

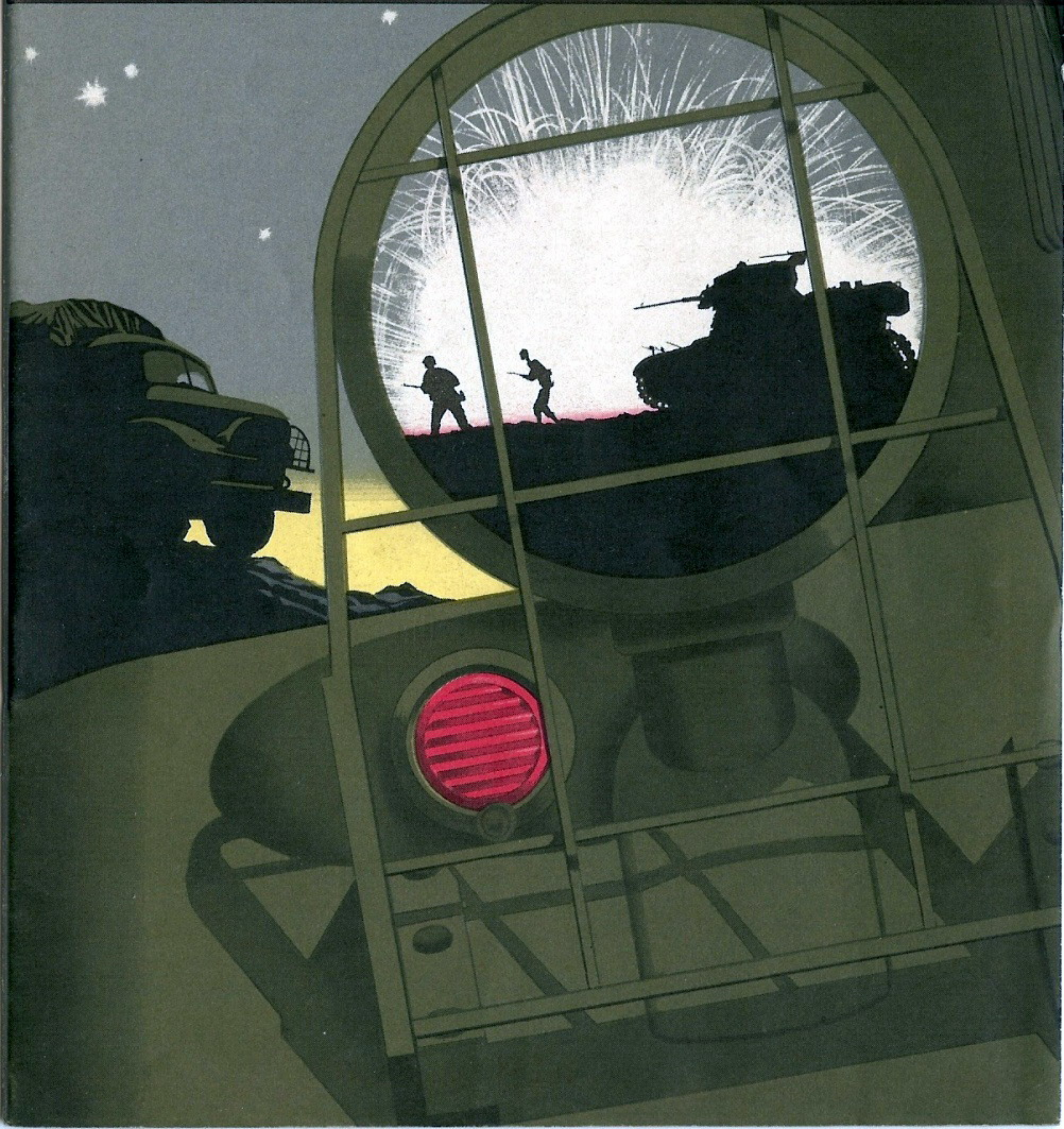
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ARMY MOTORS

VOLUME 5

OCTOBER 1944

NUMBER 7



Man Blows Top

Dear Ed,

Just when things were beginning to look brighter for the future of maintenance in my old outfit, I left. And the outfit I'm in now! Well, I always was a guy to leave when things were looking up, and jump into the unthinkable. That's about what the vehicles down here size up to. Just a



few examples to bear me out: Trucks, mostly 1/4-ton jobs, running around with only 8,000 to 15,000 miles on them and burning more oil and smoking like old grandpop's corn cob (due mostly to not letting the engines warm up); 40% of the vehicles without mufflers which isn't bad I know but a lot of them were broken driving carelessly over rough terrain; no maintenance of ventilator valves (most guys here wouldn't know one if it walked up and said hello); neglect of air pressures in synthetic tires; U-joints burning out due to lack of lubrication, and so on into the night.

The drivers down here are more poorly instructed than any place I've ever been. Some of their faults: riding the clutch, down-shifting, sudden stops, excessive speeds in lower gears, overloading—just to mention a few.



What happens? Among other things, we've had clutches go bad, a couple of broken axles, and worn steering mechanisms (due to fighting the wheel on the 1/4-ton, I believe). You can readily see why with the above faults of the drivers.

Everybody down here seems to want to get the automotive equipment into shape but no one seems to know how to go about it. They've tried everything from making us guys work from 7 a. m. to 8:30 p. m., to bringing in men from the companies—green men I mean, men who didn't know a wrench from a spittoon and vice versa—and organizing them as inspection teams. Why in the two weeks they were in the motor pool, we got the following spine-tingling results: 2 hand-brake linings burned (some joe thought he was tightening a body bolt), 40-odd stripped bolts, attempts to put grease in bleeder plugs of 1/4-tons, gaskets from master cylinder caps left off causing valuable fluid to slush out, and even clutch adjustments disturbed.

To sum it all up, the Army ought to get wise and really start performing maintenance like a contractor builds a house—from the ground, or rather the driver, on up. I have seen too many mechanics and motor sergeants who don't give a damn—a clean-up of these guys ought to come about. I've seen drivers' schools conducted by factory representatives showing drivers the inner parts of carbs, distributors, etc.—just enough to give a guy enough nerve to tear into them and really gum up the works. While I think it's plenty OK for a driver to know his stuff and what makes it tick, I don't think he should be shown too much in the first phase of instruction.

You people must think I've blown my top, but I like to spill what I think to somebody—and you seem to be gluttons for punishment.

Yours truly,
S/Sgt. B.

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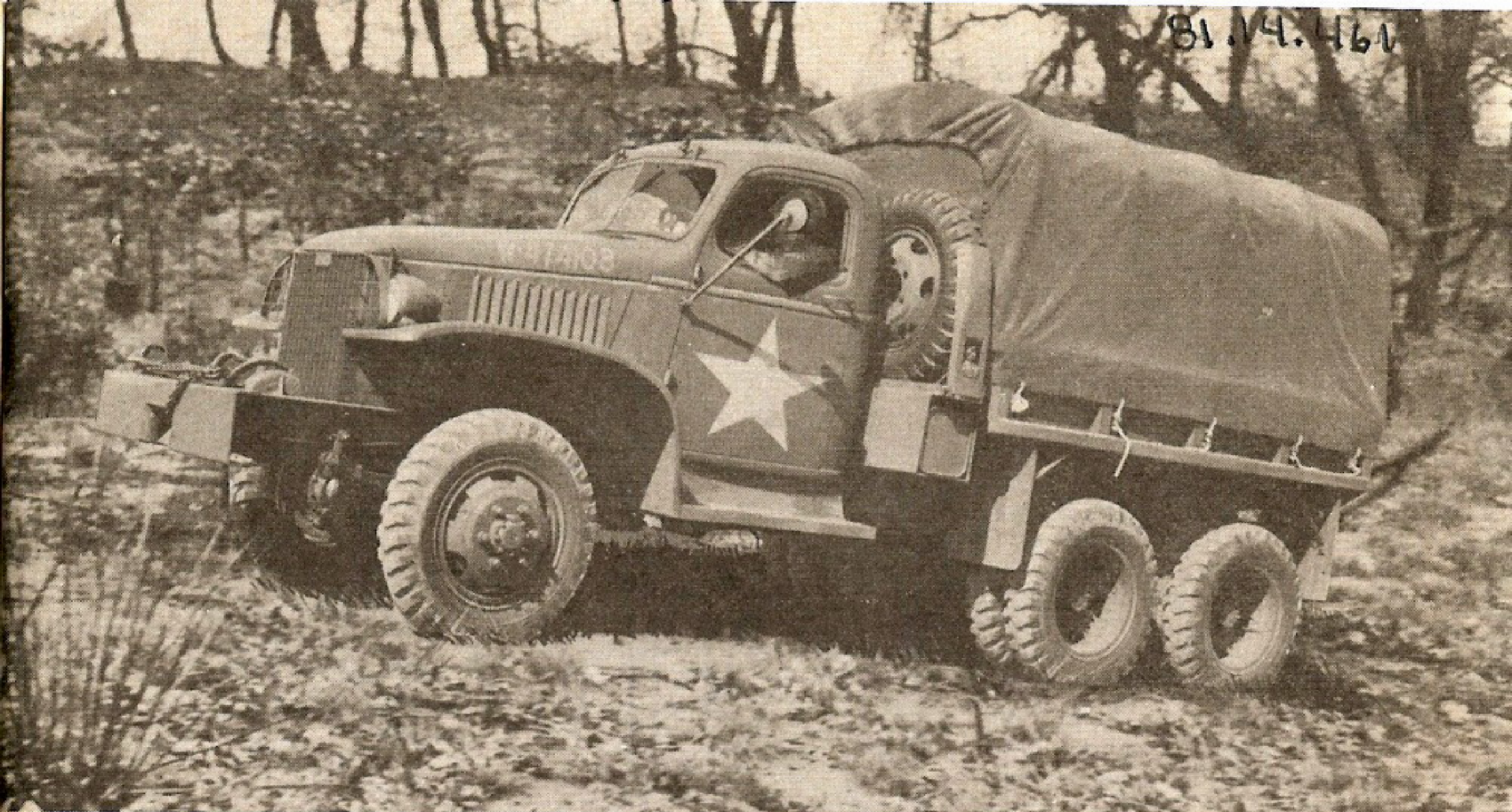
NEWS FLASHES

Inside Back Cover



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Emergency Protection For Rear Brake-Lines

Here's a quick, simple fix to keep wire and brush and foreign entanglements from cutting the rear brake-lines on your GMC 2 1/2-ton 6x6 trucks and ducks, sent in by S/Sgt. A. Polesnak who found it tough traveling on Italian soil.

The protection is a small, metal shield (Fig. 5) that's bolted to the wheel backing-plate and welded to the spring guide-bracket, and fits right beneath the rear brake-line. Practically all you'll need to make it is four strips of angle iron,

MADE-TO-ORDER FOR YOU GUYS IN COMBAT WHO SWEAT AND SWEAR WHEN RUBBER BRAKE LINES GET CUT UP ON YOUR 2 1/2-TON 6x6 GMC'S

some welding equipment, a hacksaw and a 3/8" drill. The strips of angle iron should be 8" long, 2" wide and 1/8" thick (see Fig. 1).

Grab the hacksaw and slit each strip of angle iron down the center about 1/4" (one end only) as shown in Fig. 2. Bend back each side of the split end at right angles, so

the bend will be even with the split (Fig. 3). Saw off the outer corners of the bend (the corners marked "X" in Fig. 3).

Drill a 3/8" dia. hole in each bent section—about 1 1/8" apart, measured from the center of each hole—like Fig. 4.

(Continued on next page)

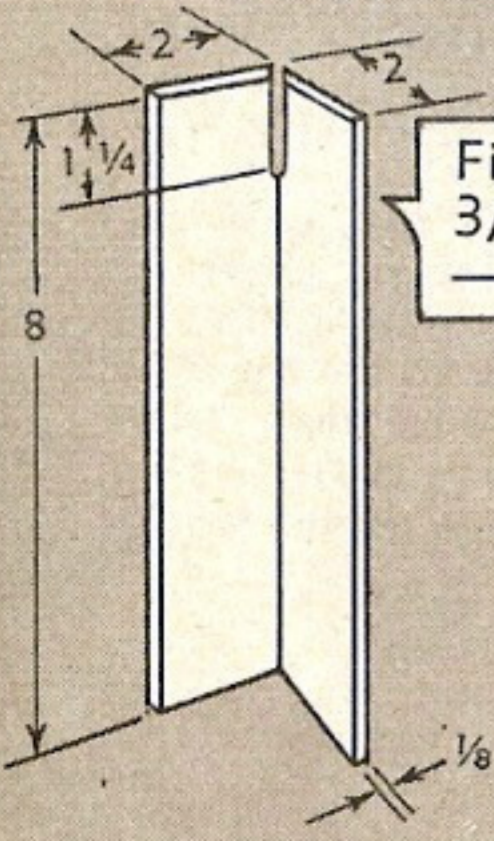


Fig. 1—You can use 3/16" or 1/4" angle iron—but 1/8" thick is best.

Fig. 2—Hacksaw down the center 1 1/4" and bend back both ends of the split.

Fig. 3—Saw off the outer corners (those marked 'X').

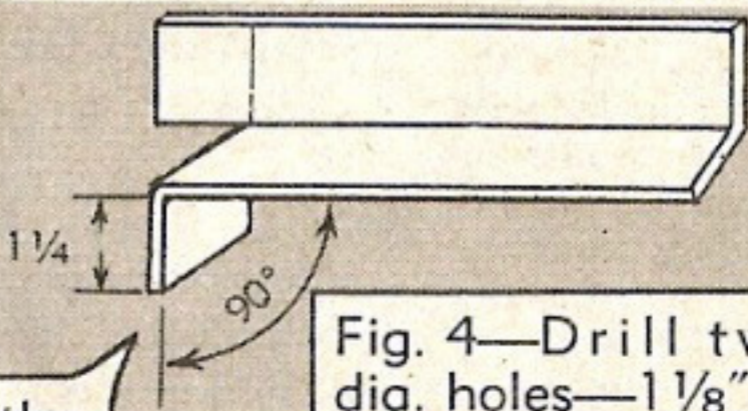
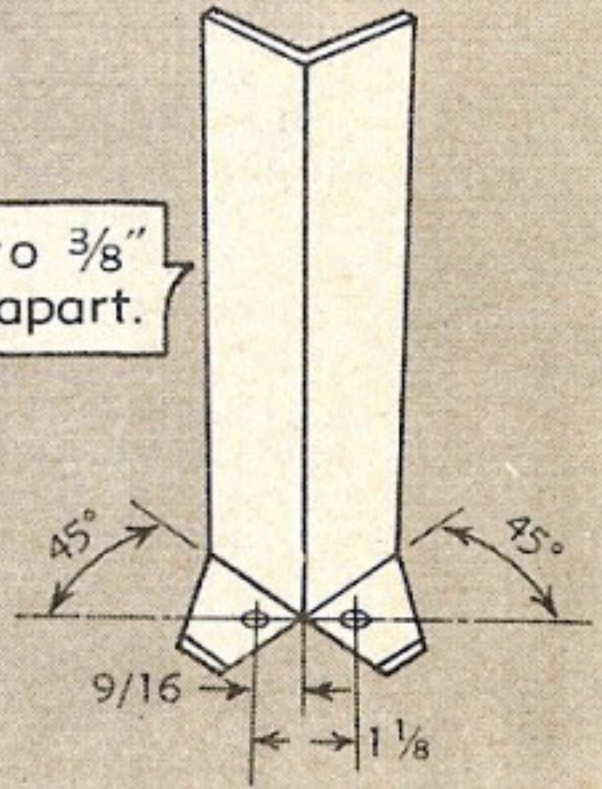
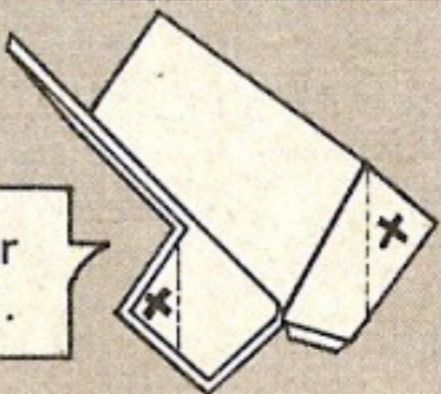


Fig. 4—Drill two 3/8" dia. holes—1 1/8" apart.



Now for the installation: Fasten the bent end of the angle iron to the wheel backing-plate by using the brake-cylinder mounting-bolts. The bolts should be 5/16x-18x3/4" (Federal Stock No. H1-10-13017) if the angle iron is 1/8" thick. If you're using thicker angle iron, about 3/16" or 1/4", you should use longer bolts—5/16x-18x7/8" (Federal Stock No. H1-10-13018).

Weld the other end of the angle iron on top the spring guide-bracket. The angle iron should cradle the rear brake-line like Fig. 5. In this position you'll get plenty of protection for the line, and even if wire does get wrapped around both the angle iron and the brake line, it won't cut the brake line.

Of course this is just an emergency fix, it's something you can get quick because you need it quick. A permanent change, one they're making in production, uses metal tubing instead of rubber hose to the rear-wheel brake-cylinders—on both the duck and truck. And another fix for the front brake-line is on the way. You'll get all the information, complete with drawings and details in an early issue, and until then—you've had it.

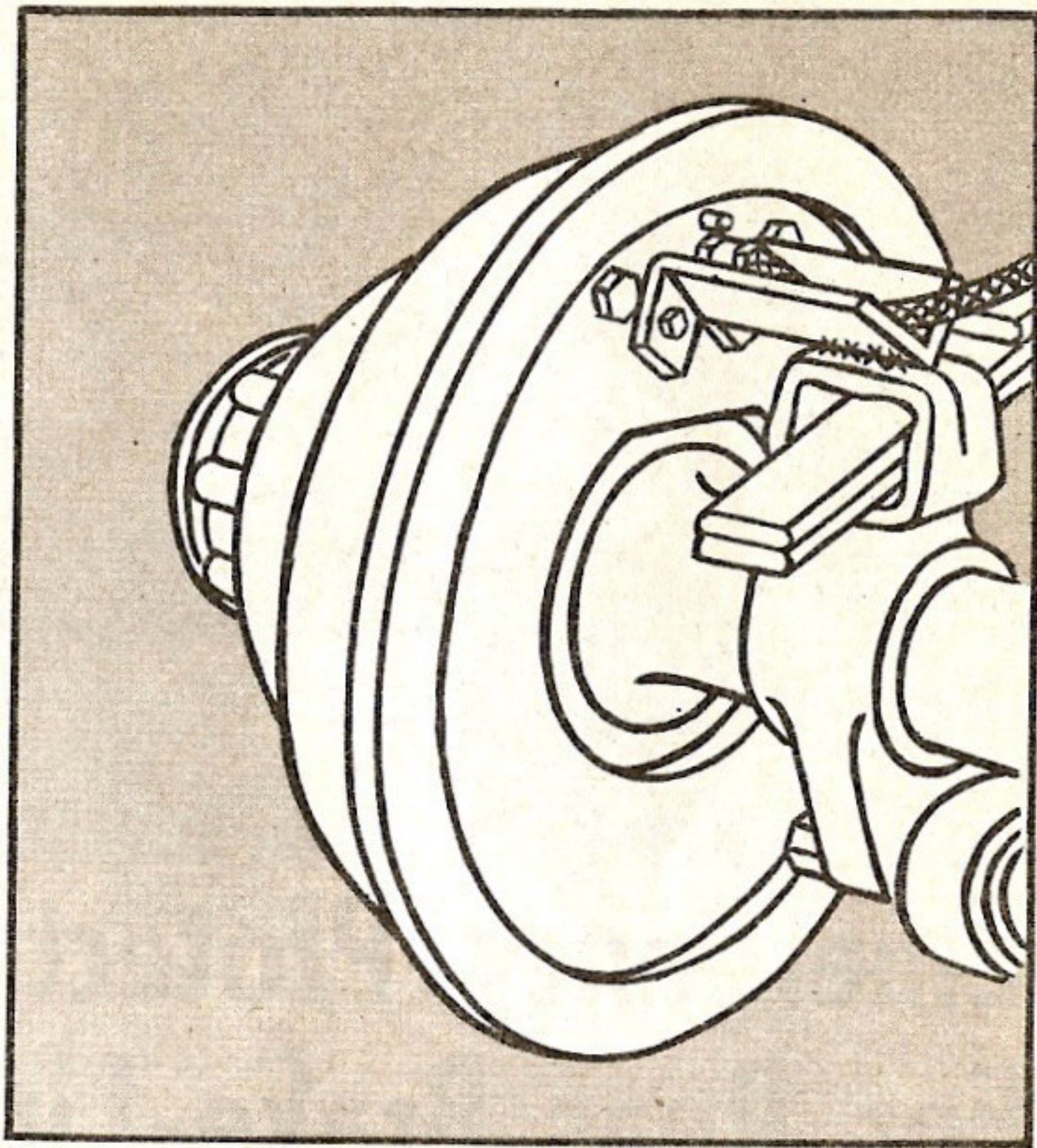


Fig. 5—Bolt one end to the backing plate using the brake-cylinder mounting-bolts (size of the bolts should agree with the thickness of the angle iron), and weld the other end on top the spring guide-bracket. Now your brake line's well protected.

How to Put the Boots to Half-Track Steering Knuckles

Half-Track Robbie (of cheap-cigar fame) just came through with a damn good solution to the headache you've been having with the steering-knuckle boots on half-tracks. Everybody knows how the boot comes off when the clamping ring slides over the zipper.

Robbie says: take a razor blade and cut the stitching between the zipper and the rubber boot on all four sides of the zipper (Fig. 1).

A RAZOR BLADE, A SEWING MACHINE, AND A HOMEMADE TOOL ARE ALL THE INGREDIENTS—YOU SIMPLY SUPPLY THE BRAINPOWER

On the inside ring, remove the stitches up to the first ridge on the back side of the boot. Cut the stitches on the outer ring to the first ridge on the outside of the boot. Get the sewing machine man to sew across and reinforce the

four places where you stopped cutting (Fig. 2).

Now you're ready to install the boot. Pull ends of the zipper out over the clamping ring (Fig. 3).

The tool shown in Figure 3 will make it easier to put the boot on.

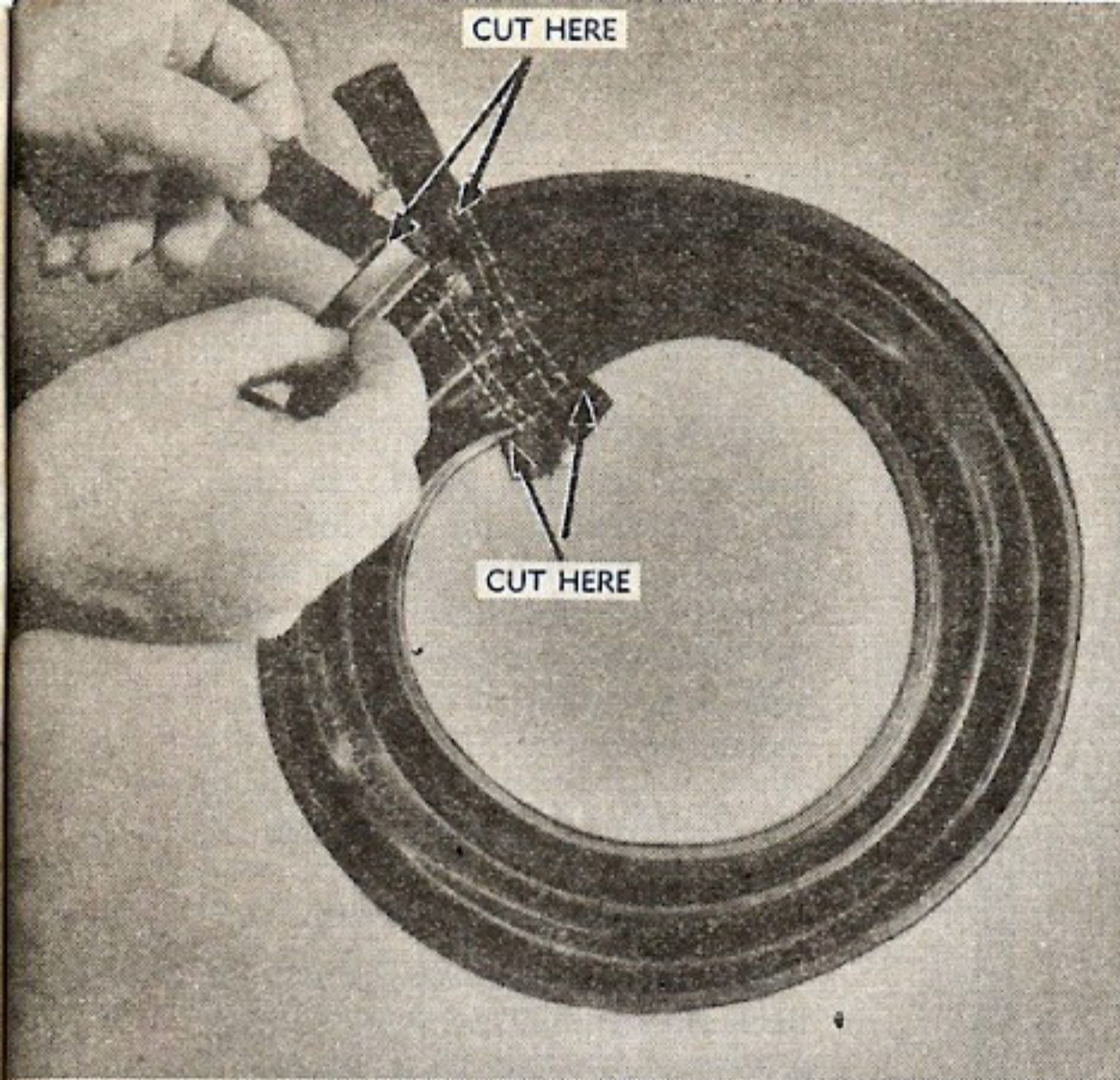


Fig. 1—This is the back side of the steering-knuckle boot with your razor blade already to cut in between the boot and the zipper.

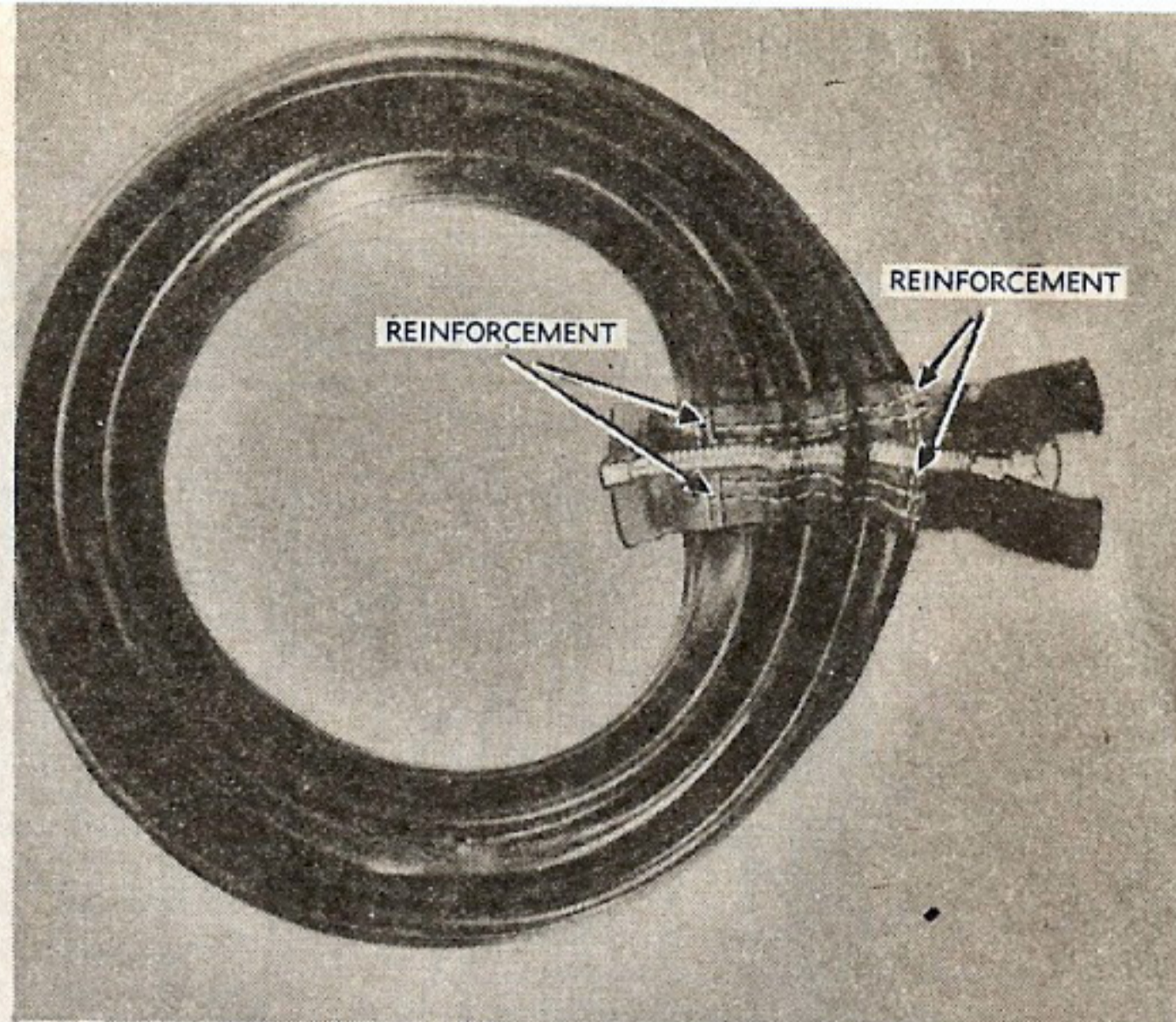


Fig. 2—The boot will look like this when the sewing machine man gets through reinforcing it. Those are the 4 points that take the needle.

Instead of cutting the end of the clamping ring a little piece at a time (in order to screw the nut down and clamp the ring tight) you can do it in one operation with this gadget.

All you need is a 5/16 wrench socket (Federal Stock No. 41-

W2972-120) and a wrench handle (Federal Stock No. 41-H-1509). Using a 1/8" drill (#27), drill a hole 1 1/4" deep in the shaft of the wrench, like this:



That makes room for the excess wire to go up in the handle until the nut is tight. Then you can cut the excess off in one piece. If you're going to be putting a lot of boots on, you can weld the socket right on the shaft, and leave it there.

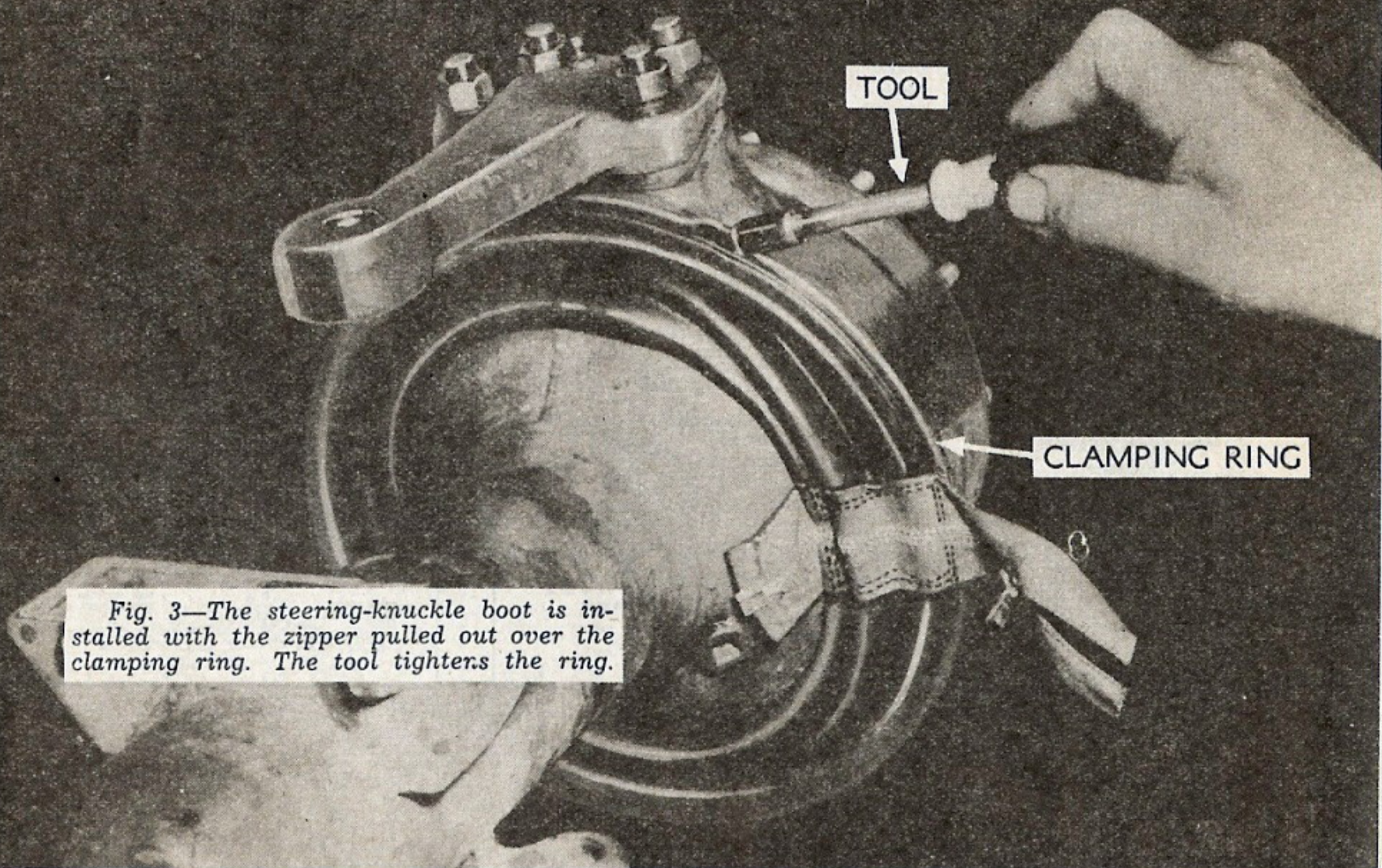
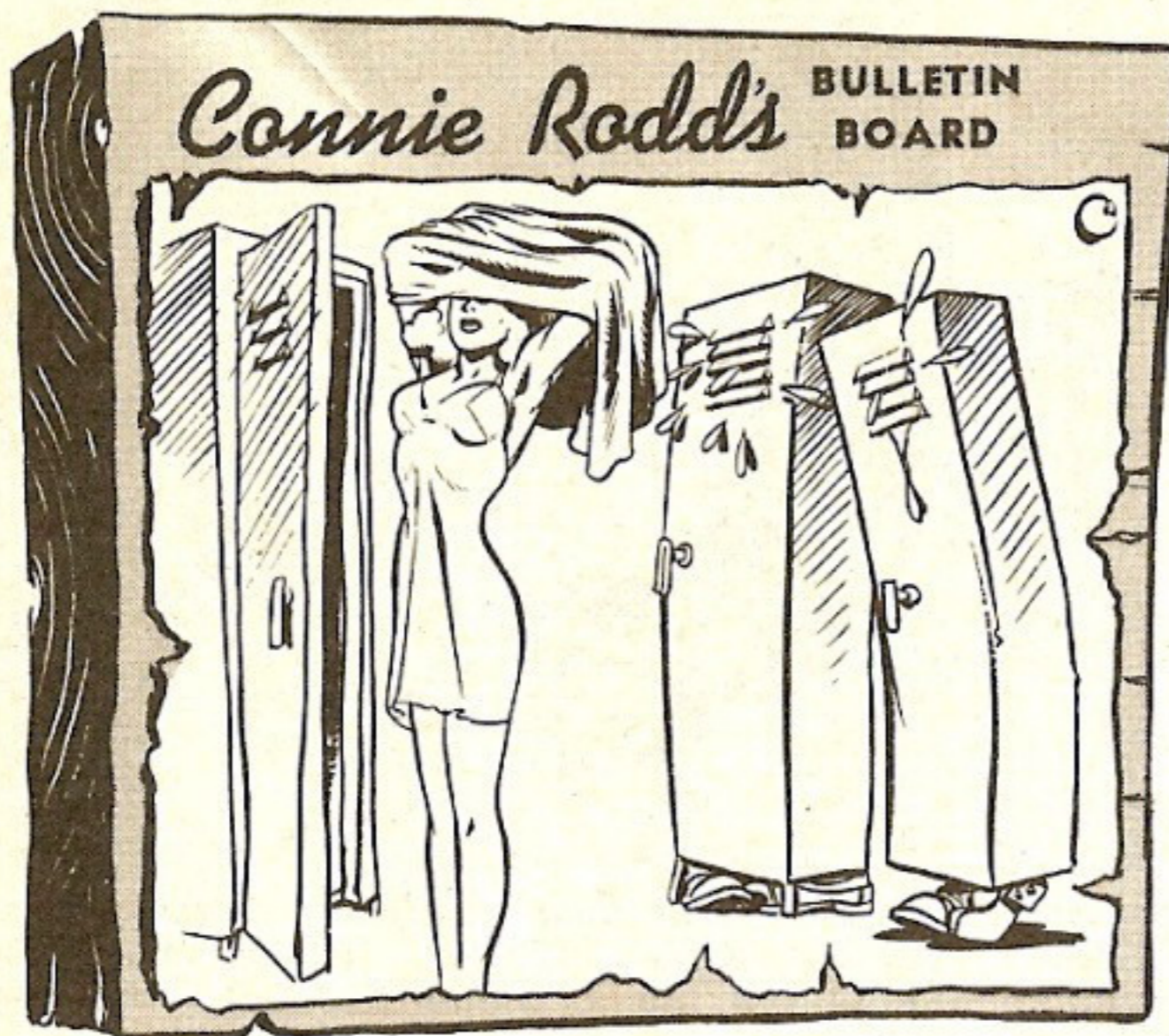


Fig. 3—The steering-knuckle boot is installed with the zipper pulled out over the clamping ring. The tool tightens the ring.



