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ARMY MOTORS

STARTS ITS FIFTH YEAR OF WAR



VOLUME 5

APRIL 1944

NUMBER 1

Now We Are Five

With this issue, we're starting our fifth year of war.

Preventive maintenance was just a little shaver when we began. Now look at him. AR's, FM's, TM's, Circulars, SNL's—there's a whole world of directives, regulations, and publications governing and enforcing preventive maintenance.



There's also ARMY MOTORS.

It was obvious from the beginning that this was going to be a new kind of war. And it required new kinds of training for millions of new soldiers—training in operation and maintenance of new vehicles of war. That's where we came in.

Some people call this magazine a new kind of technical educational writing. Hell, we don't even know what that means. We do know that our job is to get you the kind of wheeled and track-vehicle information and news you need—fast. In such a way that every dogface and his brother **understands**. And if we can make you **want** to do a better PM job, so much the better. If putting the story across means talking to you in your own language, means explaining complicated jobs simply and clearly, means using cartoons or any other laugh-provoking device, that's what we're going to do.



In fact, we've been doing just that for the past four years. You seem to like us, too. From printing a couple hundred copies a month, to a figure up in the thousands, with every copy asked for in writing by you men in using arms and services all over the world. That's our record.

Our mail bag is our chief link with you. You tell us what's good and bad in the field, and you're not afraid to gripe. The mail runs into four figures every month—and it keeps going up; an ever-increasing percentage from outfits overseas.

That, briefly, is our story.

Just as you know your job in the months ahead—so we know ours. They're both aimed at the same target (or should we say targets?).

We both want to get this over with—so we can all go home.

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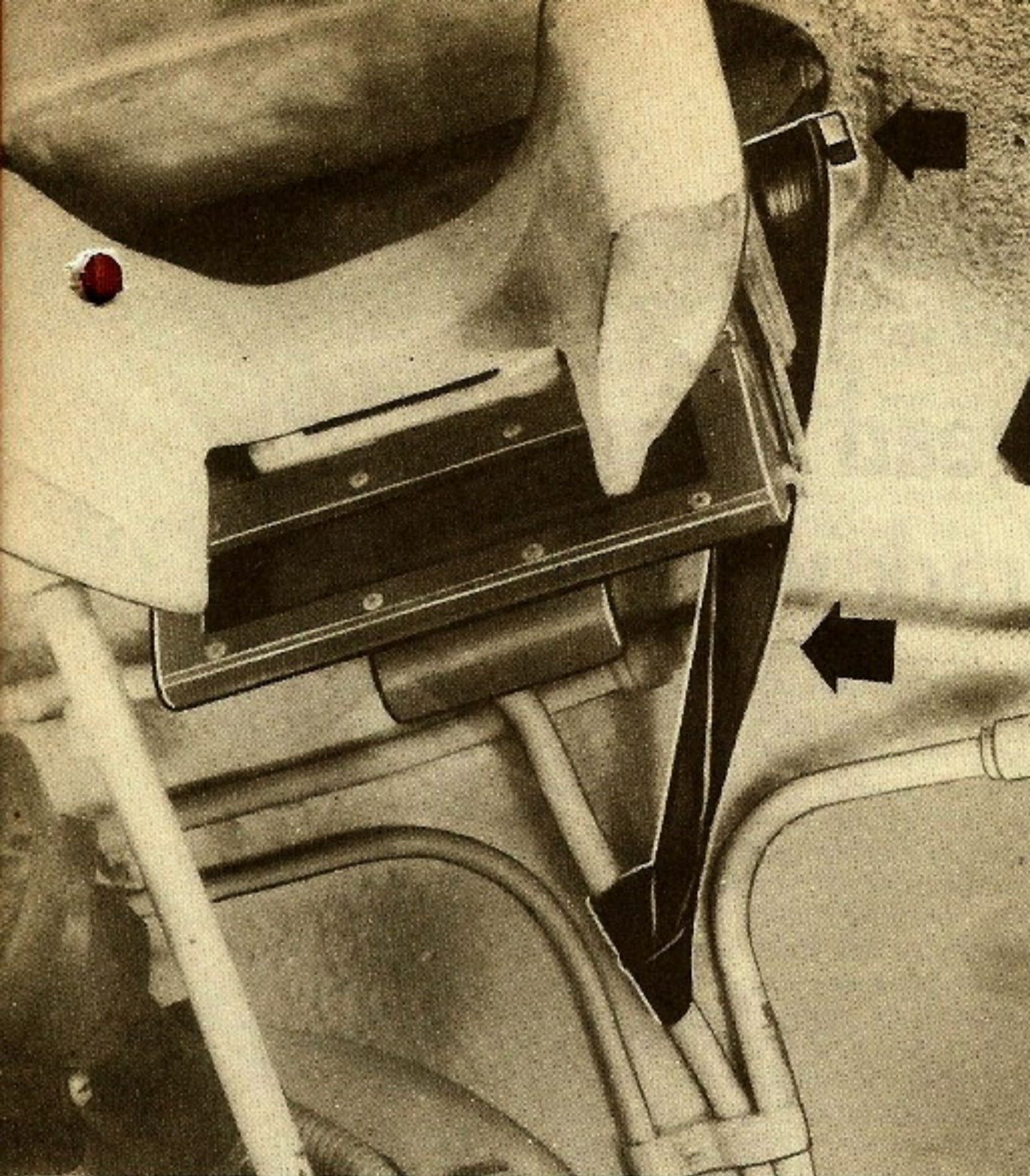
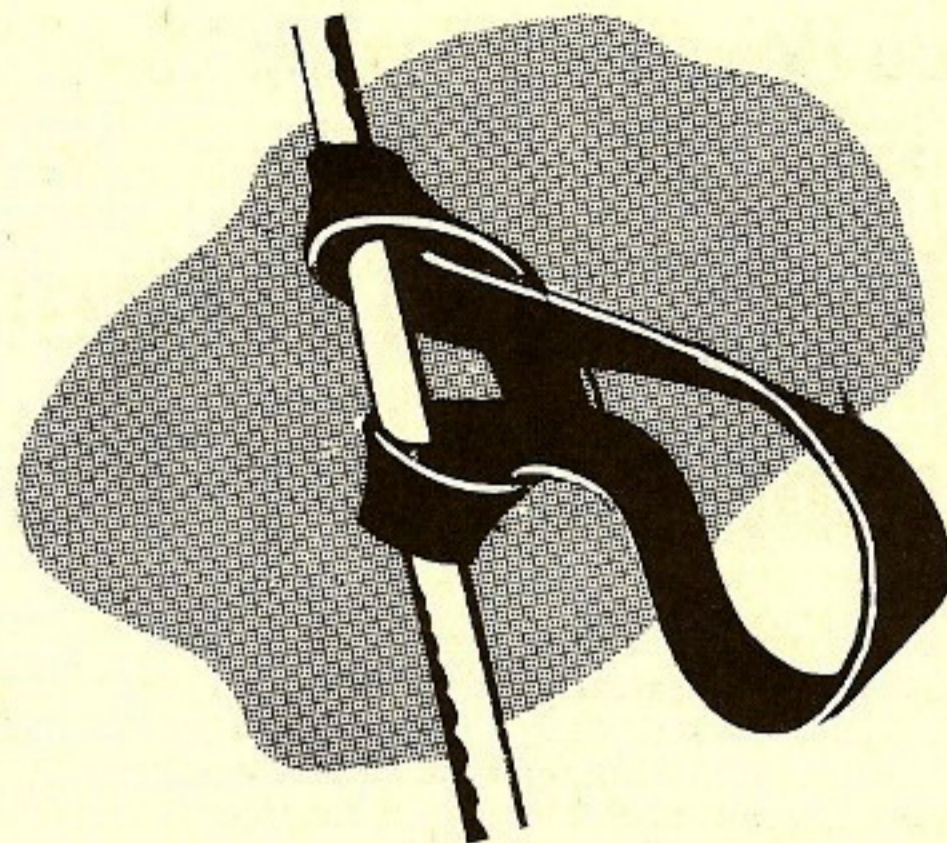


Figure 1



1

GETTING THE JUMP ON
A KRAUT . . .

Field Fix For 75mm Gunner's Periscope

ON ALL M4 TANKS

In battle the hot split seconds pay off. So the tankmen tell us. The faster they can throw HE and register hits, the better their chances. Here's a fix, still warm from OCO-D, that snips a few fractions of a second from the aiming job and improves the accuracy of the gun 1 to 3 mils. That can mean the difference between missing the turret of a Mark IV and hitting it square.

The fix is a rig-up to take the backlash out of the gunner's periscope. A gunner will notice his periscope's loose. He can wiggle it after he has lined up a target in his sights. So he tries to push the periscope around with his forehead to keep it in time with the gun. That slows down the aiming, and gives him a miss when the periscope tells him he's got a hit. The whole thing's the fault of the bushing the periscope pivots on. Some of the bushings are loose before the tanks get shipped

over. On other tanks the periscope gets sloppy after the tanks get battered by the mud and mountain test courses in Italy and Africa. Any looseness is bad. This field fix will make it good.

Find a scrap inner tube somewhere, and take off half a dozen or so neat slices, each 1" wide. Trim the bands smooth. Any burrs or slivers on the edge will end up as rips when you put pressure on the band. The only other part you need is a $\frac{3}{8}$ " x 24 x 1" capscrew (SAE) for the side of the periscope (Fig. 1). About the rubber band, it should be fastened to any conduit that runs about 4" below the periscope, and under the center of the periscope. Fastening the band under the right edge won't take the maximum play out of the periscope. Use the system shown top right to fasten the band to the conduit. Now twirl the handwheel till the gun's at full elevation. And stretch the band up to loop it over the capscrew so the job looks like Fig. 1. Just be sure you've got some tension in

the band. That tension will take out the lost motion between the gun and the periscope. (Save the few extra bands you cut off. They'll make good organizational spares in case you break one.)

(Continued on last page)

