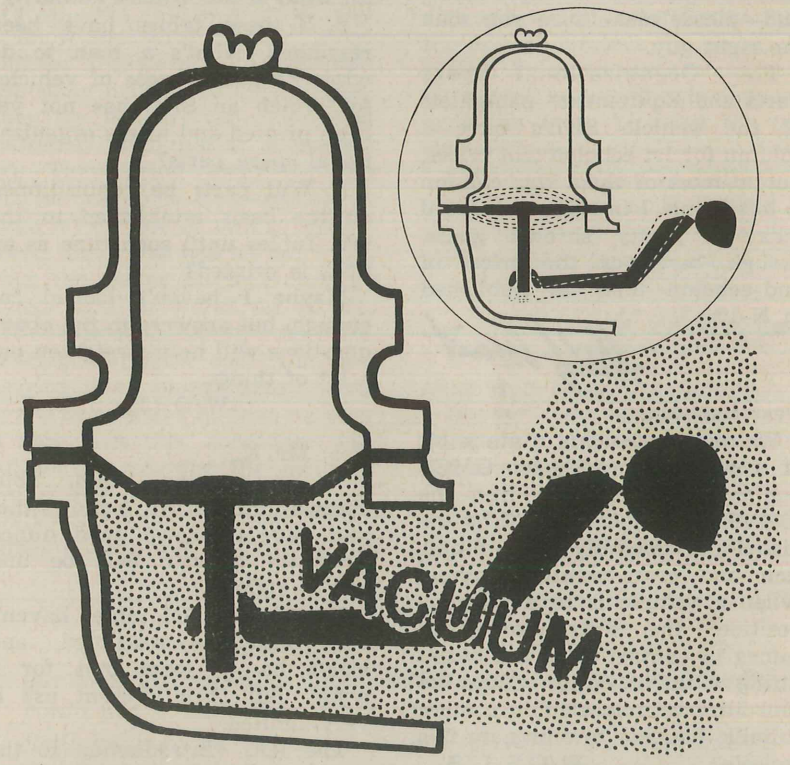


Figure 5. You CAN keep a good fuel pump diaphram down. Instead of fluttering and pumping gas (inset), the diaphram is held down by crankcase vacuum when you leave out the crankcase breather element.