Spring-Mounted Chevrolet Cabs

I hear some of you boys are having a little trouble adjusting the spring-cushion-mounted cabs on Chevrolet 4x4 trucks. Guess when the factory changed over from the rubber mount last December someone forgot to tip you off.

The front left-mount uses a 7/16" fiber shim between the body-side sill-reinforcement and body support bracket (Fig. 1). This shim takes the place of the old rubber cushion. **Mount the bolt down tight.**

The front right mount also has the 7/16" fiber shim. In addition, there's a coil spring (4½ gauge steel) under the body support bracket. Tighten the adjusting nut

until this spring measures 1-19/32" between the two flat washers (Fig. 2).

The rear center mounting has the same coil spring as the right front mount, and should be adjusted to the same measurement (1-19/32"). On the rear mount you'll also find a steel spacer between the rear cab sill and the body mounting cross member, and a spring-seat washer mounted above the rear cab sill (Fig. 3).

After all adjustments have been made, tighten the lock nuts all-around—but tight. You'll find these spring mountings work out just as well as the rubber ones.

TM for Reo Trucks

If you've been hunting high and low for a Technical Manual that applies to your 2½-ton, 6x6,

and 2½ to 5-ton, 6x4 trucks manufactured by the Reo Motor Car Company, you can stop hunting now.

TB 9-807-4 (28 Jun. 44) says you can use TM 9-807 (16 Dec. 43). It's written for 2½-ton, 6x6 and 2½ to 5-ton, 6x4 trucks (Studebaker models US 6 and US 6x4) but can also be used for your Reo trucks of the same tonnage and drive.

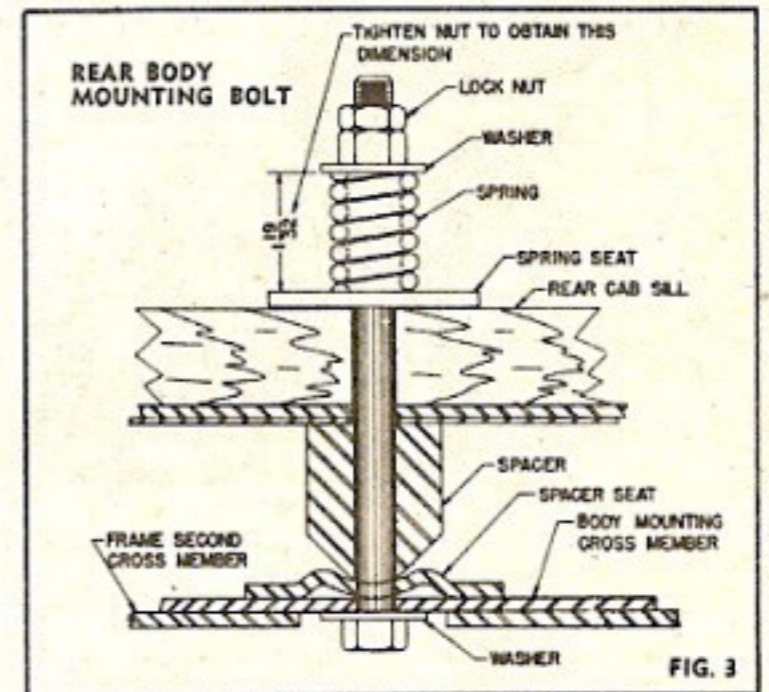
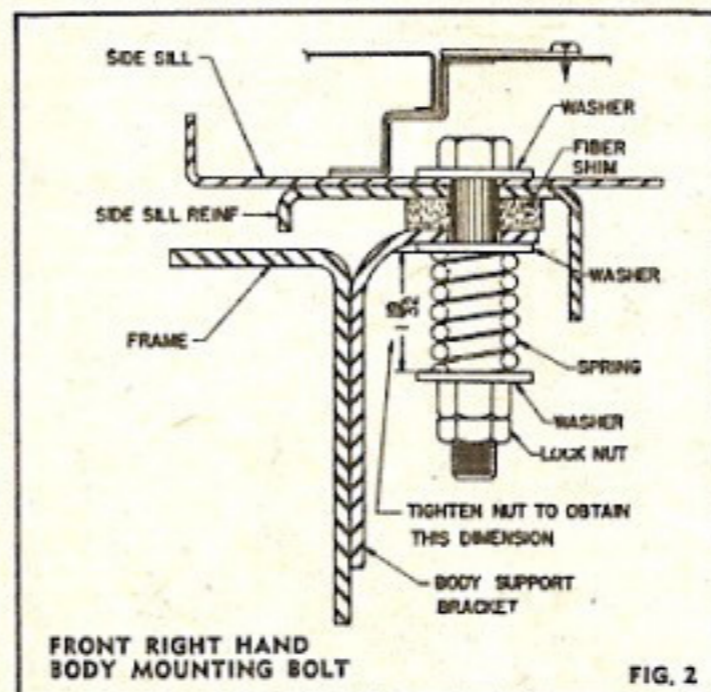
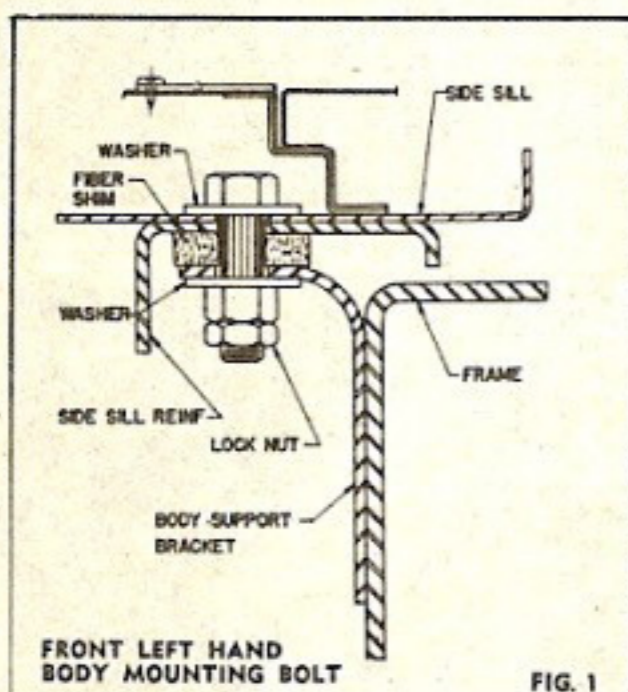
Ballast for Tank Transporters

The straw that broke the camel's back isn't enough to provide even a wisp of traction for your prime mover or tank transporter when pulling a loaded trailer.

According to TB ORD 91 (13 May 44), you should have 16,000 lbs. of ballast in the body of the tank transporter if you're pulling a 27,000 lb. load. Sand or gravel as ballast is definitely out for a load like that, since it only weighs about 3,000 lbs. per cubic yard and the body of the transporter is 3.5 cubic yards net (less tool boxes and wheel compartment).

Instead, pour about 4 cubic yards of concrete into blocks that'll fit in the body. Since concrete weighs about 4,000 lbs. per cubic yard, the blocks furnish the necessary ballast and still provide drainage and air circulation to prevent rust and corrosion from eating the metal body.

Fit the blocks with rings so they can be hoisted in or out of the body. Then too, it's a good idea to rest the blocks on wooden skids braced with wooden wedges



so they won't shift all over the floor of the transporter.

Corrections in M5 Manual

Here are a couple of corrections that oughta be made right away in your Ordnance maintenance manual on the light tank, M5, and 75mm howitzer motor carriage, M8 (TM 9-1732A). On page 146, step 5 reads: "Install six screws holding flywheel housing to crank case, and tighten to 70-75 foot-pounds with torque wrench." Change it to read 45-50 foot-pounds.

Then on page 189, change the torque figures after generator screws, starter screws and valve-lifter-bracket screws to read 45-50 foot-pounds. The cylinder head screws—which are heavier steel than the others—should still be tightened to 70-75 foot-pounds like the manual says.

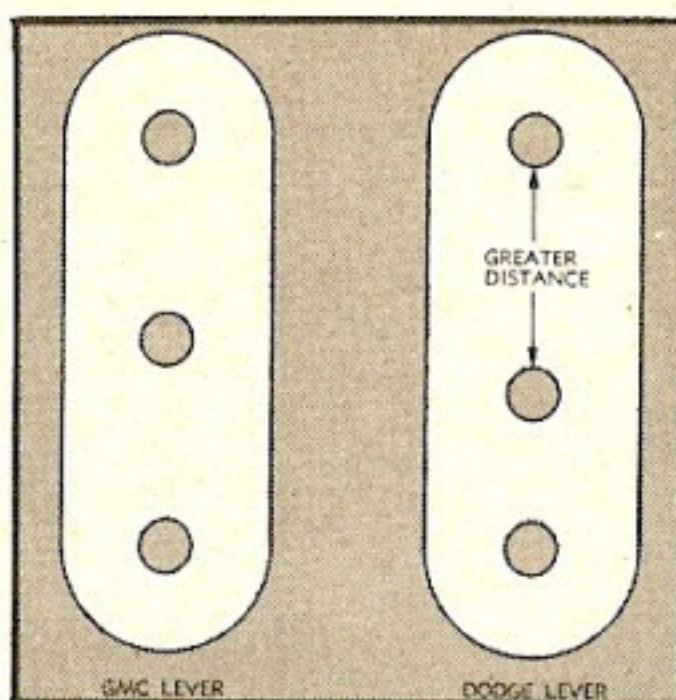
Replacing M50-Series Telescopes

While catching up on my reading I noticed that TB ORD 94 (13 May 44) calls for replacing M50-series direct sight telescopes with M70-series telescopes on several tanks and combat vehicles. Requisition them from Anniston Ordnance Depot, Anniston, Alabama, on the basis set up in the TB. Incidentally, you won't be able to install the new telescope in your light tanks M5A1 or M3A3 unless you've completed FSMWO G103-W32 (28 May 43) which provides for countersinking the telescope hole on the gun shield.

On many of the vehicles you'll need new mounting brackets and instrument lights. Since the TB doesn't list the work orders for these, I jumped the gun a little with this chart (at right), so don't requisition anything from here. Wait until the work orders come out and then requisition everything you need all at one time.

Declutch Lever on GMC 2½-Ton

Got it straight from a GMC



Service Representative who found some guys using Dodge shifter-shaft declutch-levers on the GMC 2½-ton 6x6's. That's bad, my lads, because the parts are **not** interchangeable.

You'll know they're not interchangeable the minute you use the Dodge part on the GMC because it'll be noisy, hard to shift, and keep jumping out of gear. In a short time this condition will chew off all the gear teeth, then even the **right** lever won't do any good.

There's a difference in the levers (see Fig.)—enough difference to show you in black-and-white they're not made to replace each other. So save the Dodge lever for the Dodge and use a GMC lever (Item Stock No. G057-02-74288, Lever, shifter-shaft de-

clutch, on the GMC 2½-ton 6x6. Why complicate the situation?

PM for Materials Handling Equipment

It's finally happened. Preventive maintenance has **officially** come to materials handling equipment.

WD Circular 269 (1 Jul. 44) set up the responsibilities and qualifications of operators and general policy regarding materials handling equipment.

And now along comes TB 9-2810-3 (26 Jul. 44) as the oracle of preventive maintenance on forklift trucks, straddle trucks, and wheeled warehouse cranes (until TM's on these vehicles are issued).

Tarpaulin for Gun Motor Carriage, M16

You've probably known right along that the 12x12-ft. tarpaulin that came with your multiple gun motor carriage, M16, was too short to cover both the cab and M45 gun mount.

TB 9-710-FE1 (10 Jun. 44) says your nearest higher echelon shop is now all set to make that tarpaulin large enough to keep you dry.

Present Telescope	Vehicle and Gun	Replaced by:	Mounting Bracket	Instrument Light
M51	3-in. gun M7 on gun motor carriages M10 and M10A1	M70G (standard)	MWO C43-W5	MWO C43-W6
M52	75mm how. M1A1, M2, M3 on 75mm how. motor carriage M8	M70C (standard)		MWO C51-W2
M54	37mm gun M6 in light tanks M3A3, M5A1	M70D (standard)	MWO A55-W9	MWO A55-W8
M54	37mm gun M6 in 37mm tank gunnery trainer	M70D (standard)		
M54	37mm gun M6 in armored car M8	M70D (standard)		MWO A55-W7
M55	75mm gun M3 in medium tanks M4	M70F (standard)	MWO C44-W4	MWO C44-W7
M56	75mm how. M1A1, M2, M3 on 75mm how. motor carriage M8	M70C (standard)		MWO C51-W2
M56A1	75mm how. M1A1, M2, M3 on 75mm how. motor carriage M8	M70C (standard)		MWO C51-W2
M66*	37mm gun M6 in light tanks M3A3, M5A1	M70D (standard)	MWO A55-W9	MWO A55-W8
M66	37mm gun M6 in armored car M8	M70D (standard)		MWO A55-W7

New Front for M4 Tractors

From now on you guys with M4 18-ton high-speed tractors are going to find your job of gun emplacement a lot simpler. That's because MWO ORD G150-W3 (17 Jul. 44) calls for a new front plate and pintle assembly for all M4's with serial numbers 1 to 2500 inclusive.

The new plate not only provides a front-mounted pintle for easier gun emplacement, but furnishes ventilation for those early model M4's where the driver's cab is a regular hot-box.

But a word of warning—note the caution plate on the new front. **The pintle's to be used for gun emplacement only, not for hauling heavy loads.**

Requisition Kit, front plate and pintle assembly, Official Stock No. G-150-5700468. To install it, remove the 22 bolts that hold the front plate and scrap it. Install the new front plate and pintle assembly (Fig. below) with the

original bolts and lockwashers.

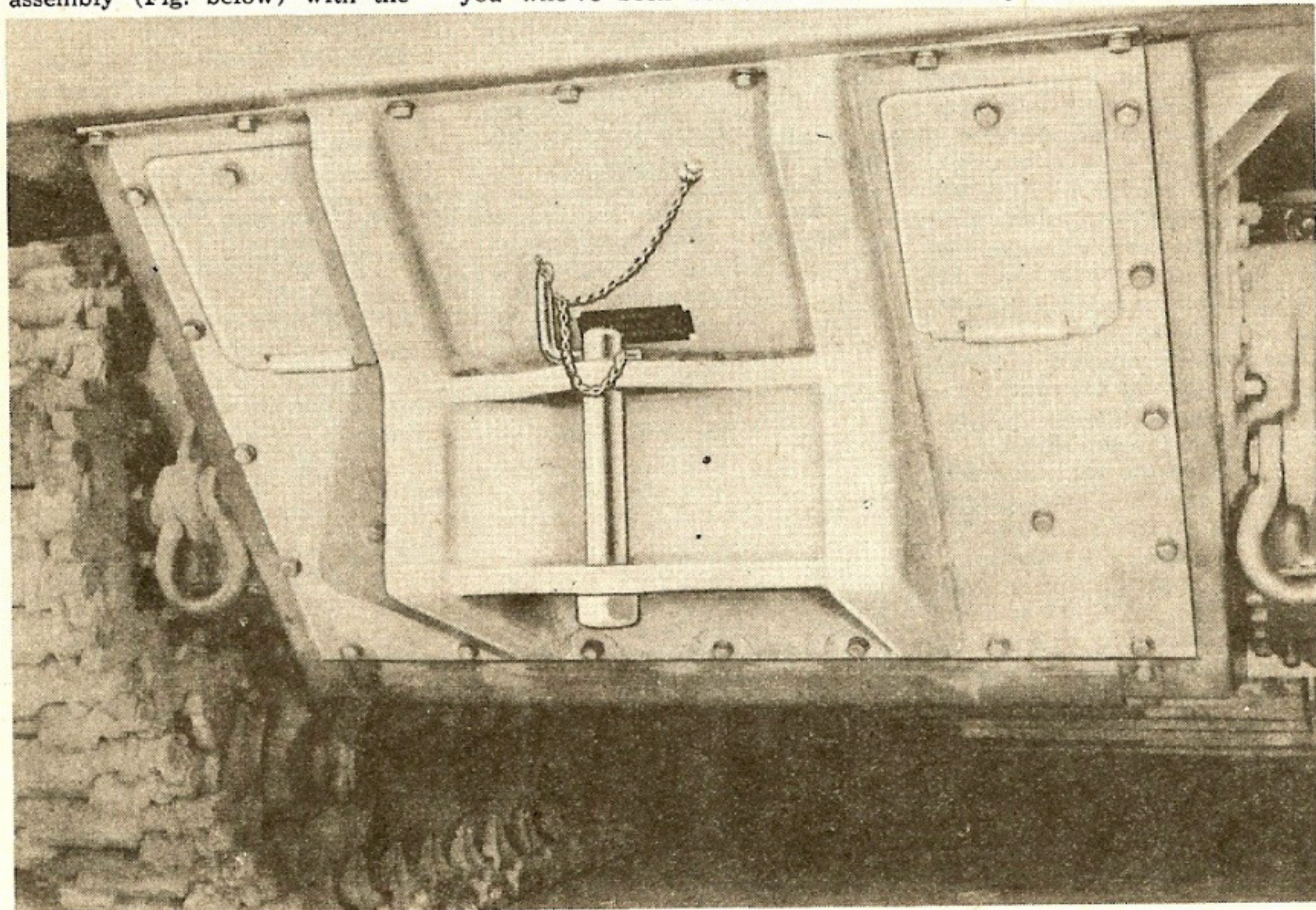
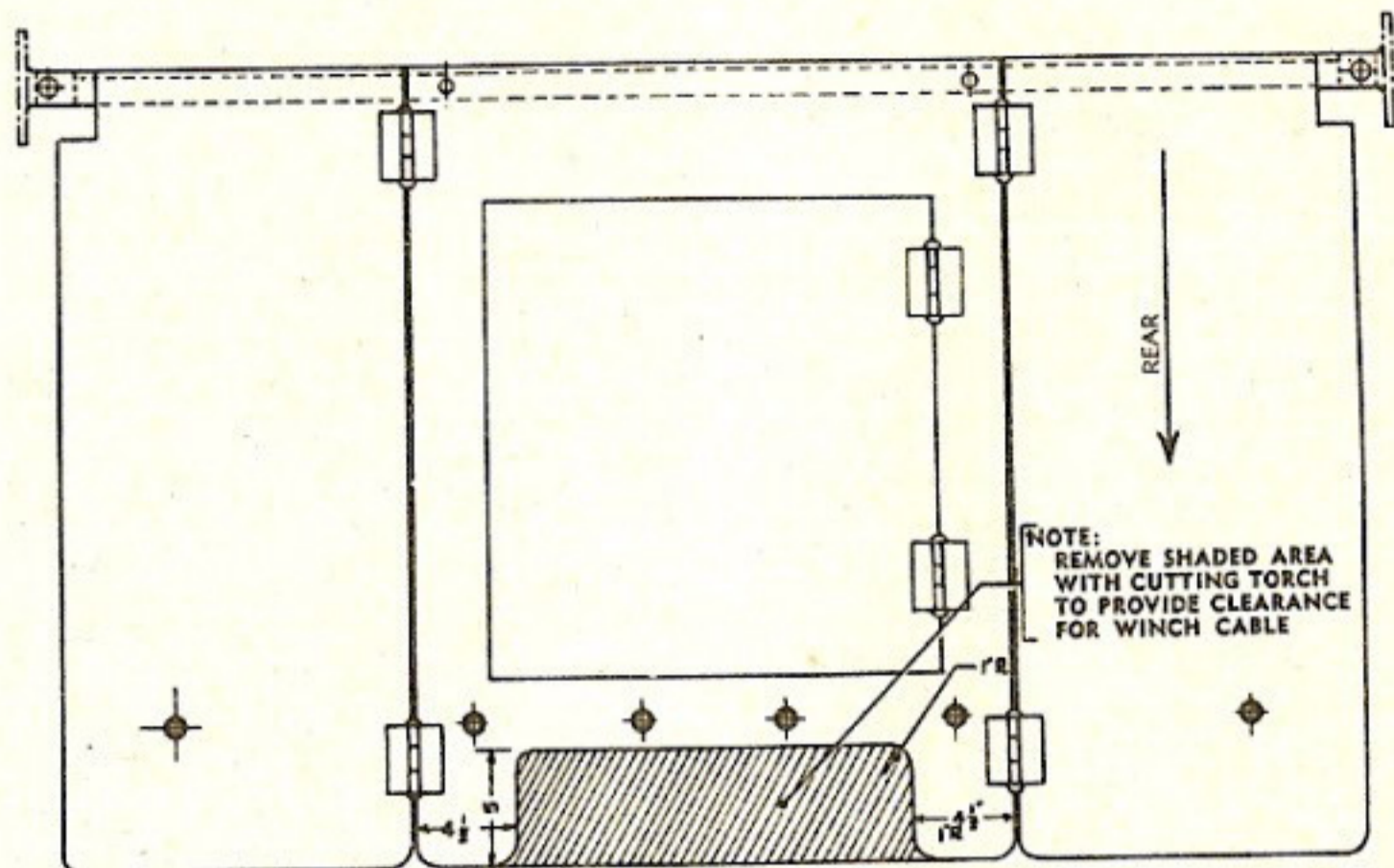
Return any extra modification kits to Lincoln Ordnance Depot, Springfield, Illinois—they're not to be held as spare parts.

M32 Winch Cable Clearance

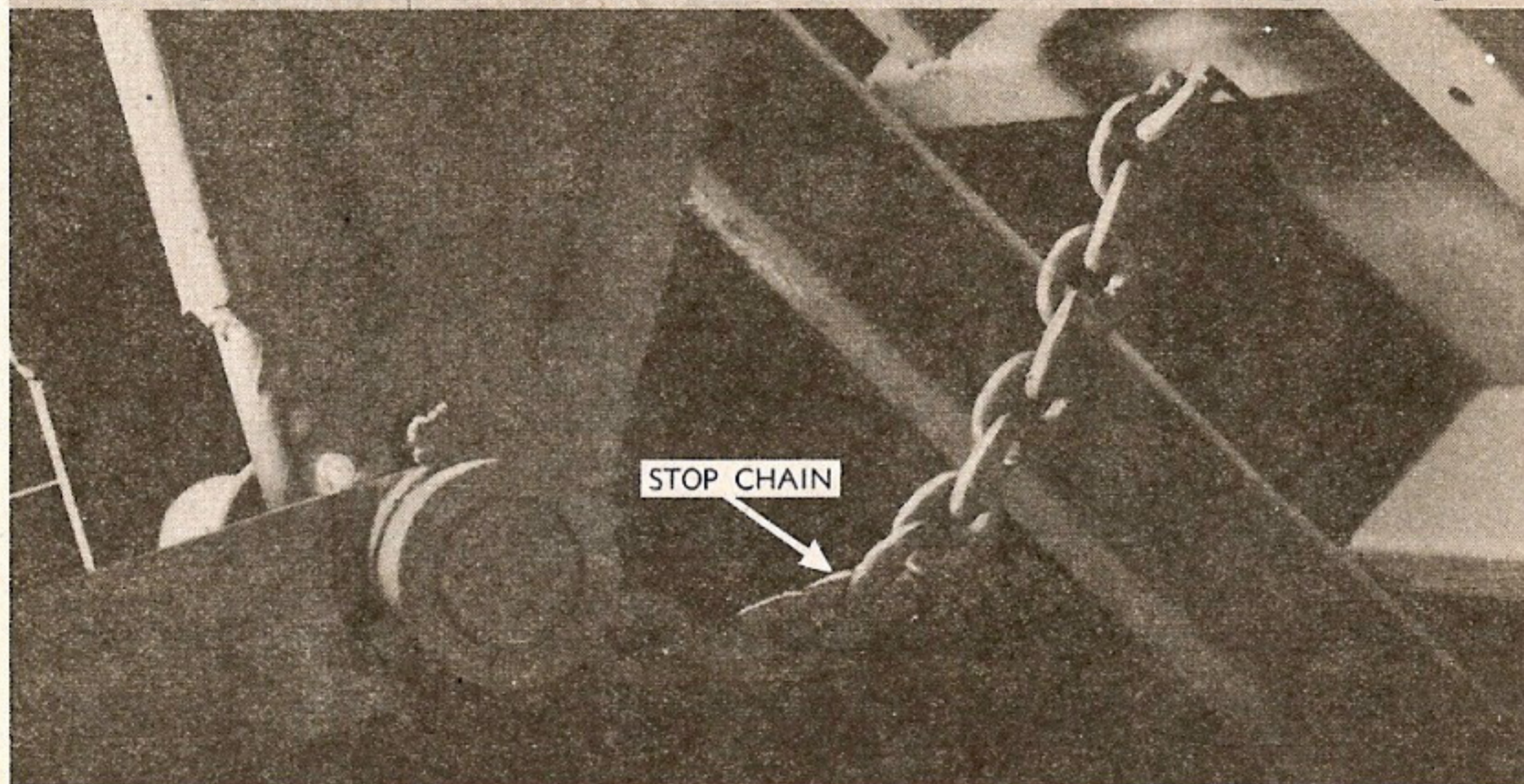
Here's a sure cure for those of you who've been bothered with

the winch cable on your M32 tank recovery vehicle scraping against the machine gunner's platform (when the cable's unwound down to the first layer).

TB 9-738 FE1 (3 Jul. 44) says to cut a strip about 5" wide off the rear of the platform—leaving at least 4½" on either end of the cut (Fig. above). It's about a five-minute job with a cutting torch.



DUMP TRUCK HOISTS



HERE'S HOW TO MAKE THEM DO LIKE THEY SHOULD WHEN THEY WANTA DO LIKE THEY SHOULDN'T

The hoist mechanism on dump trucks is one of the most neglected orphans in the Army. Lots of Gar Wood hoists on the 2½-ton GMC and 4-ton Diamond T dump trucks have been failing—just when you need 'em most. The manufacturer is now running tests to improve the hoist. Until they get results, these remedies will help keep your trucks dumping full time.

Before you start monkeying around dump bodies in the raised position, block the body in place.

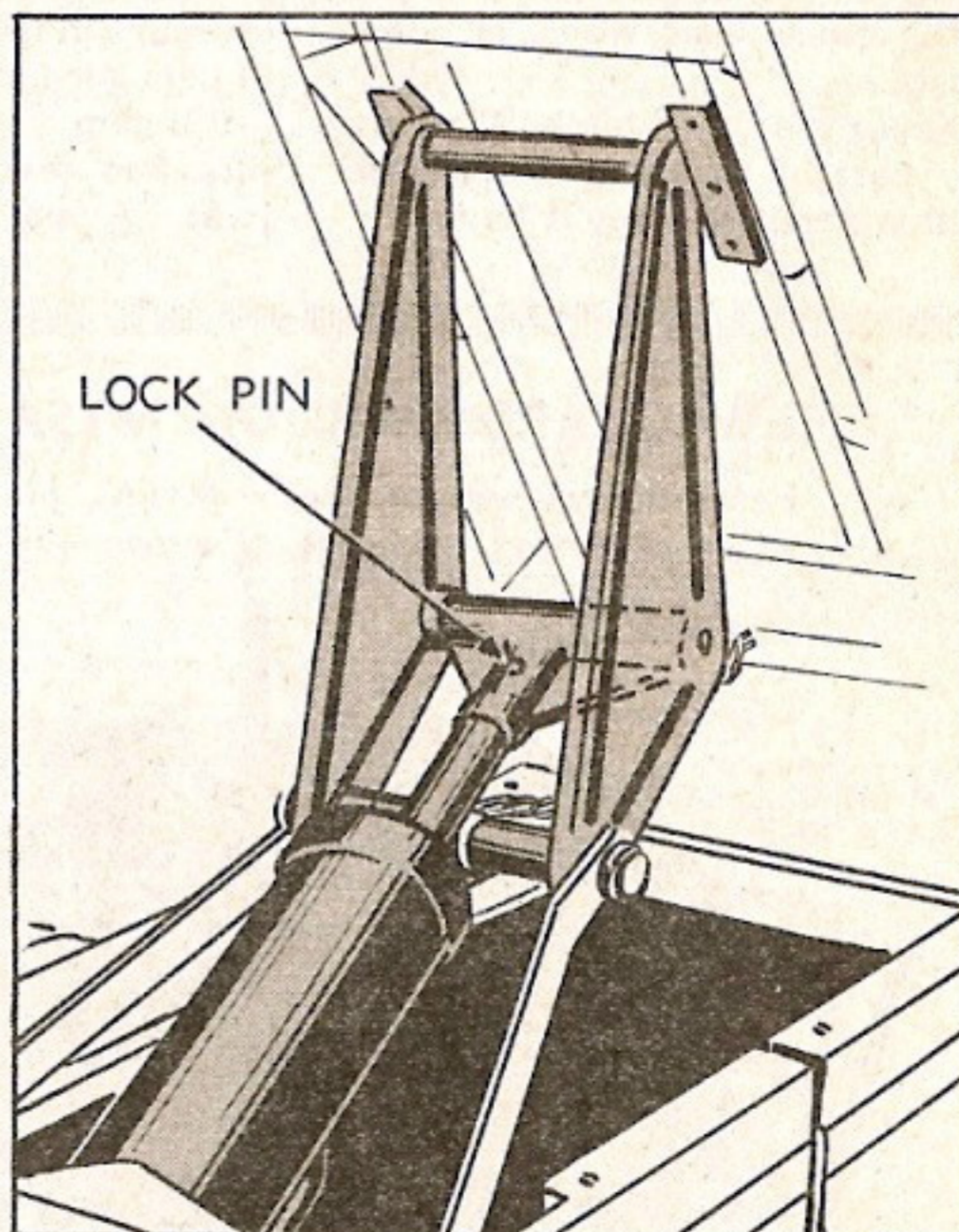
When you're dumping a load down hill, slackness in the stop chain (Fig. 1 above) may cause "over travel" of the hoist-cylinder piston and you'll find yourself with a fractured hoist-cylinder head. Drive the truck on level ground, raise the body with the hoist to its full limit of travel and check the stop chain. If it isn't taut, taut-en it.

The piston rod must seat firmly against the cross head (Fig. 2 at right). Check it by removing the pin (with the body in a lowered position). Raise the body by the hoist and then try to insert the pin in its original position. If the pin won't slide easily into place, the piston rod is not seated properly and the full thrust of the hoist is on the lock pin instead of the base of the cross head. Drill a new hole through the hoist head and piston rod 1 inch from the original hole (toward the hoist cylinder) and 30° (about 1½") to the right or left. Now put the lock pin back in place. When you're checking the lock pin or drilling the new hole be sure your safety blocking doesn't carry any load or you can't check accurately.

(Continued on next page)

Fig. 1 (above)—If the stop chain looks like this when the hoist is fully raised, tighten it.

Fig. 2 (below)—Remove this pin and try to put it back when the body is in a raised position. It should go in without any trouble.