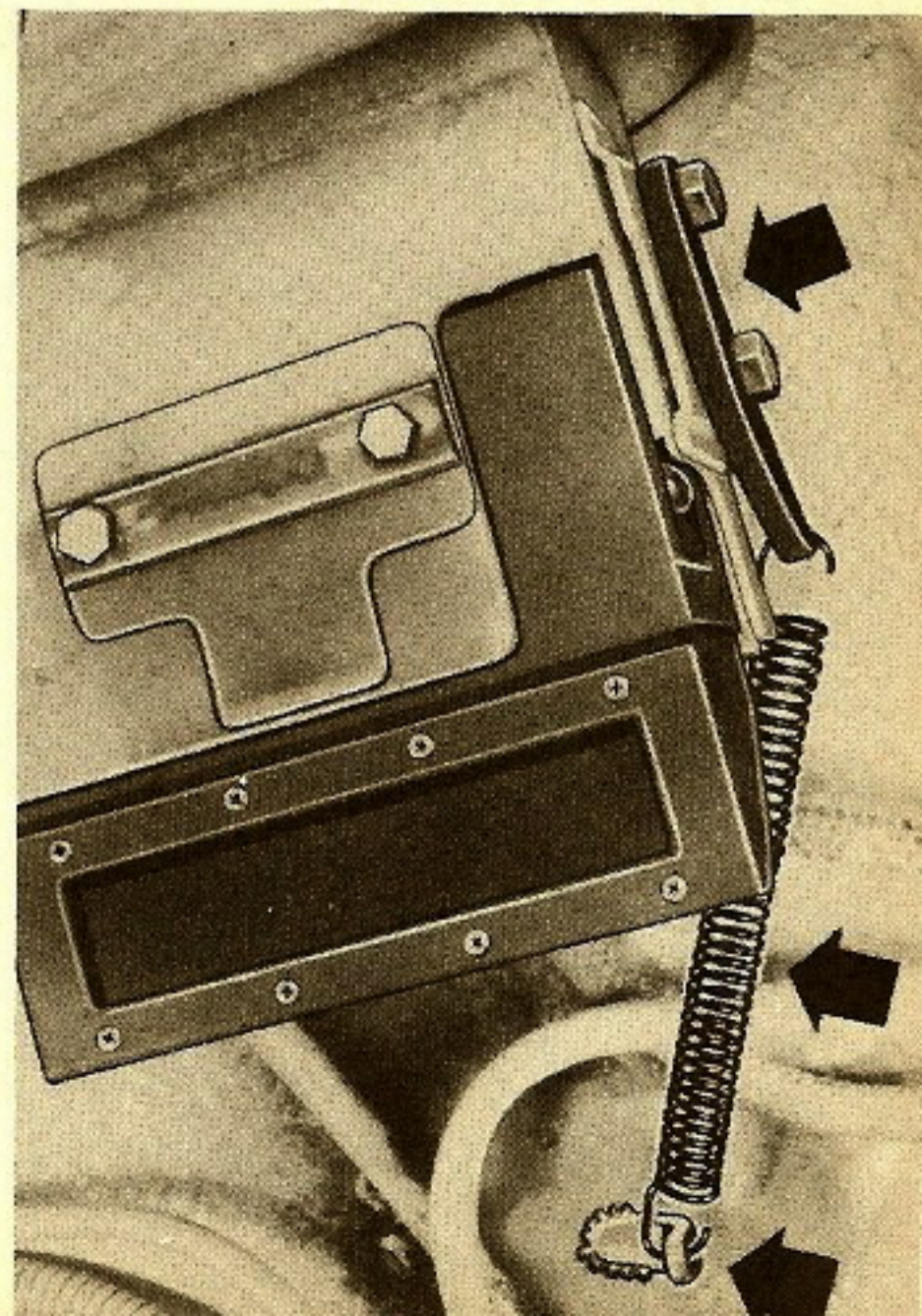


Figure 2

You Won't Be Needing That Handful of Misc. Adapters . . . There's an Order to

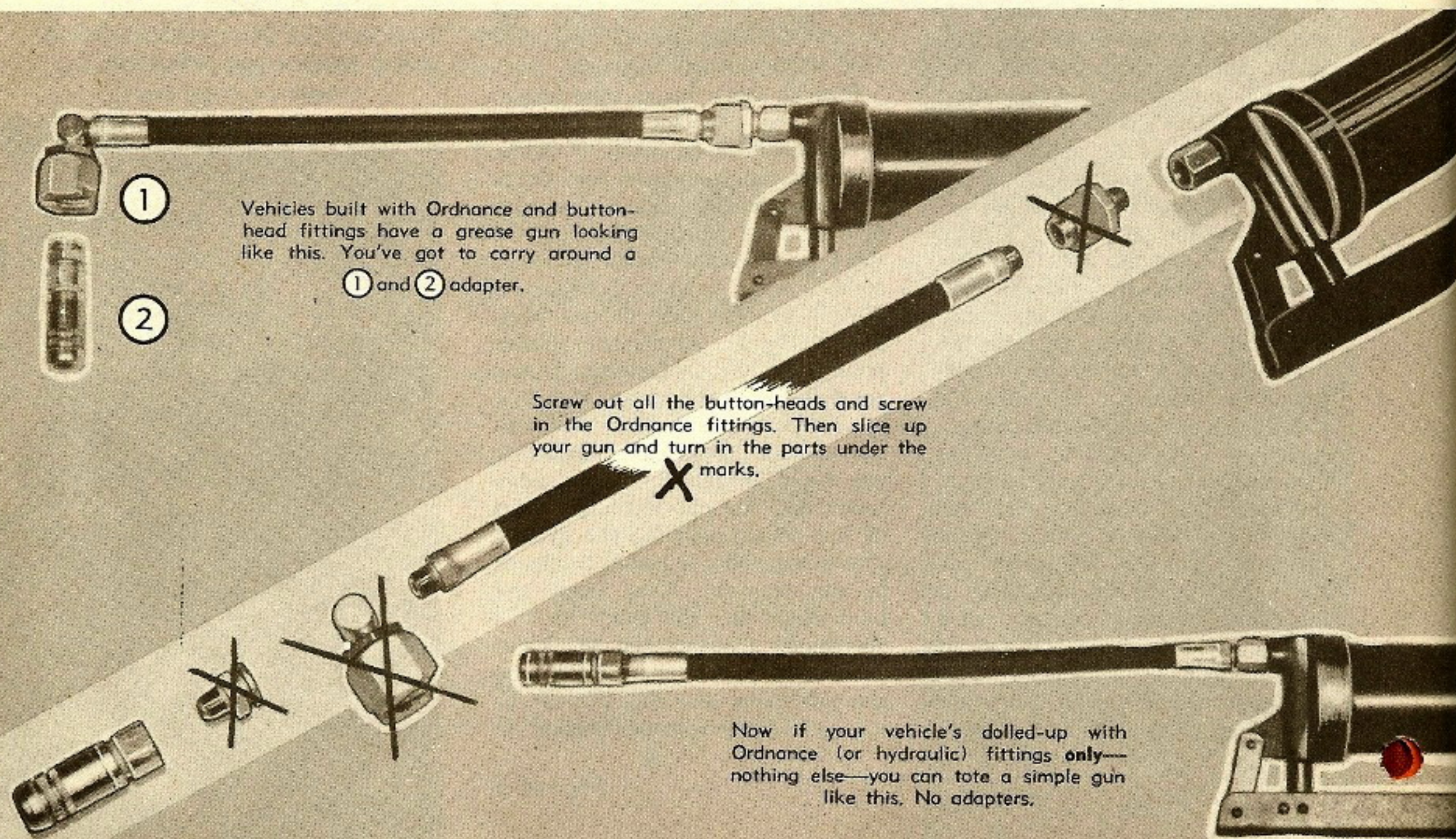
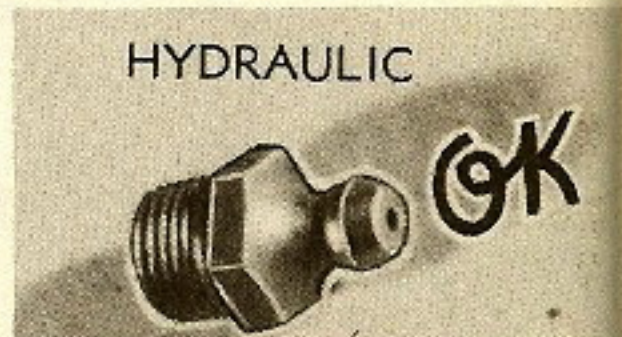
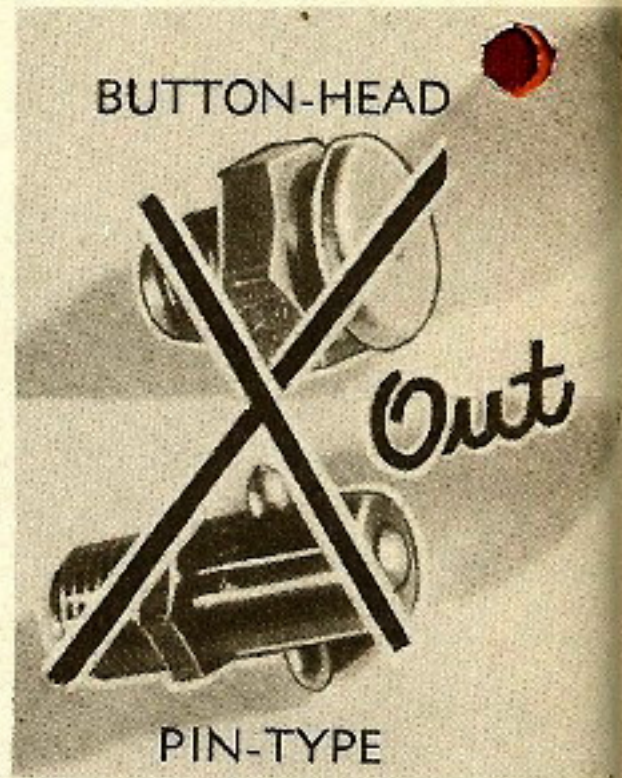
Remove all button-head fittings from half and full-track vehicles

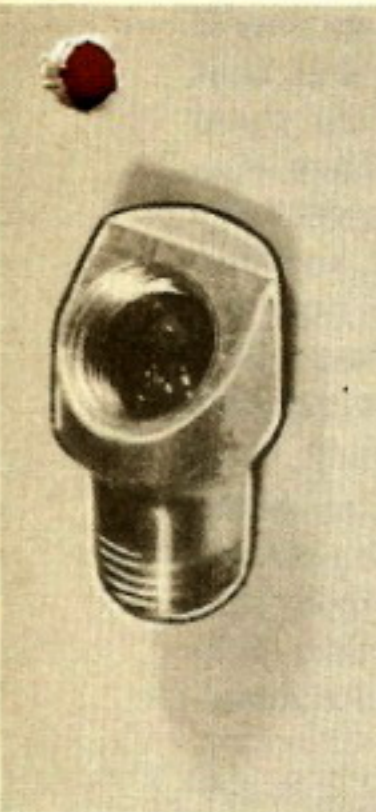
There's one in every crew—tank, half-track, armored car, tractor, or what vehicle have you. He's the guy who yells, "Who-the-hell's got my lube-gun adapter?" every time the crew goes through a lubrication service. To shut him up, Ordnance is authorizing you, in a new Bulletin, to go over your vehicle, take off all the bastard fittings, and replace them with sweet and pure standard Ordnance lubrication fittings. That'll make him shut up, because 6 to 5 the bird lets out the yell when he runs across one of the button-head fittings scattered around the vehicle. He needs the button-head adapter, but naturally he's left it in his tool bag crammed way back in a corner of the sponson.

With the Ordnance fittings, the only time you need an adapter is when the fitting's in a real tight spot and the gun coupler won't squeeze in. On many of the vehicles you don't even need the adapter then. So, you can see the advantages—you won't have to remember to carry around a fistful of those adapters, you won't spend time

fumbling around switching the contraptions off and on the gun.

First stop is to lay your hands on a supply of the Ordnance fittings. If you're a tanker or one of the boys in a crew, your organizational mechanics should have some for you to borrow. If you're the mechanic who's been lending them, better see that the supply sarge has stock enough on hand for you and your boys. In case the sarge doesn't, just keep calm. Suggest that the TB is going to bring a lot of other guys running to him for standard fittings. So he'd be a smart man to fill out a requisition for Ordnance standard fittings (Piece Mark CLDX6A, Item Stock No. H2-01-3222, Federal Stock No. 45-F-448-200), run down to his neighborhood supply section and get himself a few box-fulls. But be sure they're the standard fittings. Accept no substitutes. It's better to hold off and not do the job until you can get them. The Army's ordered some fantastic quantity like a million of the Ordnance fittings. So you should be able to get them soon.





45-Degree Elbow Body

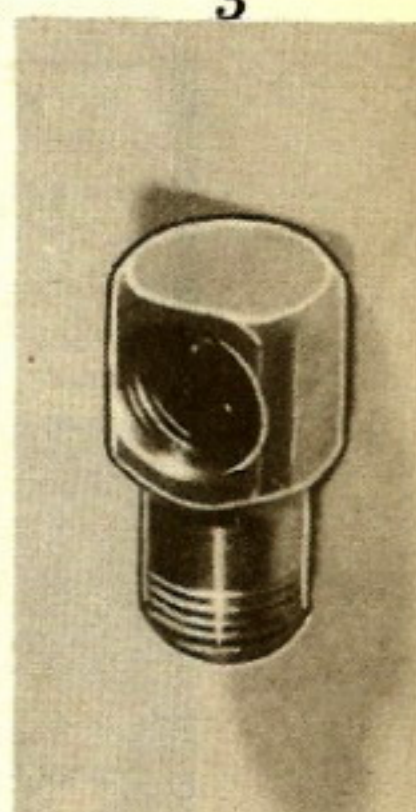
One easy way for the crew to change the fittings on their vehicle is to keep a handful of the standard fittings around. Then everytime you do any lubricating, take off any button-head fittings, or any pin-type (bayonet-type) fittings, replace them with the Ordnance ones. We can't tell you where you're going to find those old-fashioned fittings on your vehicles. They've been scattered all around—on suspension systems, turrets, other parts, all over.

Later at the 1000-mile or monthly service, the mechanics can dig out the last of the un-standard fittings the crew might have missed. Any places where it's trouble to get the gun in can be fixed by adding a 45-degree Elbow Body (Piece Mark CLDX8B, Ordnance No. A-335903, Item Stock No. H2-504201) or a 90-degree Elbow Body (Piece Mark CLDX8A, Ordnance No. A-335902, Item Stock No. H2-504202).

Once you're sure the vehicle's been

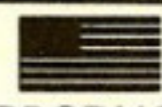




stripped of all the flattop fittings, you can do away with some of the contraptions you've been squeezing on the end of the gun. Go through the motions of the photograph below and simplify your gun. Get together all the discarded adapters and parts of your gun along with the fittings you took off. Turn the whole pile in to your supply sergeant, the way you do any other old parts. They're not scrap. He'll save up these parts, then soon as we get the word, we'll let him know what to do with them.

As overworked as you are, it's smart to spend the time to change over to all Ordnance fittings. Once it's done, your lube job's a cinch. You'll be able to whiz through it fast, and without a lot of damn-fangled adapters and special parts to play with. Think of the spare time you'll have to dream up new ways of ducking out of detail.

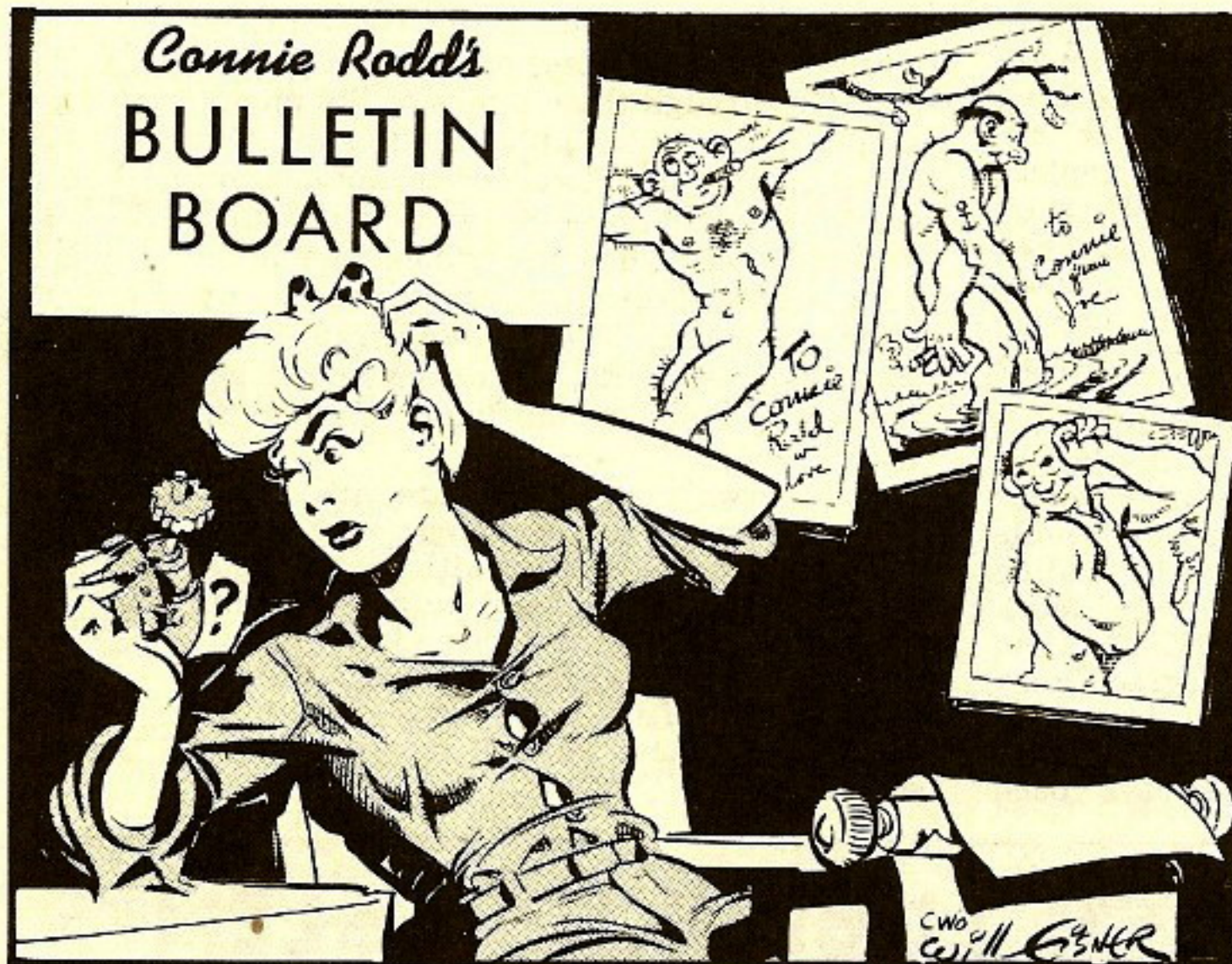


90-Degree Elbow Body

U. S. and BRITISH LUBE EQUIVALENTS

 PRODUCT SYMBOL	 STANDARD NOMENCLATURE	 U. S. SPECIFICATION	 EQUIVALENT BRITISH GRADE	 CONTAINER MARKINGS
ENGINE OILS				
OE - 10	Oil, Engine, SAE 10	USA 2 - 104B	10 HD	Yellow
OE - 30	Oil, Engine, SAE 30	USA 2 - 104B	30 HD	Gray
OE - 50	Oil, Engine, SAE 50	USA 2 - 104B	50 HD	Maroon
GEAR OILS				
GO - 80	Lubricant, Gear, Universal, SAE 80	USA 2 - 105 or FED. VV - L - 761	Hypoid 80	Light Blue
GO - 90	Lubricant, Gear, Universal, SAE 90	USA 2 - 105 or FED. VV - L - 761	Hypoid 90	White
C. 600	Oil, Gear, Compounded	(NONE)	C. 600	Blue (British only)
GREASES				
CG - 0	Grease, Gen. Purpose, No. 0	USA 2 - 106 (Amendment 2)	Grease No. 0	Grease Containers Stenciled With Grade Symbol
CG - 1	Grease, Gen. Purpose, No. 1	USA 2 - 107 (Amendment 2)	Grease No. 1	
WB - 2	Grease, Gen. Purpose, No. 2	USA 2 - 108 (Amendment 2)	Grease No. 2	
WB - 3	Grease, Wheel Bearing, H. D.	USA 2 - 110 (Amendment 4)	Grease No. 3	
WP	Grease, Water Pump	USA 2 - 109 (Amendment 2)	Grease No. 4	

If this chart looks familiar, it's because we printed almost the same thing three months ago. The only differences that matter are those in column 4, under Equivalent British Grade. But since column 4 is just about the whole reason for the chart—watch closely, please: British engine oils are now heavy duty like ours, full of additives and digestible in all our engines—including GM and Caterpillar diesels. British greases are now numbered like ours, and a little beyond. Be lube-wise! Amaze your friends! Bounce that January chart and pounce on this one.