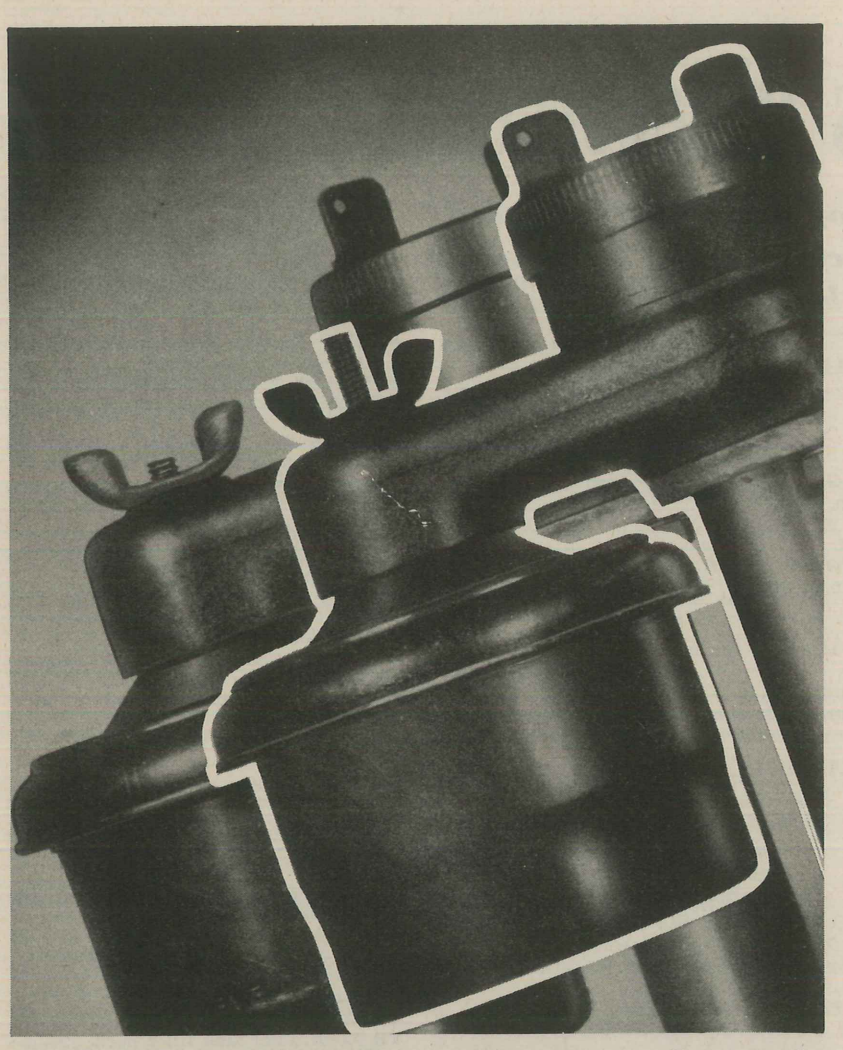


Figure 6. Why wait till the engine dies to discover the element's been left out? Here's a quicker way: when only 3 or 4 threads show beyond the wing nut (left), it's IN—and that's right. When lots of threads show (right), it's OUT—and that's wrong. So check it.

begins. If the element's left out, or lost, or forgotten, or just plain not put in—**you get a sealed crankcase!** The element holds the shell of the breather away from the top and leaves a small space for the air to get into the crankcase. Leave the element out (we dare you) and the shell screws up and seats itself comfortably on the gasket in the top of the breather. That makes a nice airtight fitting . . . just as effectively as if you'd put your hand down over the filler pipe.

We watched a mechanic try his hand on the filler pipe the other day. He took off the entire breather assembly and started up the engine. Then the mechanic pressed his palm flat against the top of the filler pipe. The engine ran O. K. After a few minutes though, it suffocated and stopped. Of course the mechanic took a piece of wire and fished down in the crankcase for the hunks of flesh that came off his palm. There's a mean cyclone going through the crankcase when it's working right.

The vacuum in the crankcase is what stopped the engine. When the air can't get in the breather, the vacuum in the manifold keeps emptying air out of the crankcase. A stronger and stronger vacuum builds up. Finally, the vacuum gets enough muscle to hold the diaphram of the fuel pump down (Fig. 5). The pumping stops, no fuel goes into the carburetor, and the engine dies of undernourishment. Later as soon as enough air seeps back in to fill the crankcase and allow the diaphram to pump gas again, you're able to start the engine.

Next time the engine pulls this stopping stunt, take a close look at the crankcase breather. It's easy to tell if the element's been left out. With the element **in,** there are only a **few** threads sticking out beyond the wing nut on the top of the breather (Fig. 6). With the element **out,** notice how high the threads stick out. Scout around and find the lost element. Or requisition a new one. But don't go driving along without the element . . . unless you like to pose in the crosshairs of a Nazi fighter plane.

'Course Jack wouldn't mind. He's too far gone. Just remember he got that way from a little thing like refusing to maintain the system. Stay way from his bad example. Operate your 2½-ton truck according to regulations and service your ventilating system. And you'll keep your crankcase from getting cranky.

VEHICLES IN STORAGE

Vehicles in storage are still governed by AR 850-18. However, in referring you to 850-18 for this subject, 850-15 has a new punch . . . "vehicles in storage **(for any purpose).**" Seems as though you might take this to mean topside wants the storage regulations enforced even for parked shop trucks or special-purpose trailers that you work in every day but don't drive for weeks and weeks. They're in storage too. (Par. 28)

The Month's Directives

Your monthly check-list of War Dept. AGO and Ordnance publications affecting 1st and 2nd-echelon motor maintenance—and how to get them.

WAR DEPARTMENT AGO PUBLICATIONS

AR—Army Regulations
FM—Field Manual
TC—Training Circular
TM—Technical Manual
T/O & E—Table of Organization and Equipment
WDC—War Department Circular

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Distributed outside Continental United States by:
The Adjutant General, War Department, Washington, D. C.

ORDNANCE FIELD SERVICE PUBLICATIONS

FSMWO—Field Service Modification Work Order
OFSB—Ordnance Field Service Bulletin
TB—Ordnance Field Service Technical Bulletin
SNL—Standard Nomenclature List.
List of All Parts (LAP)
Organizational Spare Parts and Equipment (OSPE)
Service Parts Catalog (SPC)

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TANK-AUTOMOTIVE CENTER DOES NOT DISTRIBUTE PUBLICATIONS TO THE FIELD

ARMORED CARS

CAR, ARMORED, LIGHT, M8 (6x6)

FSMWO G136-W2, Fuel gage float arm.
SNL G-136, OSPE, C2.