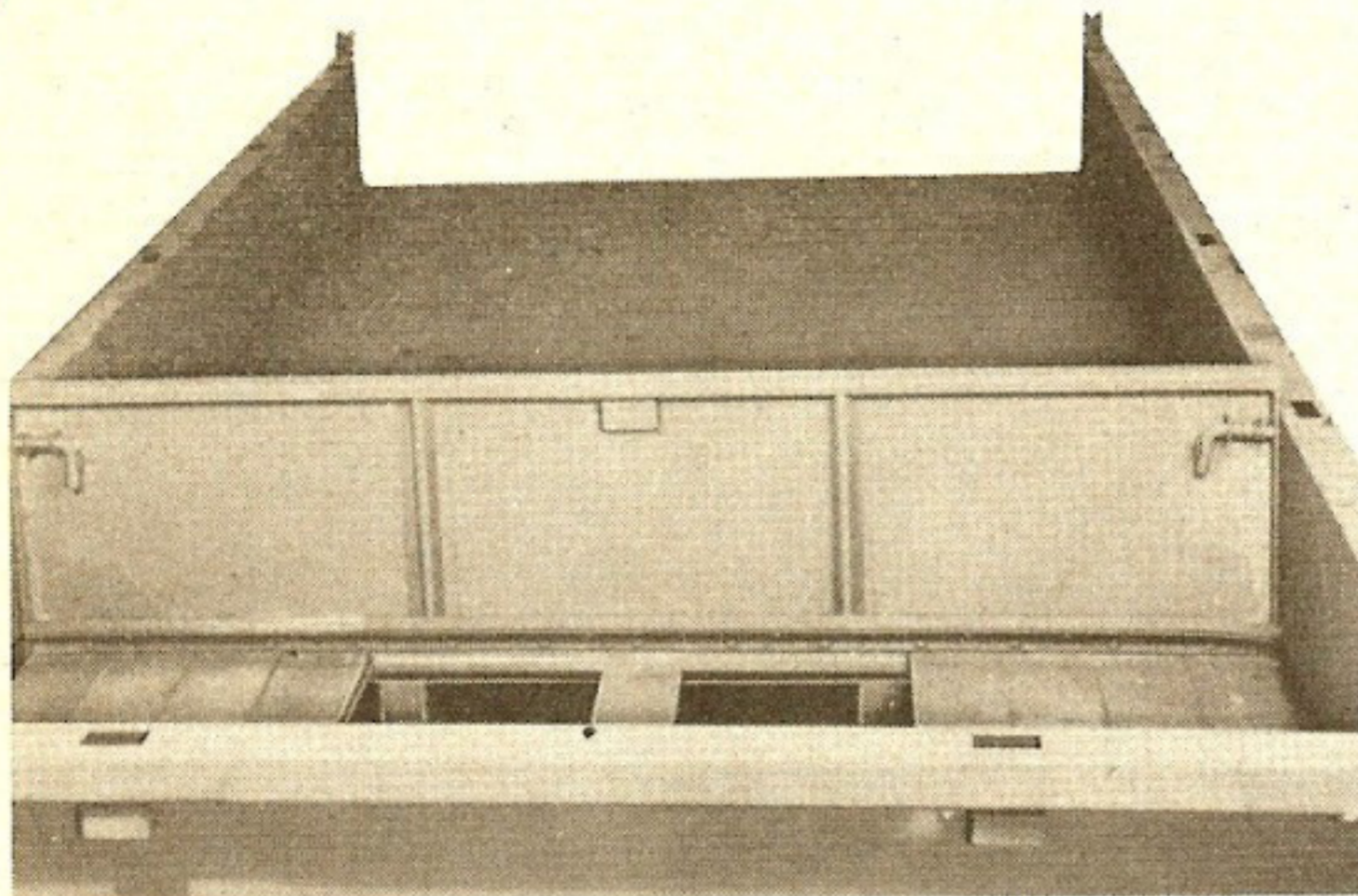


Fig. 3—The partition should always be up and locked in position when you are using the 2½-ton GMC as a dump truck.

If you overload your 2½-ton GMC past the 10,000 lb. mark, don't start crying when your hoist fails. That's the maximum load the hoist was built for. There's a partition that lies flush with the floor that's awful easy to overlook. Raise it and fasten at right angles to the floor (Fig. 3) when you're using the GMC as a dump truck with either Gar Wood or Heil hoists.

Never use the dump hoist when any part of the load is forward of this partition—you'll have an-

other hoist failure. While we're on the subject, Lt. Robert Timpany, Motor Officer of an engineering aviation battalion in the Pacific, suggests a cover for the top of the space between the front of the dump body and the partition. (Never install a false floor.) Sometimes material will fall over the partition and drop through the openings in the floor. If it happens to be a good sized rock that drops—it'll jam your drive shaft in a jiffy and tear out the universal joint. A cover, attached with

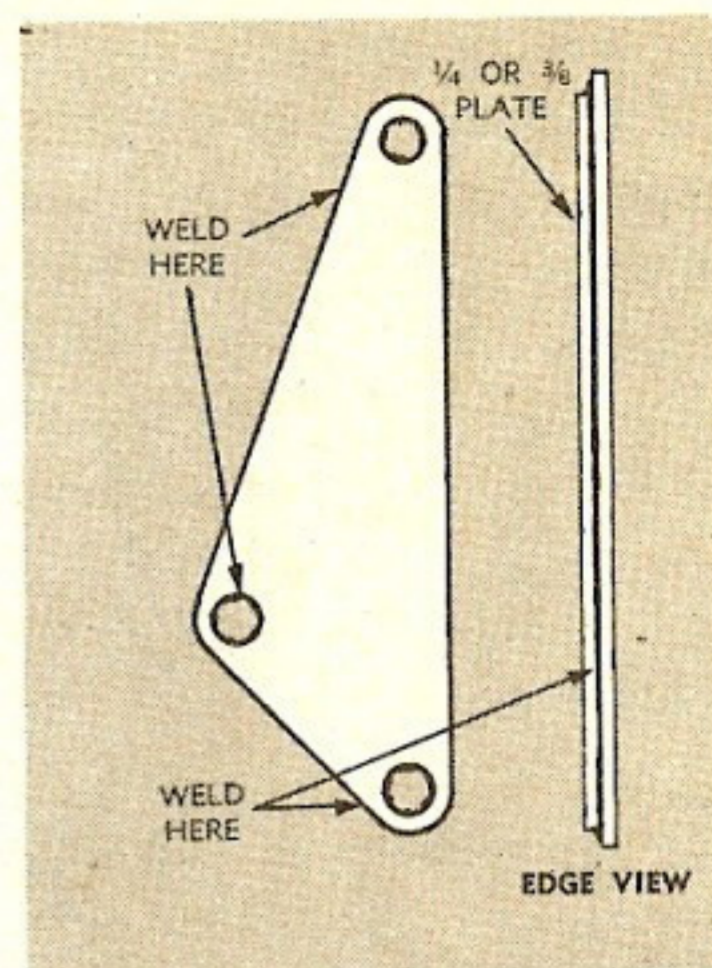


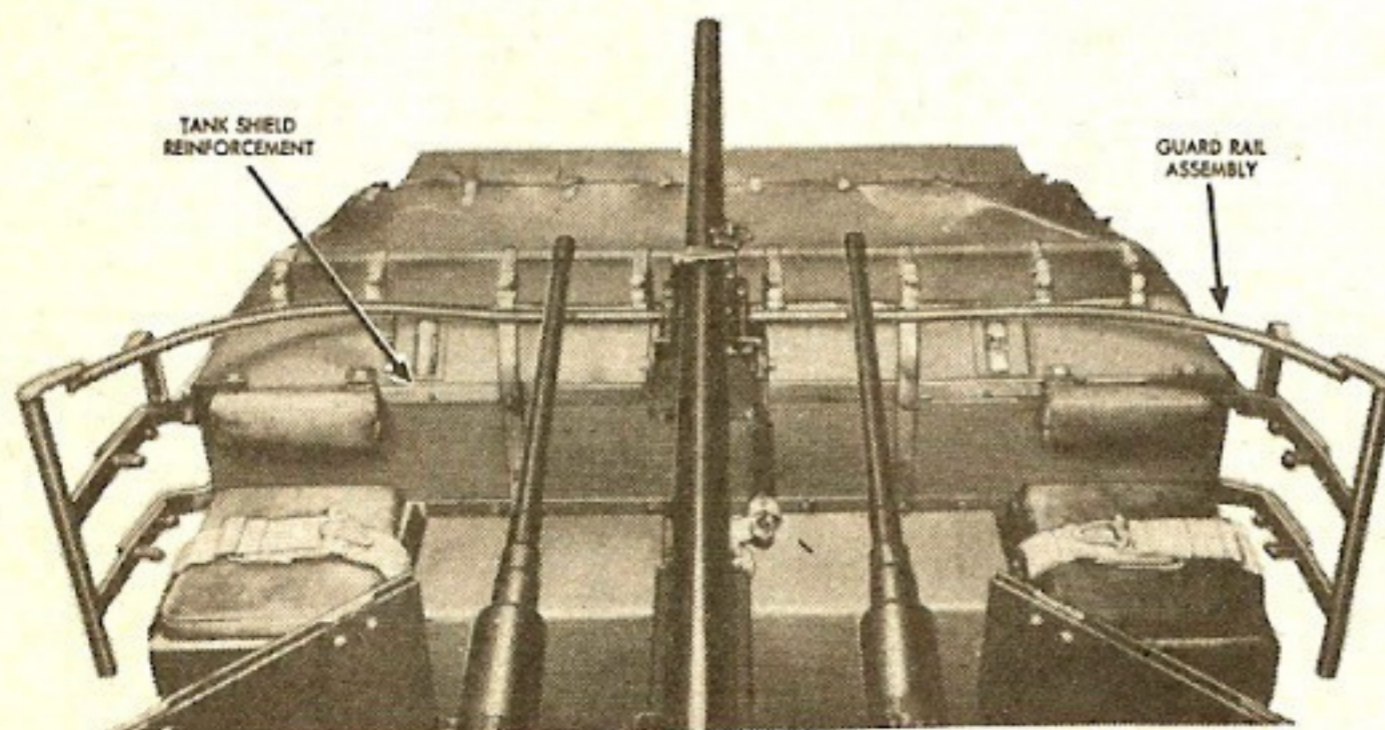
Fig. 4—Weld the scrap plate on in the three spots indicated for reinforcement of the lift arms (using ¼" to ⅜" steel)

hinges so you can remove it when you're not using the vehicle as a dump truck, protects your drive shaft. Any material that falls on the cover dumps with the load.

Lt. Timpany has been worrying himself baldheaded keeping the hoists on a flock of 4-ton Diamond T's working. To strengthen the lift arms on the hoists, he welded plates of ¼" to ⅜" steel (see Fig. 4) on the outside of each lift arm.

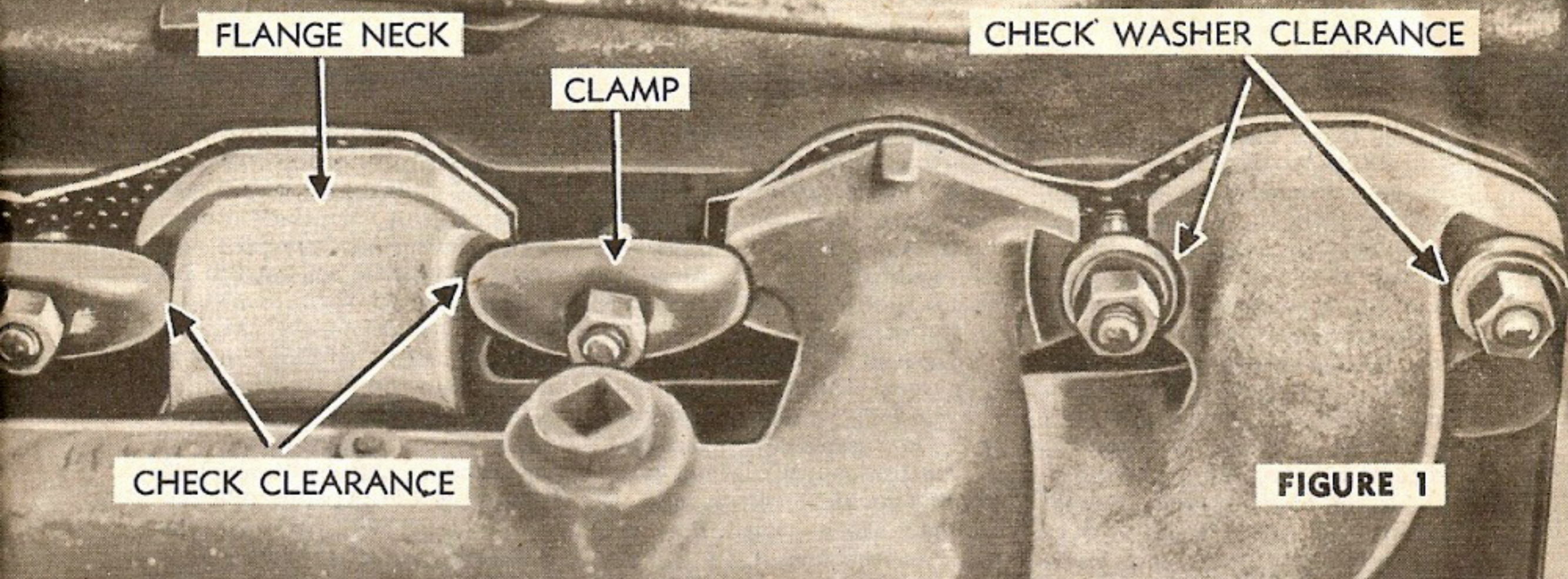
NEW GUARD RAIL ON M15A1'S

Here's a work order in the RED group that should put M15A1 multiple gun motor carriage drivers and assistant



drivers at ease. It's MWO ORD G102-W44 (29 May 44), which provides for new grab handles and a new guard rail (the rail that keeps the guns from getting low enough to shoot the heads off the guys in the cab).

According to the MWO, you're to discard the grab handle assemblies now on M15A1's with serial numbers 682 through 2333, and install the new guard rail (see Fig.) and grab handles. Check the work order for necessary parts and instructions for installation.



Cracked Exhaust Manifolds

According to the fanmail we've been getting lately, GMC 2½-ton manifolds are cracking all over the place.

From Florida, from Hawaii, from the South Pacific, from England comes the cry: "During the last few months we've been having an epidemic of cracked manifolds on the 2½-ton 6x6 GMC." "This motor pool, same as all other motor pools at this station, is plagued with cracking exhaust manifolds on our 2½-ton GMC's." "I think the experience of our organization is neither novel nor new with respect to cracking of exhaust manifolds on GMC models CCKW 352 and 353."

Now every guy has his own pet theory on why manifolds crack and what to do for them—even the Army and manufacturers' engineers admit the problem's a

2½-TON, 6x6 GMC'S HAVE BEEN PLAGUED BY THEM. READ WHY THEY CRACK—AND HOW TO PREVENT IT

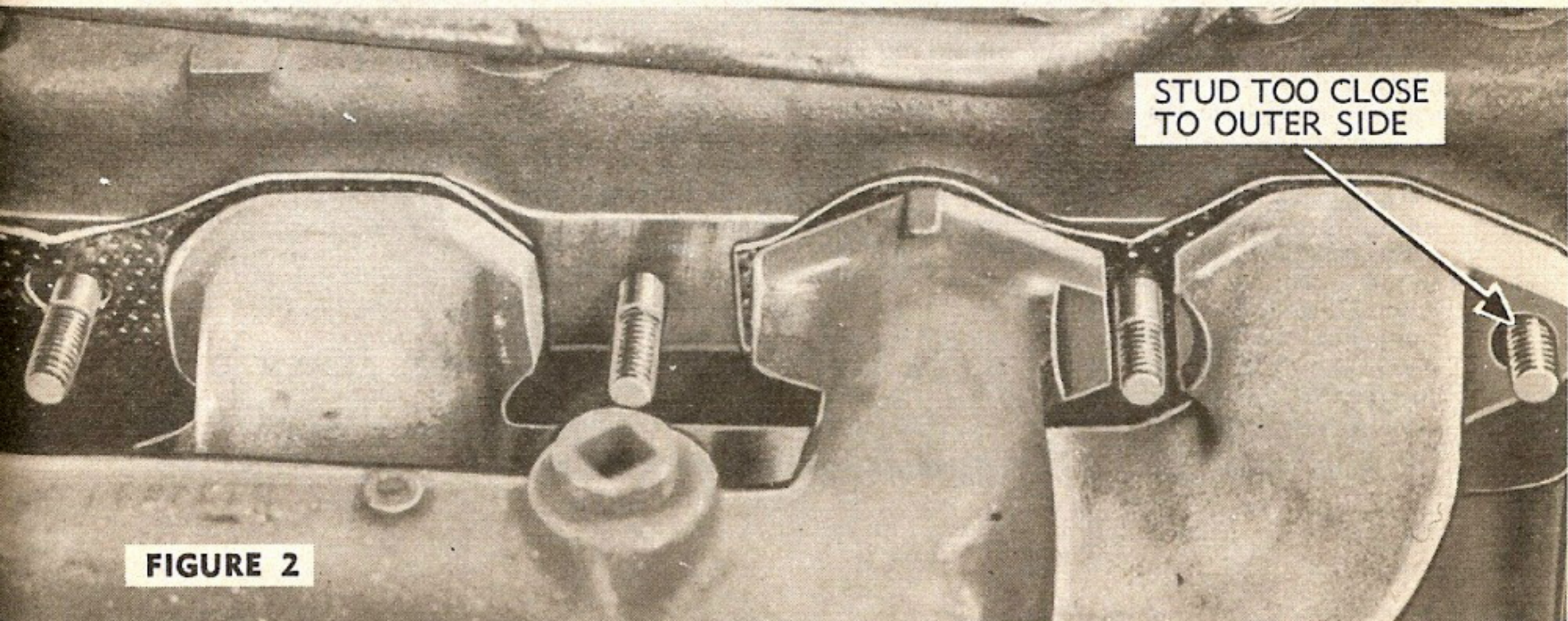
stickler. But here's their latest dope on what's causing it and what to do to prevent it from happening to you.

One of the main reasons for all the trouble is that when the manifold gets hot and expands, the mounting studs, clamps, and washers bind and distort the manifold. When this happens, it's just a matter of time till there's a crack. The best way to prevent that from happening is to check the stud, clamp, and washer clearances yourself—and if they aren't right, get your higher echelon shop to rework them.

Start with the clearance be-

tween each washer edge and unmilled face of the manifold flange (see Fig. 1). If it's less than 1/16" it's bound to cause trouble. Likewise, the studs should have 1/16" clearance on all sides of the hole (you'll remove the nuts and washers from the studs to check this). The end mounting studs are apt to be too close to the lower and outer sides (see Fig. 2).

Be sure to check the flange faces of the exhaust manifold where each manifold clamp rests against a flange (take another look at Fig. 1). There's so little clearance there on some of the manifolds, that the clamp climbs



up the flange neck as the manifold expands. The leverage developed is enough to snap the studs, so make sure the face under the clamp is smooth and roomy enough so the manifold can slide free and easy during expansion.

If you're smart, you'll also check the port-flange face-alignment whenever you remove an exhaust manifold because of a leaky gasket. Line it up with a straight edge and use a feeler gage (Fig. 3). If one or more of the flange faces is the least bit off ($1/32''$), get your higher echelon shop to do the necessary refacing.

They have all the materials and instructions there for reworking and refacing manifolds, so when you find clearances on yours aren't

right, take it in first chance you get—you'll save yourself from a cracked or broken manifold later.

If you're a member of a DUKW company, you'll be able to rework the manifold yourself. How-to-do-it will be in TB ORD 186 that's coming out soon.

Of course, there are other things that cause manifolds to crack—but constant heating and cooling of the iron seems to be the root of all the trouble. While you can't stop the manifold from expanding normally when heated, you can avoid overheating it by making sure the butterfly heat control valve is set right for the climate you're in: off (summer position) when it's warm, on (winter position) when it's cold.

On the list of things you can do to keep the manifold on your $2\frac{1}{2}$ -ton GMC from warping or cracking is to work from the center to the ends when tightening the stud nuts. And when you have to install a new manifold, follow the directions in TM 9-801 (24 Apr. 44). Incorrect ignition timing; poor circulation of air for cooling the engine; clogged exhaust pipes and mufflers; and pinching the tail pipe shut to change the exhaust sound can also cause trouble.

On the DUKW you have one thing more to worry about—water leaking in on the engine will crack a hot exhaust manifold. So keep the auxiliary air-intake and the hatch cover seals in good shape and water tight.

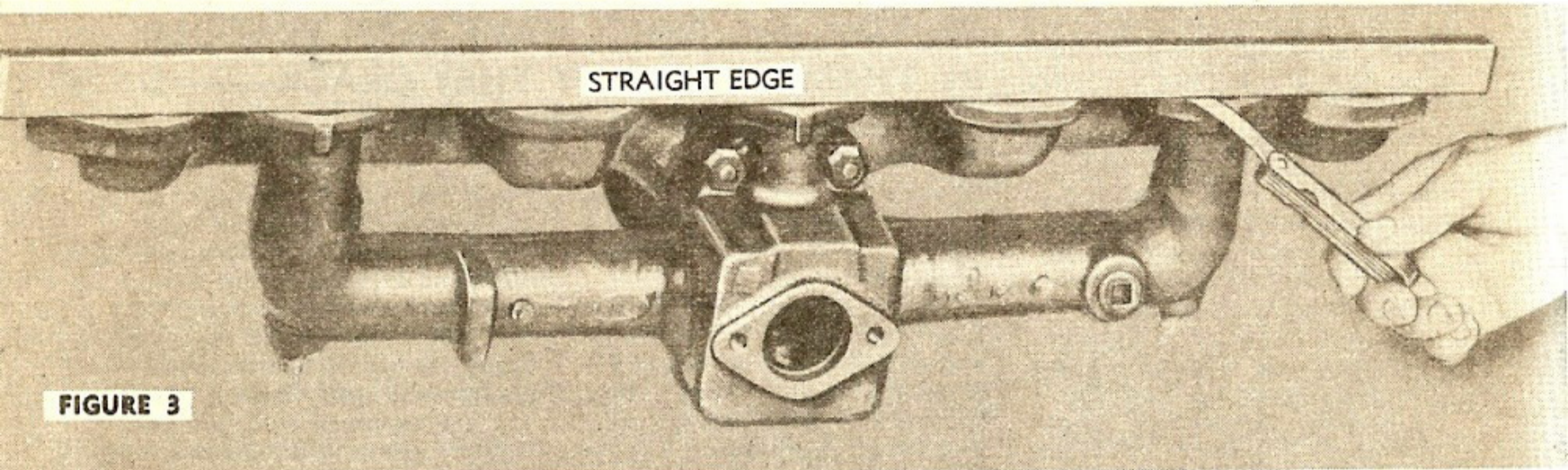


FIGURE 3

Two On The $\frac{1}{2}$ -Ton

The best way to cheat an assembly out of the lubrication it needs is to fix it so that the man with the grease gun has to take out a plug, insert a fitting, then go ahead and grease (taking out the fitting and replacing the plug when he's finished).

This is sad but true in two cases on the ancient but still honorable $\frac{1}{2}$ -ton Dodge.

The first case is the propeller shaft U-joint on the $\frac{1}{2}$ -ton. Many of these vehicles have a grease fitting in the center of the U-joint cross—which is OK. But on many other $\frac{1}{2}$ -tons, there is a small

hex screw plug on the end of the U-joint cross. At the time of lubrication (1000 miles or oftener if needed), you take out this plug, install a $\frac{1}{4}''$ by 28 lube fitting and grease away (with CG No. 1 or 0 depending on the temperature)—replacing the hex plug when done. (If you don't have a $\frac{1}{4}''$ by 28 fitting, borrow one from one of the front-spring rear bolts—put it

back when you're finished with it.)

There are, however, lots of people with grease guns who don't know these things. No fitting means no greasing—they pass up the U-joint leaving it to wither on the vine.

The remedy, you might think, would be to leave the grease fitting in the end of the U-joint cross so the man with the gun can see it. But you can't do it in this case—heavy brush might reach up and break the fitting off (it only has a $\frac{1}{4}''$ thread) or a bit of dirt might hold the fitting open

BECAUSE A PLUG HAS TO BE TAKEN OUT AND A FITTING PUT IN, TWO IMPORTANT POINTS ON THE DODGE DON'T GET GREASED

and whirling around, the grease would be thrown out. What you can do about the problem is talk it up. Let's all of us who have ½-ton Dodges leave off talking about kitten for fifteen minutes and concentrate on the grease point in the ½-ton U-joint. We'll avoid all kinds of joint trouble that way.

* * *

The second case on the ½-ton Dodge (also on the early ¾-ton) where a plug has to be removed and a fitting installed for greasing, is the front-axle steering knuckle. As you may recall, in this case both the bearing at the top of the

steering knuckle and the constant velocity joint are lubricated at the same time through the grease point on top of the steering knuckle. There's a threaded plug in the top of the steering knuckle; every 1000 miles you take out the plug, install a fitting and remove the level plug near the bottom of the CV joint. Then you grease away with CG No. 1 or 0 depending on the temperature.

However, and again, the man with the gun not seeing any fitting on the top of the steering knuckle, forgets to lubricate through it. Some people are also fooled by the current instructions

on universal drive assemblies which say to remove, clean and pack CV joints every 6000 miles. This leads some people to think they don't need the 1000-mile greasing.

But they do, and in order to remind the man with the gun that they do, Dodge took out the plug and installed a grease fitting as a permanent part of the steering knuckle assembly.

You do it too. If the plug is still in the top of the steering knuckle of your ½-ton Dodge (or early ¾-ton), take it out and install a grease fitting. Leave it there. No harm can come to it.

Water and Bell-Crank Bearings Don't Mix

How many ¼-ton jeep bell-crank bearing failures has your outfit had?

This odd little assembly sitting up front of the jeep with its chin out (see Fig.) is on the dirty end of the ride. If there's any water at all in the road, the bell crank picks it up. Water is the biggest cause of trouble—it gets into the bell-crank bearing, mixes with the grease in there, turns the grease to mayonnaise thus cheating the bearing out of its lubrication, and ruining the bearing.

Not only will a ride through a ditch or a puddle splash water

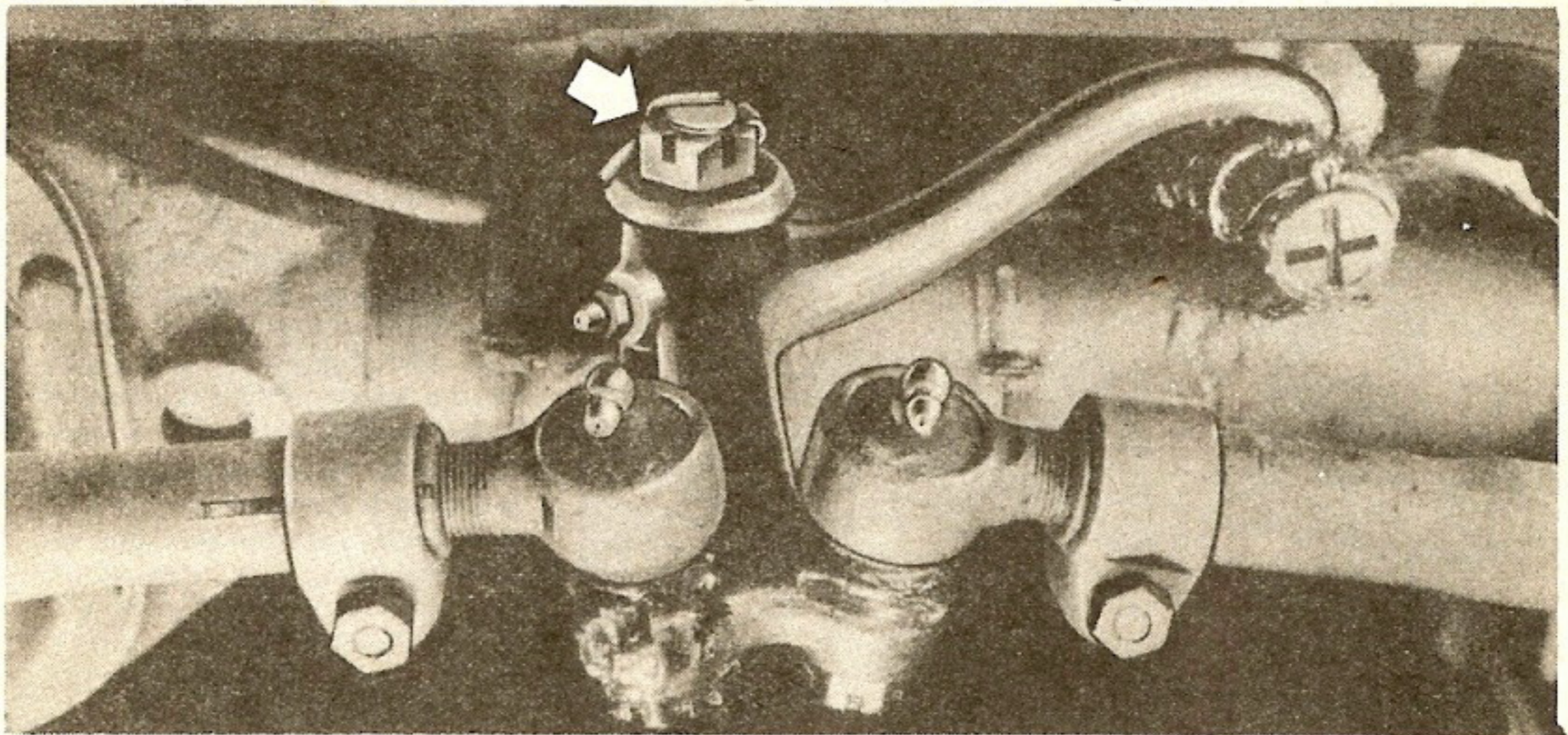
into the bearing, but an ordinary washing with a water hose will do it. Turn a hose on the bell crank for a minute or so and then try lubricating the bearings. Watch closely and you'll see water squeeze out of the bearing before the grease starts to show. This happens even with the unit full of grease at the time of washing.

If just washing a parked jeep allows water to creep into the bearing, imagine what a ride through a puddle does, with the assembly squirming around and sucking in water.

What can you do about it?

Well, lots of people have been replacing their ruined bell-crank bearings with bronze bushings. But lots of other people don't care for this idea. Probably the best prescription is to consider the bell crank a touchy assembly and keep after it with a grease gun. Anytime your jeep has been operated through water, give it a taste of the grease gun. If the jeep is washed, grease it (which is SOP anyway). Even if somebody just spits on the bell crank, grease it.

Grease is cheap, bearings are expensive!



Don't Save the Pieces . . .

A good mechanic never has any pieces left over when he finishes a job. Only guys who don't know what it's all about end up with lockwashers and nuts and bolts to spare.

If you're a good mechanic, you know the little pieces count as much as the big pieces—and that every piece is necessary in a vehicle assembly. If you're a good mechanic, you're going to put everything back where it belongs; because here's how you can make trouble if you don't.

Suppose, for instance, you reassemble the jeep transmission and transfer case and forget to install the interlock plunger (Fig.

1). You'll jump in your jeep after the job is finished and try to shift her, but she won't stay in gear—any gear.

The interlock plunger you left out of the assembly is the thing that acts as "stabilizer" on the transmission shift-rails. It keeps two different gears from engaging at the same time. The interlock plunger's gotta go in the assembly (like we said in ARMY MOTORS, March 1943). Put a dab of grease in the slot to hold the interlock plunger in place while you assemble the transfer case to the transmission—but get the plunger in there, no matter what.

Watch out when you're installing the gearshift lock plate, too. If the lock plate (Fig. 1) isn't positioned right, it'll be sheared off when the transfer case is drawn up against the transmission. And if the edge of the lock-plate enters between the face of the transmission assembly and transfer case, the two units can't be drawn up on their gaskets—result: misalignment and a grease leak.

Here's more trouble. The fuzzed-up windings on the armatures of cranking motors, and the banged-up brush holders and commutators are the result of leftout washers when the starting motors were assembled. The thrust washers (Fig. 2) are pretty important when it comes to getting rid of end play in the armature shaft.

Sgt. Russ Warner writes about it like this: "The boys must be dreaming about Maggie back home these days because they're sure leaving out thrust washers when they reassemble cranking motors. I know from experience that those washers are elusive little gadgets—but if cranking motors are assembled without them, you get end play from the armature shaft that wears down the insulation on the armature windings and shorts the cranking motor."

Not only do vehicle assemblies suffer when small parts are left out—even radio reception can be destroyed if suppressors or grounding straps (Fig. 3) aren't replaced. Don't blame the radio when a lot of static wiggles in—check for loose grounding straps; see that all the suppression shielding was reinstalled; be sure all the internal-external washers were put back (and ordinary spring lockwashers should not be substituted in their place). The same holds true for cadmium or lead capscrews and bolts—plain capscrews and bolts should not be substituted.