New Cure for 2½-ton Truck Throwing Oil

There's a new cure for old and worn GMC 2½-ton trucks that insist on whooping oil out the crankcase breather—a new ventilator valve. The new valve has a larger opening than the one put on the trucks in production (or from a Modification Kit.) It's got a bigger appetite and can draw out all the blowby a tired engine pumps down into the crankcase. Then there's no pressure built up in the crankcase to toss the oil out (see *Army Motors*, December, 1943).

But, before you go to all the fuss of requisitioning the valve, waiting, and doing the work of putting on a new valve—see if these things don't clear up the oil trouble. **Keep from overspeeding** — especially when driving down a hill. Just watch the speedometer and keep down to the right speed for the gear you're in, according to the Road Speed Plate on the dash. **Keep from overfilling** the crankcase. Even ¼" too much oil is an invite for the crankshaft and rods to whip the oil up and out. **Keep the valve clean.** Take it apart and wash it out. A

clogged passage can bottle the blowby up in the crankcase till it shoots out with the oil.

These cures make the oil in the crankcase behave, in 9 cases out of 10. If they don't, maybe you're No. 10—maybe your engine is giving off an extra heavy charge of blowby. Make a compression test to find out. If it shows you're right, then order the new ventilator valve — GMC Part No. 1543341 — through your regular supply channels.

Oil Filter Connecting Tubes on M5A1-M8

Was talking the other day to a tankman who was about to strangle a GI for ruining one of the oil filter connecting tubes on his M5A1 light tank.

Seems as though both the M5A1 light tank and M8 Howitzer motor carriage have flexible tubes that connect the oil filter to the engine oiling system. But what this dope didn't know was that the inlet tube has a stationary fitting at the elbow in the filter and a swivel fitting at the crankcase elbow; while the outlet tube has the stationary end on the engine front cover and the swivel end connected to the bottom of the filter.

Both tubes are flexible so they'll be easier to work with—but that doesn't mean you can push them around any old way. When disassembling the tubes, always **take out the swivel end first** and the **stationary end last**. It's just the opposite when **reassembling**—that is, **stationary end first, swivel end last**.

Better use two wrenches when tightening or loosening the swivel ends—it'll guarantee a good seal with the elbow connection and prevent your twisting and damaging the tube.

Crane-Mounting Brackets on Kenworth Heavy Wrecker M1

If the bolts which hold the crane-mounting-brackets to the frame-mounting on your Kenworth Heavy Wrecker M1 have been shearing—then you'll bless Connie for finding this answer to your problem.

Seems as though the eleven ½" bolts, which hold the crane-mounting-bracket to the frame side-rails are the culprits—because they shear and allow the bracket to slip on the frame-mounting.

TB 9-796-1, 12 January 1944, tells you to correct this by reaming the ½" holes in both the bracket and the rails for ⅝" bolts; then securing the bracket to the rails with ⅝" by 2" bolts. Place the lockwashers and nuts on the **outside** of the frame side-rails, so that loose nuts can be easily spied and tightened. The other three bolts (two front and one rear) which are already ⅝" in diameter needn't be touched. The Ward La France already has ⅝" bolts, so you won't have to make the change on it.

Now isn't that simple?

Propeller-Shaft U-Joint Lubrication

Something always happens to make life more complicated. Here you've been lubing along fine and dandy, using general purpose

grease in the propeller-shaft universal-joints—when all of a sudden you spy a manufacturer's instruction plate which says to use oil for lubrication.

You just pay no attention to that little plate. In fact, the next time you overhaul or remove the universal joint from a vehicle, deface the manufacturer's instruction plate.

The official backer-upper for this little scratching job is TB ORD 12, dated 12 January 1944. If you want to look it up while I go pluck my eyebrows, you'll find it's also a reminder to follow your Technical Manuals and War Department lubrication guides which tell you to use general purpose grease No. 1 above +32°F and general purpose grease No. 0 below +32°F for lubrication of universal joints—every 1000 miles.

Laxative for Light Tank Turret

On some of the M5, M5A1 Light Tanks, the turret feels paralyzed. You may have noticed the trouble. The turret is slow and acts like the race is full of mush . . . doesn't have the smooth free zip a turret

should have. The guilty part most likely's the turret guide rollers. The roller rolls around in water, freezes up and doesn't let the turret whirl around.

First thing to do about this trouble is crank the turret around till the small inspection plate on the turret edge is right over a roller bracket. Take off the plate, then the bracket. Now try to spin the horizontal roller (photo below). If it moves stiff or doesn't move at all, the shaft inside is probably rusted to the roller. You've got to get the shaft out and free it, because that's what's been constipating the turret. Now the fun begins. You can't get the shaft out of the top. And, the other end is flush with the bottom of the bracket. Give up? Tap a hole in the end of the shaft so a capscrew can be used with a puller. Simple. Now you can get the shaft out. Clean it up pretty with emery cloth, put the roller back (or get a new one if the old one's flattened), and pack with grease. Do that on all the brackets around the turret and you'll be able to move it with your little finger.

Some of the rain water that

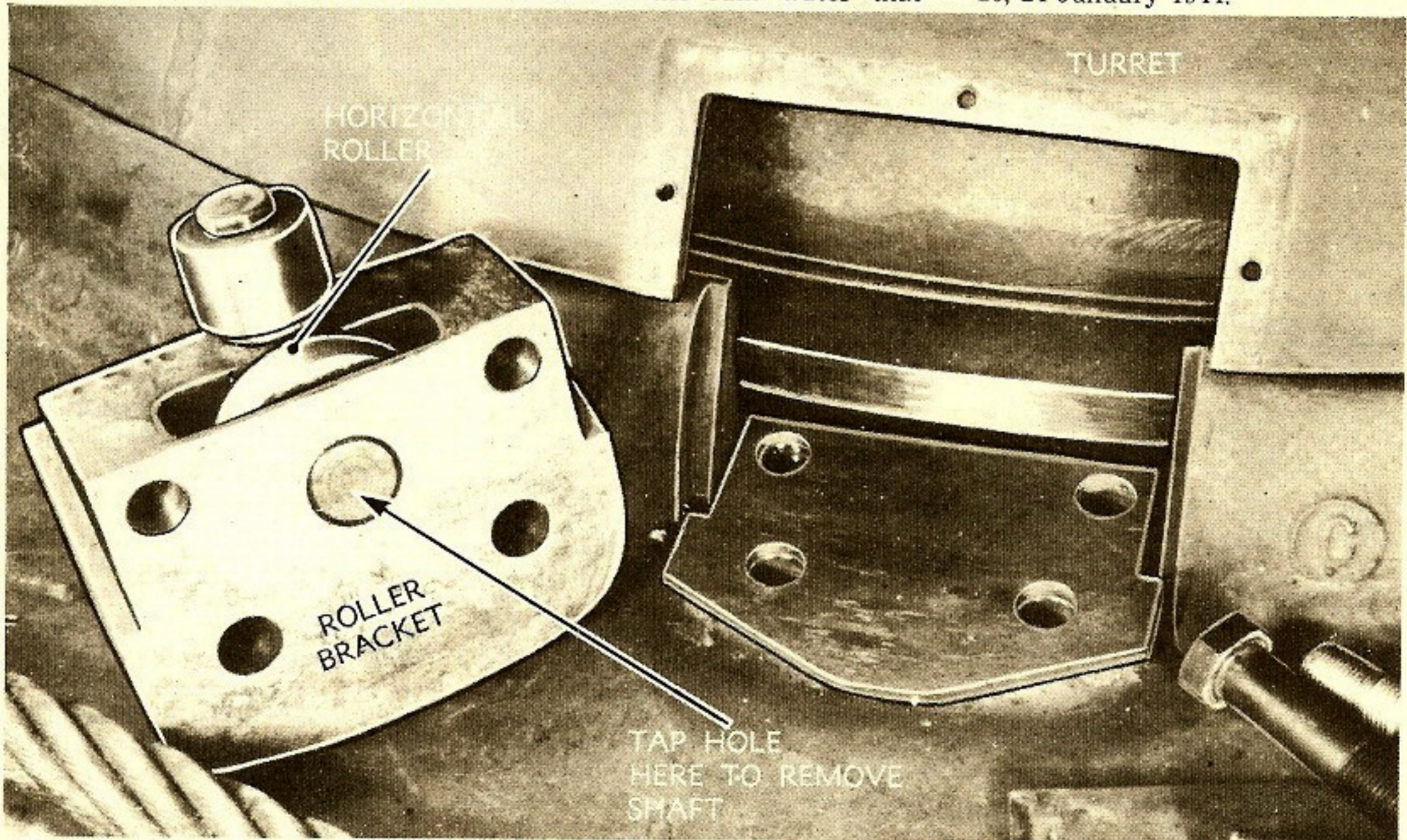
rusted the roller trickled in the hole on top of the bracket, so keep it plugged with grease (or if you're tap happy, tap in a 1/8" pipe plug).

This solution to a problem that's been irking many tankmen comes from Mr. J. S. Hemingway of Rock Island Arsenal. Helmets off to another civilian who's working to help us with some of the headaches we're having in the field.

Caution Tags Better Come Out of Hiding

You'd better start playing a new game of tag with those vehicles that don't have air in the tires, water, or oil. Because from now on, all vehicles lacking any driving needs or which are ready for storage or shipment, are to be tagged in a conspicuous place in the driver's compartment. Like over the switch, or on the steering wheel or steering levers.

Hiding the tag under the hood isn't cricket—the driver's apt to start the vehicle before he notices it shouldn't be started—and then there'll be trouble. So says the latest TB on the matter—TB ORD 20, 24 January 1944.

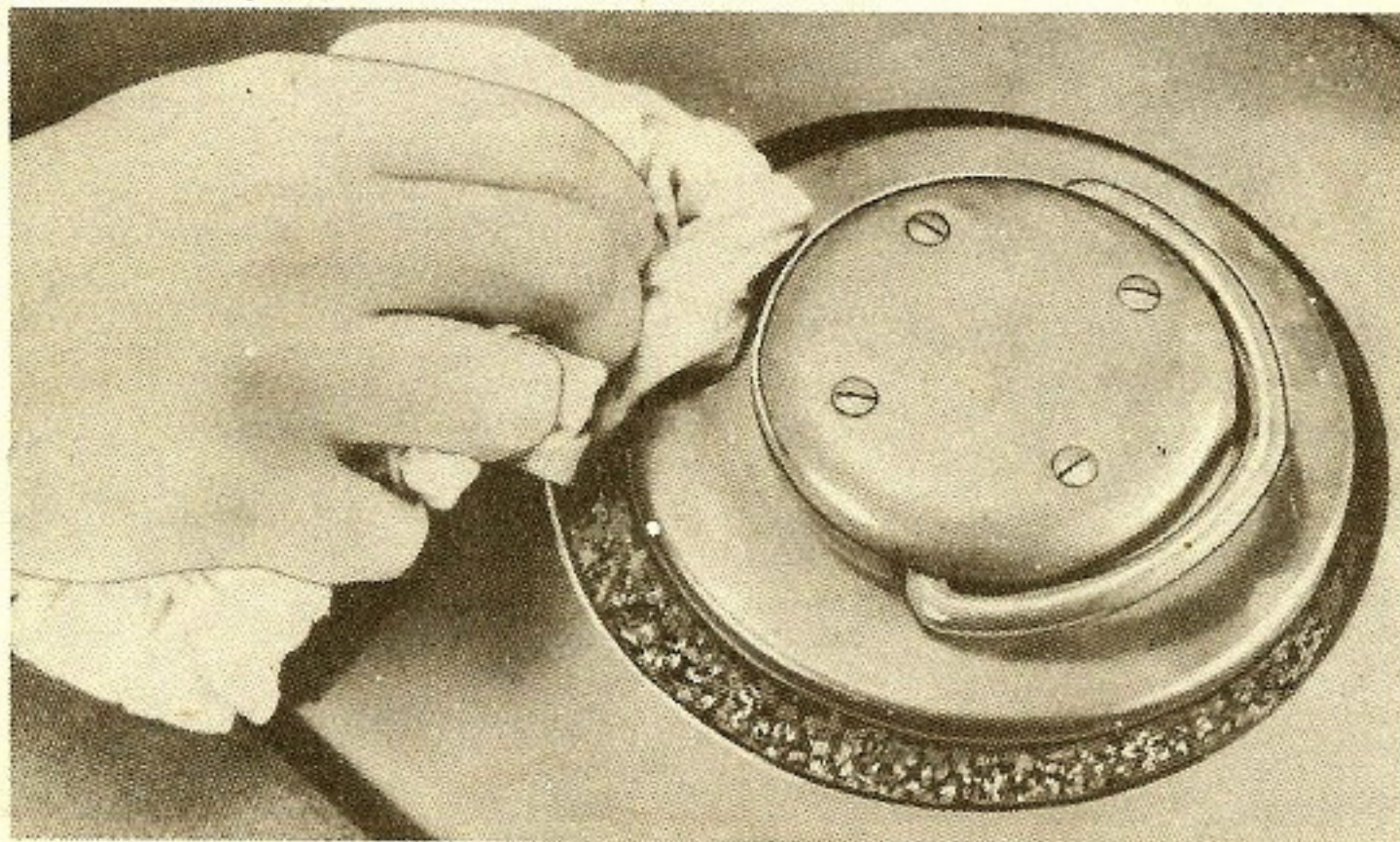


6 Incidentally, AR 850-18 gives complete details for attaching tags to the steering wheel when a vehicle is stored.

No More Half-Track Fuel Headaches... If

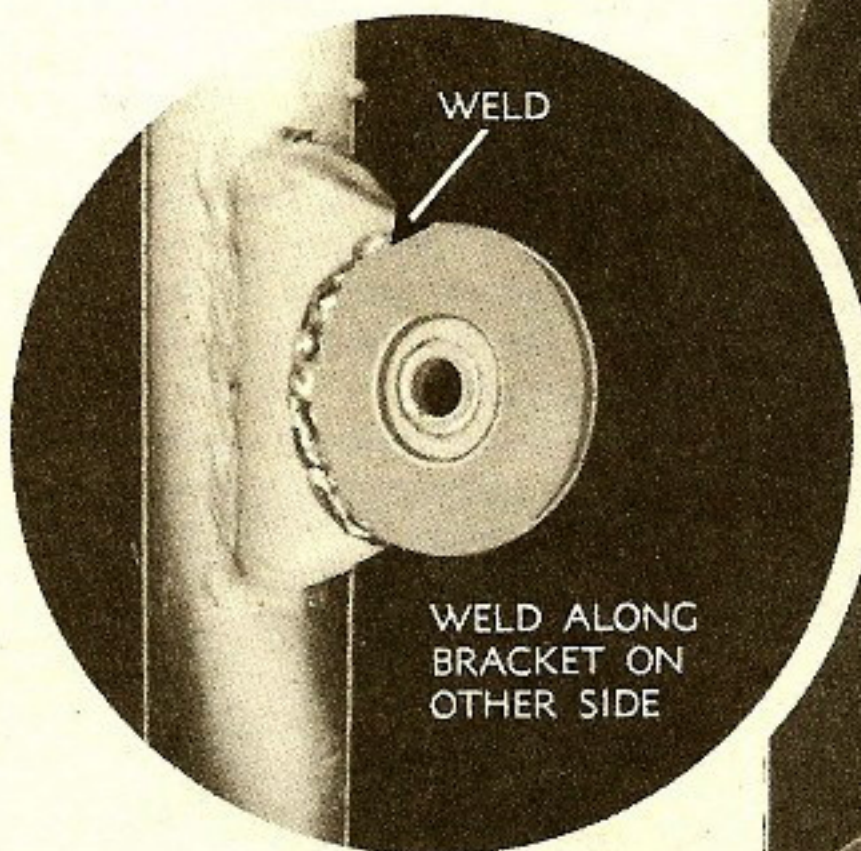
I used to cross my fingers when I drove a half-track. They're famous for fuel-line troubles—and fuel troubles bring out the worst in Connie. I don't like the job of freeing gas lines, and dunking the filter element every few hundred miles. Several weeks ago, TB 710-22 came to the rescue and told how to get a larger fuel filter for all half-tracks, and where to install it. The TB promised that the filter wouldn't clog up so easily. Get hold of TB 710-22 and requisition the parts for your half-tracks.