SCOUT CARS

CAR, SCOUT, M3A1 (4x4)

TB 700-78, Misuse of 5-gallon liquid containers.
TB 700-93, Staking of hexagon nuts and bolts.

GUN MOTOR CARRIAGES

CARRIAGE, MOTOR, 75-MM GUN, M3

FSMWO G102-W34, Pedestal type driving and blackout lights.

CARRIAGE, MOTOR, 37-MM GUN, M6 (¾-TON, 4x4)

SNL G-121, OSPE.

CARRIAGE, MOTOR, 105-MM HOWITZER, M7

FSMWO G1-W8, Hand grenade boxes and clutch pedal guard.
SNL G-128, OSPE (including C1).
TB 700-80, Periodic check of pioneer compasses.
TB 700-90, Towing pintles.
TB 700-91, Fuel tank filler neck, strainer, seal, and vent.
TB 731A-8, Shutter and deflector door.

CARRIAGE, MOTOR, 75-MM HOWITZER, M8

FSMWO G127-W4, Sand shields for top of tracks.
SNL G-127, OSPE (including C1).
TB 700-80, Periodic check of pioneer compasses.
TB 700-85, Rubber-tired trailing idler wheel.
TB 700-90, Towing pintles.
TB 727C-11, Cleaning of transfer unit oil cooler.
TB 727C-12, Modification in engine sling.

CARRIAGE, MOTOR, 3-IN. GUN, M10

FSMWO G1-W8, Hand grenade boxes and clutch pedal guard.
SNL G-104, Vol. XIII, Part II.
SNL G-130, OSPE (including C1).
TB 700-80, Periodic check of pioneer compasses.
TB 700-90, Towing pintles.
TB 700-91, Fuel tank filler neck, strainer, seal, and vent.
TB 731B-3, Clarification of master switch circuits.

CARRIAGE, MOTOR, 3-IN. GUN, M10A1

FSMWO G1-W8, Hand grenade boxes and clutch pedal guard.
SNL G-170, OSPE.
TB 700-80, Periodic check of pioneer compasses.
TB 700-90, Towing pintles.
TB 700-91, Fuel tank filler neck, strainer, seal, and vent.

CARRIAGE, MOTOR, 155-MM GUN, M12

TB 700-80, Periodic check of pioneer compasses.
TB 700-86, Lubrication of master clutch, spindle ball, and roller bearings.
TB 700-90, Towing pintles.
TB 700-91, Fuel tank filler neck, strainer, seal and vent.

CARRIERS

(See also Half-Track Vehicles)

CAR, HALF-TRACK, M2A1

SNL G-102, Vol. 2, OSPE.

CARRIER, PERSONNEL, HALF-TRACK, M3

SNL G-102, Vol. 3, OSPE.

CARRIER, PERSONNEL, HALF-TRACK, M3A1

SNL G-102, Vol. 4, OSPE.

CARRIER, PERSONNEL, HALF-TRACK, M5

SNL G-147, Vol. 3, OSPE.
TB 707-2, Relocation of the hydrovac air inlet tube.
TB 707-3, Door stop angle.

CARRIER, PERSONNEL, HALF-TRACK, M5A1

SNL G-147, Vol. 4, OSPE.
TB 707-3, Door stop angle.

CAR, HALF-TRACK, M9A1

TB 707-2, Relocation of the hydrovac air inlet tube.
TB 707-3, Door stop angle.

CARRIER, CARGO, M30 (T14)

TB 700-86, Lubrication of master clutch. spindle ball and roller bearings.
TB 700-87, New rubber blocks on worn rubber tracks.
TB 700-91, Fuel tank filler neck, strainer, seal and vent.

HALF-TRACK VEHICLES

(See also Individual Vehicle Listings)

TB 700-78, Misuse of 5-gallon liquid containers.
TB 700-79, Band track tension adjusting mechanism.
TB 700-82, Installation of steering knuckle boot.
TB 700-83, Adjustment of idler shackle stop bolt.
TB 700-88, Protecting idler adjusting screw threads.
TB 700-93, Staking of hexagon nuts and bolts.

LIGHT TANKS

TANK, LIGHT, M3A1

FSMWO G103-W37, Tolerances of bearings on gunner's periscope sight.
SNL G-103, Vol. 5, Sec. 1, Chapter 7, Parts List, C1.
SNL G-103, Vol. 5, OSPE, C2.
SNL G-103, Vol. 5, Sec. 7, Chapter 3, LAP, C1, Generator, regulator and generator filter.
TB 700-80, Periodic check of pioneer compasses.
TB 700-85, Rubber tired trailing idler wheel.
TB 700-90, Towing pintles.