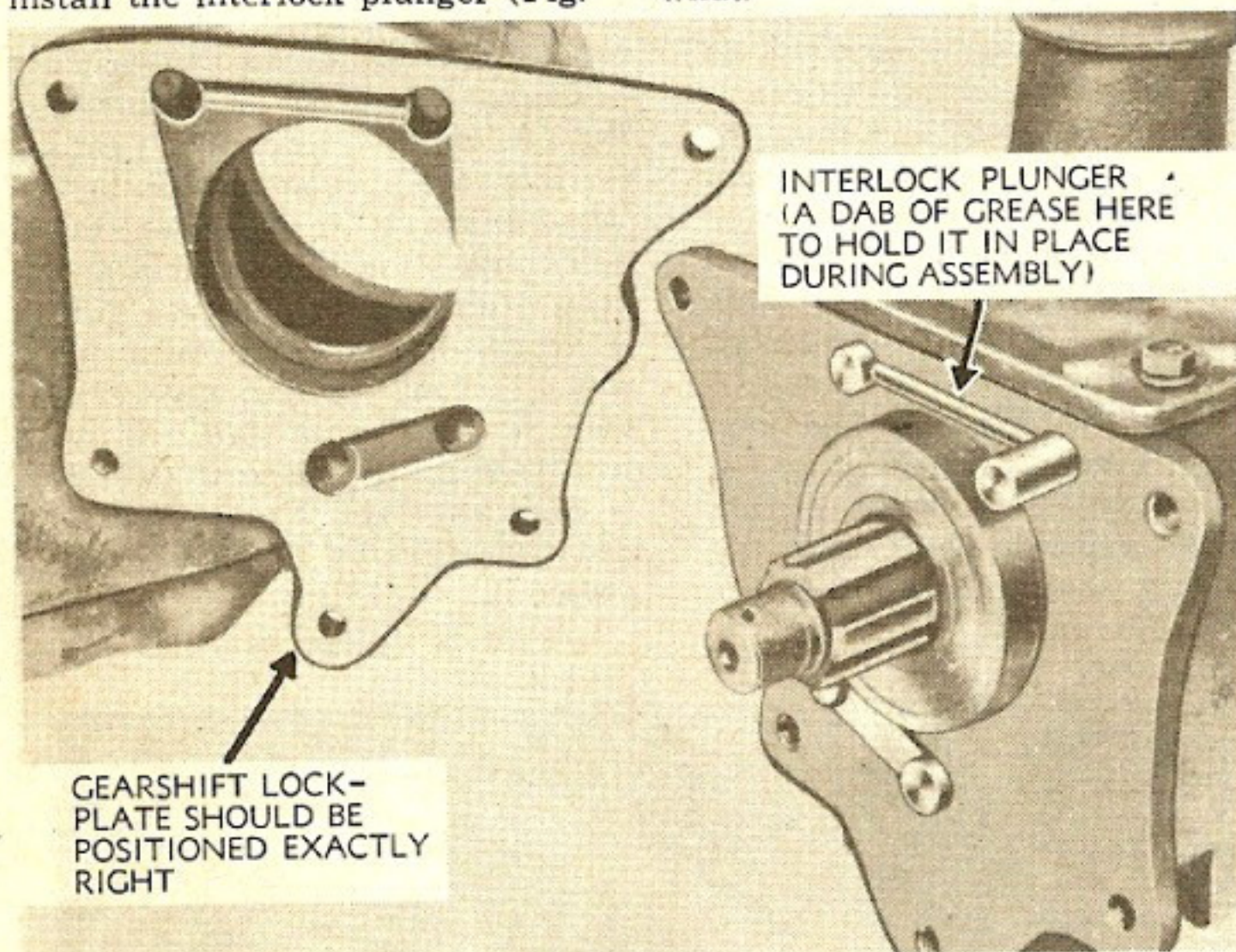


Figure 1

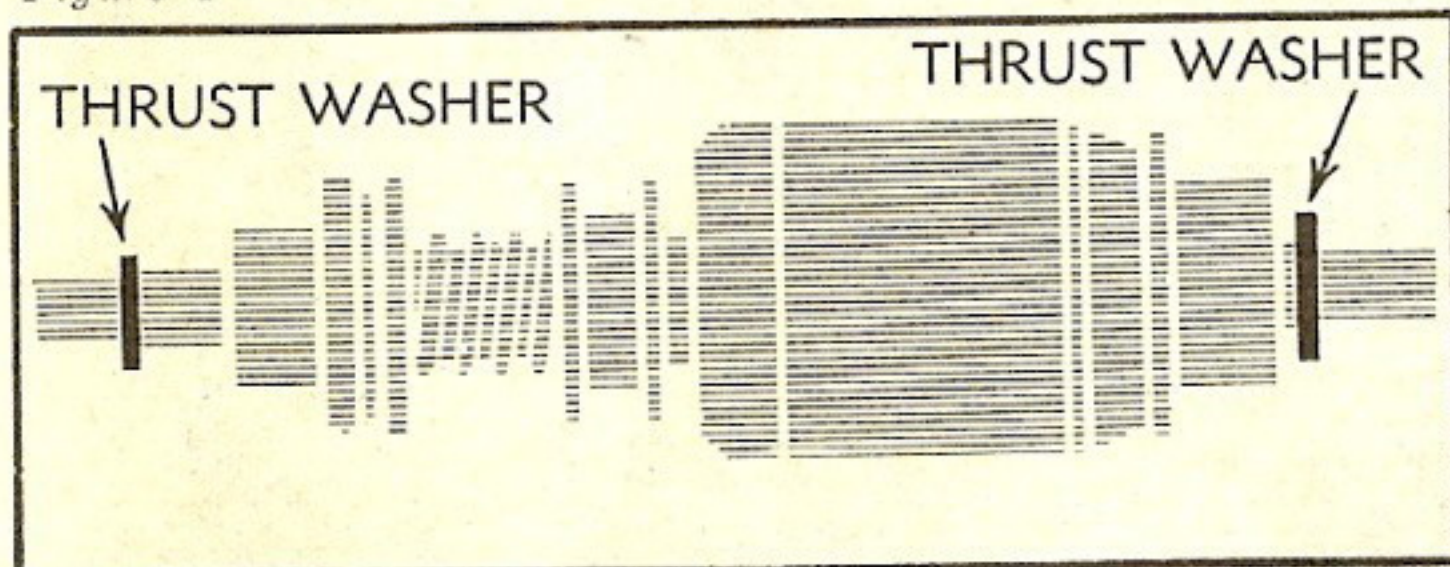
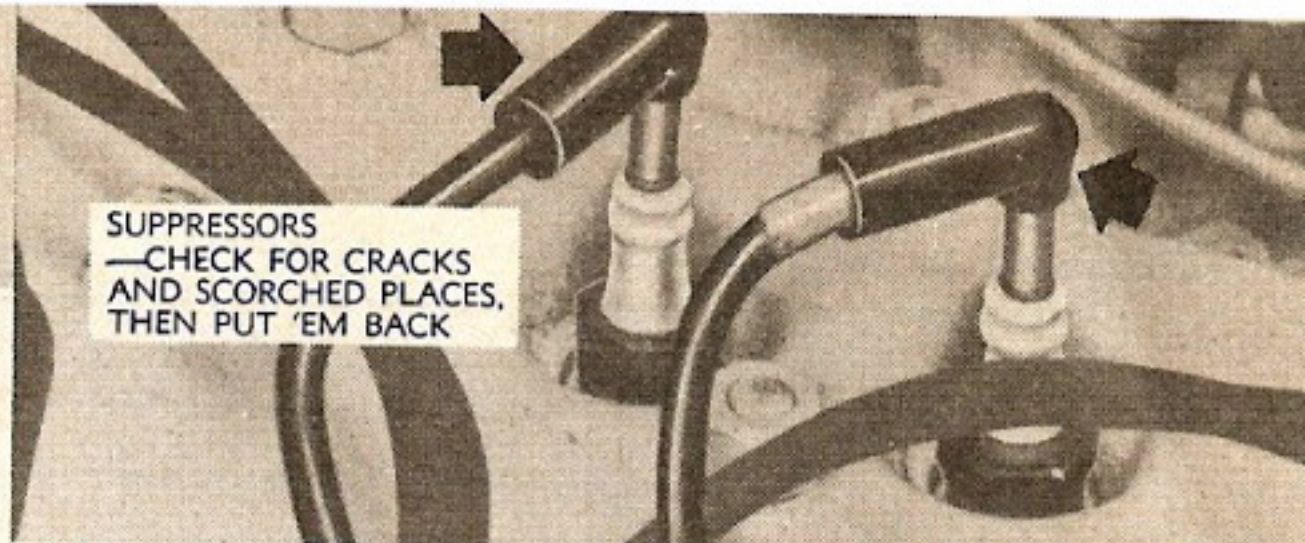
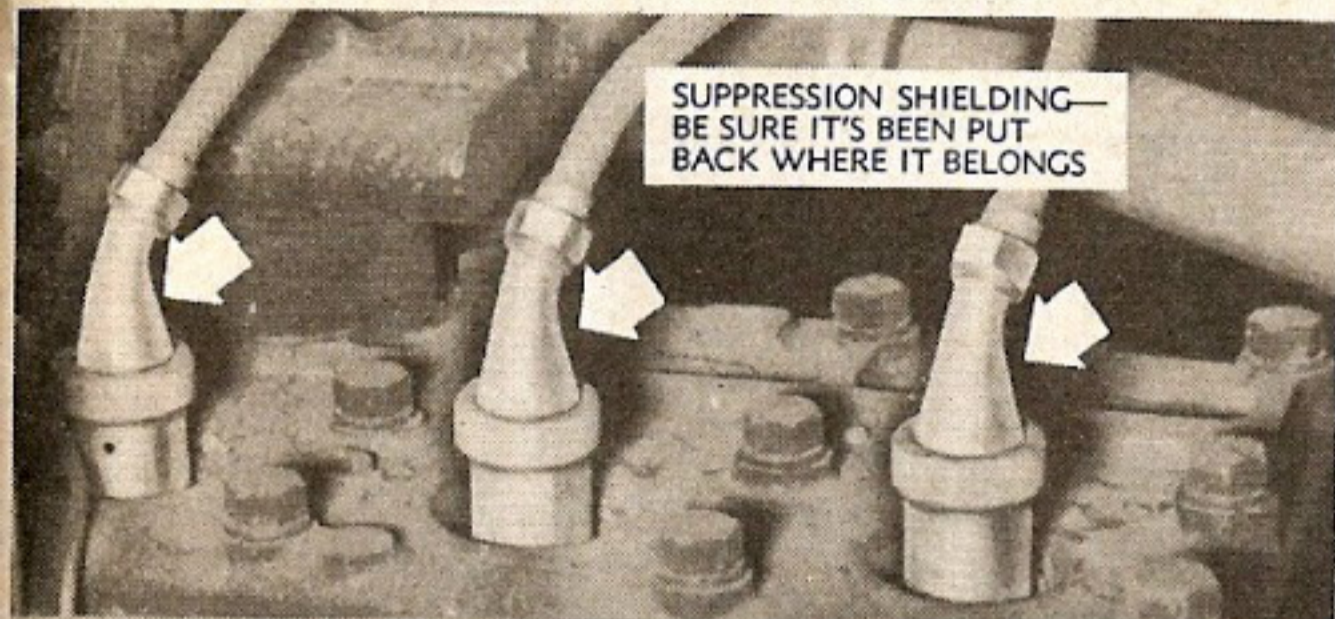


Figure 2

. . . AND DON'T THROW THEM AWAY, EITHER. PUT THE ODDS AND ENDS BACK WHERE THEY BELONG WHEN YOU REPAIR OR REPLACE ANY VEHICLE ASSEMBLY



SUPPRESSORS
—CHECK FOR CRACKS
AND SCORCHED PLACES,
THEN PUT 'EM BACK



SUPPRESSION SHIELDING—
BE SURE IT'S BEEN PUT
BACK WHERE IT BELONGS



GROUNDING STRAPS
SHOULD BE TIGHT AND
CLEAN AND MAKE GOOD
GROUND

Figure 3

M5 AND M5A1 LIGHT TANK RIGHT-HAND CYLINDER HEADS ARE NOT INTERCHANGEABLE

Note to a man about to exchange a right-hand cylinder head on a Cadillac engine in the light tank, M5 or M5A1:

The light tank M5A1 has an "engine-high-temperature signal-sending unit." This is connected into the right-hand cylinder head through a tapped hole (see Fig.). Cylinder head No. E5071.

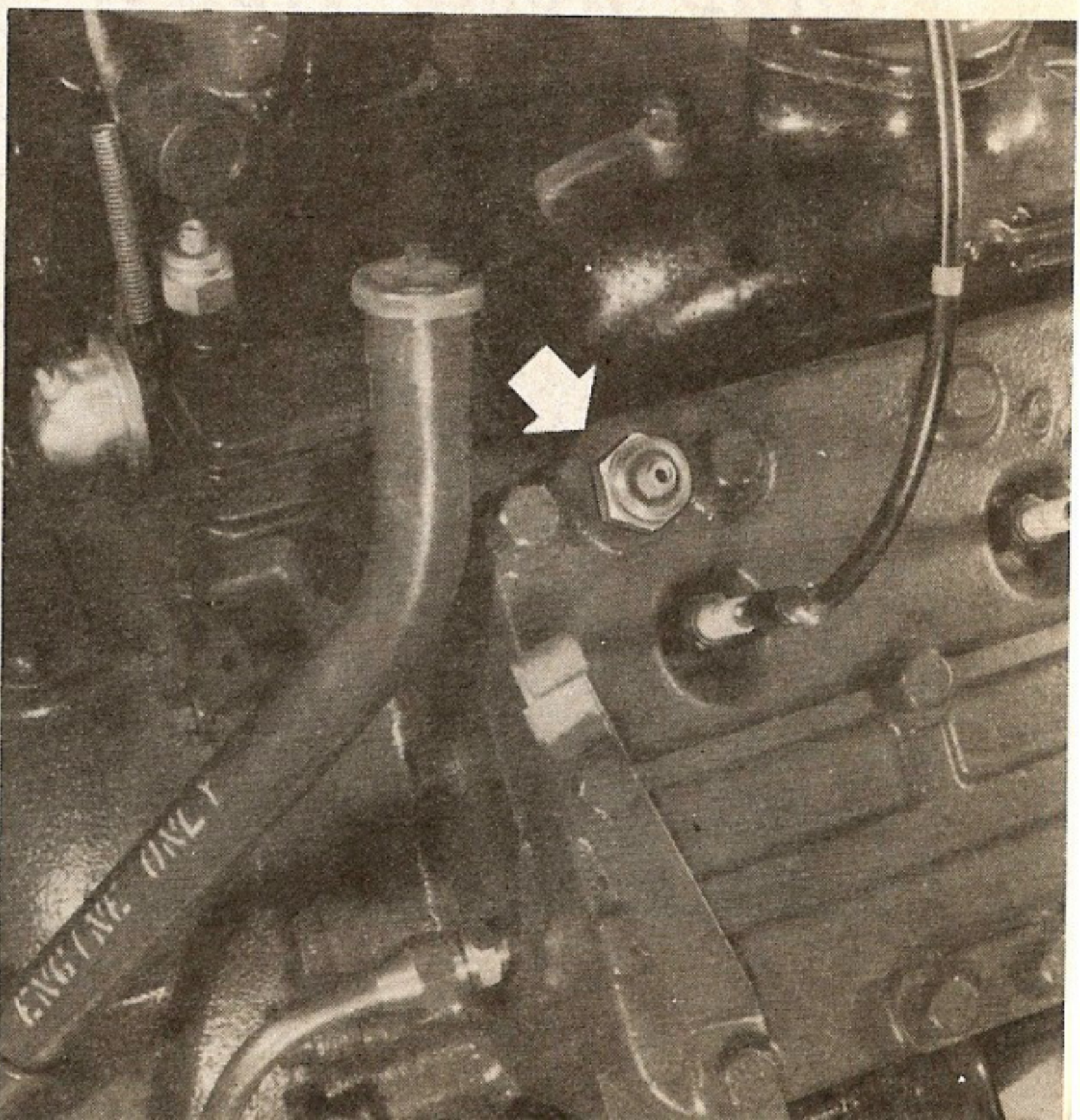
The light tank M5 did not have this signal-sending unit so naturally it did not have the tapped hole in the right-hand cylinder head (cylinder head number E5061).

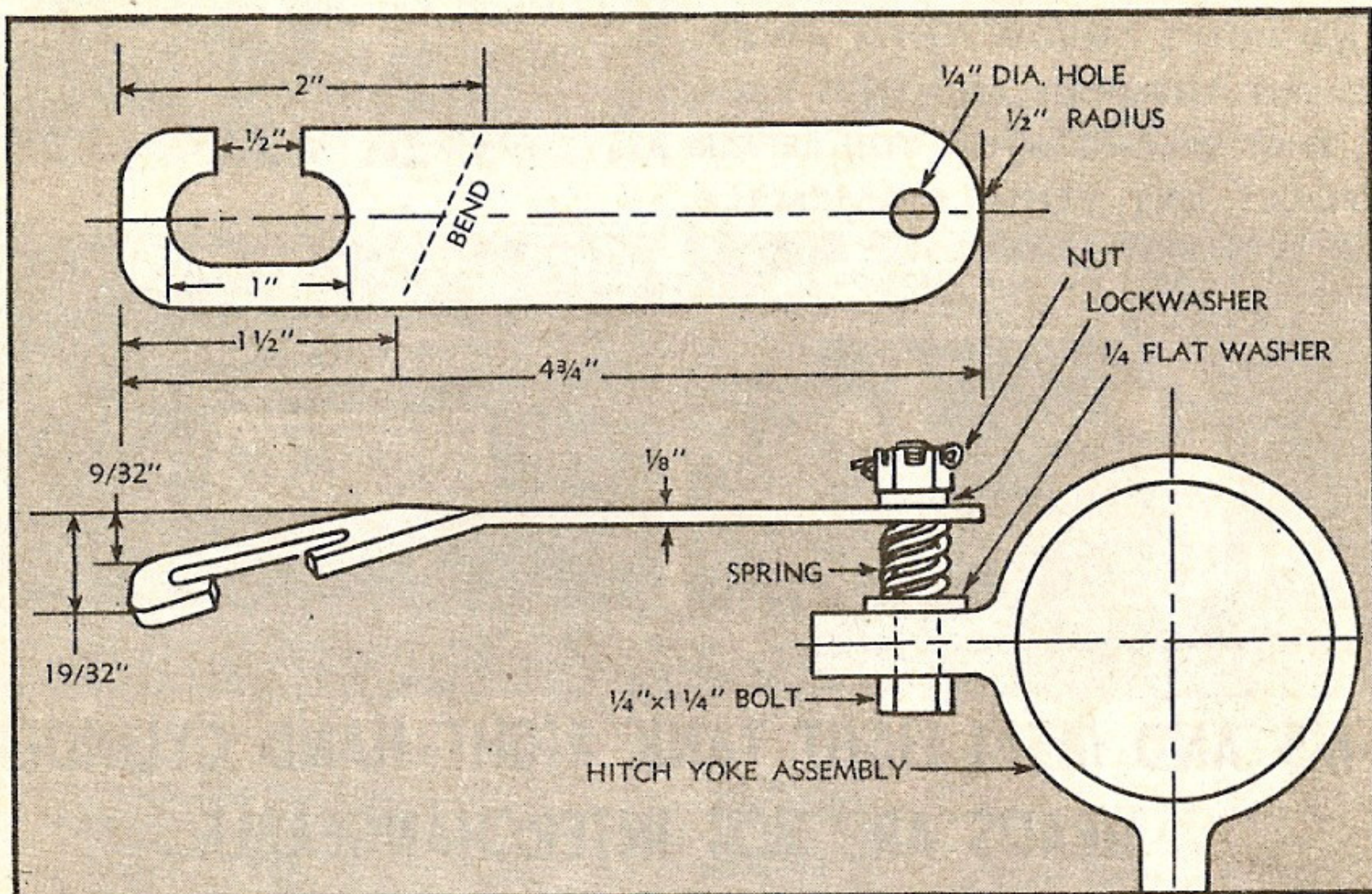
You can already see the point: you can't use the right-hand cylinder head designed for the M5 on the M5A1, the reason being that you wouldn't be able to hook up the temperature gage in the M5A1. So look for the tapped hole before you tighten that right-hand cylinder head on the M5A1.

On the other hand, you can use the right-hand cylinder head with the tapped hole in it on the M5, which doesn't have the temperature-signal-sending unit. All you've got to do is install a 1/2" pipe plug in the tapped hole. This will be even more important for you to know as time goes by, be-

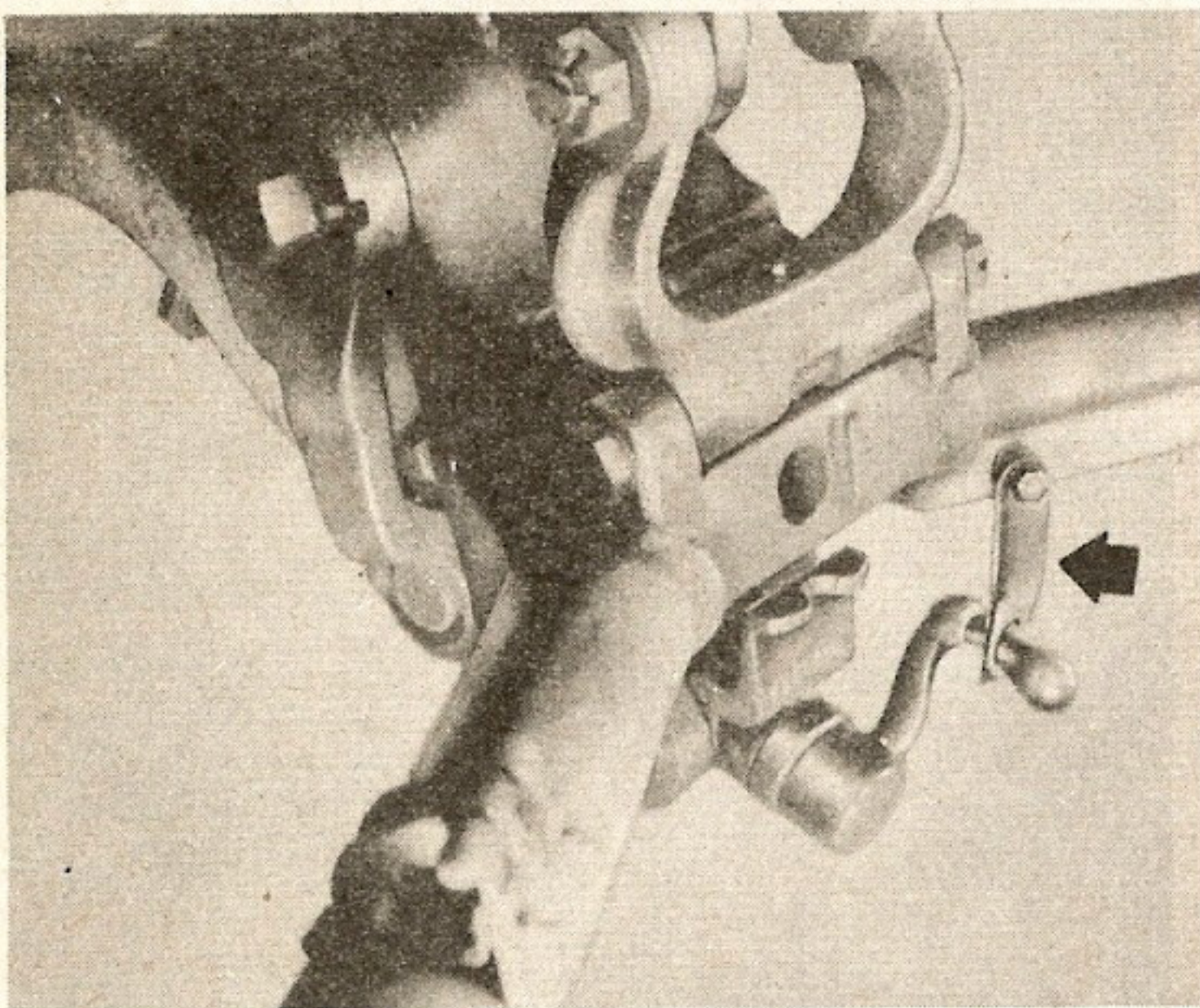
cause when the present stock of E5061 is exhausted, only E5071 cylinder heads will be sent out to

the field. And when you use the E5071 on the M5, plug the tapped hole with a 1/2" plug.





M5 Bomb Trailer Lunette Handle

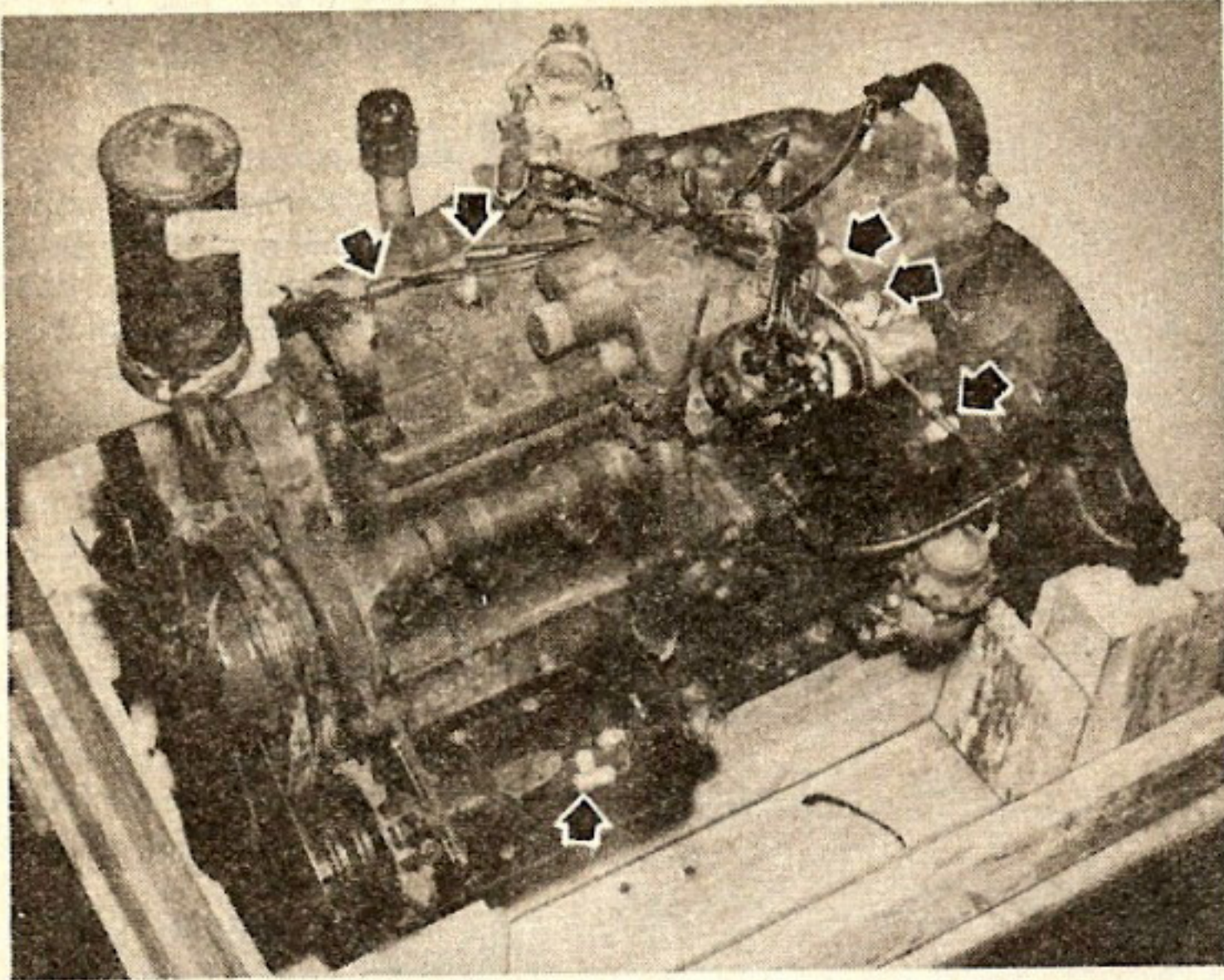


That little adjustable lunette handle on the M5 bomb trailer, that's been getting knocked galley-west every time the trailer's third wheel makes a complete turn, won't give you any more trouble.

Take a strip of $\frac{1}{8}$ " steel plate $4\frac{3}{4}$ " long and 1" wide, round off the ends to a nice smooth $\frac{1}{2}$ " radius. Cut a $\frac{1}{4}$ " hole $\frac{1}{2}$ " from one end, and another hole $1" \times \frac{1}{2}"$ the same distance from the other end. Slot the larger hole to the side, with a $\frac{1}{2}$ " opening, (see Fig. 1 above) and give the bracket a slight twist ($9/32^\circ$) with the slot to the right.

To mount this handle holder, cut a $\frac{1}{4}$ " hole in the right-front-side hitch-yoke-assembly, $1\frac{1}{8}$ " from the center (Fig. 2 at left). Use a bolt ($1\frac{1}{4} \times \frac{1}{4}$ ") from the back, then a round flat washer ($\frac{1}{4}$ "), a small, stiff spring ($\frac{1}{2}$ " long). Slip on the bracket, screw the nut on, and there you are. Simple little job, and it'll hold that handle in place until you're ready to adjust the lunette. Then there'll be plenty of clearance for that third wheel to whip around.

Radio Suppression



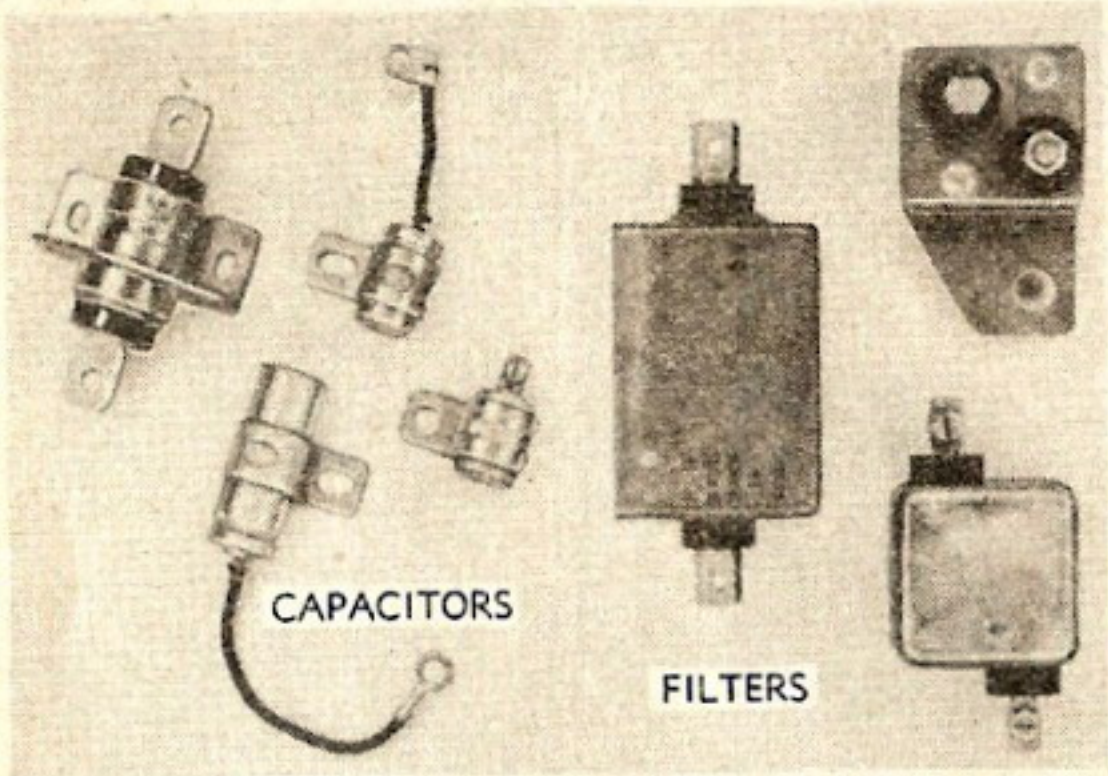
Take a look at the next replacement engine you get for your half-track—if it looks like the one in the picture at left it's already suppressed, so don't start yanking pieces off to install other devices.

Lots of guys have been pulling all the arrowed-parts off and replacing them with old-style suppression equipment pictured below. That's bad.

The Army's spent a lot of money perfecting the new suppression equipment so noises given off by the engine won't show up as static on your radio or be picked up by the big ears of the enemy. There are suppression devices both inside and outside the engine—we've pointed out only the most obvious in the figure at left.

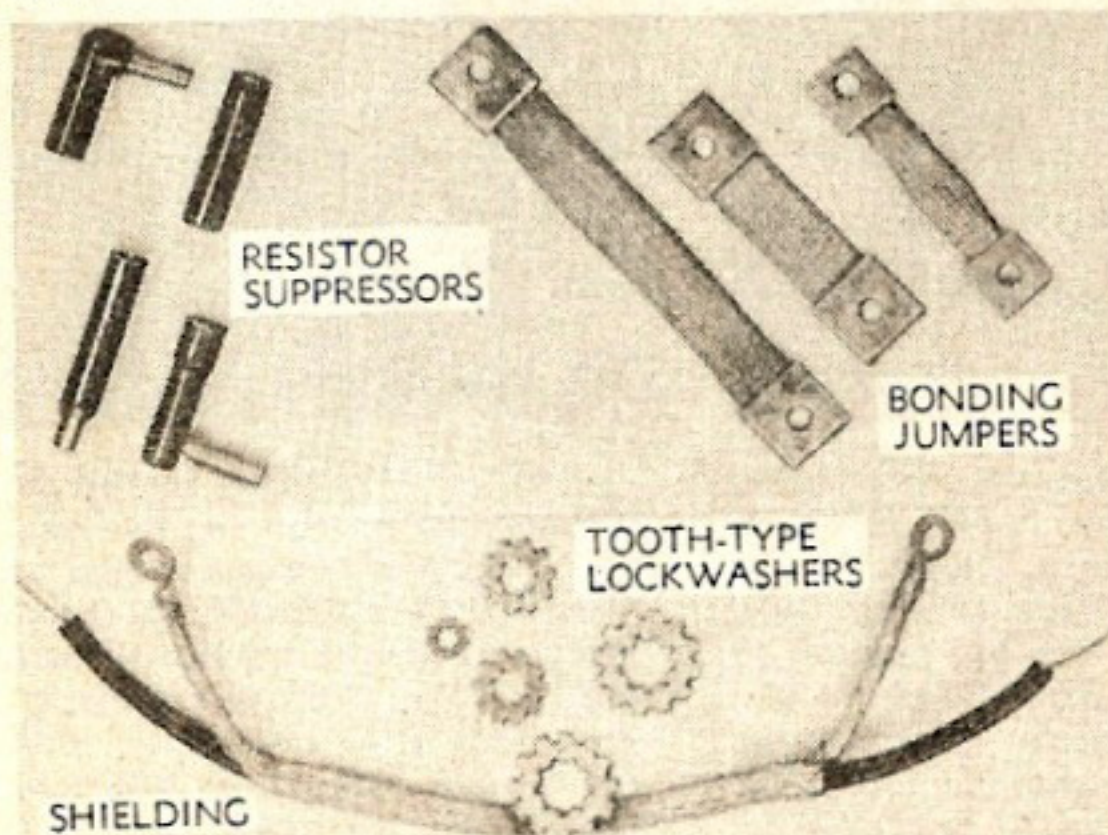
Suppressing the engine of any Ordnance vehicle, wheeled or tracked, takes lots of parts—pictures at lower left show the most common ones. But don't expect to find each and every one on your vehicle, because different combinations are used to suppress different engines. Remember: hands-off is the rule for all of them.