That's one way to clear up fuel troubles. Another way is something drivers have to watch when gassing the half-tracks. The metal pan around the filler cap gets packed with dirt so when the cap is removed to load gas, the dirt tumbles into the tank. Drivers should clean all around the cap before they open it. Even dump some water around the cap to flush the sand and muck away, and then wipe off any dirt still left around the edge (photo below). Careful as you are, if there's dirt around the cap it will probably get in the tank. So clean it off first. This, plus putting in the new fuel filters, will end that business of fuel troubles on your half-track.



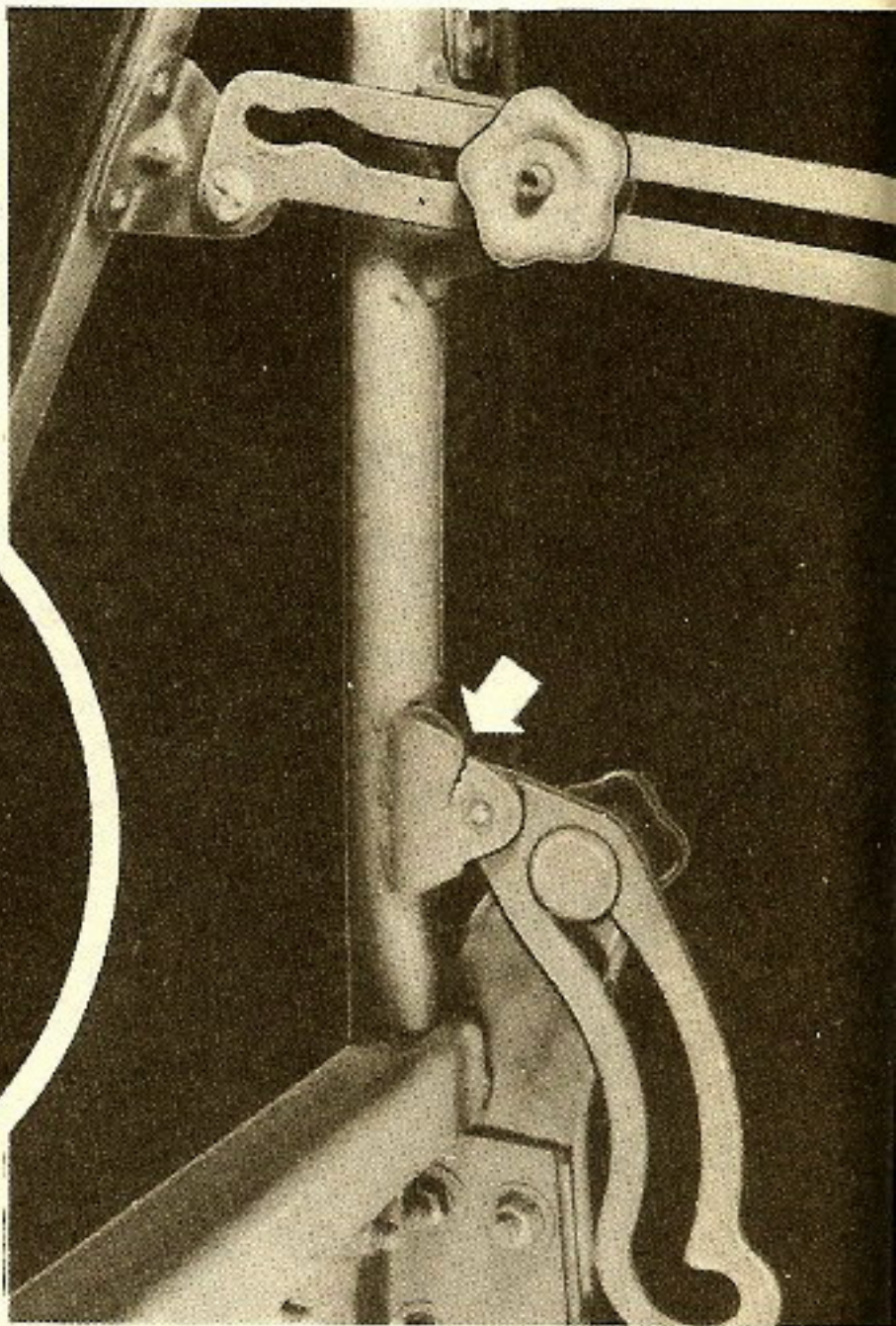
Broken Windshield Brackets, 2½-ton 6x6

Here's a pretty slick field-fix for you guys who've been growling about your GMC 2½-ton 6x6's (canvas-top models) running around with windshields flopping, torn away from the vertical support frame. The weak part that's been giving way is that adjusting-arm bracket—the one cracked in the photograph below (right). If you've already tried to weld the crack, you know it won't do any good. The bracket needs to be reinforced. Here's how. Root through the hardware drawer on your spare parts truck and dig out a plain washer about 1½" across, with a ½" hole (the one I found was ½" I.D. x 1¼" O.D. x 5/64" thick). Disconnect the adjusting



arm from the bracket. Now weld the washer to both sides of the bracket—one side the way I did it in the round photograph (below), and along the edge of the bracket on the other side.

One Joe had a perfect system for breaking the brackets. He'd fold the windshield down flat against the cowl, like a jeep. That's OK, but he piled a few cartons of supplies on top! He wanted to keep his eye on them. Load the cargo in the body, and you'll keep your windshield brackets in one piece.



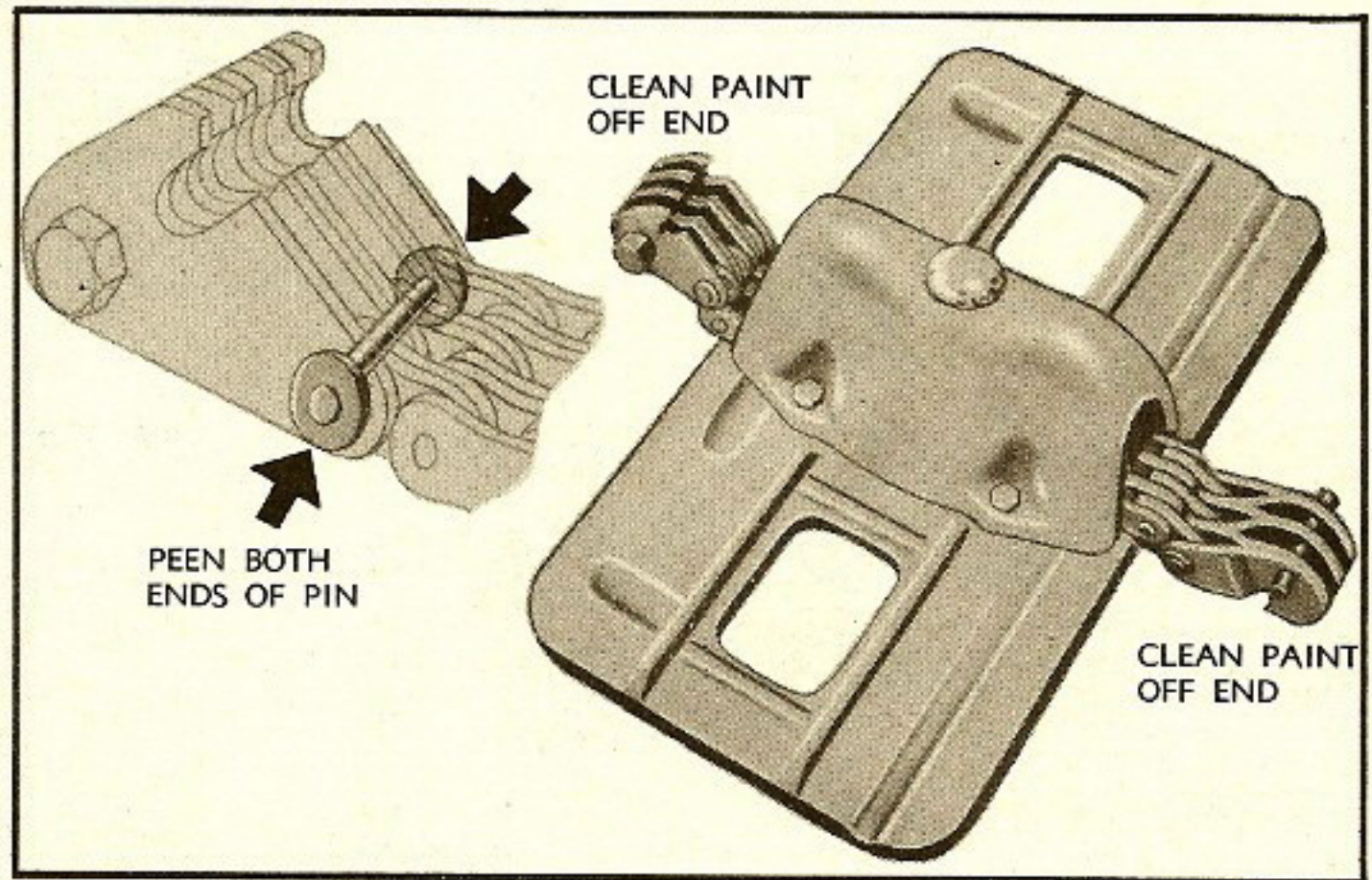
Mud-and-Ice Scraper on High-Speed Tractor M5

They tell me those front track roller tires on the M5 high-speed 13-ton tractor have been losing their faces little by little. It's all the fault of those innocent-looking little mud-and-ice scrapers sitting on top of the roller bracket in front of the track-support idlers. The clearance between scrapers and tires is now about ⅛-inch. Remove the scraper, lengthen the slot so the clearance can be in-

creased to about $\frac{3}{8}$ -inch, replace the scraper and save wear and tear on the tires.

2 Things to Correct on Traction Devices

If you're one of the lucky fellows overseas who are due to get a set of traction devices for your truck, I'll make you a wager. If your devices are painted the regular green olive drab, I'll bet you'll do some cussing the first time you join up the ends of the shoes. (Bet's off if the tracks are painted tan. They're newer models and work OK.) It all happens because the ends are all slopped over with this green paint—two coats—and they'll have to be forced together. That forcing is trouble—and it's liable to spring the chain at the ends. If you remember our February issue, we mentioned we beat the ends together with a hammer. What you should do is file the paint off, or sand it off, or eat it off with paint remover (photo-



graph above), then they'll mesh together e-e-easy. When the green stuff is extra thick and you force the ends together, the washers on the ends of the links—the ones the arrows point to in the photo—pop off. Peen the ends of the pins lightly as you're installing the track. Those two things will

save you a lot of hollering. Get the paint off the ends, and peen the pins. Say—while you're working around the devices if you come across any troubles (or praise) with them, scratch out a V-mail note to me and I'll send you a wet kiss.

(Continued on page 30)

Don't Break Your Half-Track — Brake Your Trailer!

Just switching the rods at the control lever [or making a new lever] stops that trailer cold

If the half-track stops, why doesn't the trailer? The answer is simple—the electric brakes aren't getting enough amperes. Depressing the brake pedal may be juicing your hydraulics and putting the halt in the two wheels under you, but that doesn't mean the electric brakes are getting enough juice to stop that trailer behind you.

When the electric-brake control on the dash panel of your half track is set on "heavy," between 11 and 13 amperes should be transmitted to the trailer brakes.

You've got to have that many amps in order to get a full stop on the load you're pulling.

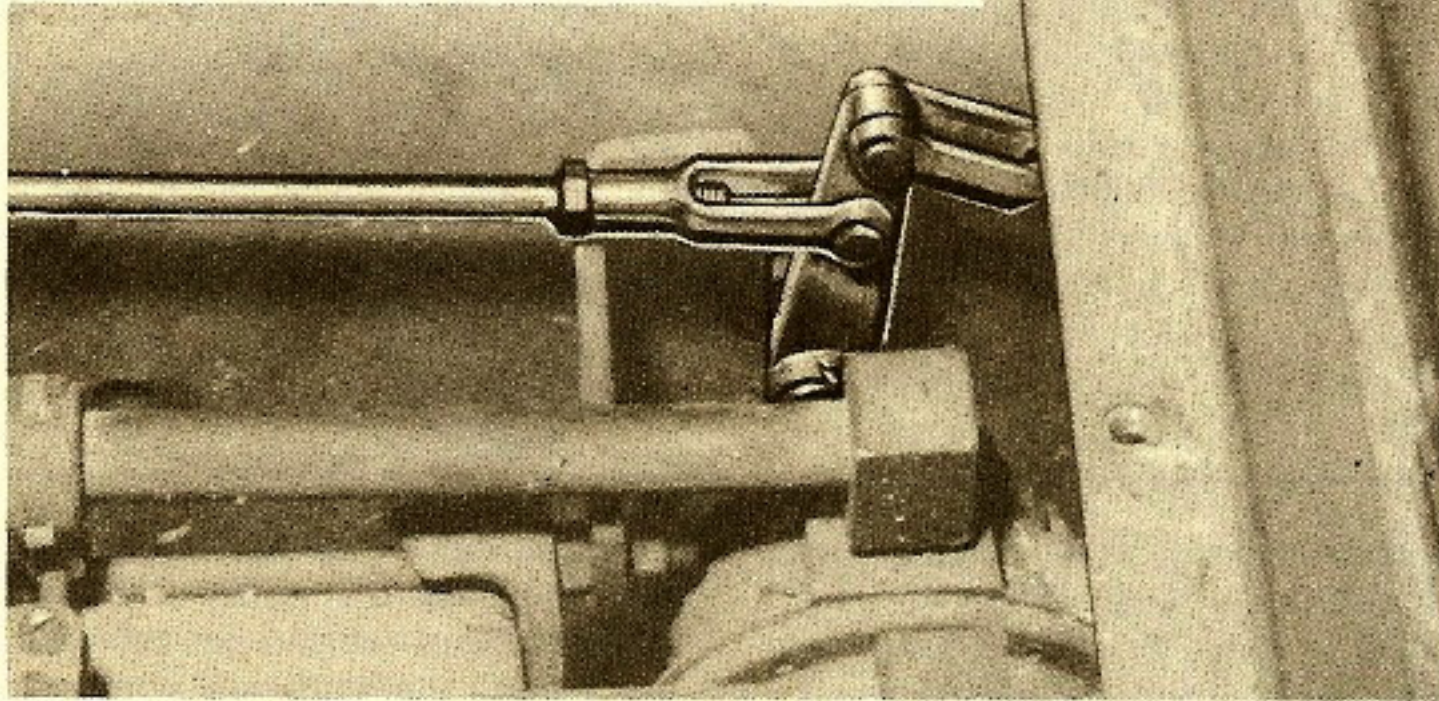
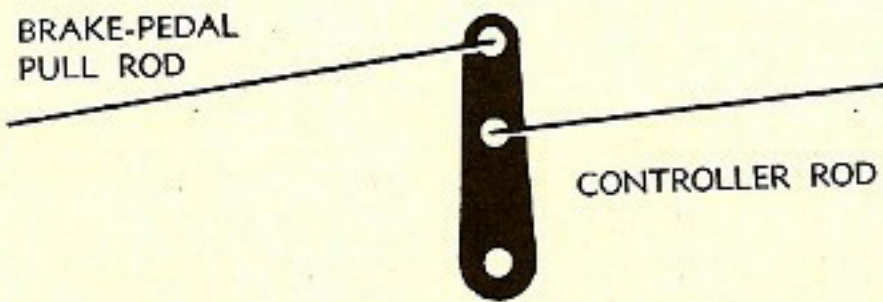
The electric-brake system puts the stop in the wheels by energizing electric current—and the magic wand that transmits that current is the controller rod. The more travel from the rod, the more current. Full travel from the rod means full stopping power—it's built that way.