TANK, LIGHT, M3A3

FSMWO G103-W37, Tolerances of bearings on gunner's periscope sight.
SNL G-103, Vol. 5, Sec. 1, Chapter 7, Parts List, C1.
SNL, G-103, Vol. 7, OSPE.
SNL G-103, Vol. 7, C2.
SNL G-103, Vol. VII, Part II, (Preliminary SPC).
TB 700-80, Periodic check of pioneer compasses.
TB 700-85, Rubber tired trailing idler wheel.
TB 700-90, Towing pintles.

TANK, LIGHT, M5

FSMWO G103-W37, Tolerances of bearings on gunner's periscope sight.
FSMWO G103-W39, Combination spot and and signal light.
SNL G-103, Vol. 2, OSPE, C1.
SNL G-103, Vol. 5, Sec. 1, Chapter 7, Parts List, C1.
TB 700-80, Periodic check of pioneer compasses.
TB 700-85, Rubber tired trailing idler wheel.
TB 700-90, Towing pintles.
TB 727C-11, Cleaning of transfer-unit oil cooler.
TB 727C-12, Modification in engine sling.

TANK, LIGHT, M5A1

FSMWO G103-W31, Sand shields for top of tracks.
FSMWO G103-W37, Tolerances of bearings on gunner's periscope sight.
FSMWO G103-W39, Combination spot and signal light.
SNL G-103, Vol. 5, Sec. 1, Chapter 7, Parts List, C1.
SNL G-103, Vol. 8, OSPE, C1.
TB 700-80, Periodic check of pioneer compasses.
TB 700-85, Rubber tired trailing idler wheel.
TB 700-90, Towing pintles.
TB 727C-11, Cleaning of transfer-unit oil cooler.
TB 727C-12, Modification in engine sling.

MEDIUM TANKS

TANK, MEDIUM, M3

SNL G-104, Vol. 1, OSPE, C1.
SNL G-104, Vol. 1, Sec. 1, Chapter 2, Suppl. 1, LAP, Electric Starter (Delco-Remy).
TB 700-80, Periodic check of pioneer compasses.
TB 700-87, New rubber blocks on worn rubber tracks.

TANK, MEDIUM, M3A1

SNL G-104, Vol. 12, OSPE, C1.
TB 700-80, Periodic check of pioneer compasses.
TB 700-87, New rubber blocks on worn rubber tracks.

TANK, MEDIUM, M3A2

SNL, G-104, Vol. 12, OSPE, C1.
TB 700-80, Periodic check of pioneer compasses.
TB 700-87, New rubber blocks on worn rubber tracks.

TANK, MEDIUM, M3A3

SNL G-104, Vol. 5, OSPE, C1.
SNL G-104, Vol. XIII, Part II.
TB 700-80, Periodic check of pioneer compasses.
TB 700-87, New rubber blocks on worn rubber tracks.

TANK, MEDIUM, M3A4

TB 700-80, Periodic check of pioneer compasses.
TB 700-87, New rubber blocks on worn rubber tracks.

TANK, MEDIUM, M3A5

SNL G-104, Vol. 10, OSPE, C1.
SNL G-104, Vol. XIII, Part II.
TB 700-80, Periodic check of pioneer compasses.
TB 700-87, New rubber blocks on worn rubber tracks.

TANK, MEDIUM, M4

FSMWO G104-W89, Muffler bracket.
FSMWO G104-W92, Combination spot and signal light.
SNL G-104, Vol. 6, OSPE, C3.
SNL G-104, Vol. VI, Suppl. 1.
TB 700-80, Periodic check of pioneer compasses.
TB 700-86, Lubrication of master clutch, spindle ball and roller bearings.
TB 700-87, New rubber blocks on worn rubber tracks.
TB 700-90, Towing pintles.
TB 700-91, Fuel tank filler neck, strainer, seal and vent.
TB 731A-8, Shutter and deflector door.

TANK, MEDIUM, M4A1

FSMWO G104-W89, Muffler bracket.
FSMWO G104-W92, Combination spot and signal light.
SNL G-104, Vol. 11, OSPE, C2.
TB 700-80, Periodic check of pioneer compasses.
TB 700-86, Lubrication of master clutch, spindle ball and roller bearings.
TB 700-87, New rubber blocks on worn rubber tracks.
TB 700-90, Towing pintles.
TB 700-91, Fuel tank filler neck, strainer, seal and vent.
TB 731A-8, Shutter and deflector door.