NEW SUPPRESSION DEVICES ARE ON THOSE REPLACEMENT HALF-TRACK ENGINES—DON'T TRY TO BEAT THEM WITH OLD-FASHIONED EQUIPMENT



CAPACITORS

FILTERS

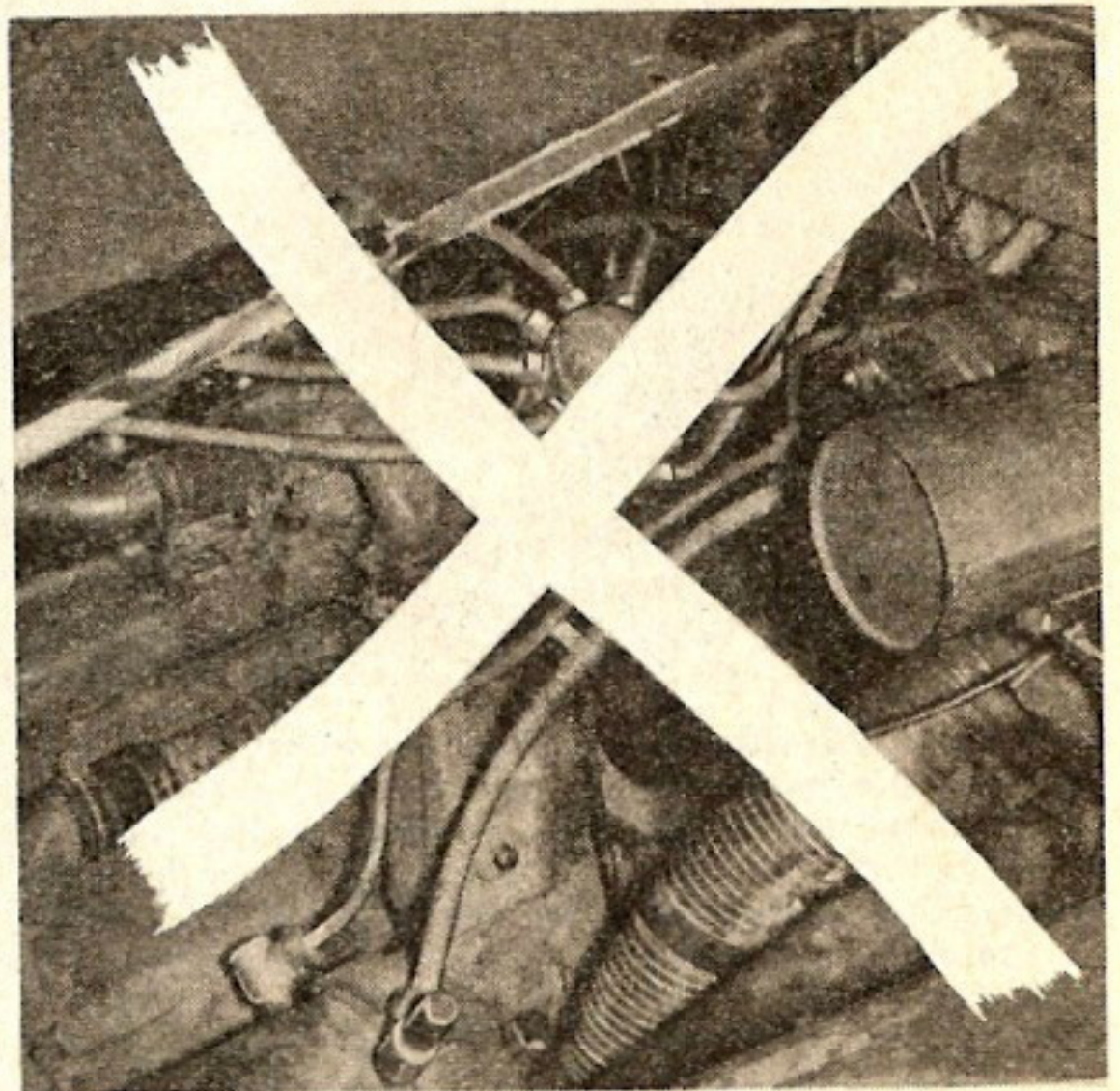


RESISTOR SUPPRESSORS

BONDING JUMPERS

TOOTH-TYPE LOCKWASHERS

SHIELDING



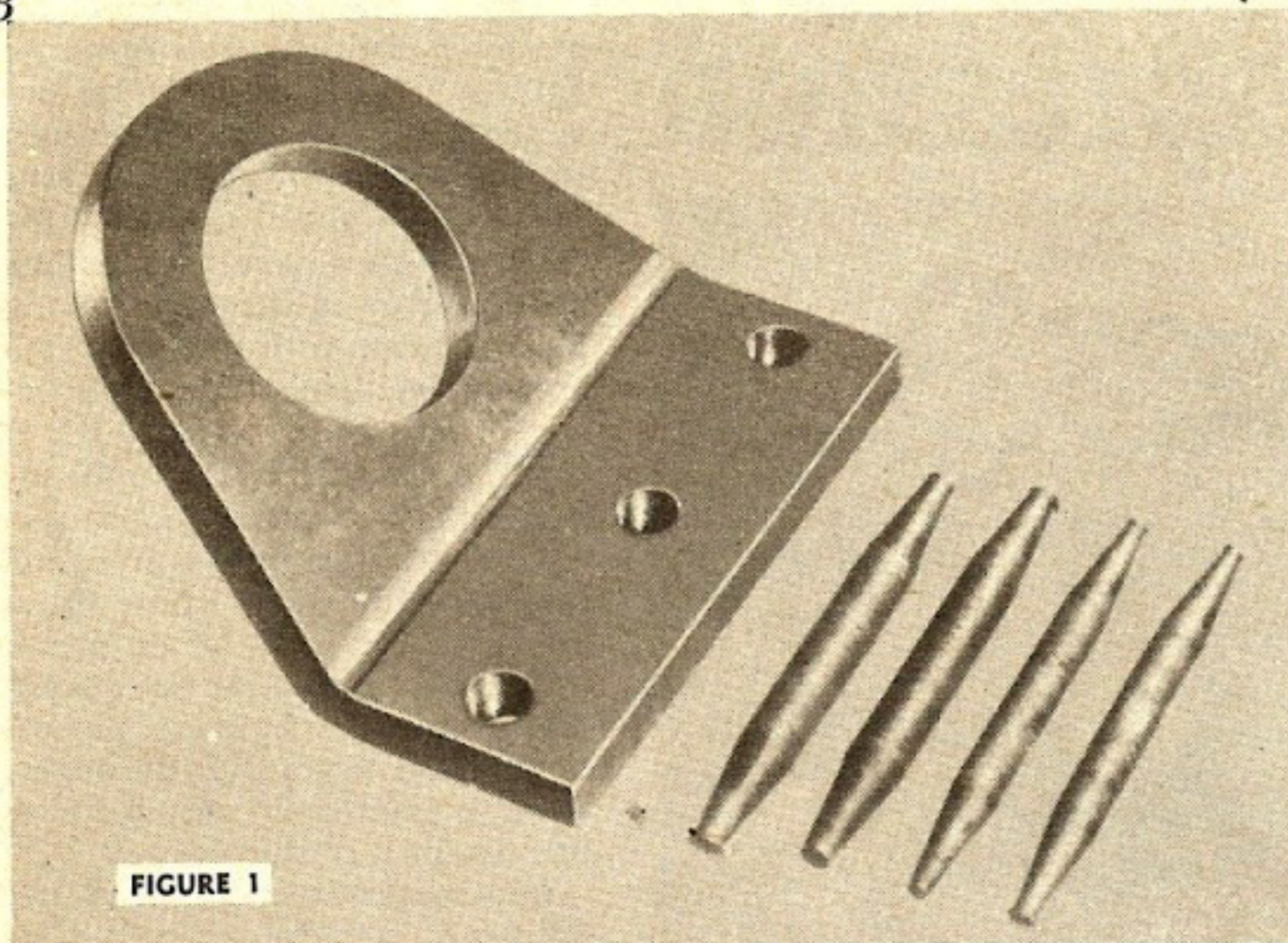


FIGURE 1



Fig. 3—Here's how the M1 wrecker is set up for the job. First, hang a single snatch block (wrecker equipment) on the boom (arrow). Remove two of the clevises that are part of the heavy snatch blocks (on the wrecker) and install them on the final drive towing lugs. (If they don't fit the lugs, you'll have to dig up clevises big enough to take the chain on the end of the rear winch cable.) Run the chain and hook from the rear winch through the single snatch block you've installed on the boom and through these clevises as shown. The hook on the boom dangles from above waiting for the eye to be installed.

HOW TO REMOVE AN M1 *One Eye and*

One eye and four cigars (Fig. 1) is as accurate as a scale with the M1 Wrecker for removing and installing tanks and gun motor carriages. Consisting of five parts, it is available on requisitions in a couple of months or which can be made by people at the tail end of the supply line, though the old sling now furnished for the job.

The old sling was okay for an earlier tank but the old sling is out of date.

Among the advantages the new sling has is that you don't have to worry the final-drive sprockets off the tank. It saves a couple of man-hours of dirty work, and it weighs only 13 lbs.—saving you 51 lbs. in carrying it.

In other words, if your organization is in the business of driving, it'll be well worth your while to make (see numbers, next page) the eye and four cigars. Using a suitable vehicle, it makes removing and installing tanks.

Here's a word and picture story featuring the

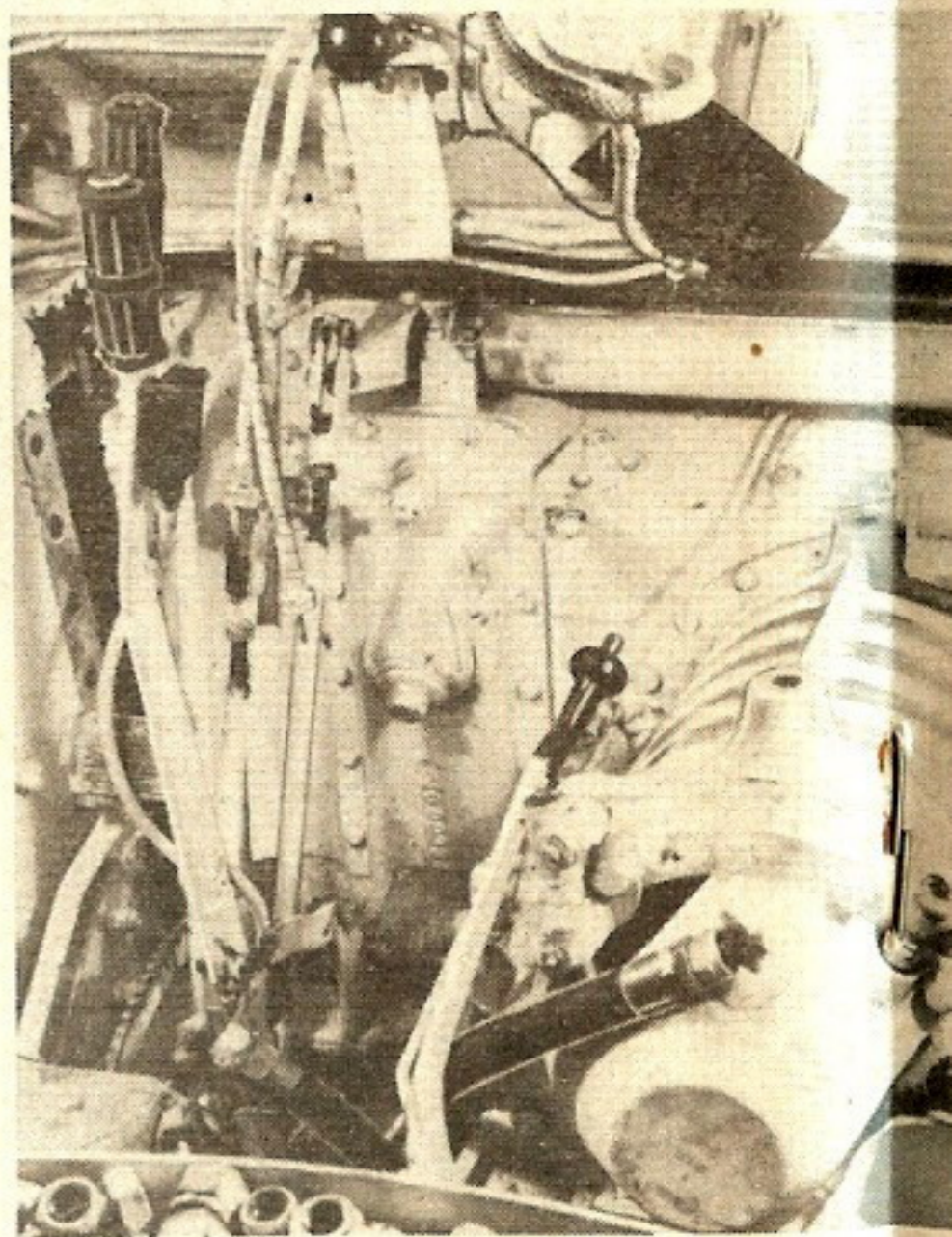


Fig. 4—Working in the driver's compartment, remove the oil lines; the oil lines running to the oil cooler; untie the companion flange on the propeller shaft; remove the throttle line. Take the sprocket out of the transmission. On some M1's, the sprocket is mounted just ahead of the transmission on the transmission case breather. You'll have to remove it, depending on your vehicle. Just make sure the final

N M4 FINAL DRIVE WITH Four Cigars

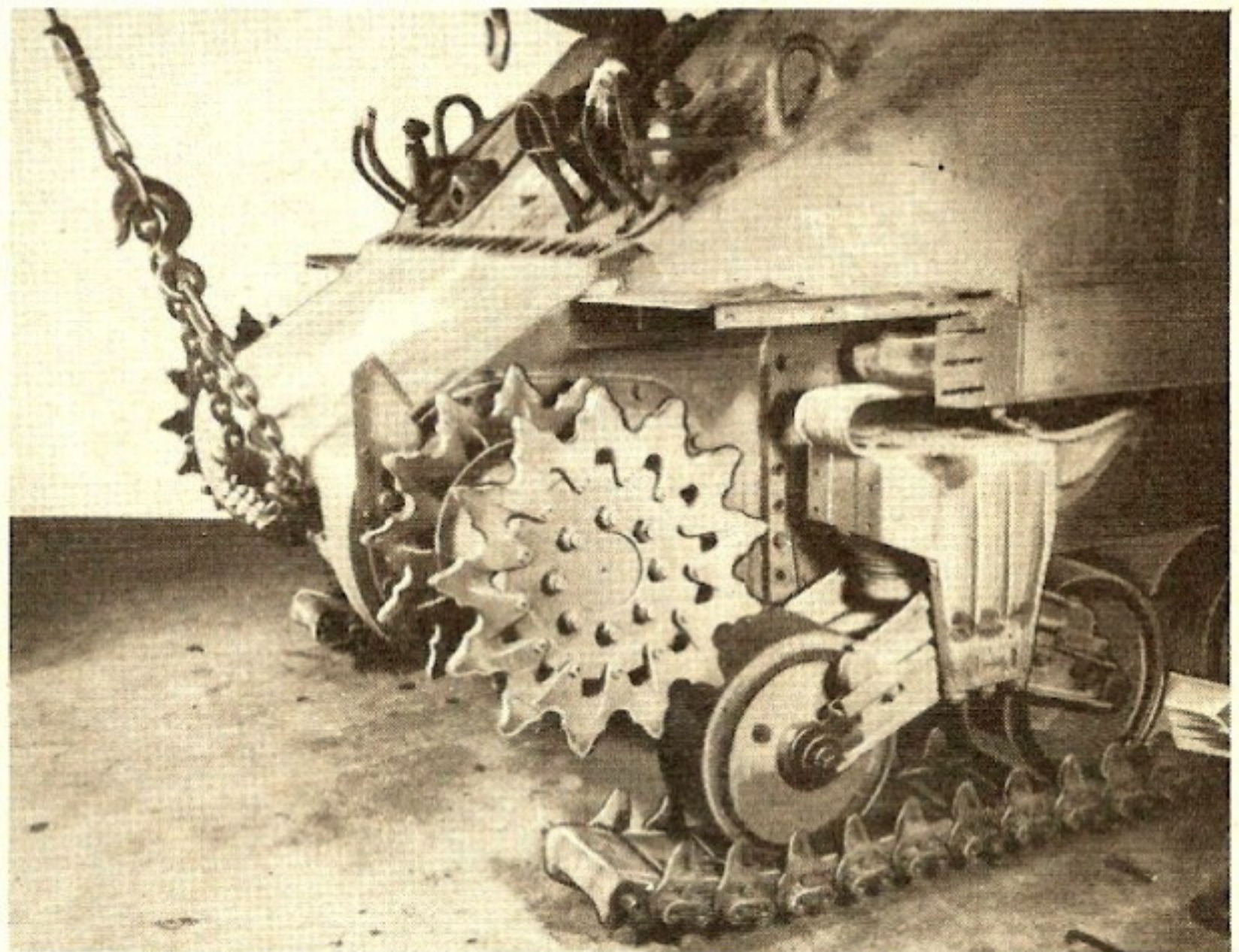
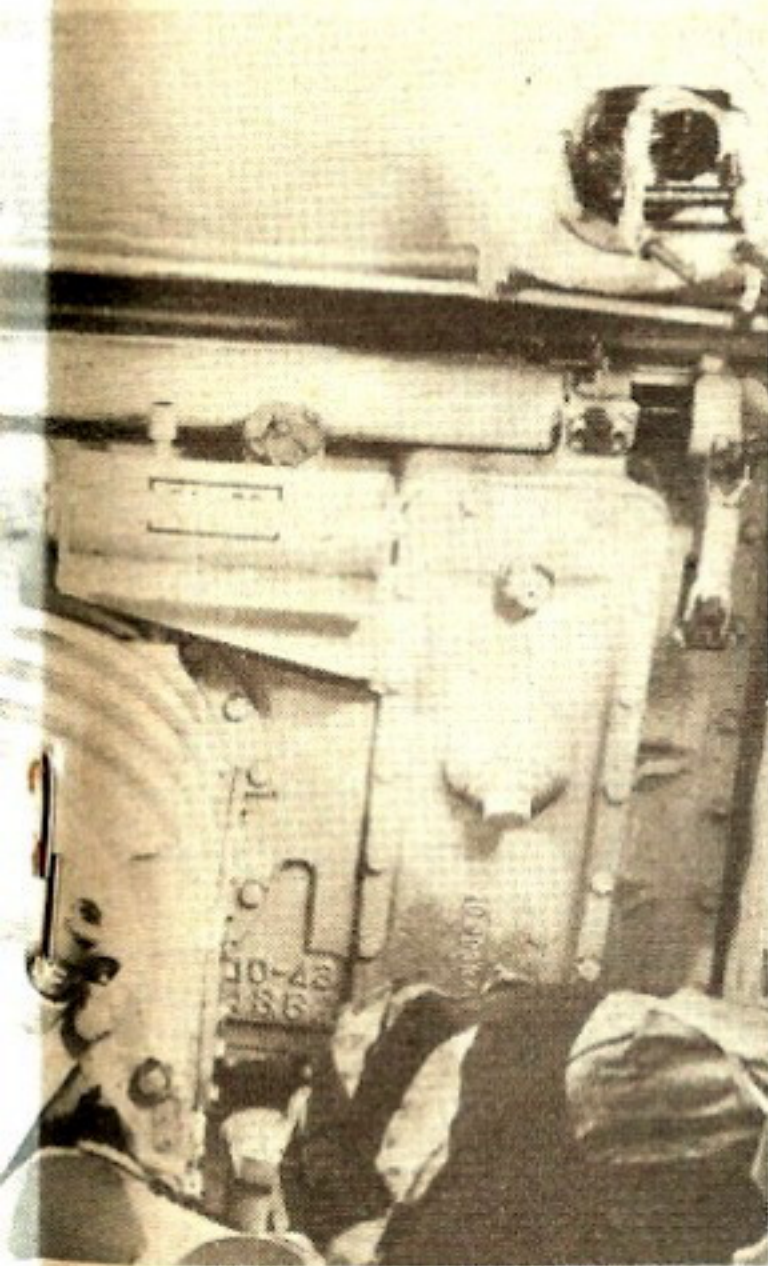
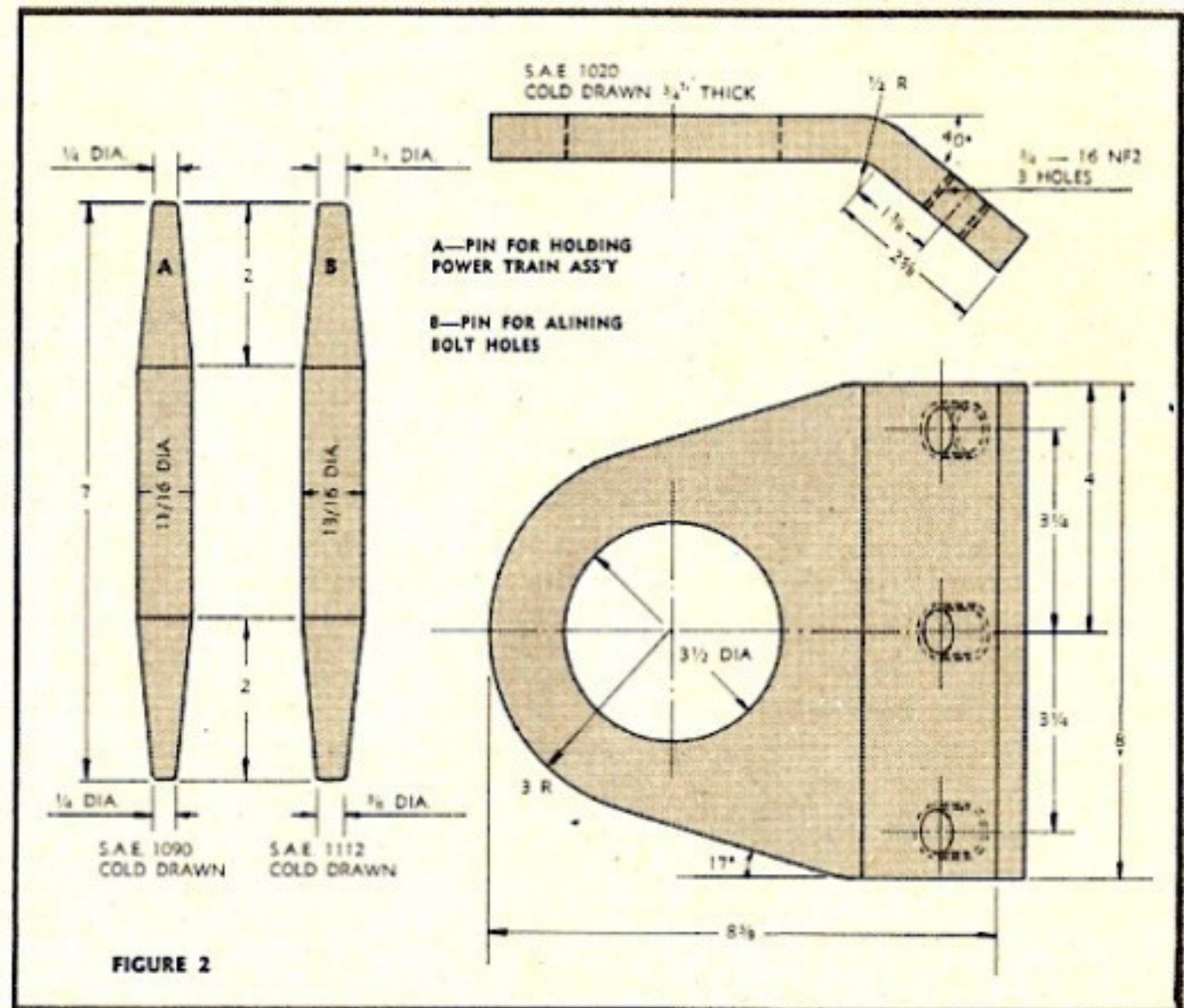
rate a name as any to describe a new "sling" used for pulling the final drive and transmission of M4-series tanks. It consists of five simple pieces of metal (which will be available or which can be easily manufactured if necessary), the new sling has a hatful of advantages over the old one.

First, it is lighter than the old one, and it is easier to use. Second, it is easier to use. Third, it is easier to use.

What has over the old is the fact that (1) you don't have to remove the final drive, (2) the job is a lot easier and you don't have to use a wrecker, and (3) the old sling weighed 64 lbs., the new tool weighs only 12 lbs.

It is in the business of removing and installing final drive and transmission (drawing in Fig. 2) or requisition (see stock list). Used, as we said, with the M1 Wrecker or other equipment, it is a pleasure to remove the final drive positively a pleasure.

Try the new sling hard at work on the power train:



Department, untie the right and left brake cables; take the generator drive belts off the generator shaft. The throttle line may be disconnected—using all you'll do then is remove one of the speedometer and tachometer shafts. Remove the fire extinguisher bracket if it is in the way. Take it out. Remove the oil filler. Take it out. Remove the oil filler. Take it out. Remove the oil filler. Take it out. Remove the oil filler. Take it out.

Fig. 5—Break the track in front and pull it back out of the way. Remove the front section of each fender. Put a block in front of the second set of bogie wheels on both sides of the tank to prevent the tank from moving forward when the final drive is coaxed out later. The final drive will be hooked up to the wrecker and when the wrecker moves forward to coax the final drive out, the whole tank will try to come with it. The blocks on each side of the tank will hold it. Remove all but four of the bolts along the top and sides of the final drive housing. Two of the remaining bolts will be at the outer corners at the top of the unit; one will be in the second bolt hole from the bottom on each side of the housing.

MORE

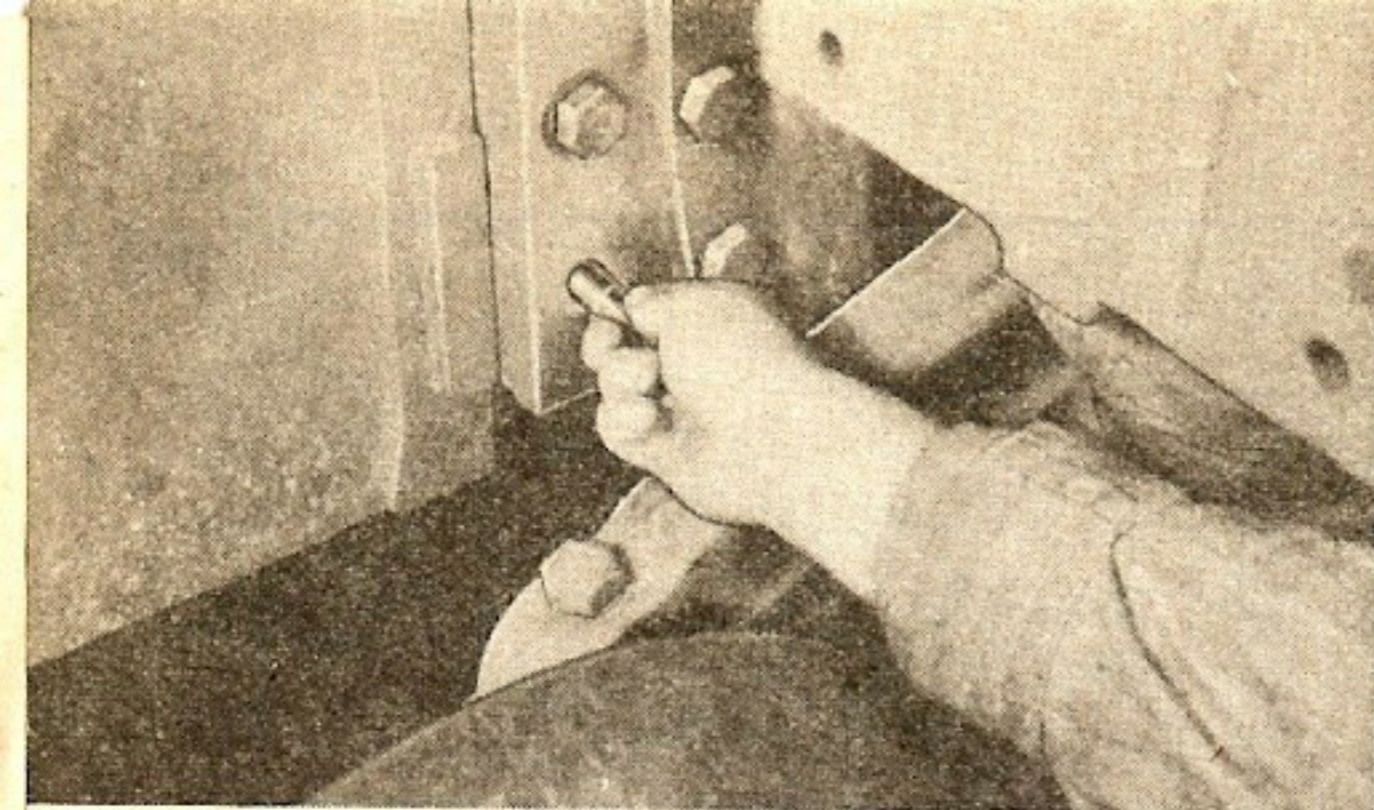


Fig. 6—Install one of the smaller cigars in the bottom bolt hole on each side of the final drive housing. These two cigars, one on each side of the housing, will act as hinges so that the final drive can be lowered just enough to install the eye (next step). O.K., take out the four bolts remaining in the housing. The rear winch cable now supports the unit.

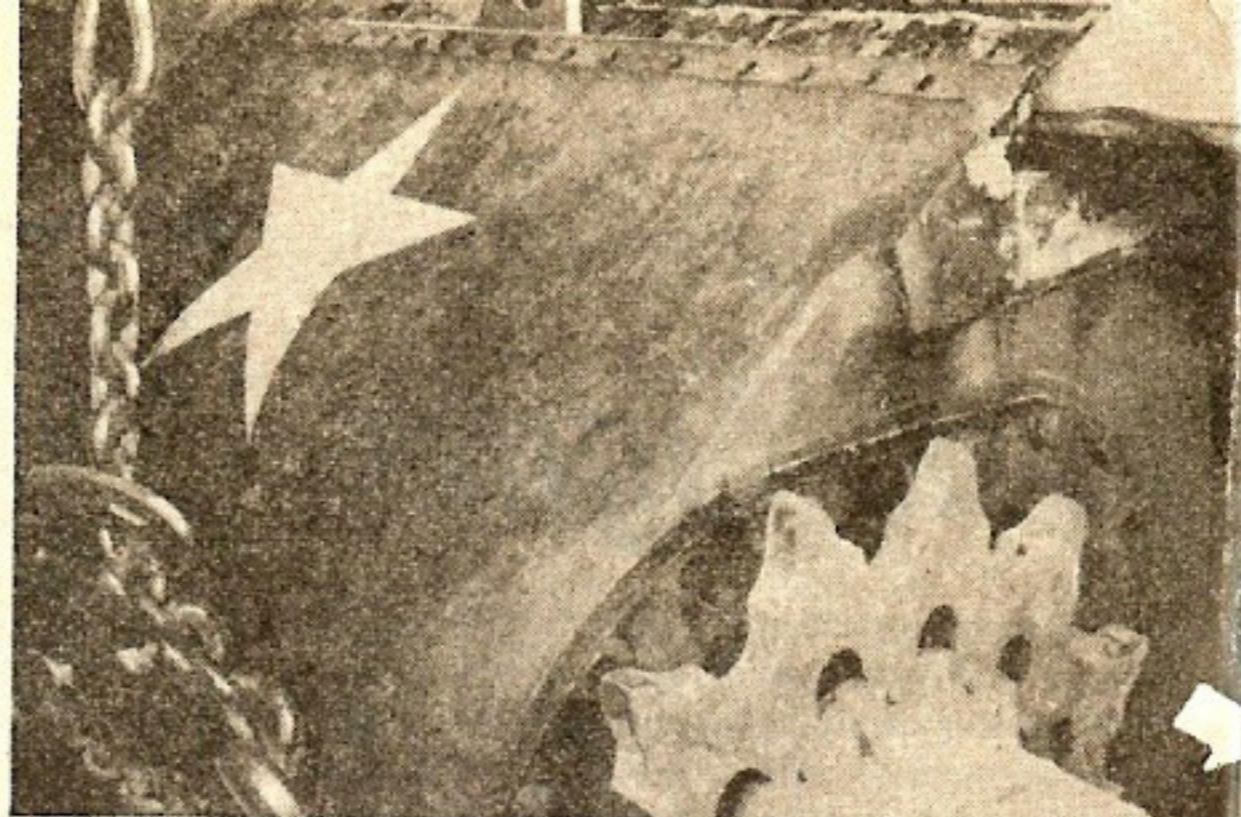


Fig. 7—Using the rear winch, let the final drive down enough so you can install the eye in the three center bolt holes (above) using three of the bolts from the housing. Run the hook from the wrecker boom through the eye. Tighten it up so that the final drive is now supported by the boom hook and rear winch line. Arrow indicates cigar.

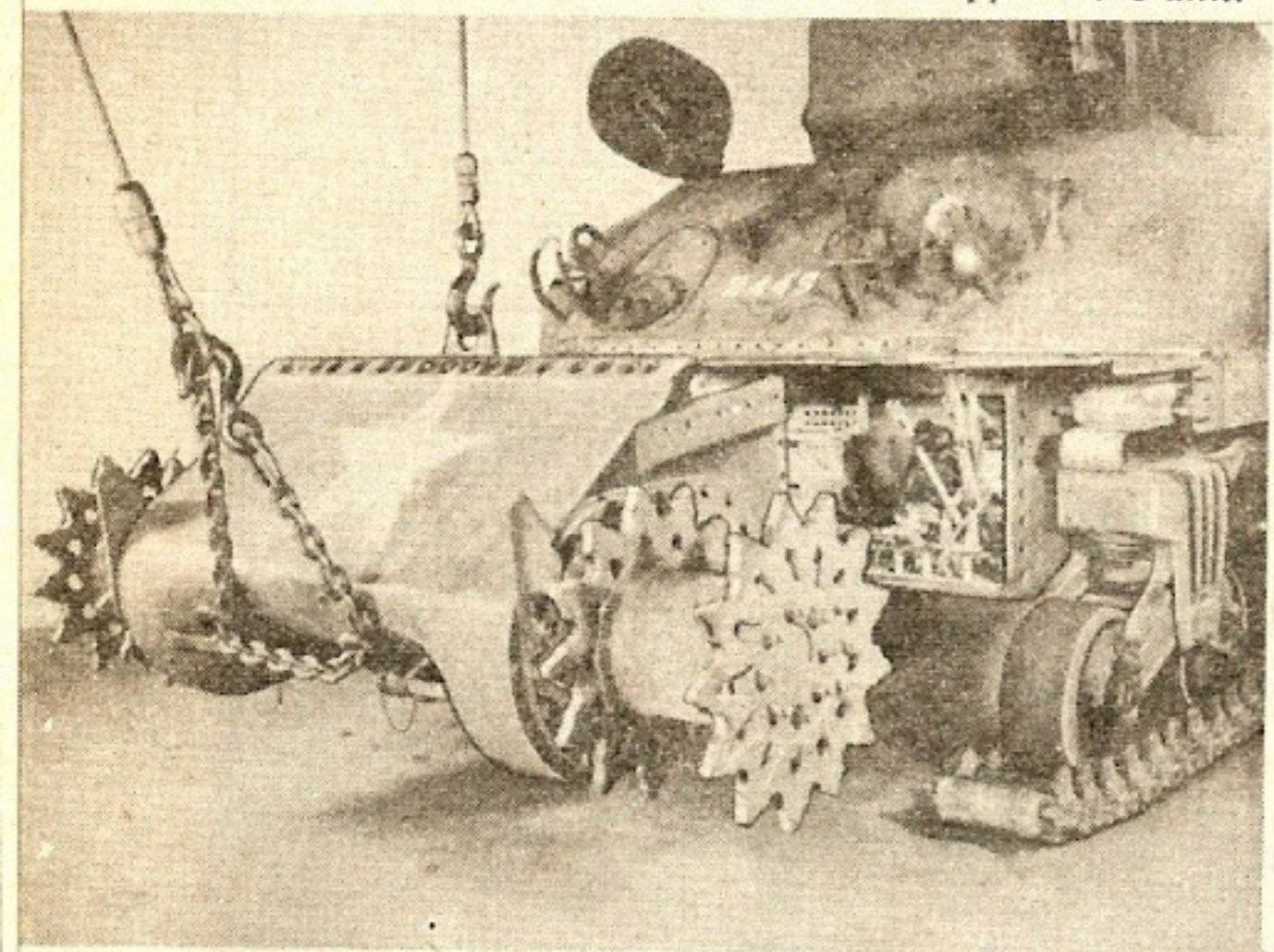


Fig. 8—Knock the two small cigar pins serving as hinges, out of the lower bolt holes in the sides of the housing. (You'll have to maneuver the unit around so it won't bind on the cigars.) Give the line from the rear winch a little slack so the line from the boom will properly position the final drive. The unit is now free to be eased out; lower it a bit, get busy with a prybar and drive the wrecker forward.