If the controller rod isn't getting full travel, no amount of brute force on the brake pedal is going to help—the controller rod

and the brake pedal pull-rod are just so long and will travel only just so far. When they don't travel far enough, then the brakes aren't getting enough current—and the trailer just isn't stopping.

Getting enough travel in the controller rod can be done only one way—by lengthening the travel of the brake pedal pull-rod. The job of lengthening the travel begins with a change at the lever connecting the controller rod to the pull-rod. And two different brakes—Warner and Empire—call for two different changes.

The Warner electric-brakes (on all International Harvester half-tracks) have the controller rod and brake pedal pull-rod connected to the lever as shown in the



inset, Fig. 1. The pull-rod is bolted to the top of the lever, and the controller rod is bolted beneath the pull-rod. In order to lengthen the travel of the pull-rod—and to be sure the controller rod is getting **full** travel—the position of the rods should be **reversed** as shown in the photograph, Fig. 1. Just rip up the left-front floor-plate or slide yourself under the half-track and go to work with your wrench.

The fix for the Empire electric-brakes (on Autocar, Diamond T, and White half-tracks) takes much more time.

The lever connecting the controller rod and brake pedal pull-rod (see inset, Fig. 2) is not long enough to allow for additional travel of either rod. A longer lever is the solution and Fig. 3 gives all the dimensions for making it. Any old piece of scrap steel will do.

And while you're doing the cutting, the hole in the Hydrovac support bracket—through which the controller rod passes—has to be enlarged. The lever on the Empire electric-brakes extends downward, and the longer lever will drop the rods a little more than an inch below their former position. With the cutting tip of your torch cut away about $1\frac{3}{4}$ " in addition to the present hole. Be sure you cut in a **downward** direction to allow free passage of the controller rod.

When you hook up the modified connection, it should look like Fig. 2—the controller rod bolted to the **end** of the make-shift lever, and the brake pedal pull-rod bolted **above** the controller rod.

And that's that. Now the electricians should be getting enough amps to brake that trailer behind the half-track—instead of just breaking the half-track's behind.

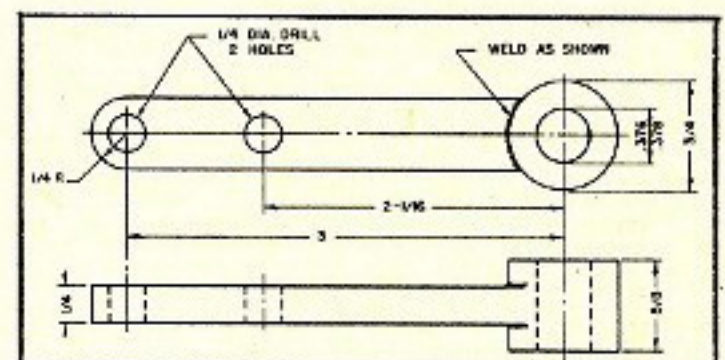


Figure 3

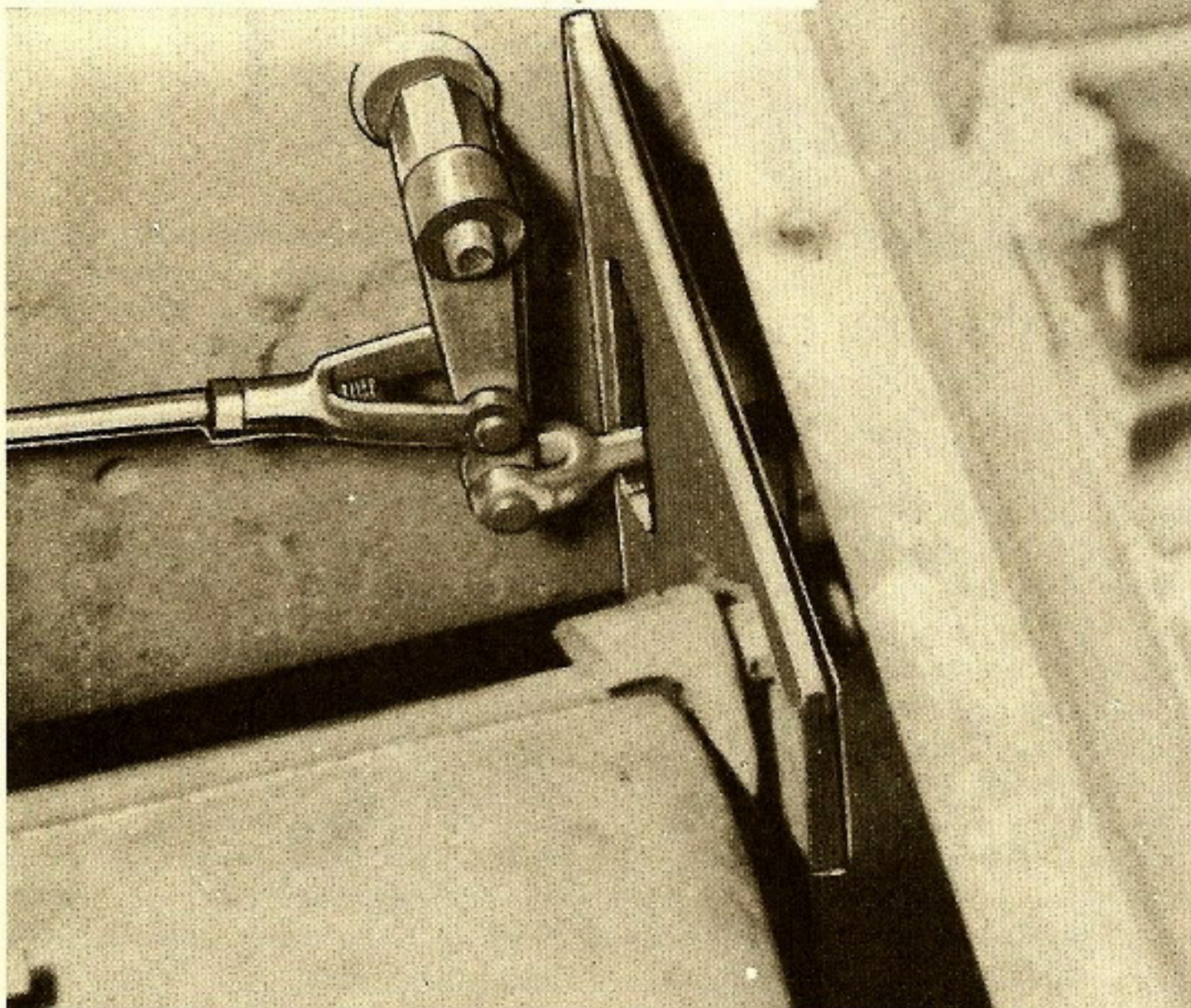
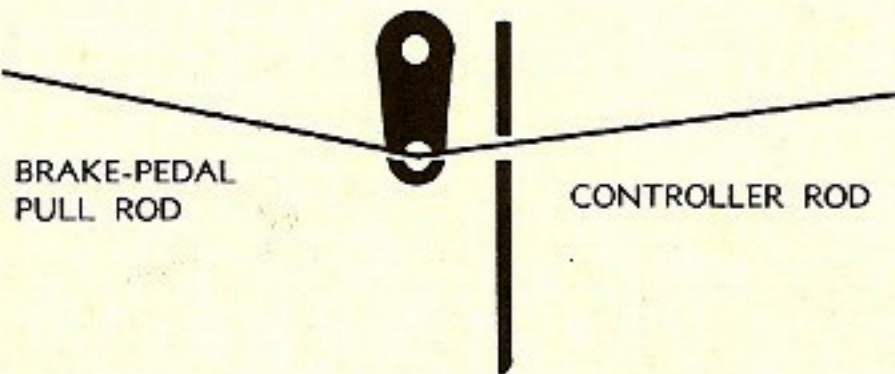


Figure 2

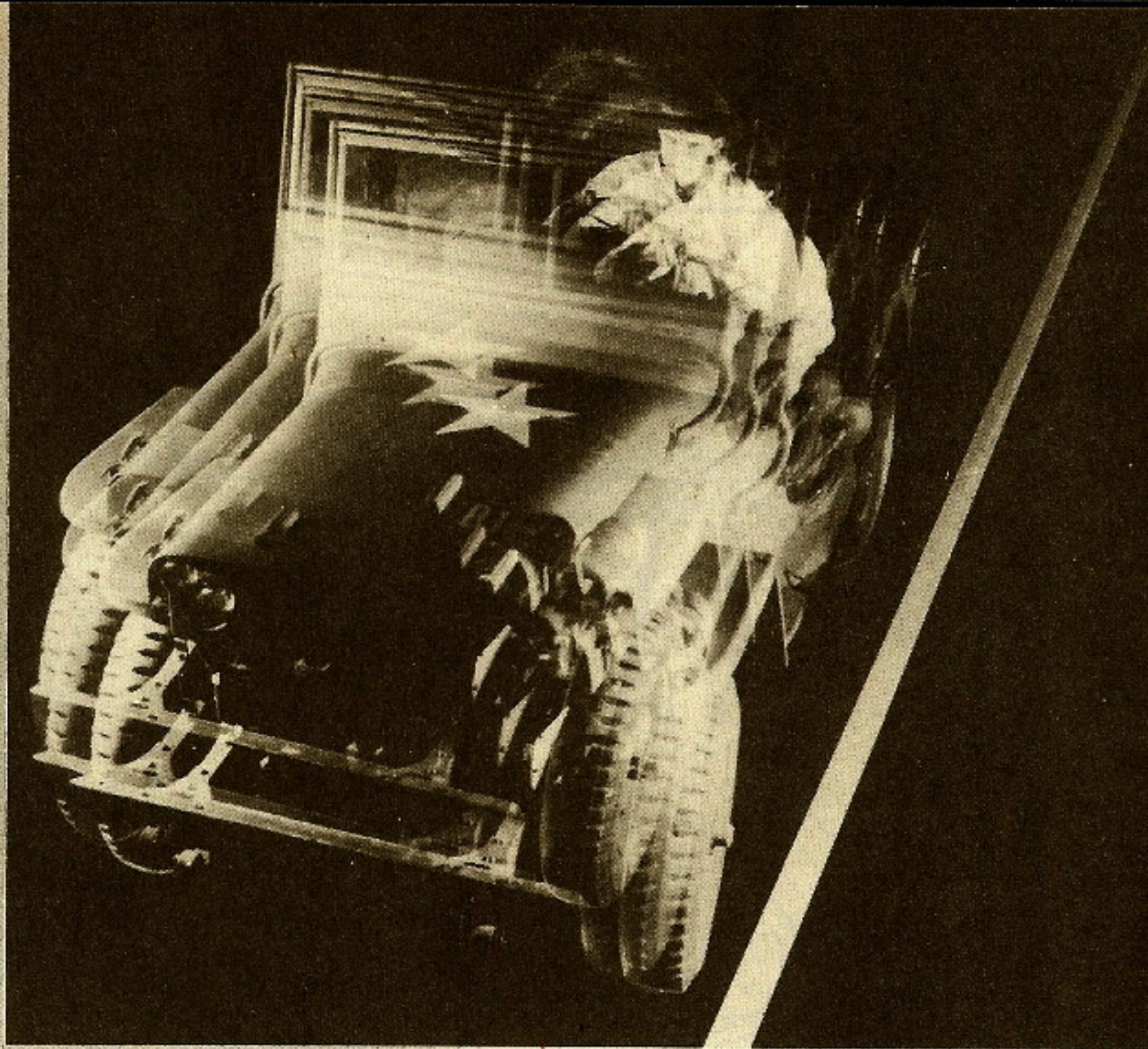
How to Stop A Jeep in a Hurry

... WITHOUT BEING WHISKED DOWN A SIDE ROAD. THAT'S WHAT THE PULL TO THE LEFT ON THE 1/4-TON TRUCK CAN DO UNLESS YOU KNOW WHAT TO EXPECT — AND HOW TO CONTROL IT.

Ordinarily, the Sad Sack's a pretty slow and droopy driver. One time he got in a spot. He had to stop fast or run over the captain. For a second there, the Sad Sack moved like a rocket. A foot flew out to the brake, mashed down the pedal, he hunched up and gripped the wheel hard, till finally the truck settled to a stop.

That's pretty much the way most of us make an emergency stop.

There are times though when stopping a 1/4-ton jeep by that same system will give you a surprise. When you jam on the brake you'll feel the jeep dive to the left, like someone's underneath cutting the wheels on you. Nothing to get your intestines in an uproar about. It's just one of the facts of the jeep's driving life. The best thing a heads-up driver will do is stay cool, find out **why** it happens, and



how he can control the pull to the left.

Here's the "how" part: just make your emergency stop the same with a jeep as you do on any other truck, except for **one** thing. **Don't freeze the steering wheel.** Let it have a little play. Still keep a firm grip, but hold your arms loose enough to give with the wheel a little, and to your right. Another thing, if you have time during the stop—pump the brake at least once. Don't give it one long push all the way down.

Those two things sound easy. Don't fool yourself, they take a good driver. You've got to remember them when you're in a tight spot—when it's the most natural thing in the world to kick out at the brake and hang on the wheel **hard**. You'll have to practice and keep the right way in mind. So in a pinch you'll automatically relax your grip and pump the pedal.

It's a case of knowing your jeep, too. Some have the curse more than others, and some conditions make the pull more noticeable. We found the pull strong when the stop was made on a smooth

A WORD ABOUT THE PHOTOGRAPH ABOVE

The clear sharp eye of the high-speed camera freezes the jeep in the act of pulling to the left. The test driver hugged the wheel hard to make the pull stronger. Notice how the front wheels have moved closer to the center stripe.

hard road. The worst pull . . . a pull that nearly swerved the jeep into the left lane . . . happened when the brakes were applied going around a left curve. That's not surprising though because putting on the brakes on a curve is Joe Dope driver practice with any truck. Third gear—high or low range—brought out the attraction to the left more than any other gear. But the pull is liable to happen on any roads, any gears. The important thing is, it **does** happen. And the blame all goes to the jeep steering set-up.