TANK, MEDIUM, M4A2

FSMWO G104-W92, Combination spot and signal light.
SNL G-104, Vol. 7, OSPE, C3.
SNL G-104, Vol. XIII, Part II.
TB 700-80, Periodic check of pioneer compasses.
TB 700-87, New rubber blocks on worn rubber tracks.
TB 700-90, Towing pintles.
TB 700-91, Fuel tank filler neck, strainer, seal and vent.
TB 731B-3, Clarification of master switch circuits.

TANK, MEDIUM, M4A3

FSMWO G104-W92, Combination spot and signal light.
SNL G-104, Vol. 8, OSPE.
TB 700-80, Periodic check of pioneer compasses.
TB 700-87, New rubber blocks on worn rubber tracks.

TB 700-90, Towing pintles.
TB 700-91, Fuel tank filler neck, strainer, seal and vent.

TANK, MEDIUM, M4A4

FSMWO G104-W92, Combination spot and signal light.
SNL G-104, Vol. 9, OSPE, C3.
SNL G-104, Vol. 9, Sec. 16, LAP, Instruments.
TB 700-80, Periodic check of pioneer compasses.
TB 700-86, Lubrication of master clutch, spindle ball and roller bearings.
TB 700-87, New rubber blocks on worn rubber tracks.
TB 700-90, Towing pintles.
TB 700-91, Fuel tank filler neck, strainer, seal and vent.

TANK, MEDIUM, M4A6

TB 700-80, Periodic check of pioneer compasses.
TB 700-87, New rubber blocks on worn rubber tracks.
TB 700-90, Towing pintles.
TB 700-91, Fuel tank filler neck, strainer, seal and vent.

VEHICLE, TANK RECOVERY, T2

SNL G-169, OSPE, C1.
TB 700-91, Fuel tank filler neck, strainer, seal and vent.

TRUCKS

CRANE, TRUCK MOUNTED, M2

OFSB 6-G-172, Lubrication.

TRUCK, ¼-TON, 4x4

OFSB 6-G-503, Lubrication.

TRUCK, BOMB SERVICE, M6, (CHEV) 1½-TON, 4x4

SNL G-85, Vol. 4, OSPE, C1.

TRUCK, 2½-TON, 6x4, C.O.E., 1940 (MACK N B)

SNL G-629, OSPE.

TRUCK, AMPHIBIAN, 2½-TON, 6x6

OFSB 6-G-501, Lubrication.
TB 802-2, Floor board.
TB 802-3, Inspection of winch shear pin hole.

TRUCK, 2½-TON, 6x6, AUTOMOTIVE REPAIR, M8 & M8A1

SNL G-139, Vol. 2, OSPE, Load "B."

TRUCK, DUMP, 5-TON, 4x2

SNL G-542, OSPE, C1, (1942).

TRUCK, 5-TON, 6x4, CHASSIS WRECKER, W/CRANE

SNL G-652, OSPE, (1941).

TRUCK, PRIME MOVER, 6-TON, 6x6

OFSB 6-G-535, Lubrication.

TRUCK, PRIME MOVER, 7½-TON, 6x6

SNL G-532, OSPE, (1943 model, w/winch).
TB 10-1471-1, Position of shifter lever ball.

TRUCK, CARGO, 10-TON, 6x4, (MACK)

SNL G-528, OSPE.

TRUCK, HEAVY WRECKER, 10-TON, 6x6, M1

SNL G-116, Vol. 1, OSPE, (Series 1).
SNL G-116, Vol. 2, OSPE, (Series 2).

TRACTORS

TRACTOR, HEAVY, M1

OFSB 6-G-98-C1, Lubrication.
SNL G-98, Sec. 11, LAP, Winch and snatch block group, (Allis Chalmers HD-10W).
SNL G-101, LAP, C1.
SNL G-101, OSPE, (IHC TD-18, Diesel), including C1.

TRACTOR, MEDIUM, M1 (IHC TD-9, DIESEL)

SNL G-99, OSPE. (IHC TD-9, Diesel).
SNL G-99, OSPE, (IHC T-9, Gasoline).
SNL G-125, Sections 1-10, LAP, (Allis Chalmers HD-7W).

TRACTOR, MEDIUM, M4, (ALLIS-CHALMERS)

OFSB 6-G-130, Lubrication.
SNL G-150, OSPE, C1.
TB 785-1, Improved track supporting roller assemblies.
TB 785-2, Transmission gear locking.

TRACTOR, MEDIUM, M5, (IHC)

SNL G-162, OSPE, C1.