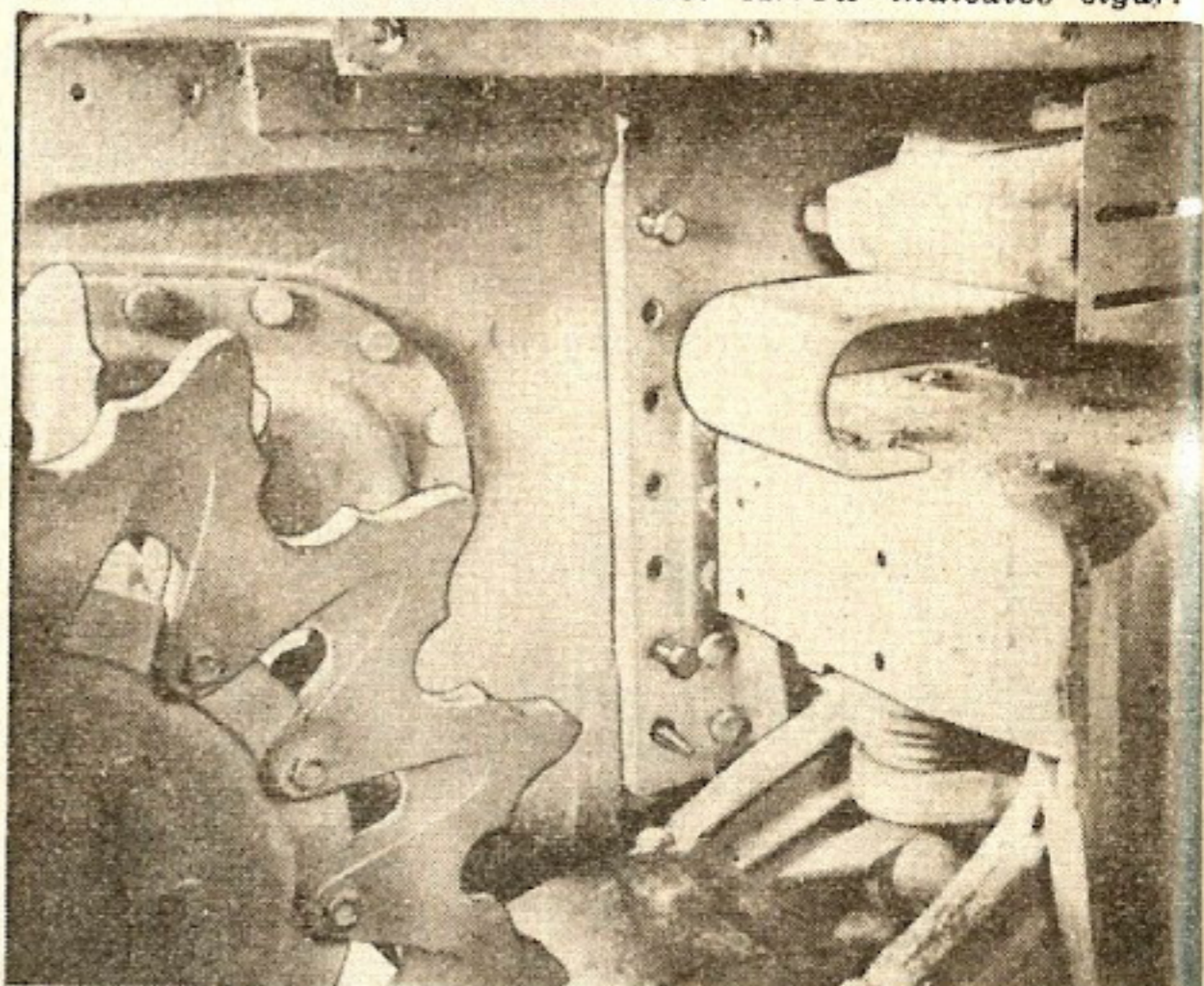


Fig. 9—Reinstallation is just about the reverse of removal. Jockey the unit back into position until the two small cigars can be pounded into the lowest bolt hole in each side to again serve as hinges. The boom allows you to maneuver the unit from side to side into position. Place bolts in the second bolt holes from the top and bottom to hold the spacer that goes between the hull and final drive.

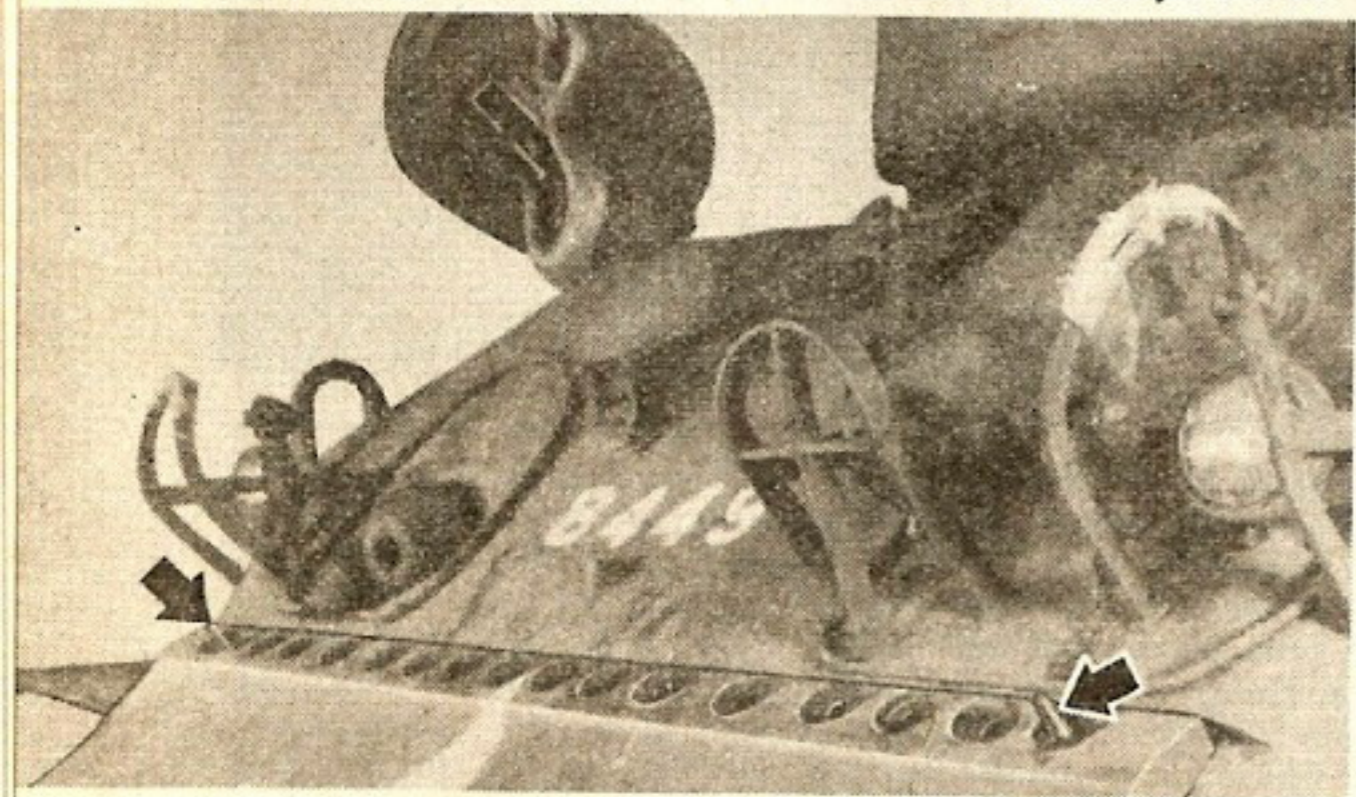


Fig. 10—With the small cigars acting as hinges, lower the unit enough so that the eye can be removed. Be sure the line from the rear winch is taut—with the eye removed, it's the sole support of the final drive. Now, with the line from the rear winch, raise the unit back into place. Here's where the pair of larger cigars come into play; use them to align the bolt holes. Pound them, as shown above, into the outer bolt holes on top. From here on, it's just routine. Replace all the bolts, knocking out the aligning cigars when most of the bolts are in. Tie up all the linkages, and lines, on the inside; put back track, fenders, etc.

FEDERAL STOCK NUMBERS

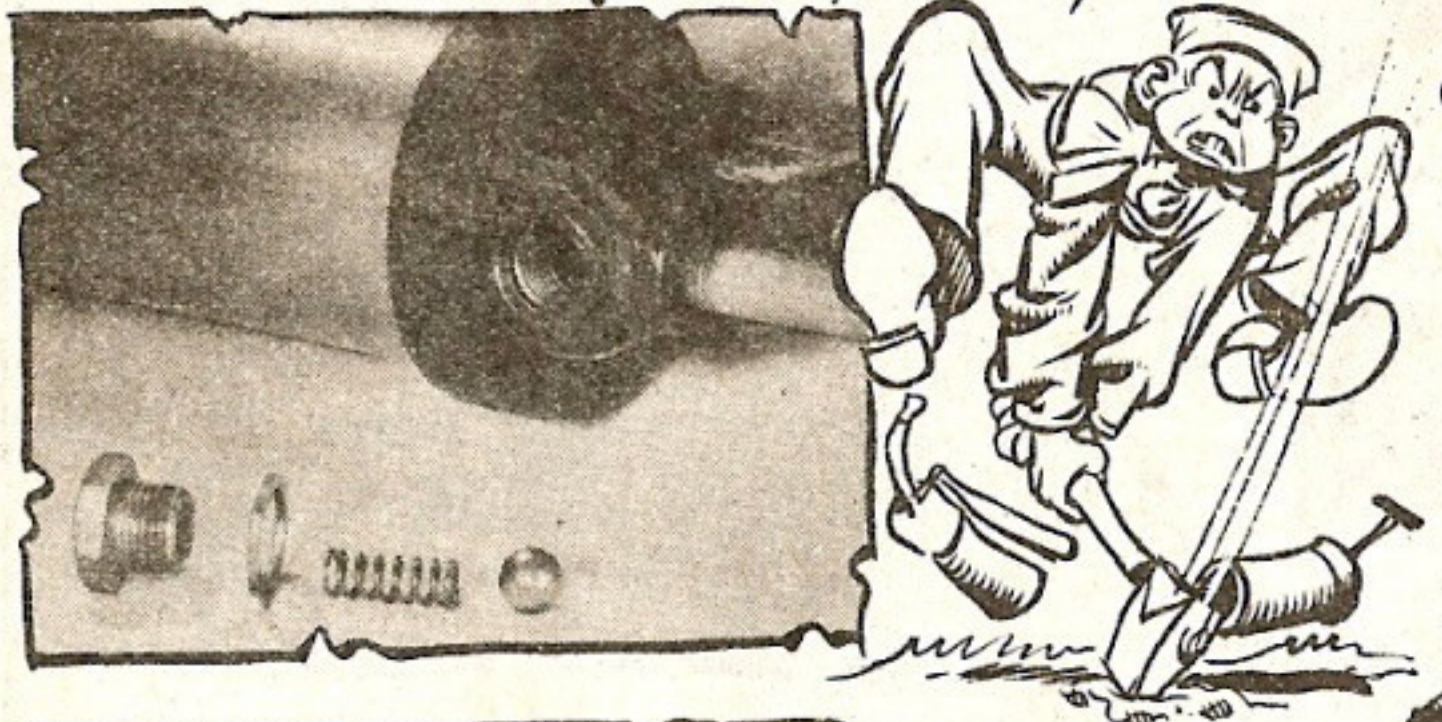
- Eye—Fixture, removing and replacing power train assembly, 41-F-2997-220
- Small Cigars—Pin, holding, tapered, power train assembly, 41-P-647
- Large Cigars—Pin, aligning, tapered, bolt-holds to power train and hull, 41-P-555-600

THE LOWLY GREASE GUN

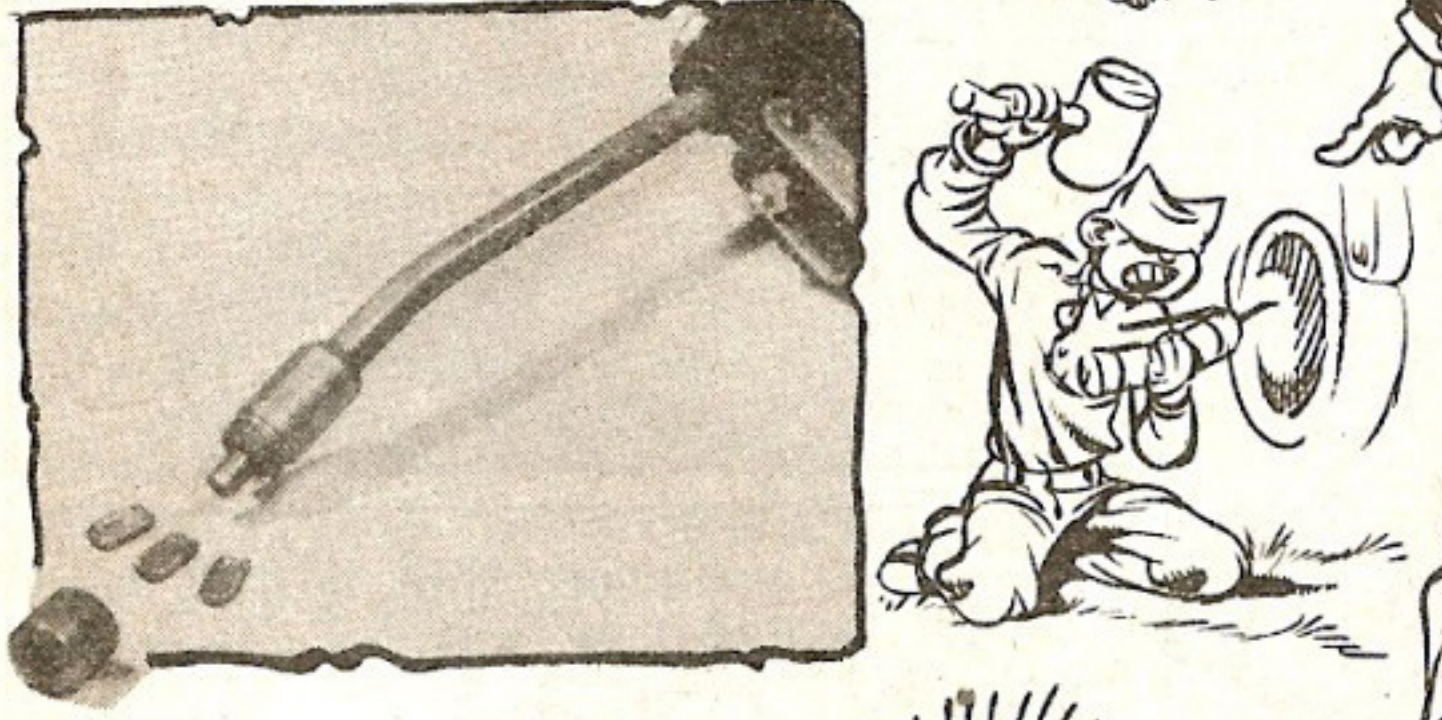
BY JOSEPH U. DOPE

A grease gun is a grease gun—that and nuttin' more. But what would you say if I told you that a slight poll indicates that amongst drivers and greaseballs there is an ignorance of the finer points of greasing and grease guns—especially of the newer hand-lever type gun now on every vehicle—that is positively profound?

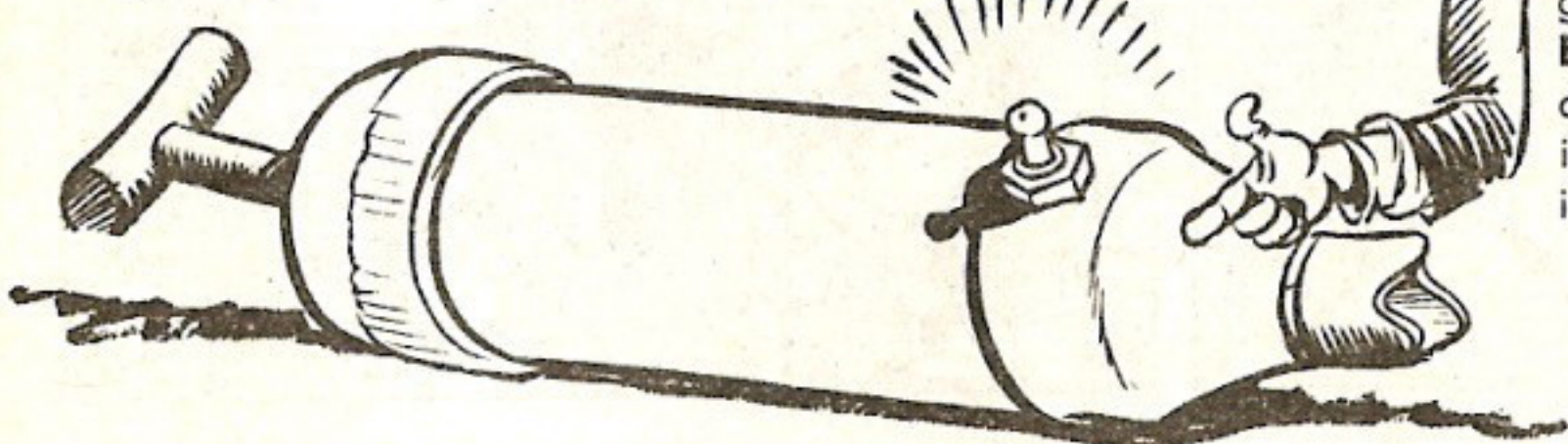
For instance, here on this page are a couple of lube and lube gun secrets. Test yourself—if you aren't familiar with each and every one of these tricks, you can probably learn something from the animated cartoon strip beginning on the next page. In which I have the starring role!



Sometimes your gun will not operate properly because dirt will clog the ball check. In the photo at left, you can see how easy it is to clean it; merely unscrew the plug, take out the spring and ball and wipe them clean.

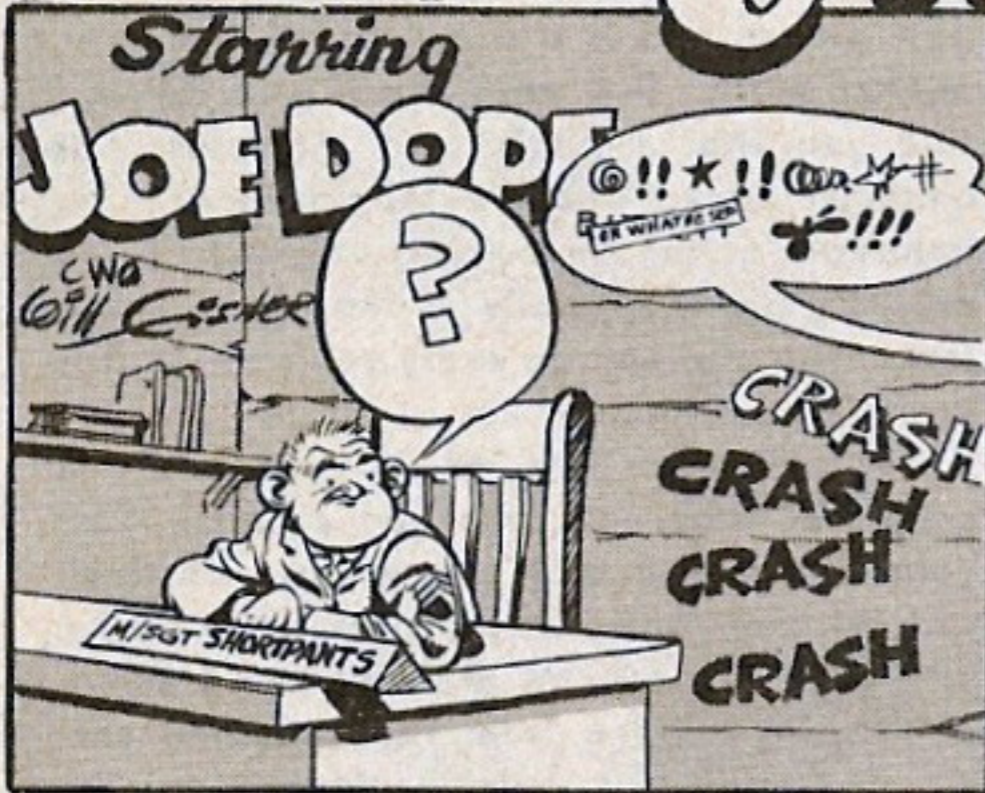


If only that dope will look at the picture he will notice that the grease gun has reversible jaws. What he should have done when he found that the tip wouldn't hold onto the fitting was to unscrew the end of the coupler and just turn the three little pieces that make up the jaw, bottom side up. The tip will then be good as new.

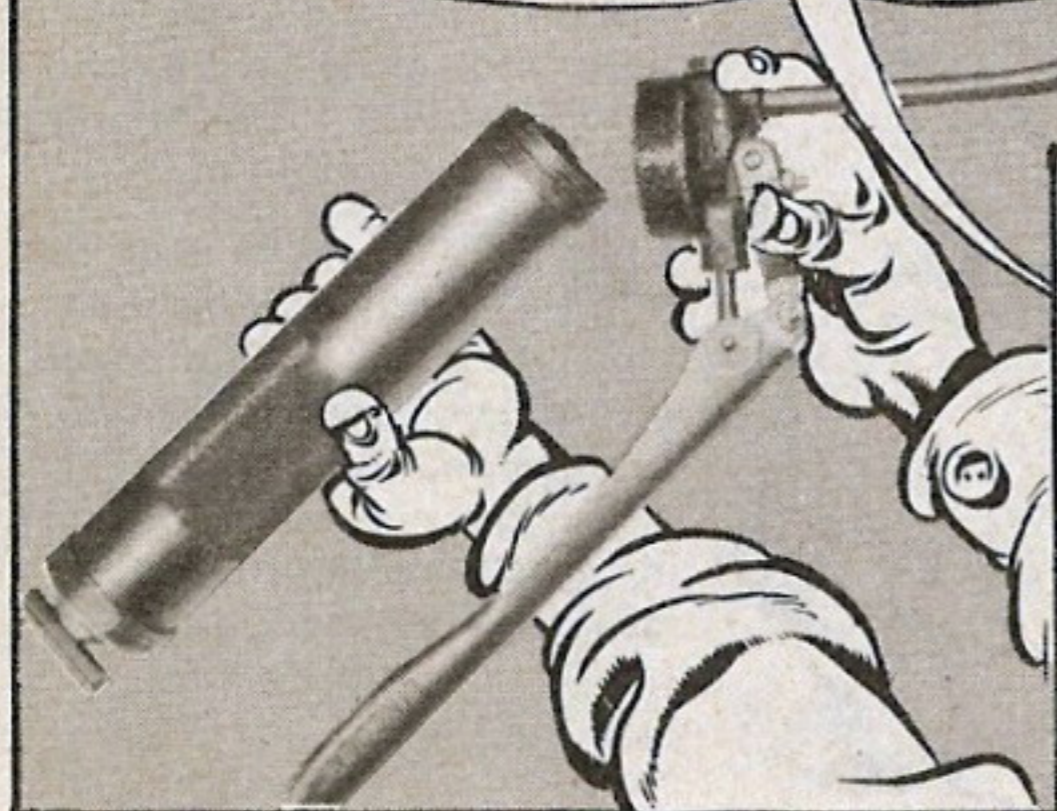


To fix it so that he could fill the old push-type grease gun with a power grease gun, **Sgt. Delbert C. Bridgeman**, AAF overseas, drilled the gun as shown and installed a grease fitting. Good idea for everybody, even me.

Filling A Grease Gun



THERE'S **TWO WAYS**... WITH A POWER GUN AND THE WAY Y'DO IT IN THE FIELD, **BY HAND!** THE HAND WAY, Y'UNSCREW THE FRONT END AND IF YA LOOK AT THE NEXT PANEL YOU WILL SEE THAT THE INSIDE CONTAINS A **PISTON**

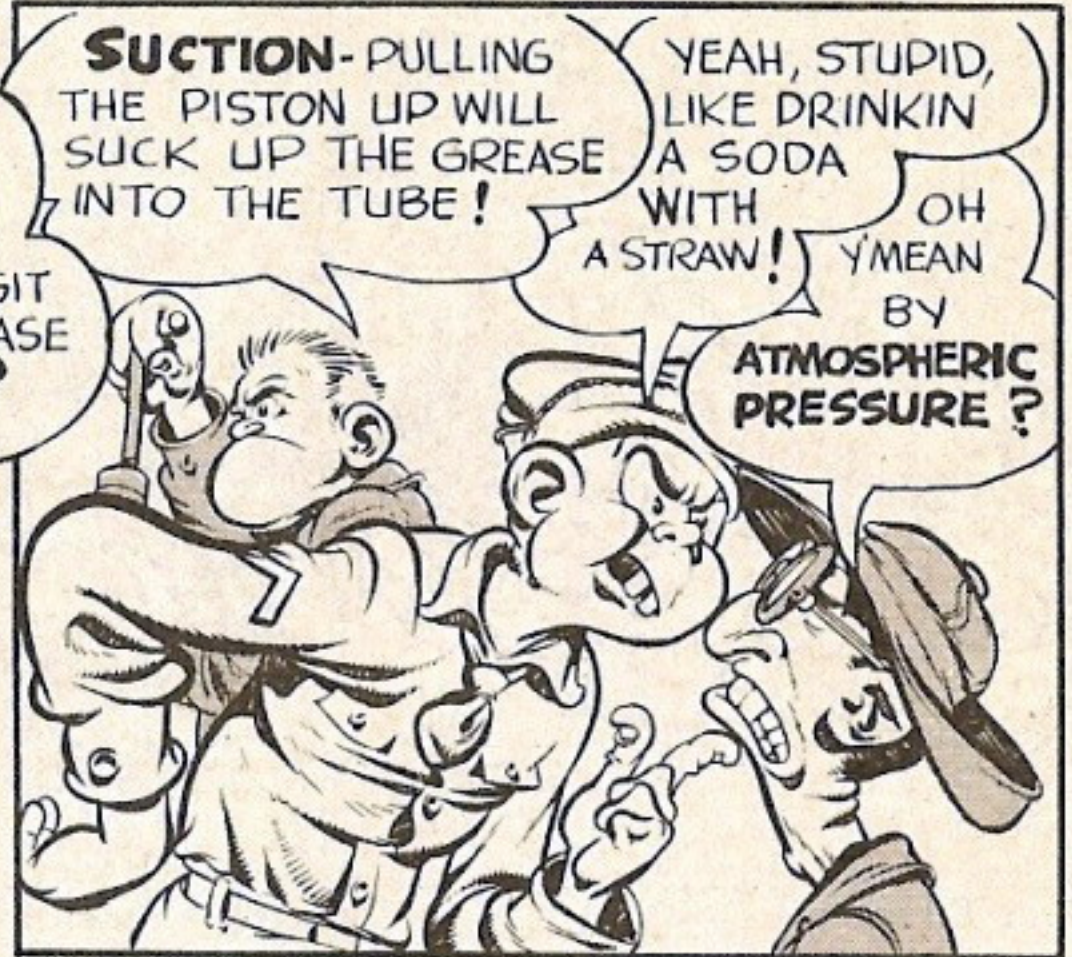




WHAT FOR, -PRAY?

KEEP Y'R BUTTONS ON, KID-NOW, **PULL** THE PLUNGER HANDLE AT THE REAR ---UP, **SLOWLY**

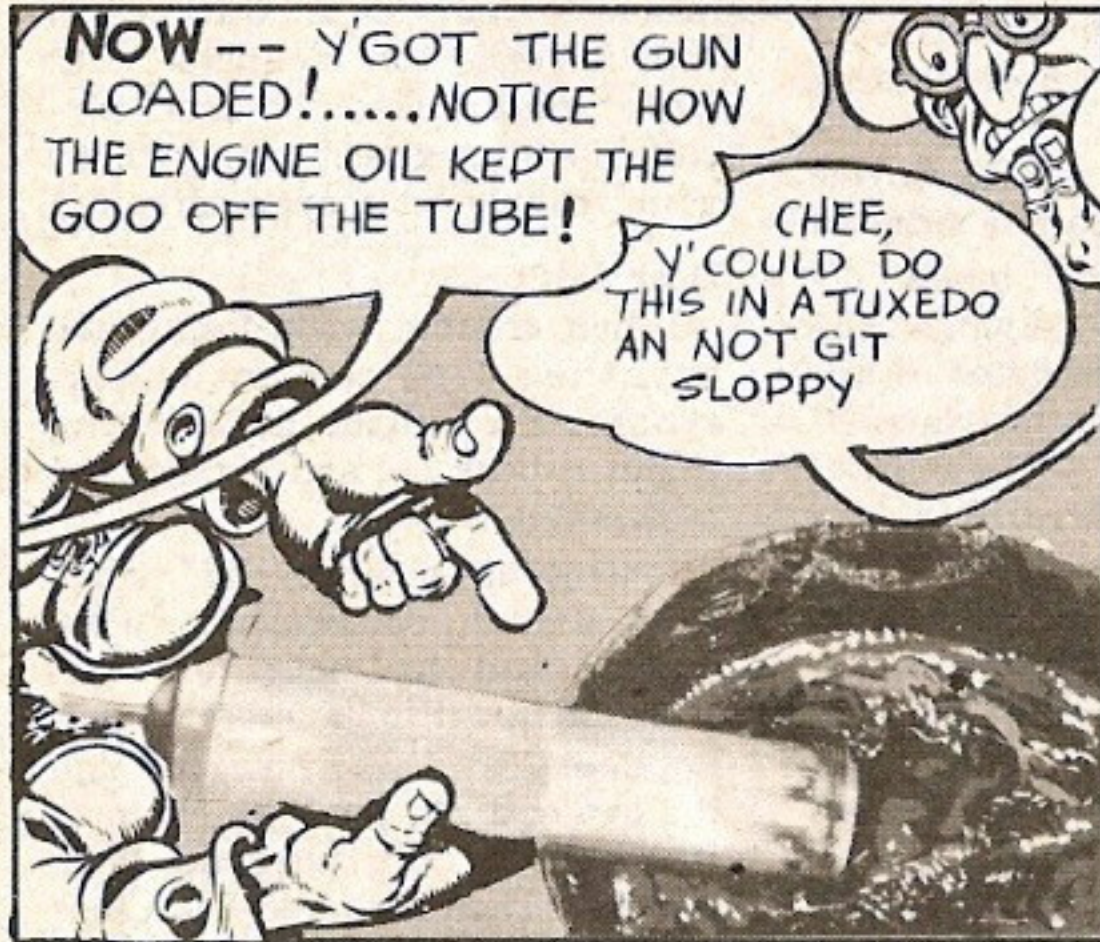
BUT HOW DOES THAT GIT THE GREASE INTA IT?



SUCTION-PULLING THE PISTON UP WILL SUCK UP THE GREASE INTO THE TUBE!

YEAH, STUPID, LIKE DRINKIN A SODA WITH A STRAW!

OH Y'MEAN BY ATMOSPHERIC PRESSURE?



NOW -- Y'GOT THE GUN LOADED!.....NOTICE HOW THE ENGINE OIL KEPT THE GOO OFF THE TUBE!

CHEE, Y'COULD DO THIS IN A TUXEDO AN NOT GIT SLOPPY

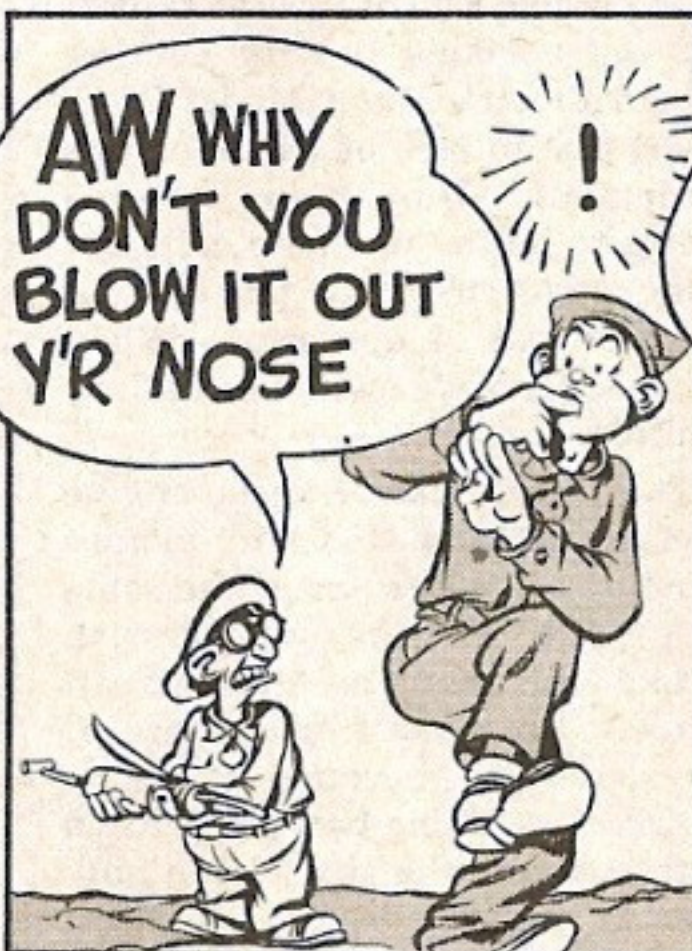


NOW....RESTORE THE CAP AN' JES' IN CASE THERE'S SOME AIR LOCKED IN THE TUBE, PUSH THE PLUNGER FORWARD JES' A BIT



THAT'S ALL THERE IS TO IT IT'S A CINCH.... SOME GUYS JES' NEVER GOT ACQUAINTED WITH IT!

YEAH, ITS GUYS LIKE YOU WHO THROW AWAY THE INSTRUCTION SHEETS THAT COME WITH IT!



AW WHY DON'T YOU BLOW IT OUT Y'R NOSE



PRIVATE HONUS T. MUSCLEHEAD!! ... NEED I REMIND YOU THAT I OUT-RANK YOU!

CONTRIBUTIONS



Dear Editor,

Some MWO's are received in the field, in many instances, four and five months after the date in the upper right hand corner of the work order.

I know that the MWO's are held up in many cases pending availability of parts, etc., but when the CO's get their hands on an MWO and see the date in the corner, they really raise the roof, especially when they find their vehicles haven't been modified. Naturally, they're under the impression that the MWO has been in the field

since the date of the work order. A lot of motor officers get gray hair trying to convince their CO's that they haven't been hiding these MWO's in file 13.

L. W. Boyler
Modification Advisor

(Ed. Note—To save motor officers from early graying: The dates on MWO's are dates of approval or publication, not dates of release to the field. Often it takes time to make kits available, and MWO's are never released until the kits are ready for the field. If you watch ARMY MOTORS' list of directives and the monthly changes to FM 21-6, you'll find MWO's listed after they've been released.)