It's a little different combination of rods and arms that takes your turn of the steering wheel down to the front wheels. Most trucks as you know have a steering sys-

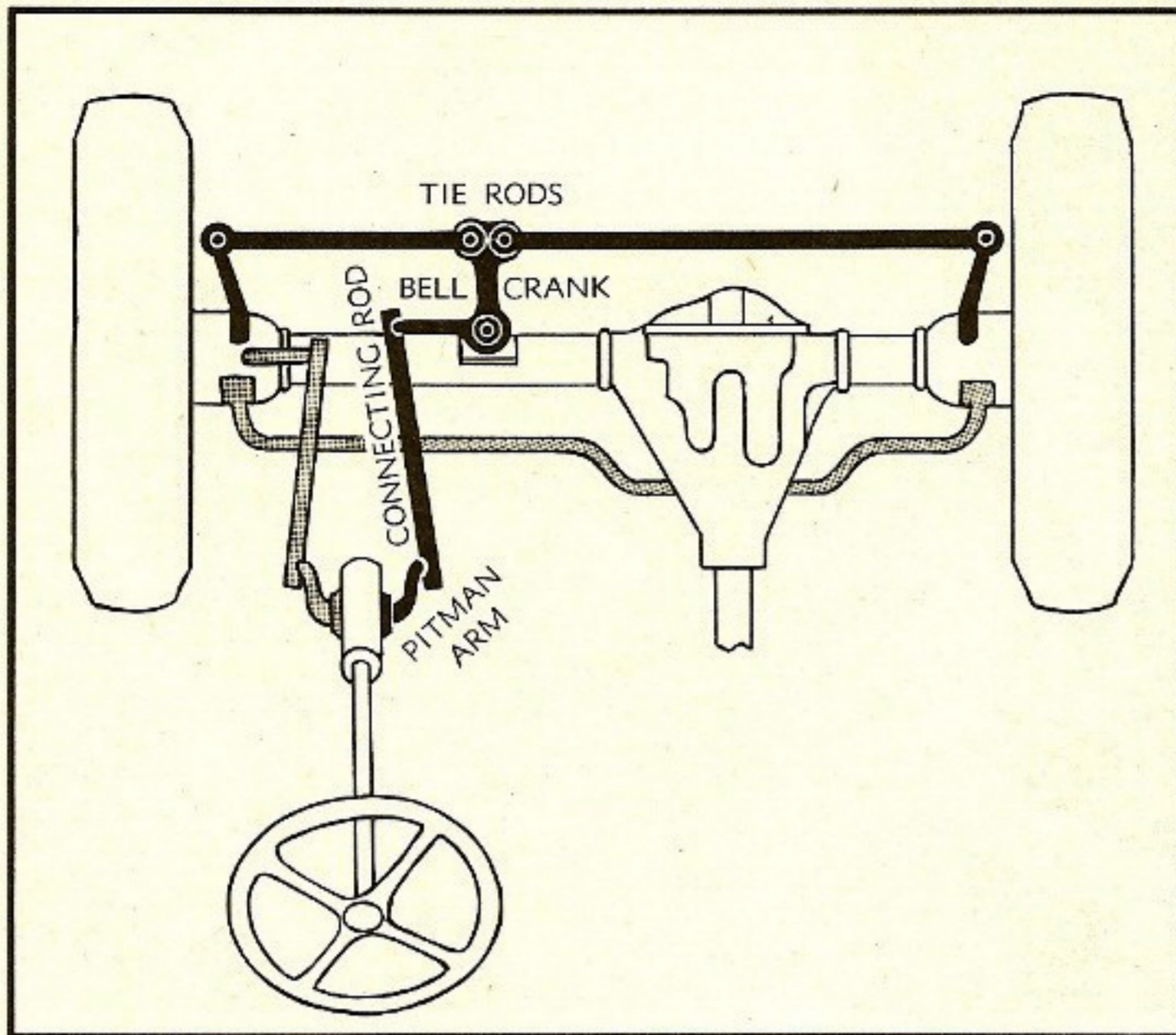


Fig. 1. Two steering systems on one drawing. Every truck has one or the other. Follow the gray lines—that's the conventional steering on most trucks. You can see how the jeep steering arrangement—in black—is different.

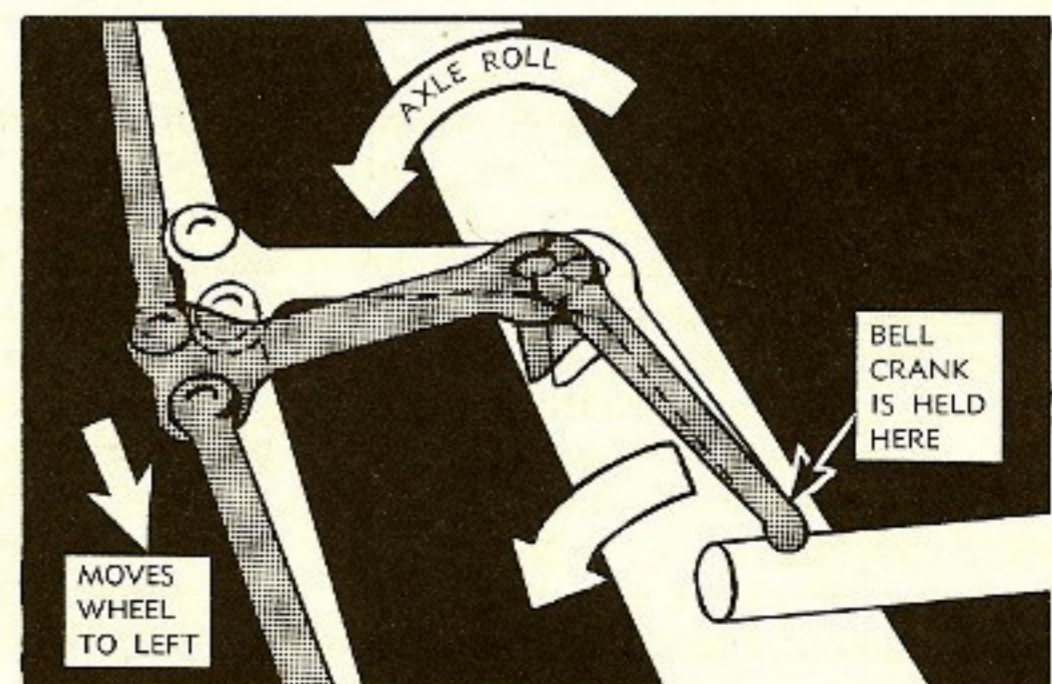
tem that looks like the grayed parts in Fig. 1. There's a one-piece tie rod connecting the steering knuckles. But the jeep has a bell crank on the front axle (black parts in Fig. 1), and a two-piece tie rod up front. It's different for a good reason: to leave more space between the underparts of the truck and the ground. The regular set-up with the one-piece rod would hang down too low if it were used on the $\frac{1}{4}$ -ton jeep. You'd tear off a piece of the rod everytime you drove across a field.

As the jeep rushes to a stop, something awful peculiar goes on with this steering. Wrap yourself around the front axle and watch. The brake shoes take hold, the tires grip. Just then you'll feel yourself twist forward a few degrees. The braking action makes the axle twist forward a little. You'll see the bell crank dip forward and down, because it's

mounted right on the axle. Watch it—that's where the pulling business all starts. As the crank twists forward, the end in the steering connecting rod tries to pull the rod forward. If the rod stands pat, you'll see the crank pivot and swing the tie rod and wheels to the left (Fig. 2). Finally the jeep stops—over in the left lane somewhere.

You can see now why it's wrong to clench the steering wheel when the jeep's coming to a stop. Giving the wheel a little play to the right loosens up the steering system. Then the steering connecting rod is free to move forward with the bell crank instead of standing pat and holding back the end of the crank. The rod moves for-

Fig. 2. Unless the steering wheel is allowed some play when you come to a hot stop, the bell crank goes into action—like we've shown in gray—and pivots the wheels to the left.



ward and the crank doesn't pivot and the jeep rolls to a straight stop.

The Army didn't hang the responsibility for the job of controlling the pull entirely on the driver's head. About a year ago the engineers popped up with a two-leaf spring arrangement to add on the left front spring. This Torque Reaction Spring was put on in production, and put on in the field (Fig. 3). It did cut down the axle roll and make the pull much less violent. But because it's still noticeable, some of the mechanical geniuses have been swamping us with magic fixes to make the pull vanish completely. One fellow told us it was just a simple matter of reversing the brake shoes on the left front wheel. Another GI stopped dreaming of Mabel a few nights to dream up a way to take some of the pep out of the left-front wheel cylinder. Then the cylinder would have a softer push on that side, and the jeep would stop in a straight line. We'll admit those things do make the pull less noticeable. But man, that's reducing the braking power of the jeep! In an emergency stop, you'll need **more space** to stop in. Any cure that futzes with the brakes is worse than the disease of a left-pull.

Not all the suggestions were off the ball. A few wanted to go back to the regular truck steering with the single tie rod, take the bell crank off the axle and stick it some place on the frame. No question. That would cure the pull to the left. The Army's Ordnance engineers know it, manufacturer's engineers know it and even Half-Mast knows this would do the

trick. But there are two good and practical reasons why the step isn't being taken officially. First, any change would hang more iron under the jeep. There's not too much space now between the ground and underpinnings. Under rough combat conditions every inch is needed. Second, any modification in the steering made now would be tremendously costly. Costly in materials—hundreds of thousands of tons of metal would be needed to modify the jeeps that are dancing around in England, Russia, China, Africa, Italy, Australia, and the Pacific Islands. Costly in millions of man-hours to manufacture the parts. Costly in mechanic-hours in the field putting on the fix.

And all this for what?

To correct a little distemper that happens only when the jeep's forced to make a hard fast stop? To correct a quirk good drivers notice only once in a while? No. That wouldn't be sensible. Instead of the impractical costly modifica-

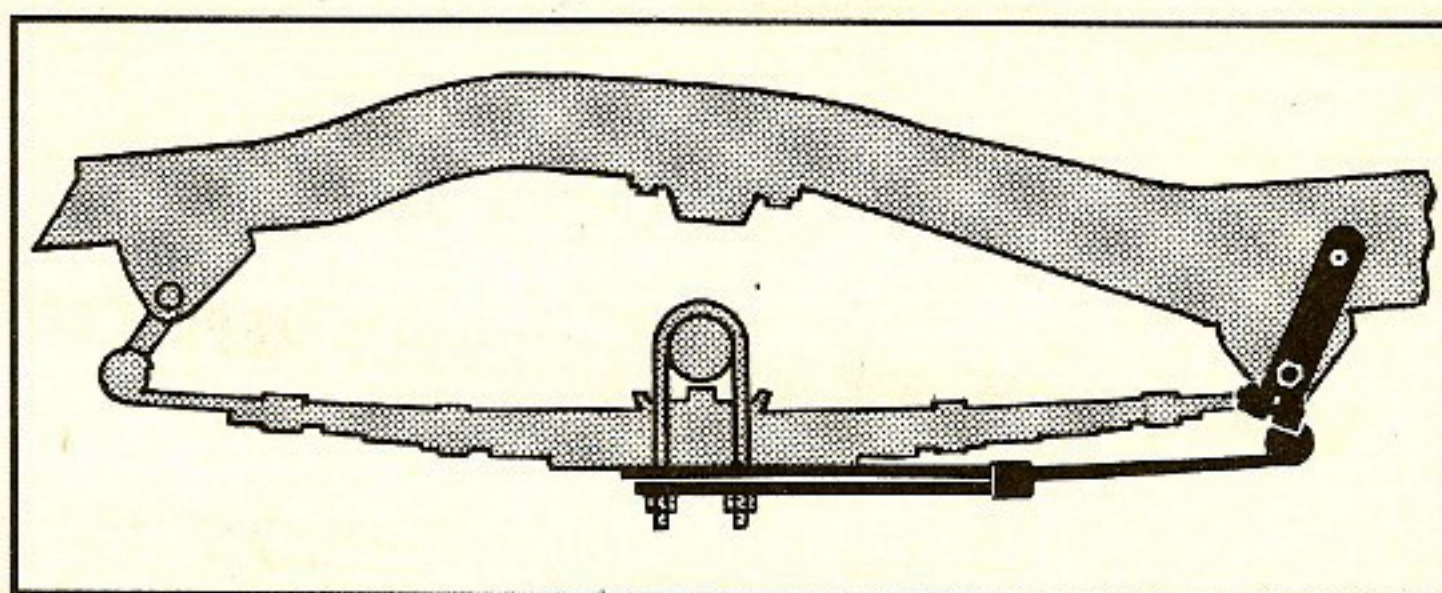


Fig. 3. All jeeps have this two-leaf Torque Reaction Spring tacked on the left front spring. Its job is to take some of the fighting roll out of the axle.

tion to all ¼-ton 4x4's, the Army's put the problem up to you fellows in the field. Mechanics—they're depending on you guys to give more attention to the Preventive Maintenance on jeep steering systems. Steering linkage that isn't adjusted properly can make the pull stronger, enough to smack your jeep hard to the left. Follow your vehicle TM and keep the

steering in line and adjusted. Drivers—the Army's depending on you chums to know the pull's normal and nothing to get excited about. And, to learn the little trick of controlling it by relaxing your steering and pumping the brake during an emergency stop. The whole deal's in your hands. They're good hands . . . just use them.

THE 14th REASON

Why Requisitions Go Wrong

Looks like we slipped up and missed an important point in our "13 Reasons Why Requisitions Go Wrong," the feature appearing in the December ARMY MOTORS.

The fourteenth reason is that in many cases, two or more different items are listed under the same Ordnance Stock Number. The War Department orders similar items from several manufacturers, and each supplier has his own way of meeting the same U. S. A. specifications. **All items designed to do the same job, and meeting the same government specifications are supposed to be listed under the same Ordnance Stock Number.** If each item was given a separate number your parts and supply list would look like the Manhattan phone book. This method of listing not only shortens your list, but increases your chances of getting

prompt service.

A good example of this general listing is the Battery Tester listed in First Echelon Sets No. 1 and No. 2. It is illustrated, and checking back in the truck company's Quartermaster Handbook, you'll find one of quite different physical appearance listed under the same Stock Number. Now suppose the Supply Depot had fifteen testers on hand, ten of type A, and five of type B, listed under separate Stock Numbers. If all of a sudden seven requisitions come in, all specifying type B—two would go unfilled—but under the system in use all are listed under the same number, and every one would therefore be supplied.

Here's a point you may not know. The crew at the Supply Depot are under orders too; they're required to fill requisitions exactly

as specified or to make substitutions of any material **officially** cross-referenced to the number specified. This is to protect you against wild switching. Now, maybe nobody'd object to leaving it up to the guys at the depot if you could be sure they were all good mechanics, and knew their stuff. Who knows, they're probably a bunch of CPA's, shoe salesmen, or Good Humor men and wouldn't know a universal joint if one popped up in the soup. They are supposed to know their numbers though; so if you order as listed, chances are you'll get what you want—or a reasonable facsimile.

The new packaging instructions require **all** manufacturers to indicate the official **Ordnance Stock Number** on each item regardless of, or in addition to, the manufacturer's part number.

KEEP WITH VEHICLE

MWO AND MAJOR UNIT ASSEMBLY REPLACEMENT RECORD

USA REG. No. _____ NOMENCLATURE _____

Personnel completing modification or major unit assembly replacement will record clearly description of work completed, and will initial in column provided. When modification is completed, record date, hours and/or mileage, and MWO number. When major unit assemblies (engine, transmission, transfer case, and tracks) are replaced, record date, hours and/or mileage, and nomenclature of unit assembly. Minor repairs, parts, and accessory replacements will not be recorded.