TRACTOR, CRANE, 2-TON, M5

SNL G-99, OSPE, (IHC T-9, w/crane).

TRACTOR, CRANE, 6-TON, M4

SNL G-101, OSPE, (IHC TD-18, w/crane).
SNL G-101, OSPE, C1, (IHC TD-18). w/crane).
SNL G-126, OSPE, C1, (Caterpillar D-17, w/crane).

TRACTOR, HIGH SPEED, 13-TON, M5

SNL G-162, OSPE.

TRAILERS & SEMITRAILERS

TRAILER, TRACTOR CRANE, M6, (T26), (7-TON)

SNL G-117, OSPE.

TRAILER, TRACTOR CRANE, M12, (9-TON)

SNL G-117, OSPE.

SEMI-TRAILER, CARGO, 7-TON, (10-TON GROSS)

SNL G-544, OSPE, (1943-44).

SCOOTERS

SCOOTER, MOTOR, W/SIDE CAR

SNL G-551, OSPE.

PASSENGER CARS

CAR, 5-PASS., LIGHT SEDAN, 4-DOOR, (CHEVROLET)

SNL G-520, OSPE.

ADMINISTRATION

AR 310-60, T/O&E and other publications.
AR 310-200, C2, Allowance and distribution of Military Publications.
FM 9-5, C1, Ordnance service in the field.
FM 9-10, C1, Ordnance field maintenance.
TM 12-255, C1, Check list of records for overseas service.
WDC-231, Automotive disability report.
WDC-246, Definitions of terms pertaining to maintenance, repair and salvage of property.
WDC-248, Ordnance materiel: Distribution of FSMWO & TB's.
WDC-252, Civilian automotive advisors.
WDC-253, Automotive disability report.
WDC-263, Publication of War Department pamphlets.
OFSB 1-1, Index to ordnance publications (in 2 volumes).

MAINTENANCE

TM 5-267, Suppl. 4 & 5, Camouflage.
TM 38-250, Basic maintenance manual.
TM 38-305, Corrosion prevention.
WDC-231, Automotive disability report.
WDC-248, Ordnance material: Distribution of FSMWO & TB's.
WDC-253, Automotive disability report.
FSMWO G1-W6, Blackout driving light.
SNL H-9, C1, Miscellaneous piece material.
TB 700-84, Ordnance wheeled vehicles. Lubricant passage for universal joint trunnion ends.

STORAGE SHIPMENT AND ISSUE

TM 38-305, Corrosion prevention.
WDC-247, Tire and tube procurement, storage, issue and inventory control.
SNL G-656, Master Parts List (Studebaker).

TRAINING

TC 111, List of publications.
TC 112, List of films.

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Your monthly reference guide to all subjects covered in the last 12 issues of ARMY MOTORS

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CONNIE RODD

(Continued from page 230)

Ordnance Officers who aren't distributing publications as directed in OFSB 1-8, but there might be one or two more. If you can't explain things tactfully to **your** Ordnance Officer, write a letter **direct** to your Regional Ordnance Publications Depot (addresses on the "Directives" Page of ARMY MOTORS) asking for an OFSB 1-8, and explaining why you couldn't get it locally.

If that doesn't work, drop me a line.

LUBE YOUR TANK THROWOUT BEARING

(Continued from page 231)

your Ordnance officer know. There's a Field Service Modification Work Order issued directing that this new type bearing be installed in the following vehicles:

Medium Tanks M4 & M4A1	FSMWO G104-W50
Carriage, Motor, Howitzer M7	FSMWO G128-W10
Carrier, Cargo M30	FSMWO G158-W4

If **you** get the job of putting in the new bearing, load it with the special grease before installing it. Than you can forget all about greasing throwout bearings and concentrate on that weekend pass.

SGT. HALF-MAST

(continued from page 249)

vehicles by saying you didn't know of anything in black and white that says an officer can't drive an Army vehicle.

I'd like to direct your attention to Army Air Forces Regulation 75-4, which states: "Only enlisted drivers will drive tactical vehicles assigned to organizations."

Major M. K. G.

Dear Major,

Right you are! The new AAF regulation reached me shortly after answering the Lieutenant's question. As he happens to be at an AAF installation, it should help solve his "rank troubles." Note that it refers only to **tactical** vehicles assigned to **organizations.**

Unless somebody sneaks another new regulation across before I get this into print, I'll say that there's still nothing to bar officers of Army Ground Forces or Army Service Forces outfits from driving if they have a GI permit. Nothing, that is, except any local regulations of the post, camp, or station, or special rulings by the CO of the unit.