Dear Editor,

We've had a lot of trouble repairing the portable battery charger (Onan Electric Plant Model OCT-33-B) due to lack of parts for this equipment. Our main trouble seems to be the magneto coils become open-circuited, putting the machine out of operation. When this happens, we switch to battery ignition.

This 2-cylinder, 4-cycle engine is constructed so that both pistons reach top dead center at the same time—one on the compression stroke, the other on the exhaust stroke. Both spark plugs fire at the same time, because there's no distributor. Using battery ignition with one coil, the spark plug only fires in the cylinder whose piston is at top dead center on the exhaust stroke. But with one coil

for each spark plug, both spark plugs fire at the same time, and you get the same results as with magneto ignition.

Materials needed to replace the magneto coils are two 6-volt coils and one ignition switch. The two coils are hooked up in parallel, using the condenser and breaker points of the Onan unit. The plus side of the coil can be attached to the plus side of the 6-volt receptacle of the unit or to a 6-volt battery. (You can use a motorcycle coil instead of two 6-volt coils.)

This isn't according to the book, but it's been a God-send to us.

M/Sgt. Alfred G. Payette
118th Ord. Co. (MM)

(Ed. Note—Your converted ignition system looks O.K. when you haven't got magneto coils. Have you checked for short circuits? Our engineers think that's your trouble—not open circuits.)

Dear Editor,

I had trouble with losing the breather pipe cap on the six-cylinder Ford engine, or forgetting to put it back on, and always had to order new ones.

I took an ordinary 1/4" stove bolt, a nut, lockwasher, plain washer, and six inches of chain and fastened it to the motor as follows: drilled a 1/4" hole through the cap and attached the chain to it with the bolt, nut and lockwasher. Then soldered the other end of the chain on to the plain washer and installed it under one of the cylinder-head nuts. If you forget to replace the cap, it'll rattle against the block.

Pvt. Henry R. Hamann
Anniston Army Air Field

Dear Editor,

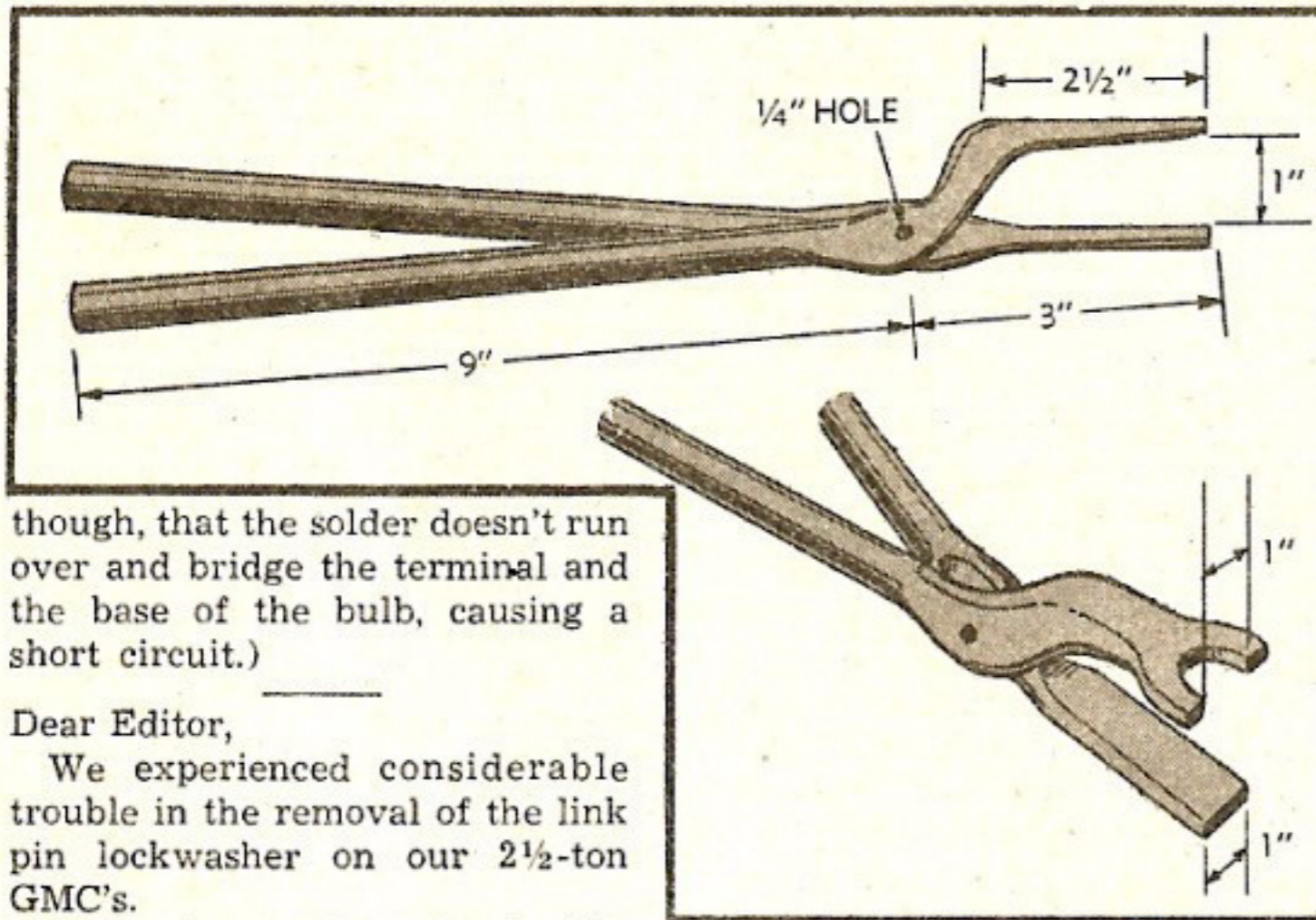
Having had no end of trouble with the blackout lights on our tank destroyers, I decided to do something about it.

I found the contact points worn off and put a drop of solder on each terminal. Since then, I haven't had one light burn out. This also works on any type of vehicle having removable blackout and service lights.

S/Sgt. Forrest D. Thomas
Co. C, 670 T.D. Bn.
(Ed. Note—Good idea. Be sure,

HELP WANTED, MALE

Men! Have you worked out ways of lightening your maintenance load, have you devised little tricks to make your job easier? Get in touch with us—we are an old established firm (U. S. Army) now engaged in essential war work. We pay off heavily (in United Cigar Store coupons) for bright ideas that keep vehicles off the deadline. You can win a valuable personal subscription to ARMY MOTORS if your idea is on the ball. Write now: ARMY MOTORS Magazine, Office, Chief of Ordnance—Detroit, Detroit 32, Michigan.



though, that the solder doesn't run over and bridge the terminal and the base of the bulb, causing a short circuit.)

Dear Editor,

We experienced considerable trouble in the removal of the link pin lockwasher on our 2½-ton GMC's.

Every time we had a brake job, a vise had to be used to compress the spring. So taking two pieces of ½" iron rod (one piece 12" long, the other 13½" long), and one ¼" bolt, T/4 Everett Bray and I made a pliers for easier removal of the lock (see Fig. above).

These pliers can be made by any blacksmith.

T/5 Leslie Opsahl
327th Engr. Bn., 102nd Inf. Div.

Dear Editor,

The front-fender rear support-frame-brackets on our ¾-ton Dodges had a habit of breaking at the frame. Even after welding the broken braces and instructing the drivers to keep the bolts tight, the vehicles kept coming back with fenders flapping in the breeze.

We finally solved the problem this way. There's a piece of angle iron riveted along the bottom of the fender. We removed the rivet nearest the outer edge and, using the hole as a guide, drilled a hole in the flange of the running board. We then put a piece of pipe between the fender and the running board as a spacer, and bolted the two together—that way, the running board holds down the vibrations of the fender. (A piece of wood can be used as a spacer, but weather will probably cause it to split and fall out in time.)

We also had trouble when the drag-link bell-crank on the ¼-ton 4x4 became loose and caused poor

steering control. Even if new needle bearings were available, it didn't do us much good since the shaft or stud was always pretty well worn. We found that the tie-rod bushing from a 6x6 GMC would fit the arm and needed only slight reaming to fit the stud. When we installed it, we left room enough on either end for replacing the original oil seals, and we drilled a hole in the bushing where the grease-fitting hole was in the crank. The grooves worn

in the stud by the needle bearings acted as grease slots.

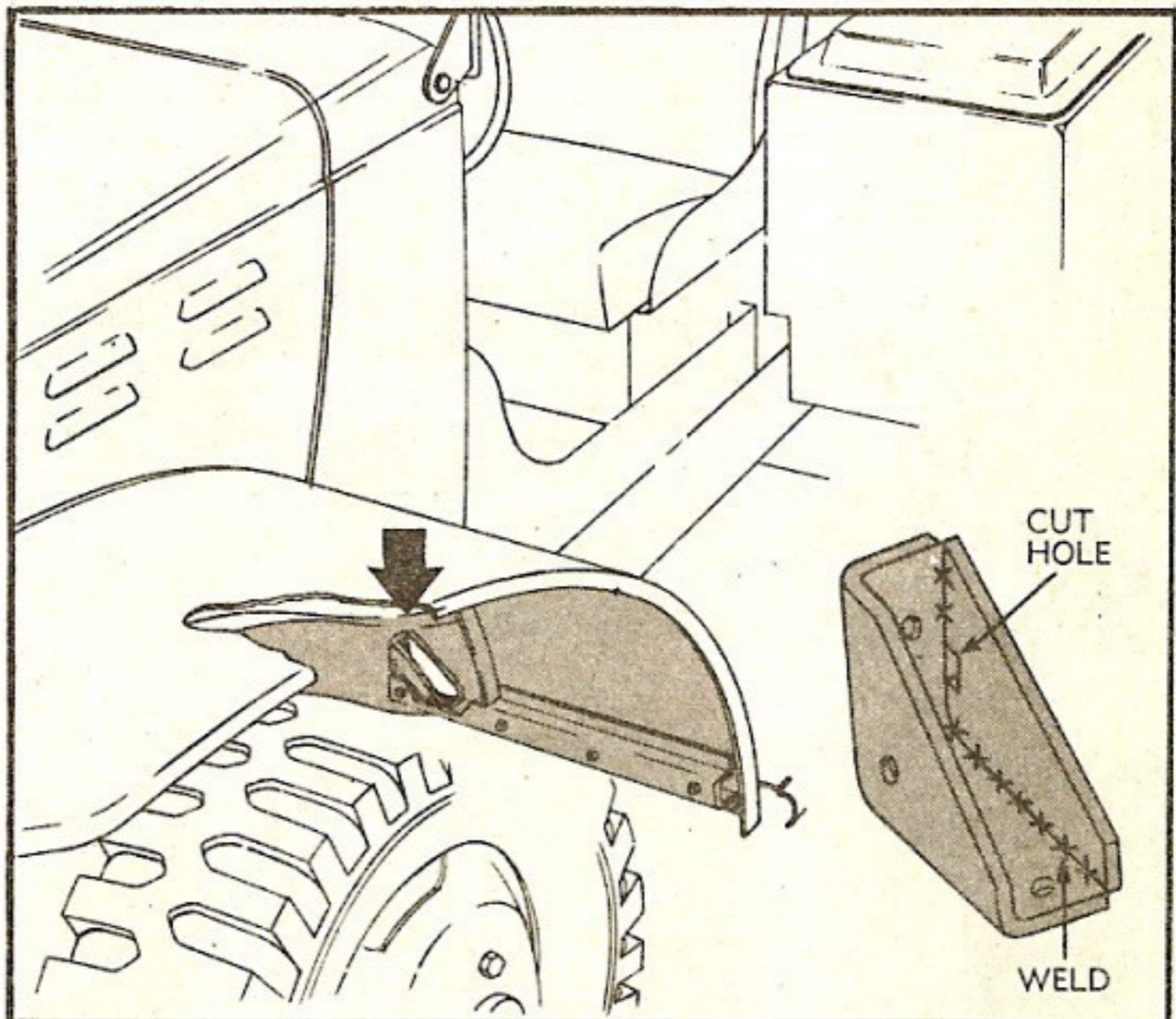
M/Sgt. Harry Vellekoop
Service Btry., 912th FA

(Ed. Note—You'll be glad to know that the manufacturers have been using an improved, heavier front-fender rear support-frame-bracket on the ¾ and 1½-ton Dodges since about April of this year. They suggest you strengthen the old brackets by removing them and adding a triangular reinforcement (inset, Fig.). When you're cutting the triangle, cut out a small hole on the side (see inset again) to clear a frame rivet that's just back of the bracket. Weld the reinforcement to the outside edge of the bracket.

Enlarge the three frame-bracket holes and corresponding fender-rear-support holes to 15/32". Attach the reinforced bracket to the frame (see Fig.) and assemble the fender rear-support to the bracket, with the 7/16"-20-1" bolts, lock washers, and nuts.)

Dear Editor,

Some time ago, an Ordnance outfit I was assigned to had several cases where oil was pumped into the cooling system of half-track White engines, Model 160 AX, during operation, and water



leaked in the oil pan overnight.

After checking the cooling system thoroughly, we found that the threaded holes in the block were drilled into the water jacket. Capscrews, Part A-215105, fit into these holes to hold the valve-lifter-guide assemblies in place. We machined a brass plug with a screwdriver slot. After coating it with shellac, the plug was screwed into the hole far enough so that it didn't interfere with the capscrews seating properly.

WOJG Walter E. Collins
Hq. 4th Army (Ord. Sec.)

Dear Editor,

Last summer on maneuvers in the states, and since we have been in England, I've noticed a number of ¼-ton and 1-ton trailer lights out of working order due to improper mounting of the electric cable.

The cable is wound around the trailer frame and passes over the trailer hitch-eye retainer-block. This way, it gets cut up bad with guys walking all over it. And when the cable loosens and dangles, it gets hit by all the rocks, gravel, and sand that's thrown back by the truck's wheels.

If two holes are drilled in the trailer frame (at the trailer body and at the hitch-eye retainer-block) the cable can be passed between the trailer frame and reinforcement. Then clip the cable outside the hitch-eye retainer-block, run it under the frame and clip it (with Clip, coupling-socket

cable to draw-bar bracket, Willys Part No. WO-A-6335; hex-head bolt, Parts Common No. 43-B-19377-10; and lock washer, Parts Common No. 43-W-5812) along the inner side of the frame.

This is a simple, inexpensive fix—and I believe it'll save cable and get rid of trailer-light trouble.

Cpl. Howard W. Jenkins
England

(Ed. Note—It's a good idea, Corporal, except our engineers don't approve of drilling holes, large enough to take the cable, in the draw-bar rail. But since they agree with you that something should be done, why not mount the cable as shown in Fig. below.

First, clip the cable to the inner side of the trailer frame, if it isn't already clipped there. Then use a longer clip (Part No. B-208671T) on top the hitch-eye retainer-block and bend the clip as shown so the cable will run **along side** the retainer block.

You'll have to bend the clip eye to hold the cable tight, else tape the cable to fit the eye.

If you can't find a clip ready made, fashion one from 1/16" thick by ¾" wide, soft iron. The clip eye should be ½" in diameter—the mounting hole 9/32" in diameter. The distance between the center of the clip eye and the center of the mounting hole should be 2".

When the cable's not in use, run it under the frame and back to the trailer body where it should be

fastened to a hook. The hook on the trailer isn't a new idea; some trailers already have one. Make the hook from scrap metal, slightly larger than the lashing hooks, and weld it in place as shown. Or requisition a lashing hook, Part No. 08513-V, and weld it on, upside down.)

Dear Editor,

The Universal Joint Repair Kit, Chevrolet No. 605773, contains all parts needed to rebuild the Ford universal joint. The following parts have been interchanged on 1½-ton Fords and Chevrolets:

Description	Ford No.	Chev. No.
Trunnion	01T 7084 B	3660990
U bolt, universal joint	01T 4529	2066840
Bearing, universal joint	01T 7074 B	3661395
Ring, universal joint snap	01T 7096 A	080385

Sgt. L. Goldberg

Base Ordnance Office

(Ed. Note—These same parts are interchangeable on the ¾-ton Chevrolet, too. There's also a Spicer Kit No. K5-18X, GMC 2186972, which is interchangeable with Chevrolet Kit No. 605773, except that the two "U" bolts aren't included. Naturally, though, you'll use the kit that's intended for the vehicle, and not interchange it unless necessary. Use the kits on the vehicles which are most-used—no sense in tying up good kits on little-used vehicles.)

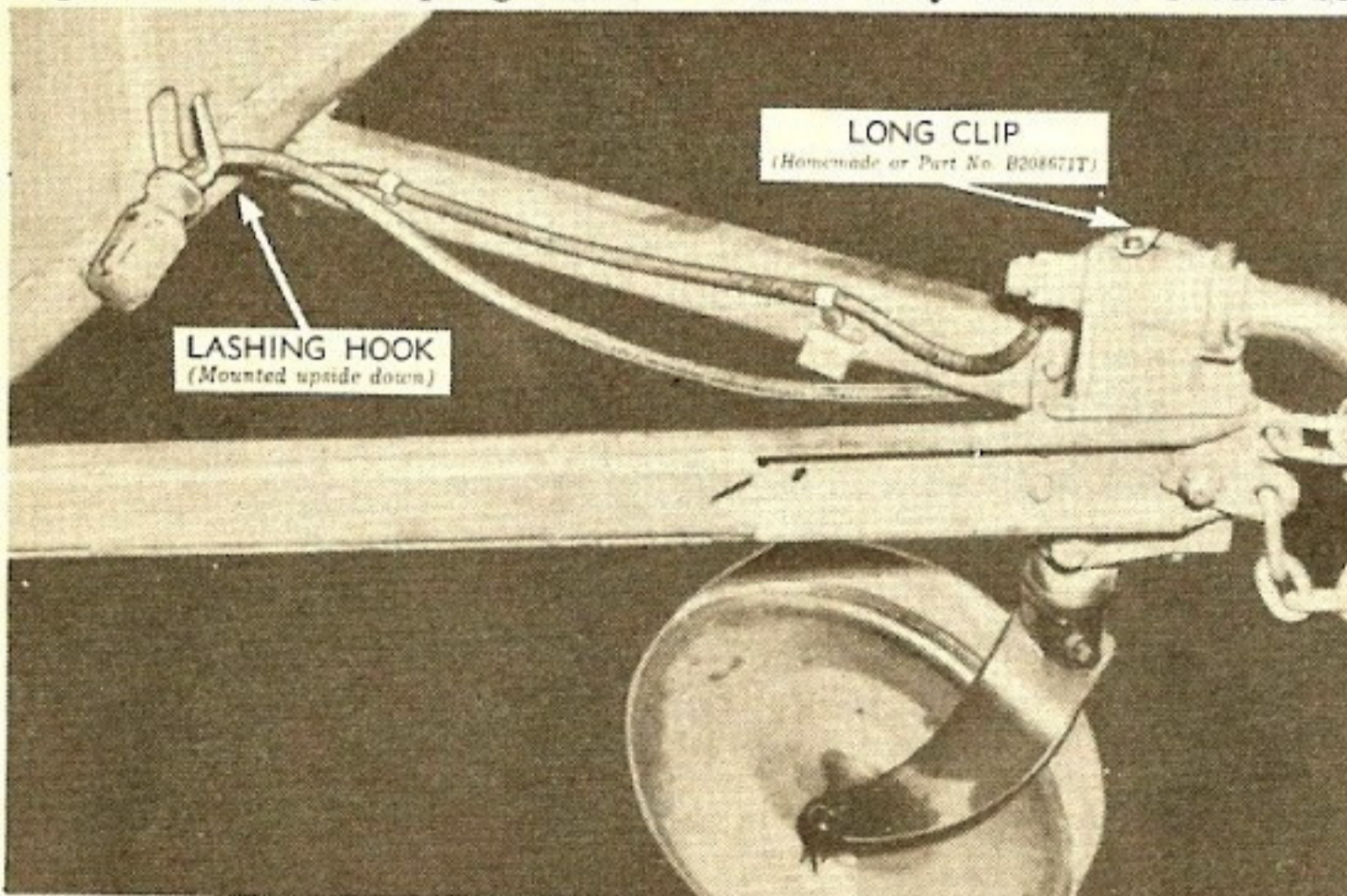
Dear Editor,

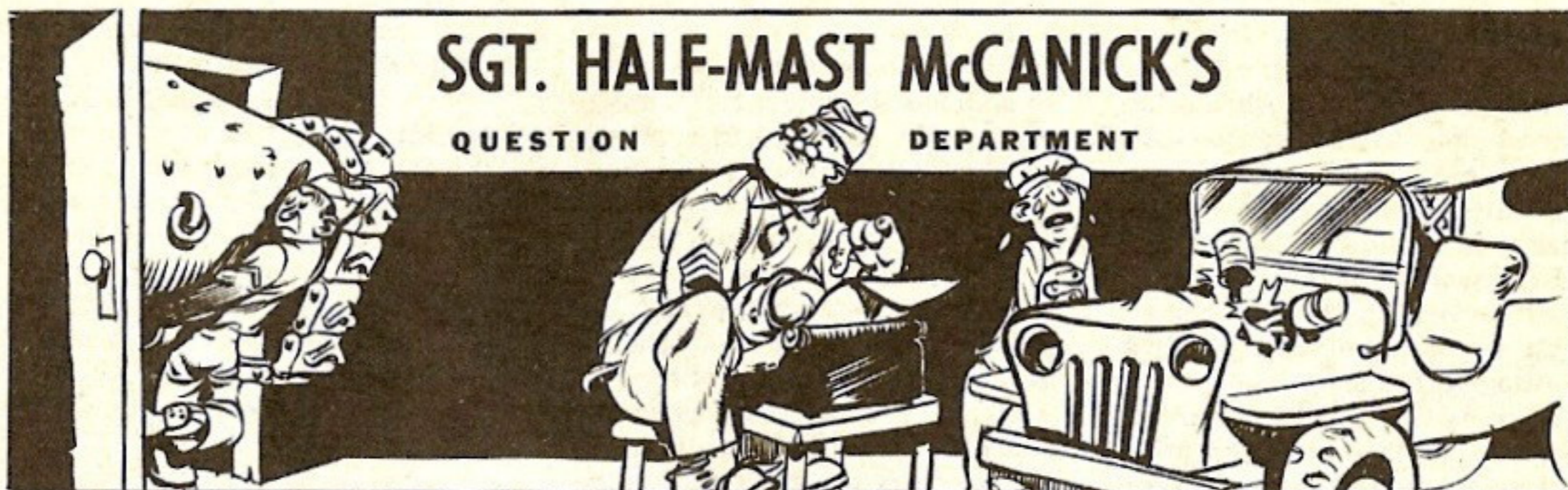
There seems to be a lot of confusion in the field regarding the use of Prestone. Drivers and mechanics are blaming it for leaks and overheating of the cooling system.

Perhaps I can clear up some of the questions. The installation of any antifreeze that has a glycerine base will seep through poor hose connections, loose water-pump-bushings, or bad gaskets; so check all connections before adding antifreeze. Overheating is usually caused by the presence of rust, not by the use of Prestone.

It's best to flush the cylinder block separately from the radiator to keep accumulated rust from being pumped through the radiator core, as it might not pass through the small sections of the core.

(Continued on last page)





Dear Half-Mast,

Here's a subject that many a guy in the Army argues about, and we'd like to have it settled once and for all. The subject concerns the center bolt on the front spring of a GMC.

We would like to know if the center bolt has another function other than compressing the spring so it can be put in place. Does the center bolt help in alining of the front end at all?

S/Sgt. F. F. A.

Dear Sergeant,

Far as I know the spring center-bolt has two functions: (1) it keeps the spring properly assembled before installation in a vehicle. (2) It's a help in getting the spring into correct position on the axle, because the bolt head fits right in the locating hole in the axle spring-seat.

But I'm afraid the center bolt doesn't have anything to do with the alinement of the front end.

Half-Mast

Dear Half-Mast,

The oil dipsticks on the ¼-ton have us confused. Some models have dipsticks with the full mark 1⅞" from the end, and others have the full mark 2¼" from the end. All these different models have the same 5-quart crankcase capacity.

Is there a modification to make the dipsticks alike?

WOJG C. W. S.

Dear Mr. S.,

Something bonged inside the old head when I read your letter. Seems like I recollect that the jeep's crankcase capacity is only 4 quarts, not 5.

You drag out your dog-eared TM and see if it doesn't say that the only time you should put in 5 quarts with an oil change is when a new oil filter is installed. All other oil changes should be 4 quarts, period.

There ain't no real reason to make all the dipsticks alike, so I don't think they will. Dipsticks with the full mark 2¼" from the end (used in all jeep engines since No. 170201) will show "full" when the crankcase is full—they never miss.

Older dipsticks, with the full mark 1⅞" from the end, sometimes show "full" when there's only 3¼ quarts of oil in the crankcase. This happens if there's a slight variation in the dipstick or the oil-filler tube.

Instead of losing sleep over it, why not drain the crankcase, re-fill the crankcase (with the correct 4 quarts), wait until the oil settles nice and still, and re-mark the dipstick. Then you'll have the full mark right where it belongs.

Half-Mast

Dear Half-Mast,

We're in a towed Tank Destroyer outfit and are having a lot of trouble with distributor shafts on our M3 half-tracks. The shafts always seem to break when letting up on the accelerator after a hard pull, or from a quick acceleration.

The male end of both upper and lower shafts twist off. Why?

S/Sgt. P. C. C.

Dear Sergeant,

Too much vibration in the shaft could be the answer. Sometimes after a driver has gone up a steep grade in low gear, he doesn't

change gears before he starts down. As a result the engine is raced over 4200 rpm and there's a terrific vibration in the shaft. So terrific that the shaft can't take it, and breaks.

Then again if you have the one-piece type of tachometer drive adapter on your engine, it might be that the tachometer-drive cable isn't lubricated or is binding. The gear (A293973) that drives the tachometer gear (A293969) is not a tight fit on the distributor shaft (A226215). If the cable isn't lubed or if it binds, there'll be a seizure between the gear and the bushing (A293958) that will cause the shaft to break.

Half-Mast

Dear Half-Mast,

We would like to have some information on radio suppression of vehicles.

What TB, FSMWO, or other publication authorizes the suppression of vehicles? Where can technical instructions for performing this modification be found?

Is the Ordnance Department or the Signal Corps responsible for storage and issue of supplies required for this modification?

CWO R. K.

Dear Mr. K.,

With few exceptions, vehicles in production since early 1942 have been suppressed. But for some of those vehicles that came off previous to this date I dragged out an ASF directive, File No. SPRMD 413.44 (1 May 44) sent to all service commands. It directs the radio suppression of such vehicles be-

fore overseas shipment. These vehicles are the ¼-ton, 2½-ton GMC, 4-ton Diamond T, 4-5-ton Federal and Autocar, 5-6-ton Autocar, 6-ton Corbitt, Brockway, and White prime mover, 6-7½-ton Mack, and 10-ton Ward La France and Kenworth heavy wrecker.

Technical instructions were sent to all service commands for distribution to the shops.

All parts listed in the technical instructions for this modification are available to the shops from the Signal Corps.

For maintenance of suppression on vehicles, requisition through regular Ordnance channels.

Half-Mast

Dear Half-Mast,

I met a mechanic the other day, who grumbled about cleaning dirty and corroded battery cable terminals, and I wondered if the fellows knew about sodium carbonate (washing soda). Put an ounce of soda in a large-mouthed container with 3¾ gallons of water, immerse the dirty and corroded battery cable terminals, and let chemistry take its course.

After about 5 minutes, the terminals should be clean. Wash them off in plain water before replacing them. It's a timesaver, and I have found that it does a better job.

A. P. S.

Dear Mr. S.,

Sure, it'll do a better job—if you can get it. And so will bicarb of soda (ordinary baking soda). But the only cleaning compound listed in Army SNL's is Soda Ash (Federal Stock Number 51-S-2039-10, for the 1-lb. size; 51-S-2050 for the 100-lb. box). Use ½-lb. Soda Ash to a gallon of water.

'Course, if guys in the field can scrounge up some baking soda or washing soda, there ain't no law against using it.

Half-Mast

Dear Half-Mast,

Since our organization has received its M5 tractors, there has been considerable difference of opinion as to the most practicable spot to place the two 5-gallon

gasoline cans.

We're sure you have access to an unbounded amount of knowledge on the subject and can help us. We will appreciate any suggestions.

M/Sgt. L. H. F.

Dear Sergeant,

I found there simply ain't no place on the 13-ton M5 tractor for carrying extra gasoline.

You sorta a-rouse my curiosity, asking a question like that. If you're carrying gasoline in the cans, I wonder why, because the M5 holds 100 gallons of gasoline in the regular tanks—10 extra gallons would be a drop in the bucket.

And besides, it ain't safe—stowing two cans of gasoline around heavy equipment and near ammunition. Since the M5 engine is mounted in a hull (causing a terrific amount of heat in certain places) you can't take a chance on stowing gasoline in those places, either.

If you're using the cans for water—seems to me like a lot of water, because you've already got four cans under the front floorboards as regular equipment for carrying water. If you're carrying the cans empty, I see no objection to packing them in the regular luggage compartments.

You could have asked about 5-gallon cans on most any other vehicle and your question would be covered by TB ORD 92 (13 May 44). It's got ten pages telling where and how to mount 5-gallon liquid containers and container brackets on different vehicles. But I guess they don't mention the M5 tractor because it's pretty well equipped now.

Half-Mast

Dear Half-Mast,

Some time ago you told a Mr. B. to use a cam angle meter when setting ¼-ton 4x4 distributors, and to set the cam angle at 47° (as specified in the 10-series maintenance manual), even if the point gap was only .010. We checked 24 new ¼-ton Fords and found the cam angle set at 41° and the point gap between .018 and .020. Assuming that there's a misprint in

the ¼-ton manual, we've been setting the cam angle at 41°.

Chief Inspector S. A. E.

Dear Mr. E.,

You're right—there was a misprint in the old 10-series manual. The cam angle should be set at 42°. This will automatically give a point gap of about .020 and a 47% dwell set—which is where the mix-up started.

Half-Mast

Dear Half-Mast,

Several disagreements have arisen among Motor Officers during our Division Artillery Inspection.

Is it necessary to pack GMC 2½-ton spring-seat-bearing caps after lubricating the housing and bearings?

Can tightening spring rebound clips so they bend over the upper spring leaf cause excessive damage?

Lt. C. F. K.

Dear Lieutenant,

No, it ain't necessary to pack the caps, but there's no objection, if you want to.

As a general practice, rebound clips shouldn't be tightened so much they overlap the leaves. Tighten them just enough to restrict the rebound of the leaves and still allow for free movement. On the ¼-ton 4x4 torque reaction springs, though, the rebound clips are bent around the leaves.

Half-Mast

Dear Half-Mast,

At our motor pool there was some discussion about painting engines. Some said it made the engines overheat, others said no.

Please tell us if there are any regulations about painting engines, and if so, where we can find them.

T/5 B. E. H.

Dear Corporal,

The only directive I've ever seen on painting engines is in TM 9-850 (Cleaning, Preserving, Lubricating Materials, etc.). And all it says is that they should be painted, "as required."

I think the only time engines should be repainted is when a major overhaul is made in a base

shop. The guys who say painting engines any old time prevents proper cooling are on the ball. Layers of paint insulate and hold heat in the engine.

Maybe you'd better leave this paint job up to the base shops.

Half-Mast

Dear Half-Mast,

I have a question concerning the "Synthetic Hot Patches Ready for Issue" article (ARMY MOTORS, May 1944). The article says to fill the injury in the tube with quick-cure gum before applying the hot patch. But it says nothing about reinforcing the tube before filling the injury with gum.

Manufacturers putting out synthetic hot-patch kits state that a cold patch should be used before inserting the gum. Since your article says there's not much adhesive quality to synthetic, I've been wondering if the cold patch would stick.

T/Sgt. V. J. G.

Dear Sergeant,

You're right about wondering—because cold patching ain't good for synthetic tubes. The synthetic patches you get in repair kits are for $\frac{3}{4}$ " injuries and nothing larger. You don't have to worry about reinforcing the hole underneath the gum—small injuries don't need it.

I've never seen a manufacturer's statement that cold patches should be used first. They do say that for large injuries in synthetic tubes, reinforcing stock should be

used. This reinforcing stock is rubber, cured on one side (so it won't stick inside the tube) and not cured on the other side (so it'll stick to the filler gum).

But the filler gum you use for small injuries won't stick inside the tube—the tubes are dusted on the inside with soap-stone talc during manufacturing and filler gum won't hardly stick to talc.

Half-Mast

Dear Half-Mast,

We are continually bothered with drivers coming in to get another oil change as soon as 200 miles, just because the oil is a little gray or colored. I believe this is unnecessary because the oil is still good. I attempted to explain the reason for the coloring to the inspecting officers, but I'm no oil expert and may be wrong myself. What about it?

CWO W. M. S.

Dear Mr. S.,

You should get hold of a copy of TB 9-2835-4 "Oil, Engine, USA 2-104," (30 Dec. 43). It has a lot to say about the characteristics and actions of engine oil, and it backs up your statement that oil is still good even though colored.

As a matter of fact, a black color in the oil proves cleaning action is taking place. The oil contains a chemical that dissolves and suspends the carbon binders (gum or varnish) in the oil—this is called "washing," because the oil is then able to clean and lubricate surfaces and prevent new carbon

formations.

A gray color is OK, too. Sometimes by-products that are formed by combustion of leaded fuels, slip past the piston rings and into the crankcase. These by-products change the oil from a bright color to a muddy gray. So you're absolutely right—colored oil does not mean bad oil.

Half-Mast

Dear Half-Mast,

Some time ago I was in charge of a convoy, and on the return trip the generator burned out on a $2\frac{1}{2}$ -ton GMC. We towed her about 25 miles to the nearest military installation. I contacted the Base Transportation Officer who said he was unable to supply me with a generator though he had a truck (same model as ours) deadlined—but not for the generator. We had to tow the truck another 150 miles to complete the trip.

I understand that a military installation must supply necessary parts, if they're available, to vehicles in convoy. But I can't find an Army Regulation covering this.

Am I right regarding the furnishing of parts to vehicles in convoys and, if so, what is the number of the regulation?

S/Sgt. C. A. B.

Dear Sergeant,

I rummaged through my files and can't find any such regulation.

I guess that providing a visiting truck with spare parts is like providing a visiting fireman with a little courtesy. Most outfits are glad to help if they have the spares.

Half-Mast

Dear Half-Mast,

I've run into some trouble with carburetors on the $\frac{1}{4}$ -ton Willys—got a batch of them to overhaul and after I'd cleaned them up and replaced all parts with new ones, they were put back on the vehicles. But they just wouldn't idle.