DATE	HOURS AND/OR MILEAGE	MWO No.	DESCRIPTION OF MWO COMPLETED OR MAJOR UNIT ASSEMBLY REPLACED	INITIALS

MEMO TO: Every Army motor vehicle
SUBJECT: WD AGO Form No. 478, attached

Here's where you start keeping a diary, big boy. A complete official record of all modifications of your major unit assemblies (engine, transmission, transfer case, and tracks). You'll carry this record with you always -- "in a convenient place" -- until your last long mile. The GI's, in any echelon, who perform these modifications or replacements will jot down the required facts and figures as soon as they've done the job. And sign on the dotted line. 3rd or 4th-echelon maintenance men will list the modifications already applied to you (before 3 February 1944) the next time you roll into their shop for a fix or another modification. That date happens to be the date of WD Circular 49, which officially adds WD AGO Form No. 478 to the list of forms, records, and reports authorized by AR 850-15 (28 August 1943). Actually, Form 478 isn't quite as spacious as the attached version. It's a white card, 5 1/2 x 8 1/2 inches -- and it'll ride around in style, in a special waterproof envelope. Requisition one per vehicle, through regular AG channels, right away quick.

People keep askin' us

How Can I Get Army Motors?

We got a funny distribution setup. Usually, with other magazines, you pay your money and you get your magazine. With Army Motors, you DON'T pay your money because Army Motors is free. Our biggest trouble is that we can't print enough copies to give every automotive joker one. So what we try to do is send out enough copies to an organization and then depend on guys passing the magazine around so every driver and mechanic gets to see it.

Of course, the one big exception to this is that we award personal subscriptions to guys who send us a good contribution or ask a good question.

We don't just pick up a handful of the magazines and throw 'em at every organization. We got a basis of issue. Our basis of issue is as follows:

For every Motor Officer in the outfit—1 copy

For every Motor Sergeant in the outfit—1 copy

For every Automotive Mechanic in the outfit—1 copy

Mind you we didn't say that each one of these characters is entitled to a personal copy. What we said was that for each of these jobs or ratings in the T/O, a copy of the magazine goes to the organization. And everybody in the outfit is entitled to take a read at it. Army Motors is like the air—it's GI and free. And it's nobody's personal property to be hid in a footlocker and read behind the barn when nobody else is lookin'. Of course, the ratings may get ahold of it first but it's their responsibility to pass the magazine on to the drivers and assistant drivers when they've finished with it.

Another thing you ought to know, is that organizations in posts, camps, or stations get their copies from the one big package sent to the commanding officer. It's up to him to see that the Motor Officer of each outfit on the post gets the right amount of copies for prompt distribution throughout his organization. Reason for the bulk distribution is that it makes it easier on the postal system.

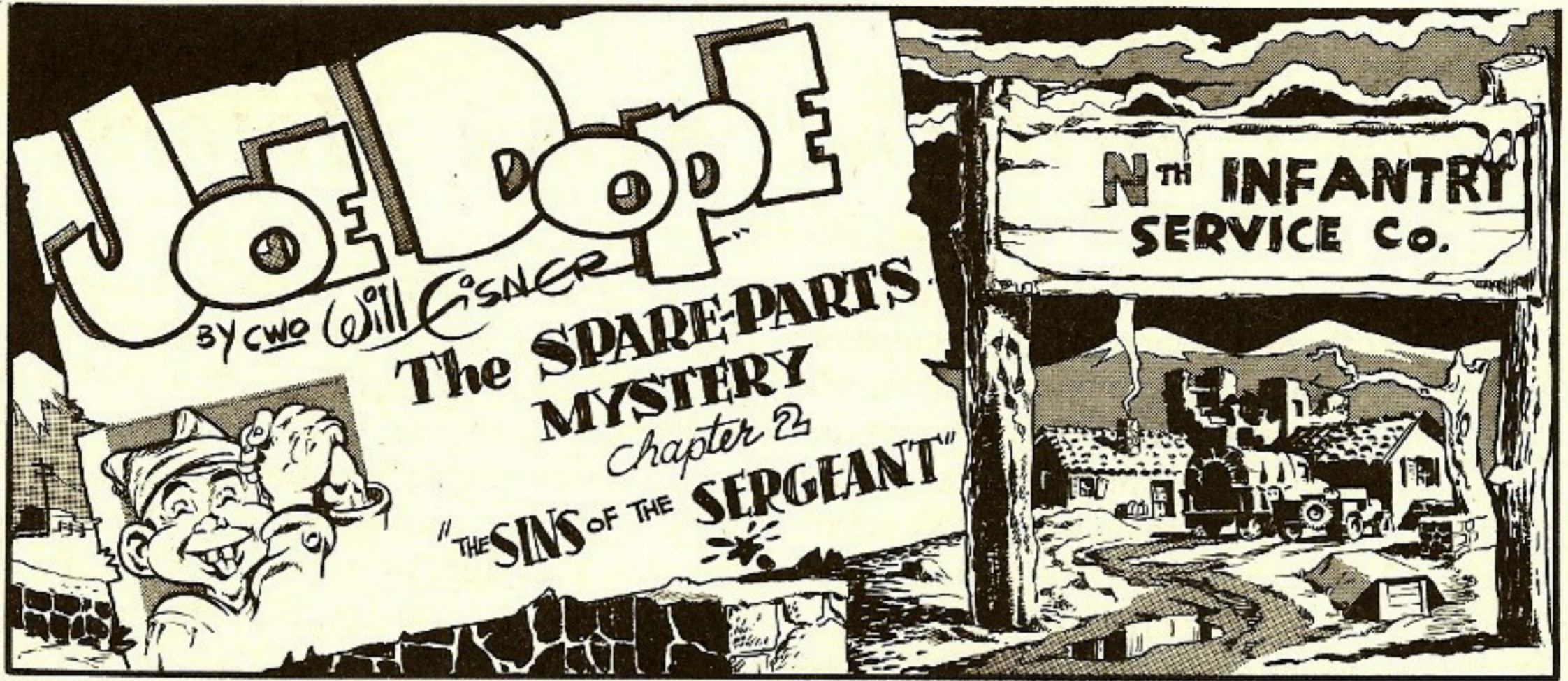
Well, that's the story. Now, if you're a driver or assistant driver, and never get to see Army Motors, ask the mechanic who nurses your truck to pass you the copy he's hoarding. If you're an automotive mechanic and miss out on the magazine, ask your Motor Officer or Sergeant for it. If you're a Motor Officer or Sergeant, and you're not getting your organization's quota of Army Motors, trot on over to the Adjutant and ask him about it.

To discover for yourself just how many copies of the magazine you're entitled to, just figure up how many a) .014 mechanics, b) motor sergeants, and c) motor officers you've got in your T/O. For each of these—or the equivalent—your organization is entitled to one copy of the magazine.

When you write, tell us what T/O's are covered by your headquarters, and how many copies you're allowed on the basis given above. You might also tell us how many you've been getting all along.

If you've got any other questions or complaints, drop us a line.

ARMY MOTORS Magazine
Office, Chief of Ordnance—Detroit
Detroit 32, Michigan



BACK AT THE THEATRE SUPPLY DEPOT

STOP ALL WORK!
EVERYBODY QUIT WHAT YOU ARE DOING. **START WORKIN' ON THIS ORDER FROM THE NTH INFANTRY CO....THEY MUST BE AWFUL SHORT!**

HEY SAM! WHATS A GO-ROUND ROD

SEARCH ME! SEND HIM AN AXLE... THAT GOES 'ROUND

WHERE DOES THIS JOSEPH DOPE FIND THESE ITEMS.... "A RUBBER HOSE..." FOR WHAT??

DUNNO. GUESS HE WRITES HIS OWN SNL'S

ONE DOZEN GAUGE NEEDLES. 20 EMERGENCY VALVE BALL CHECK W/STEM ASSY..

HOLY HOUSINGS! WE AINT GOT ANY O' THAT STUFF... CABLE THE STATES!

TELL THE 5TH ARMY WE'RE SORRY BUT ALL OUR BRAKE ASSEMBLIES HAVE GONE TO JOE DOPE'S OUTFIT!

...IN AMERICA

I DON'T CARE IF THOSE STEEL LATHES ARE OUT OF PRODUCTION...RETOOL! OUR MEN ON THE FIGHTING FRONT NEED IT!! HANG THE COST!

LATER, BACK AT THE NTH

HEY JOE, WHAT THE HECK'S A EARTH AUGER 4X4 M1. ??

I DUNNO... LET'S ORDER A COUPLE... SEE WHAT IT LOOKS LIKE!

GOOD EVENING JOSEPH

ER... FIVE JEEPS..NINE 6X6'S...ONE BICYCLE

HOW MANY VEHICLES DO WE HAVE IN OUR PARK??

WELL, TOMORROW WE MOVE UP TO ST. STOMFLUTZ WHICH IS OVER THE MOUNTAINS....NOW, WILL YOU KINDLY TELL ME HOW WE'LL CARRY ALL THOSE USELESS SPARE PARTS OVER THEM ROADS!

ONLY 5 MORE MILES, JOE, AND WE'LL GO BACK FOR ANOTHER LOAD!...KEEP REPEATING IT!

PRIVATE DOPE!

I WILL NOT ORDER WHAT I DO NOT NEED. I WILL USE SNL'S. I WILL NOT....

Tank Instrum

Good advice on any engine, or you'll be Noah's ark in the great flood.

Whoa now! If you have a V8 or GM Diesel this gem shouldn't be on your plates. It's for radial and multi-bank engines only. Cranking clears the oil from the cylinders in case that old devil hydrostatic lock is hanging around. If you're in doubt as to how long the tank has been standing—CRANK or you may find yourself on the receiving end of a blown cylinder head. If she cranks hard, remove the spark plugs so the collected oil can escape.

An open circuit isn't going to help start any engine.

No fuel, no go, no nuthin' till you open those valves.

Naturally.

A richer mixture never hurt anyone on a cold morning.

Contact!

Opening the throttle will keep the engine from stalling so easily, but how in the hell are you able to tell when the throttle is 1/10 open? Just file a notch in the control lever at the 1/10 or 1/4 mark, whichever your plate says.

CAUTION TO ST

1. DO NOT PUMP THROTT
2. IF TANK HAS STOOD 6
3. CRANK ENGINE 50 TU
4. CLOSE BATTERY MAST
5. OPEN ALL FUEL TANK
6. SEE THAT GEAR SHIF
7. IF ENGINE IS COLD P
8. TURN ON IGNITION-BO
9. OPEN THROTTLE ONE
10. DEPRESS CLUTCH PED
11. PRESS STARTER AND
12. AND CONTINUE PRIMIN
13. CREATING RATE UNTI
14. SMOOTHLY

If she's gonna go, now's the time. You w have a booster switch on your V8 or Diesel (s may have, but it's just a decoration) so c tear your hair out looking for it. For the c engines it's necessary 'cause the magneto not develop enough current.

Instead of making your starter feel like it's c ing full pack on the double—you'll lighten load.

ment Panels

START ENGINE

ROTTLER BEFORE CRANKING
FOR 6 HRS. OR MORE HAND
TURNS
MASTER SWITCH
RANK VALVES
SHIFT IS IN NEUTRAL
D PRIME ENGINE
- BOTH MAGNETOS
ONE TENTH OPEN
PEDAL
AND BOOSTER SWITCHES
TIMING WHEN COLD AT DE-
UNTIL ENGINE OPERATES

This is to cool any engine down gradually, like you walk a horse around after a workout.

CAUTION TO STOP ENGINE

1. IDLE ENGINE FOR 5 MINUTES
2. RUN ENGINE AT 1000 R.P.M. TEN SECONDS.
3. OPERATE FUEL CUT-OFF SWITCH AND HOLD ON UNTIL ENGINE STOPS
4. TURN IGNITION SWITCH OFF

Most of your caution plates won't have this, but if they do, don't race your engine over that ten second period. The idea is to leave a thin coat of oil on the cylinders—not to undo all the good you've done by cooling your engine gradually.

Clear the fuel lines of any fuel so the engine won't keep running after you switch off the ignition.

That's all, brother.

We started out with the idea of giving you guys all the latest information on standardized caution plates telling how to start and how to stop the engines in your M4 series tanks. It took about 30 seconds of nosing around to find out that we weren't on the right track. There are almost as many caution plates as there are tanks.

The caution plates above may not be quite the same as you have in your tank because they're supposed to vary according to the type engine (V8, GM Diesel, multi-bank, or radial). Occasionally the plates get screwed up.

For example: we saw an M4A1 that had two different plates on how to stop the engine. Another example is the M4A6. We don't have to tell you that a radial or multi-bank engine has to be hand-cranked to prevent hydrostatic lock (collection of oil in the two lower cylinders after the tank has been standing a while). The M4A6 is a radial Diesel and you can't hand crank a Diesel. These engines have a manual control to release the oil that may have collected in those lower cylinders. The control isn't there as an added attraction; use it before starting your motor.

So we're telling you what to do and what not to do for your type of engine.

You won't
sel (some
so don't
the other
neto may

it's carry-
ghten the

How Tight Is Tight?

Soldier, if you're talking about nuts and bolts, you have the answer right in the palm of your hand!

When a tank loses its firepower in the midst of battle because the nuts and bolts holding the gun mounts are loose—or when a half-track or truck stops on the road to Berlin because loose cylinder-head gaskets are leaking—that's damn bad! All because you didn't know the answer to a simple little question about how tight is tight—until now. We're going to tell you. We're going to show you that you've got the answer right in your hands—where you can feel it even if you can't describe it.

All the torque wrenches and specifications; the whys, hows and whats on tightening nuts and bolts don't compare with the feel you can develop in your hands—the feel that answers the question—how tight is tight?

Not only can you feel that tightness, but you can see it. You can see it in terms of length, because it can be measured. When a bolt is tightened properly—when it's tight enough to hold the maximum load it was made to hold—it will be stretched. But we'll come to that later—let's begin at the beginning.

The right nut and bolt for each and every connection will do a flawless job—when it's tight. Hundreds of experiments have been made—sizes, locations, tension loads, external loads, fatigue strengths, stress changes, elasticity and elongation of nuts and bolts were studied in thousandths of an inch. The action and strength of metal that you can't see with naked eye was figured—making each bolt perfect for the job it has to do.

But, all this careful research means nothing—and those nuts and bolts are absolutely worthless—unless they're tightened prop-

erly. And you—with the power in your hands to make or break all the bolted connections on a vehicle—are responsible for the good—or bad—job they do. Your responsibility is greater than that of the metallurgist, the designer and all the processing a bolt gets before you even see it.

As we said before, when a bolt is properly tightened it will be

stretched. This stretch makes it tight by forcing the threads of the bolt against the threads of the nut—the pressure of thread against thread creates enough friction between the threads to hold the connection tight.

While a bolt is being tightened, it's pulling the bolt-head and the nut against the metal being connected—but, at the same time, the metal is pushing the bolt-head and the nut away. The bolt will never be tight unless the pull is as great as—or greater than—the push. And only when the bolt is stretched, is the pull on the bolt-head and the pull on the nut strong enough to fight the push from the metal in the connection.