Half-Mast

Don't Oil Wheel BEARINGS

Since we gave you the low down on inspecting wheel bearings in the September-October issue (page 162) we've been handed a new interpretation that throws cold water on what we said.

If you remember, we told you to squirt a few drops of oil on the clean bearing, before you revolved it for inspection. We've just been told this is wrong. **Don't oil the bearing!** Do your inspecting with the bearing dry. An oil coating on the bearing prevents the wheel bearing grease from getting to the rollers like a slicker repells water. So after you've cleaned the bearing in solvent, inspect it dry, pack it, and install it immediately.

If you're going to have the bearing hanging around, out of the hub, for hours or days, then it's OK to dunk it in clean engine oil to prevent rust. But, before you start grease packing it, wash the oil off with solvent.

2 WAYS TO WASTE ANTI-FREEZE

Just pour it on the ground. That's one. The other is to put **extra** quarts in your radiator to give the cooling system protection **down** to **—40 degrees,** when the vehicle's only going to be used in climates where it gets down to **—10 degrees.** Both are bad, and waste the precious stuff. Your cooling system should have only enough antifreeze to protect it for the coldest weather you're operating in, or expect to be operating in, **here in the U. S.** Nobody expects you to be able to foresee whether the vehicles will be shipped to a colder climate. Just be on the lookout, and if they are, pop up and mention that more antifreze should be added before the vehicles are sent. (Forget about protecting your vehicles for overseas climates. Ports of Embarkation test the solution and add enough to give your vehicles maximum possible protection.) Keep a close watch on the strength of your coolant. Technical Manuals tell you to check it with the antifreeze hydrometer as part of the After-Operation Preventive Maintenance Service. Add enough to bring the hydrometer reading to the protection mark for your outfit (see chart). If your radiator's full, drain off only enough coolant to make room for the new antifreeze you're going to add. With engine running, take another reading to be sure you've added enough. NOT too much . . . don't add any quarts for "good measure."

If your antifreeze hydrometer shows . . .	Add number of pints shown here (for each gallon coolant in system*) to bring protection to temperatures above.	+10	0	—10	—20	—30	—40
+20 F ▶		1	1½	2¼	2¾	3	3½
+10 F ▶			1	1½	2	2½	3
0 F ▶				¾	1¼	1¾	2¼
—10 F ▶					¾	1¼	1¾
—20 F ▶						¾	1
—30 F ▶							¾

*Your vehicle Technical Manual lists the cooling system capacity.

NOTE: If your anti-freeze has been in all Summer, don't conclude that it's bad. It's probably OK. Get the complete dope in WD Circular 137, 16 June 43; and in OFSTB 700-20, 13 October 42.

••NEWS FLASHES••

The items on this page include latest news, revisions, and corrections verified after the publication deadline

It's now OK to lubricate your hydrovac cylinders, and vacuum brake cylinders with **light shock-absorber fluid** (U.S.A. Spec. 2-112, type I; Item Stock Number K001-10-28395 or Federal Stock Number 51-S-720) instead of **hydraulic oil,** according to an order sent out by the Chief of Ordnance. All future Lubrication Guides will contain the change.

* * *

Those packs of questions you've been asking about the Civilian Automotive Advisors are now answered officially in WD Cir. 252, 14 October 1943. The Circular gives the complete story on advisors—their mission, administration, number authorized for various units, uniform dress and brassards, and a list of references to previous directives on the advisor program.

* * *

The Adjutant General's Office now has plenty of WD Form 48's (the new Driver's Trip Ticket and Preventive Maintenance Service Record) on hand. Post Adjutants can get them for distribution from the regional AGO depots.

* * *

It isn't so. The Chief of Ordnance has **not** authorized any modification of the Chevrolet 1½-ton cargo truck into a dump truck, and Fort Wayne is **not** stocking any conversion kits for such a change. We don't know how such a story got started, but there is no official backing for it, and we can't even find any signs that there will be.

All Bearings Are CRITICAL

BALL — ROLLER — NEEDLE — SLEEVE

Middle-aged mechanics, who've spent years and years inspecting bearings on commercial trucks, tell us a surefire way to spot a bad roller bearing. BY LOOKING AT IT. Looking at every roller, one roller at a time, every part of it. Looking at the races. They call a bearing bad when they see a flat spot—or a rust spot—or pitted rollers—or a surface crack on the roller—or a cracked race. They see these things, then condemn the bearing. These experts don't depend on their ears for testing. Ears are unreliable. A bearing may sound noisy when you spin it over a few times, and still be all right. It's looking for the flat spots, the rust and the cracks that tells. Give your bearings a twice-over—carefully with bright eyes—before piling them in the scrap heap. The way bearings are made they'll last a long time. All they ask is to be packed with grease.