I checked them all over: the idle jet was clear and all passages free of dirt and lead accumulations, the economizer was free of all foreign matter, the floats were set at the specified level, and the metering

(Continued on last page)

Don't Blow It Out Your "B" Bag

Blow them maintenance problems to Half-Mast. The only time Half-Mast wasn't able to answer a vehicular question was when the man from the IG asked, "What's that there lady's bizeer doing in your map compartment?" Half-Mast cooks strictly with white gas; among Army vehicle manufacturers, and Ordnance engineers he's affectionately and respectfully known as "that old bum with beer on his breath." To get you an answer to those stubborn maintenance problems, there's no limits to which Half-Mast won't go—including Mamie's Off-Limits Cafe and Rzeppa's Joint (table for ladies). Write "Dear Half-Mast," ARMY MOTORS MAGAZINE, Office, Chief of Ordnance-Detroit, Detroit 32, Michigan.

The Month's Directives

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

WAR DEPARTMENT AGO PUBLICATIONS

AR—Army Regulations	MWO—Modification Work Order
FM—Field Manual	TC—Training Circular
TM—Technical Manual	WDC—War Department Circular
TB—Technical Bulletin	SB—Supply Bulletin

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WD Lubrication Orders for Ordnance materiel are requisitioned (except in the ETO) from Fort Wayne Ordnance Depot, Detroit 32, Michigan.

ORDNANCE DEPARTMENT PUBLICATIONS

FSMWO—Field Service Modification Work Order	SNL—Standard Nomenclature List
ORD 2 OPSI—Formerly Ordnance Publications for Supply Index	Organizational Spare Parts and Equipment (OSPE)
	Service Parts Catalog (SPC)

Distributed through Ordnance Officers by AG Depots listed above.

South Pacific Area units request on the Ordnance Publications Officer, Hq. South Pacific General Depot, APO 502, % Postmaster, San Francisco, Calif.

Other units with San Francisco APO's request on the Ordnance Publications Officer, Box 5, APO 456, or the Ordnance Officer, Base Section 3, APO 923, depending on their location.

Units with Seattle APO's request on Port Military Publications Supply Officer, Moran Bldg., Seattle Port of Embarkation, Seattle 4, Wash.

Units with Minneapolis APO's request on Chicago AG Depot (address above).

Units with New Orleans or Miami APO's request on Atlanta AG Depot (address above).

Units with New York APO's request on (a) Ordnance Publications Section, General Depot G-25, APO 518, if located in the ETO; (b) the Ordnance Officer, Ordnance Section, Hq. MBS. Depot 150-0, APO 600, if located in territory served by that APO; and (c) on New York AG Depot (address above), if located elsewhere.

Distributed to AAF Activities by Area Air Service Commands (see AAF Reg. 5-9).

NOTE: The Office, Chief of Ordnance-Detroit and the Publications Department, Raritan Arsenal, **DO NOT** distribute publications to the field.

ARMORED CARS

CAR, ARMORED, LIGHT, M8

TB 9-743-6, Use of telescope M54 with 37-mm gun M6.

SCOUT CARS

CAR, SCOUT, M3A1

TB ORD 107, Surge tank operation in freezing weather.

GUN MOTOR CARRIAGES

CARRIAGE, MOTOR, 105-MM HOWITZER, M7

MWO G128-W29, Providing sturdier propeller shaft.

TB ORD FE5, Tachometer drive installation on old-style transmission.

TB ORD 106, Incorrect engine oil gage blade markings.

TB ORD 108, Replacing Romec with AC fuel pump equipped engines.

CARRIAGE, MOTOR, 105-MM HOWITZER, M7B1

TB ORD FE5, Tachometer drive installation on old-style transmission.

SNL G-199, ORD 7, 8, 9 (5 Jul. 44).

CARRIAGE, MOTOR, 3-IN. GUN, M10A1

TB ORD FE5, Tachometer drive installation on old-style transmission.

CARRIAGE, MOTOR, 155-MM GUN, M12

TB ORD FE5, Tachometer drive installation on old-style transmission.

CARRIAGE, MOTOR, MULTIPLE GUN, M16

TB 9-710-FE1, Enlarging tarpaulin.

CARRIAGE, MOTOR, 76-MM GUN, M18

TB 9-755-12, Governor adjustment.

CARRIERS

CARRIER, CARGO, M30

TB ORD FE5, Tachometer drive installation on old-style transmission.

HALF-TRACKS

(See also individual vehicle listings)

ALL BASIC HALF-TRACKS

TB ORD 107, Surge tank operation in freezing weather.

LIGHT TANKS

TANK, LIGHT, M5A1

MWO G103-W45, Impulse relay and new firing solenoid.

MEDIUM TANKS

ALL VEHICLES WITH MEDIUM TANK CHASSIS EQUIPPED WITH RADIAL GAS ENGINES

SB 9-25, Ventilated clutch and clutch throwout lever assemblies (20 Jun. 44).

ALL VEHICLES WITH MEDIUM TANK TRACK SUSPENSIONS

TB ORD 116, Bogie wheel assembly interchangeability.

ALL VEHICLES EQUIPPED WITH MEDIUM TANK, M4 TRANSMISSION (GASOLINE POWERED)

TB ORD FE5, Tachometer drive installation on old-style transmission.

TANK, MEDIUM, M4 SERIES

MWO G1-W16, Periscope holder sighting device spring.

TANK, MEDIUM, M4

FM 17-67, Crew drill (5 Aug. 44).

TB ORD FE5, Tachometer drive installation on old-style transmission.

TB ORD 106, Incorrect engine oil gage blade markings.

TB ORD 108, Replacing Romec with AC fuel pump equipped engines.

TB 9-731A-15, Instrument panel engine hour meter.

TANK, MEDIUM, M4 (105-MM HOWITZER)

TM 9-731AA, Operation and maintenance (23 Jun. 44).

TANK, MEDIUM, M4A1

TB ORD FE5, Tachometer drive installation on old-style transmission.

TB ORD 106, Incorrect engine oil gage blade markings.

TB ORD 108, Replacing Romec with AC fuel pump equipped engines.

TB 9-731A-15, Instrument panel engine hour meter.

TANK, MEDIUM, M4A1 (76-MM GUN)

TM 9-731AA, Operation and maintenance (23 Jun. 44).

TANK, MEDIUM, M4A3

TB ORD FE5, Tachometer drive installation on old-style transmission.

TANK, MEDIUM M4A3 (75-MM GUN, WET)

SNL G-204, ORD 7, 8 (20 Jul. 44).

TANK, MEDIUM, M4A3 (76-MM GUN, WET)

SNL G-104, Vol. 15, G-205, ORD 7, 8, 9 (1 Jun. 44).

TANK, MEDIUM, M4A3 (105-MM HOWITZER)

SNL G-104, Vol. 15, G-205, ORD 7, 8, 9 (1 Jun. 44).

TANK, MEDIUM, M4A6

TB ORD FE5, Tachometer drive installation on old-style transmission.

PRIME MOVER, FULL TRACK, M33

TB ORD 112, Tow bar eye enlargement.

PRIME MOVER, FULL TRACK, M34

TB ORD 112, Tow bar eye enlargement. SNL G-215, ORD 7, OSPE (1 Jul. 44).

VEHICLE, TANK RECOVERY, M31

TB ORD 112, Tow bar eye enlargement.

VEHICLE, TANK RECOVERY, M32

TB ORD 112, Tow bar eye enlargement.

NO BLOODHOUNDS, WE

ARMY MOTORS may have a nose for news, but we can't follow you by just sniffing. If you want to keep on getting your magazine, be sure to send us your **individual organization and address** the minute any of these things happens:

- You get an APO number
- You get to a staging area
- You get to a port of embarkation
- You get to an overseas base

That way, we'll know when to take you off our domestic station list and put you down for direct distribution. See?

TRUCKS

TRUCK, 1½-TON, 4x2 (FORD)

SNL G-540, ORD 7, 8, 9 (15 Jul. 44).

TRUCK, 2½-TON, 4x2 (Federal 2G)

TB 9-821-FE1, Front fender and running board failures.

TRUCK, 2½-TON, 6x6 and 2½-5 TON, 6x4 (REO)

TB 9-807-4, Operating instructions.

TRUCK, 2½-TON, 6x6 and 6x4 (REO, STUDEBAKER)

SNL G-630, ORD 9, SPC (15 Aug. 44).

TRUCK, AMPHIBIAN, 2½-TON, 6x6 (GMC DUKW)

MWO G501-W29, Litter stop assembly stowage.

SNL G-501, ORD 7, 8, (1 Jul. 44).

TRUCK, TRACTOR, 5-TON, 4x2 (INTERNATIONAL H-542-9, H-542-11)

TB 9-812-2, Trailer light socket wiring.

TRUCK, 12-TON, 6x4 M20 (DIAMOND T 980, 981)

TB ORD 91, Ballast requirements.

TB ORD 103, Increased torque wrench pull on cylinder head bolts.

TRUCK, BOMB SERVICE, M6 (CHEVROLET)

MWO G85-W15, Radio suppression system.

TRACTORS

TRACTOR, HIGH SPEED, 13-TON, M5

MWO G162-W2, Cowl mud guards added.

TRACTOR, SNOW, M7 (T26E4)

SNL G-194, G-195, ORD 7, 8, 9 (1 Aug. 44).

TRAILERS

TRAILER, 1-TON, SNOW, M19 (T48)

SNL G-194, G-195, ORD 7, 8, 9 (1 Aug. 44).

SEMITRAILER, 5-TON PAYLOAD, 8-TON GROSS, 2W, STAKE AND PLATFORM, 1944 (TRAILER CO. OF AMERICA, TRUCK ENGINEERING CORP., OLSON MFG. CO.)

TM 9-890, Operation and maintenance (12 Jul. 44).

SEMITRAILER, 6-TON PAYLOAD, 10-TON GROSS, 2W, FUEL TANK, 2,000 GAL. (SI-6-2M)

SNL G-678, ORD 7, 8 (15 Jun. 44).

TRAILER, PLATFORM, 6-TON (ATHEY, ES-451, BT 898-4, MODIFIED)

TB 9-790A-1, Operation and maintenance.

SEMITRAILER, 7-TON PAYLOAD, 10-TON GROSS, 2W CARGO, WOOD BODY, 1943-44 (CARTER C-11-691-W, EDWARDS D-11-B, GRAMM SC-600, HYDE S-C, NABORS 2-GC, POINTER-WILLIAMETTE PW-S-1, FREUHAUF, RELIANCE)

SNL G-544, ORD 7, 8, 9 (20 Jun. 44).

LANDING VEHICLES**ALL TRACKED LANDING VEHICLES**

TB ORD 118, Storage battery identification.

VEHICLE, LANDING, TRACKED (ARMORED), MK I, LVT (A)
(1)

MWO G1-W14, Differential modification.
TB ORD 102, Repainting vehicles.

VEHICLE, LANDING, TRACKED (UNARMORED), MK II, LVT (2)

MWO G1-W14, Differential modification.
TB ORD 102, Repainting vehicles.

VEHICLE, LANDING, TRACKED (ARMORED), MK II, LVT (A)
(2)

MWO G1-W14, Differential modification.
TB ORD 102, Repainting vehicles.

VEHICLE, LANDING, TRACKED (ARMORED), MK III, LVT (A)
(3)

TB ORD 102, Repainting vehicles.

VEHICLE, LANDING, TRACKED (UNARMORED), MK IV, LVT
(4)

MWO G1-W14, Differential modification.
TB ORD 102, Repainting vehicles.

VEHICLE, LANDING, TRACKED (ARMORED), MK IV, LVT (A)
(4)

MWO G1-W14, Differential modification.
TB ORD 102, Repainting vehicles.

GENERAL

AR 850-15, C6, Miscellaneous, motor vehicles (24 Aug. 44).

FM 9-5, C6, Ordnance service in the field (29 Jul. 44).

FM 9-10, C5, Ordnance field maintenance (27 Jul. 44).

FM 17-5, C2, Armored force field manual (10 Jul. 44).

FM 17-30, C1, Armored force field manual, tank platoon (8 Jul. 44).

FM 18-5, Tactical employment, tank destroyer unit (18 Jul. 44).

WDC 310, Organizational equipment status report (20 Jul. 44).

WDC 321, Unsatisfactory equipment report procedure (3 Aug. 44).

WDC 322, Cleaning and preserving materials (4 Aug. 44).

WDC 325, TM rescissions (7 Aug. 44).

WDC 331, Diesel fuel (11 Aug. 44).

TB ORD FE6, All Ordnance vehicles, universal rifle bracket.

TB ORD 92, All Ordnance wheeled vehicles, 5-gal. liquid container bracket.

TB ORD 93, All Ordnance wheeled vehicles, pioneer tool brackets.

TB ORD 104, All Ordnance vehicles, hydraulic jacks and hoists, correct fluid.

TB ORD 126, Cold weather lubrication and servicing.

TB 31-200-5, Pneumatic tires and rubber treads, air pressure.

TB 9-850-15, Use of dry cleaning solvents.

SB 9-26, Preparation of unserviceable engines for shipment (23 Jun. 44).

SB 9-27, Motor vehicle registration, WD O. O. Form No. 7358 (13 Jul. 44).

WD Publications Lists, Index to General Orders, Bulletins, Circulars (Jul. 44).

SNL G-27, ORD 6, Sec. 2, Automotive and semi-automotive maintenance tools (1 Jul. 44).

SNL K-1, ORD 5, C1 (21 Jul. 44).

WINTERIZED JEEP FIX

The Heat-Indicator Bulb Needs Relocating

On the ¼-ton jeep fitted with winterization equipment, there's a little trouble with the heat indicator bulb.

As you may know, the jeep winterization equipment includes a Perfection stove. The engine coolant passes through this stove, gets heated and circulates through the engine to warm it. However, the pipeline from the stove to the engine passes through a tee in the side of the cylinder head and the heat indicator bulb is also connected into that tee. The result is that the freshly heated water from the stove passes right by the heat indicator

bulb subjecting it to higher temperatures than it was built to stand. It gets ruined. Not to mention that the engine temperatures indicated by the heat indicator are false.

Solution to the problem is to move the heat indicator out of this hot spot and into another location. Another location is at the top rear of the cylinder head, in the boss that the crew compartment heater (if the jeep has one) fits into.

Relocate the heat indicator bulb this way: (1) Remove the connector tee from the right-hand side of the cylinder head, the heat indicator bulb also being removed.

(The pipe from the stove is now hanging free for a minute.) (2) Reinstall the connector tee and heat indicator bulb in the hole in the upper rear of the cylinder head (Fig. 1). In order to do this, you have to remove the cylinder head and drill and tap the hole for a ½" pipe thread. Reconnect the pipe from the crew compartment heater to the tee as shown in Fig. 1. If your jeep doesn't have a crew compartment heater, you can block off the hole in the side of the connector tee with a ⅞" pipe plug. (3) Now you've got to reconnect the pipe from the stove into its original hole in the side of the cylinder head. For this you'll need a 90° street elbow (malleable iron) ½", and a ½" x ¼" bushing. Install as shown in Fig. 2 using the original nipple on the pipe from the stove.

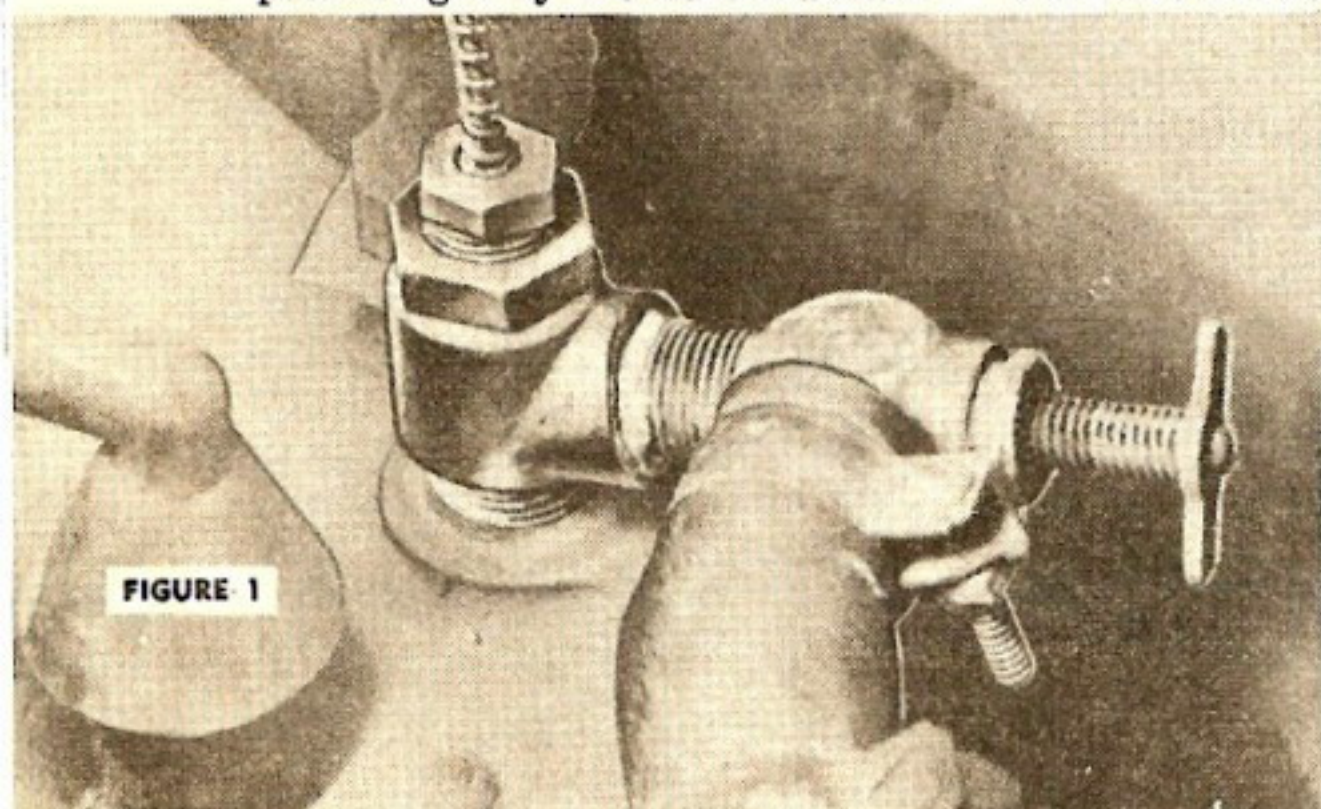


FIGURE 1

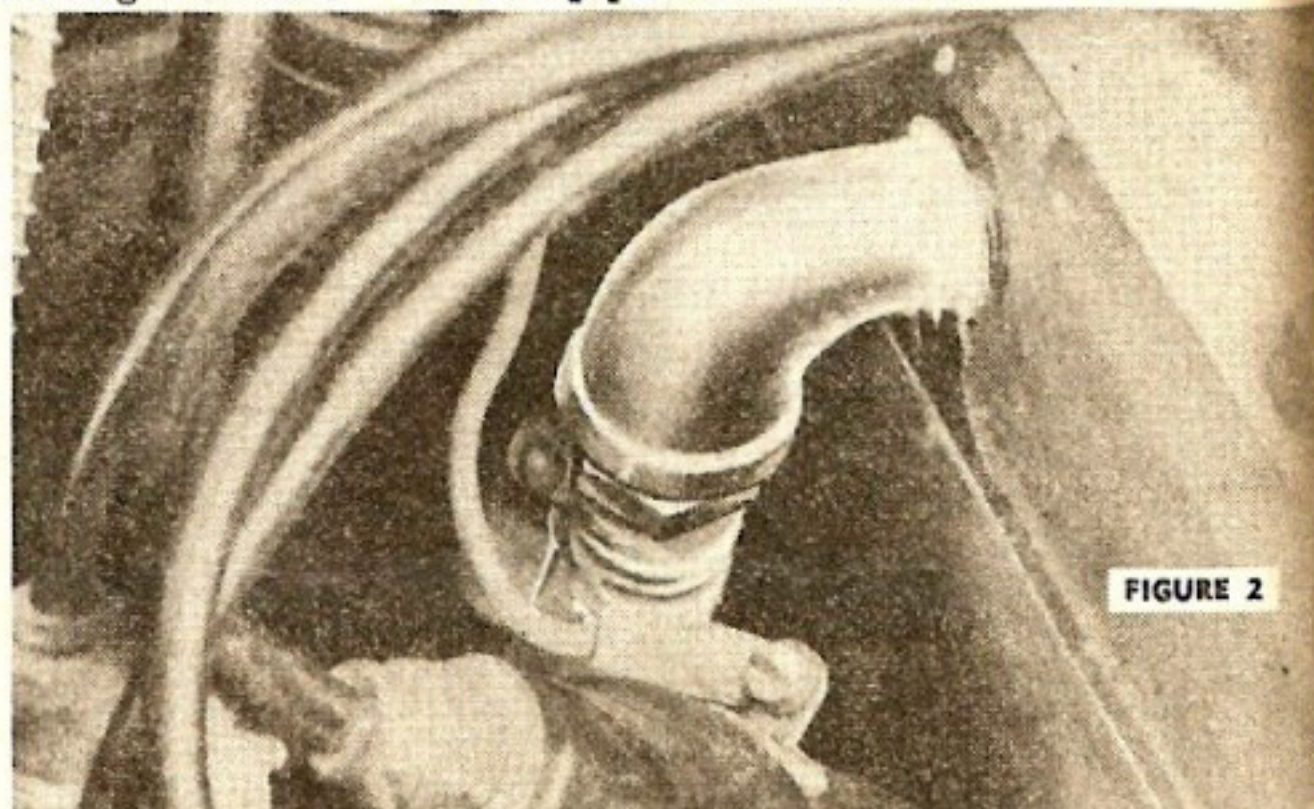


FIGURE 2

PERPETUAL INDEX

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

SUBJECT	SEP. 44	AUG. 44	JULY 44	JUN. 44	MAY 44	APR. 44	MAR. 44	FEB. 44	JAN. 44	DEC. 43	NOV. 43	Sep.-Oct.
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WINCH	179	139, 151	103, 104		52		325	312	278	245	200, 218	170

2C-Inside Front Cover. 3C-Inside Back Cover 4C-Outside Back Cover

CONTRIBUTIONS

(Continued from page 216)

Prestone installed in a clean, leaktight, cooling system will prevent formation of rust, and con-

tains an oil inhibitor that prevents the loosening of existing rust.

T/Sgt. J. F. Bobalik
Governors Island, N. Y.

(Ed. Note—Just one impression

we'd like to correct, Sergeant. Prestone, as well as other permanent types of antifreeze used by the Army, has an ethylene glycol base and contains no glycerine. By the way, as far as the Army is concerned, there's no such thing as "Prestone" or any other brand-name antifreeze. If it meets U. S. specifications for ethylene glycol type antifreeze compound, it's OK—and you can requisition by asking for compound, antifreeze, 1 gal. (ethylene glycol type), Federal Stock No. 51-C-1554-15, Item Stock No. K-001-10-24660.)

TOP HONORS IN MAINTENANCE

The individuals cited below have distinguished themselves in the campaign for better vehicle maintenance. So outstanding was their performance that the War Department has decorated them with the specified awards.

A perpetual personal subscription to ARMY MOTORS is the most—and the least—we can offer by way of additional tribute.

LEGION OF MERIT

M/SGT. EDWARD A. DUVAL, Ordnance Dept.

For setting up procedures for specialized automotive shops and inspections of the Persian Gulf command, and for streamlining methods by which vehicles were handled in 3rd-echelon shops there.

COL. LOUIS T. HEATH (then Lt. Col.) Field Artillery

For numerous improvements and modifications which have contributed to the adaptability and maneuverability of armored vehicles.

T/4 SAM S. THOMAS, Ordnance Dept.

For designing, building and operating a device which straightened two motor vehicle frames concurrently, thus repairing many vehicles which would have had to be salvaged and saving many man hours.

LT. EDWIN D. THOMPSON, Ordnance Dept.

For designing and manufacturing, in quantity, 14 vehicular parts and 23 labor and time-saving tools, for working out a table of limits and tolerances for oversize and undersize automotive parts in North Africa.

WOJG GILBERT B. WISEMAN

For outstanding organization of vehicle repair and salvage operations under combat conditions, for maintaining and keeping available a maximum of ambulances in North Africa from July 10 to October 13, 1943.

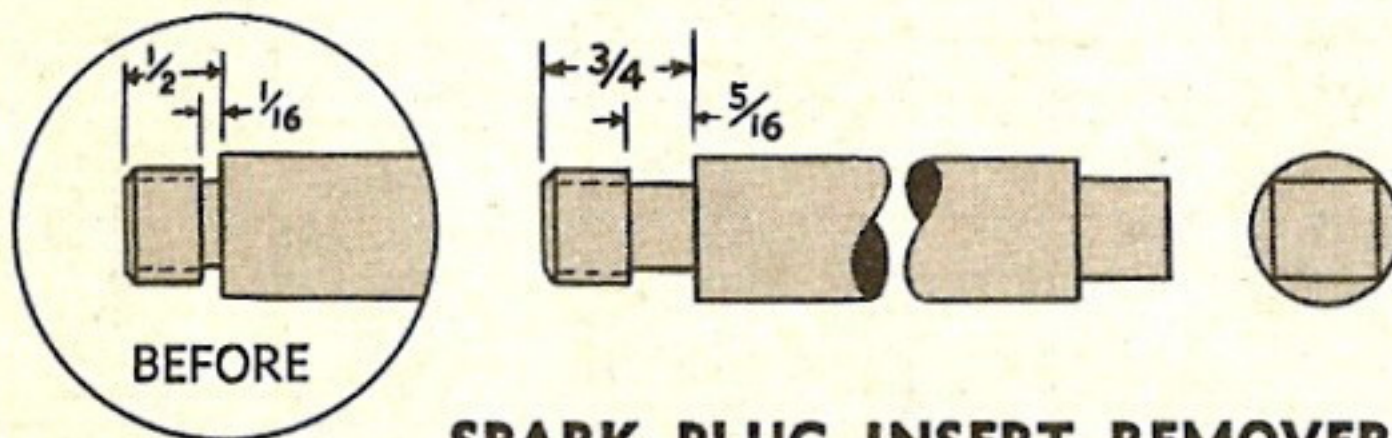
BRONZE STAR MEDAL

CWO CHRIS GUILLORY

For maintaining an efficient and uninterrupted transportation system (improvising and adapting vehicle parts) during the year he was assistant maintenance officer for an Infantry regiment in the South Pacific.

WE CUT THE UNDERCUT

If you tried to lengthen the undercut on the Spark Plug-Insert Remover like Connie Rodd told you last month, and it wouldn't work, don't start beating yourself over the head. The figures in the picture got all screwed up. It **should** look like this. So take heart, and try again—it'll be worth it.



SPARK PLUG INSERT REMOVER

SGT. HALF-MAST

(Continued from page 219)

rod adjusted to the proper operating length. I also checked for cracks in the base of the carburetor and the body, and I checked the rivet plugs. All was in order. Can you clear up the mystery?

Another question is: What are the Welch plugs on the side of an engine block for and what's their purpose?

T/4 M. P. A.

Dear Sergeant,

There's a lot of conditions in the engine itself that could prevent it from idling properly. But I'm gonna assume the engine idled all right **before** you overhauled the carburetor—and then I'm gonna suggest you check the throttle butterfly.

If you didn't assemble the butterfly with the letter "C" facing the manifold and towards the port opening in the carburetor body at the air-adjusting screw, that'd be your difficulty. Because if you checked all the things you said you checked—the trouble is probably improper assembly of the parts.

The Welch plugs on the side of the engine block are simply to close up the holes made by the core sand legs when the block was cast at the foundry. And just because a lot of guys call them "freeze-out plugs," don't think they'll prevent cracking of a cylinder block when the water inside freezes solid—they won't.

Half-Mast

• • NEWS FLASHES • •

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

Those of you with 105mm howitzer motor carriages, M7, will be interested in **MWO G128-W29** (10 Jul. 44), just released to the field. The work order, which provides for a stronger propeller shaft on all M7's with serial numbers below 2816, contains all the info you need—kit number, parts numbers, instructions for installing the new propeller shaft, etc.

* * *

Chief of Ordnance has been granted exception to **War Department Circular 325** (7 Aug. 44), which makes the Adjutant General solely responsible for issuing Modification Work Orders. Ordnance may issue Emergency MWO's in the form of circular letters or teletypes, which will be used in emergencies when the usual MWO's cannot be prepared in time.

* * *

Another bunch of old 10-series service parts catalogs have been rescinded, this time by Paragraph VI, **WD Circular 325** (7 Aug. 44). They've been superseded as follows:

Vehicle	Obsolete Parts List	Superseded By
Truck, 1½-Ton, 4x4 (Chevrolet)	TM 10-1558	SNL G-85, Vol. IV, G-506, ORD 7, 8, 9 (15 Jun. 44)
Truck, 5-6 Ton, 4x4 (Autocar)	TM 10-1496	SNL G-511, SPC (15 Dec. 43)
Truck, 10-Ton, 6x4 (Mack)	TM 10-1544	SNL G-528, ORD 7, 8, 9 (1 Apr. 44)
Truck, 10-Ton, 6x4 (White 1064)	TM 10-1466	SNL G-642, ORD 9, SPC (20 Apr. 44)

* * *

Before you get the urge to throw your broken down 4-ton 6x6 Diamond T viscometer gage in the drink, take a look at the screen in the oil pan. Chances are you've never seen a dirtier, more clogged-up screen in your life. Clean it off thoroughly, put the screen back in and zingo—the viscometer gage works like new!

When that new style thermostat (BB17815)—still talking about Diamond T—catches up with you, forget about the rubber gaskets from the old type thermostats (BB7815). The new one has a metal diaphragm installed right on it.

Just pay attention to your necking and you won't have any trouble identifying the new chromium-nickel beadlock-studs on the truck, trailer, 40-ton tank transporter. The old studs were hot rolled steel and had a necking (space between the head of the stud and the base of the thread) of 9/64". The new stud necking is 3/8".

The steel studs were likely to break and leave you rolling down the road without tires. **TB 9-767-1** (6 Jul. 44) says to requisition the chrome-nickel studs under Ordnance Part No. B246776. Save the old studs to use on other vehicles.

The most important thing to remember is tightening the studs up to 400 foot-pounds of torque. Make them tighter than tight.

* * *

Go ahead and requisition a lunette (Official Stock No. D0315597710) for your 38-ton tractor, M6, for towing transport wagons carrying the 240mm howitzer. The transport wagons did carry these lunettes but **TB 9-788-2** (17 Aug. 44) says the tractors will from now on. Chuck the lunette in your tractor tool box and you'll always have it when you need it.

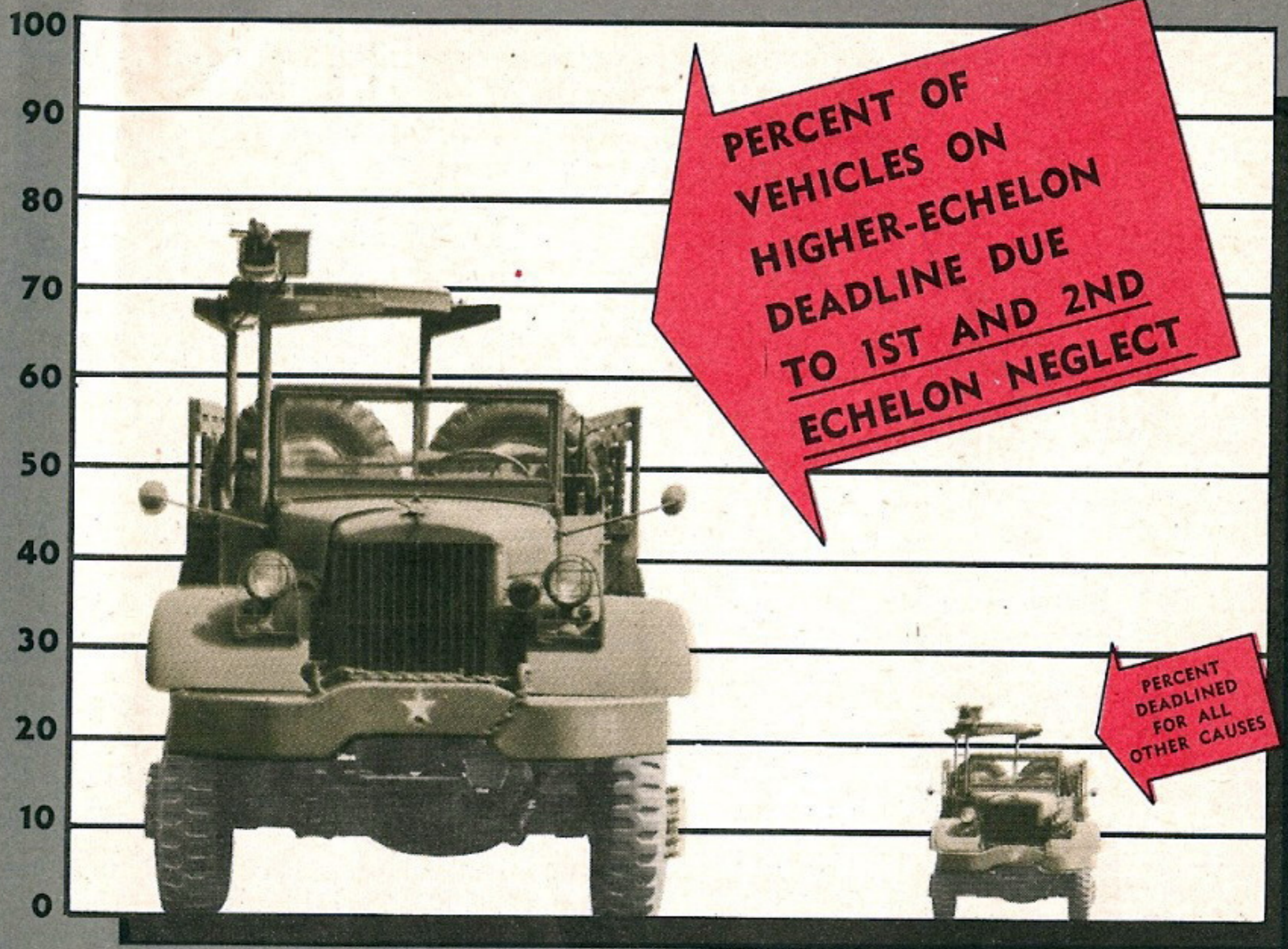
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The Numbers Racket

—or when is a Federal Stock No.
NOT a Federal Stock No.?

When it's an Ordnance Stock No., of course. On page 162 of the "Grease for your Pillow Block" story last month, two Ordnance Stock Nos. were listed as Federal Stock Nos. That's not all—the numerals themselves were wrong. The correct Ordnance Stock Nos. are **90° lubrication fitting, elbow body, H-2-504202** and **lubrication fitting, H-2-504208**.

TB ORD 127, on which our story was based, also listed the numbers incorrectly.



"It Burns Me Up!

...to see the damage done to high-priced equipment through lack of 1st and 2nd-echelon maintenance. I can swear that 1st and 2nd-echelon work is being neglected on 75% or more of the jobs we receive in our shops for major repairs."

M/Sgt. D. S. W., Texas