Remember—ALL bearings are CRITICAL.

Your Air Cleaners—the World's Best

The air cleaners on your vehicle—whether it's a tank, halftrack or truck—are the best cleaners there are. They don't come any better. They're good at keeping out dirt, dust, and other corruption that grinds the guts out of your engine. If you want figures, these air cleaners are **98% efficient**—almost perfect.

But no matter **how good** the air cleaners are, even if they were 100% efficient, they're not worth a damn unless you give them the services they need—regularly. If the filter is left without oil, or even with a **low** oil level, you may as well take a #14 shovel-full of sand and dump it in the engine. Because it's been found that in only 200 hours of operation an engine will suck as much as 18 pounds of dirt—with the air cleaner in good shape. **Eighteen pounds of bearing-grooving, ring-clogging, piston-wearing DIRT.** We get all that with a 98% efficient air cleaner. Think what happens when you let your cleaner drop to 40 or 50% efficiency!

That's what lack of service will do. You've got to inspect the oil level of the cleaners **every day**—After-Operation. If the oil level is low, put in some engine oil. If you're out of that, don't just let the cleaner go without oil. Strain some used crankcase oil through a rag and put that in. It's just as good. (Remember to run your finger through the oil in the cleaner bowl. When you feel lots of dirt and grime, add new or used engine oil. At least once a month—and oftener when conditions warrant it—you should take the cleaner down, clean it from start to finish, and add fresh oil.)

Even with the air cleaner in topnotch condition, you can be throwing handfuls of dirt and sand in the engine by allowing leaks to exist around the intake system. Those hoses from air cleaner to the carburetor (if your vehicle has them) are good spots for leaks. They should be clamped **tight.** They're so easy to put on, you can do it with your eyes shut. But don't. Get around and **look** to see if you can find any openings on the air horn. Just because they "feel" tight is no sign they are. Air that gets in there without going through the cleaners comes in loaded down with sand and grit. Close all those openings. That goes double for vehicles with a crankcase ventilating system. Leaks around the valve covers, the push-rod covers, and the oil pan let air into the engine without being scrubbed clean by the crankcase breather.

Need we say any more about this? We will, next month.

NO MORE NEW TIRES

—Except in Theaters of Operations!

That's right, soldier—effective immediately, no more NEW truck tires for anybody in the zone of the interior.

Why?

There's a CRITICAL SHORTAGE of TRUCK TIRE CASINGS. And because you're entitled to know, we're telling you that this shortage of casings is partly due to a shortage of tire cords, but mainly due to a lack of skilled personnel and tire production facilities. Demands for combat tires from overseas are steadily increasing—and these demands MUST be met.

There's only ONE thing you can do—GET ALONG WITH WHAT YOU'VE GOT. ("Second" tires and tubes will be available for use within the continental limits of the U. S. **only**—but remember, they are **substandard.**)

Getting along with what you've got is wrapped up in 3 points:

1 **AIR PRESSURE.** Too much air is no good—too little air is no good. TM 31-200 (Maintenance and Care of Pneumatic Tires and Rubber Treads) tells you how much pressure your tires need. Read and follow it.

2 **OPERATION.** Whenever you can, **please** stay away from rocks, stumps, ruts, ditches, etc. TM 31-200 (Maintenance and Care of Pneumatic Tires and Rubber Treads) shows what happens to tires whose drivers manhandled the vehicles they were mounted on.

3 **INSPECTION.** Watch for small cuts and breaks and fix them. RECAP tires before the CASINGS are worn to the breaker or before the tread design is worn off in the center. TIRE CASINGS MUST BE SAVED. Every ruined tire casing is ONE LESS TIRE for the Army. Casings CANNOT be REPLACED. They can be repaired and returned to service ONLY if they're not destroyed. Read TM-31-200 (Maintenance and Care of Pneumatic Tires and Rubber Treads)—re-read it, study it, and apply it.

Close SUPERVISION by OFFICERS—the WILLING cooperation of every ENLISTED MAN—CAREFUL DRIVING—and day-in-day-out PREVENTIVE MAINTENANCE are ABSOLUTELY VITAL.

YOU'VE GOT WHAT IT TAKES, SOLDIER---
NOW TAKE CARE OF WHAT YOU'VE GOT!