You can be certain of the bolt's tightness by measuring this stretch—it's measured in relation

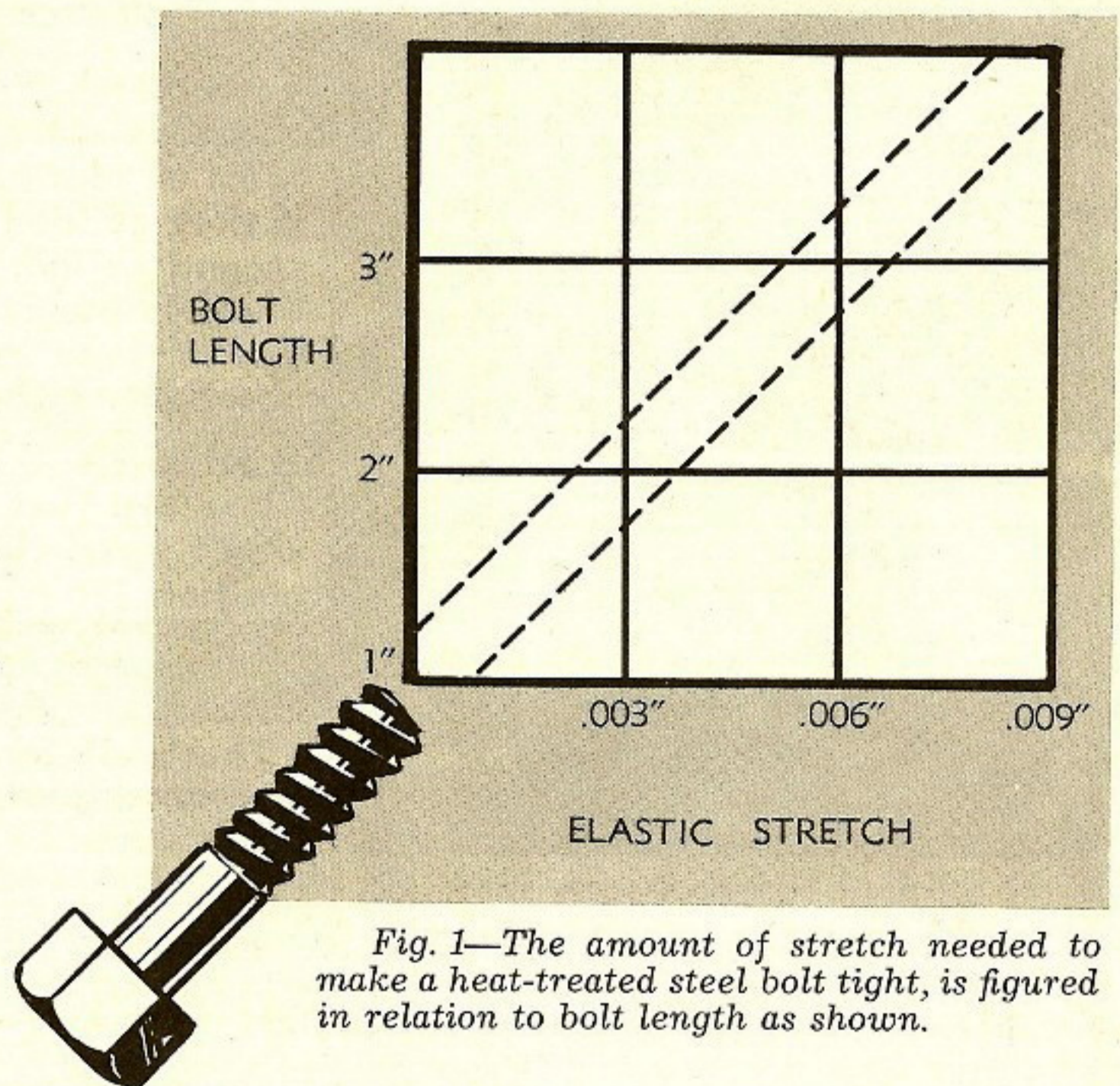


Fig. 1—The amount of stretch needed to make a heat-treated steel bolt tight, is figured in relation to bolt length as shown.

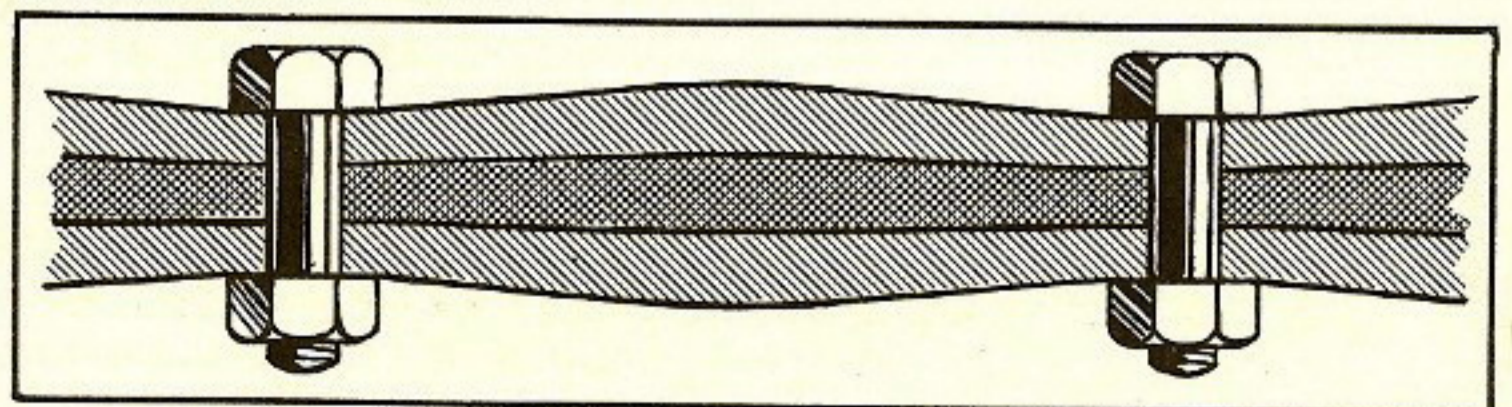


Fig. 2—Too-tight nuts and bolts look like this—too much squeeze ruined the plates.

to bolt length, no matter what the diameter.

A bolt that is 1" in length and $\frac{3}{4}$ " in diameter will have a greater duty to perform—a heavier load to support—than a bolt 1" in length and only $\frac{1}{4}$ " in diameter—but, the thinner bolt will have to be stretched **just as much** to perform its smaller duty, as the thicker bolt to perform its greater duty.

Take for example the elastic band that used to be in pajama pants (when you used to wear pajamas). It didn't matter if the band was $\frac{1}{2}$ " wide or 3" wide—it would have to be stretched the same amount in length to hold snug.

The diagram in Fig. 1 shows the elastic stretch range of a bolt in relation to its length. The stretch is called "elastic" because when the bolt is released from the connection, after having been tightened and stretched, it will return to its original length. Take those pajama pants again—they unstretched after you took them off, didn't they?

For each inch of bolt length, a properly tightened bolt will stretch **three-thousandths (.003) of an inch**. Thus, a two inch bolt will be .006" longer when tight—a five inch bolt will be .015" longer. This .003" of stretch for each inch of bolt length is the **ideal** amount. The stretch, however, can range anywhere from .002" to .004" for each inch of bolt length and still be elastic.

Beyond .004", a small amount of the stretch will become **permanent**. For example: the same pajama pants, around your wasp waist, weren't stretched too much—but if a 250-pounder wore the same pants they would be stretched beyond their elastic limit and wouldn't measure the same at the waist when he took them off. Some of the stretch would remain permanent and the pants would measure larger when unstretched.

This permanent stretch naturally **weakens** the bolt just as it would weaken the elastic band in the pants. And something else that weakens the bolt when it's

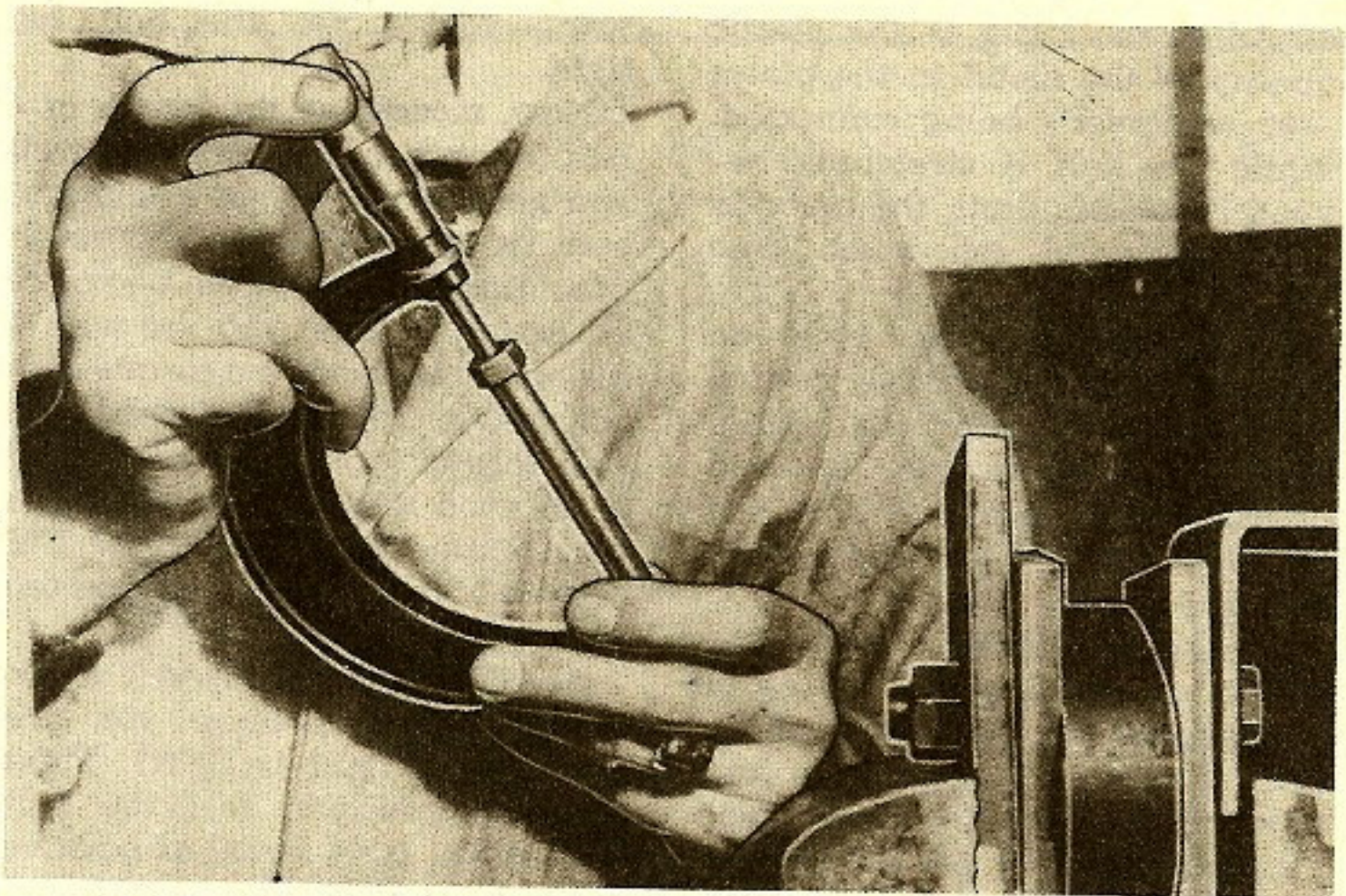


Fig. 3—Measure the bolt before tightening. Use a micrometer—or a caliper—just as long as you measure those thousandths of an inch. Remember the figure, or write it down.

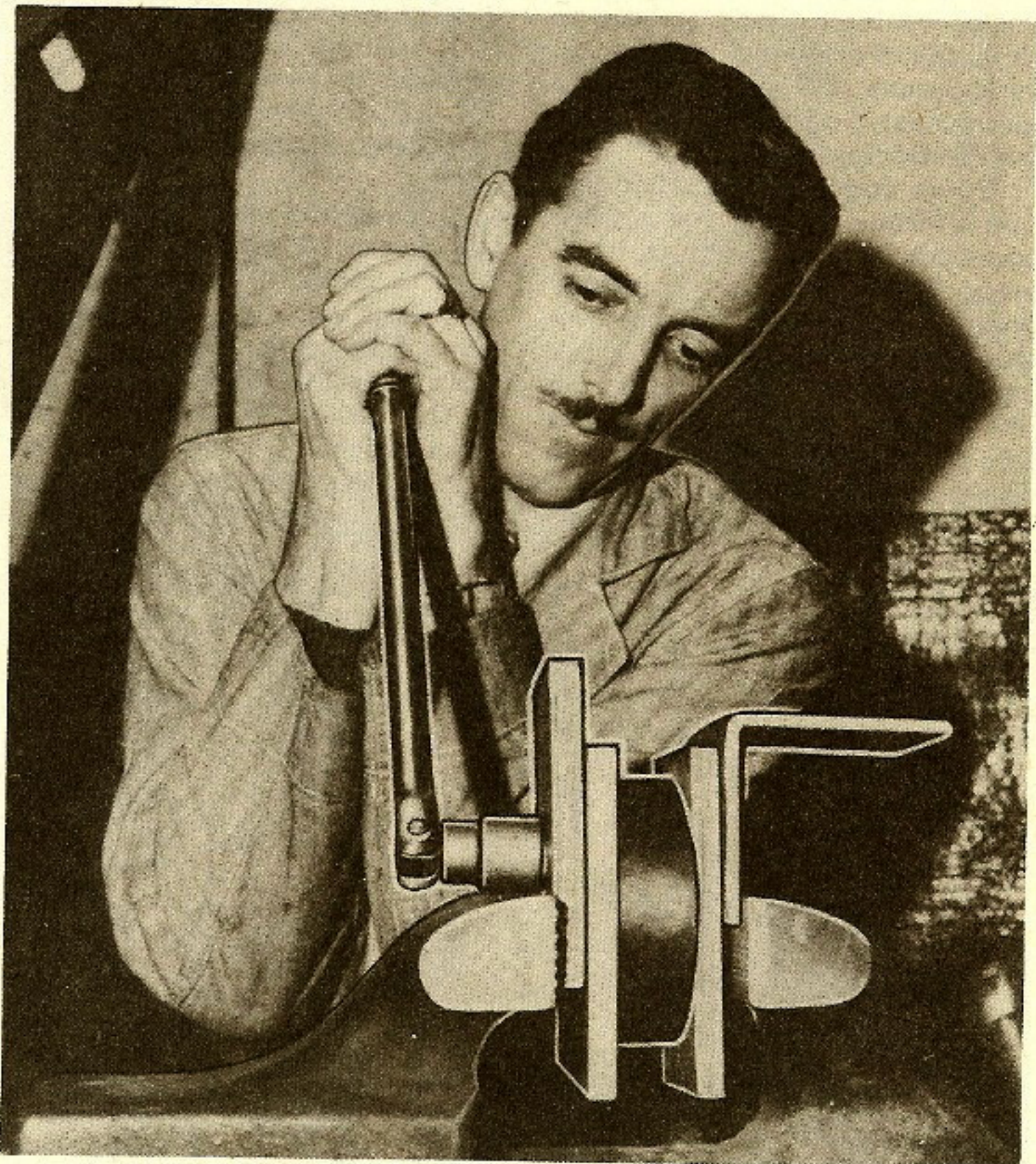


Fig. 4—The bolt is in the connection, complete with nut. You can use any old hunks of scrap-iron (as shown) for the connection. The leverage on the wrench is up to you and your strength.

stretched too tight, is the elastic quality of the metal in the plates—or whatever's being connected. While the bolt is stretching beyond its elastic limit, the metal is being squeezed too much (see Fig. 2).

Since the plates **do** have an elastic quality—the bolt is getting just that much additional strain from the **push** in the squeezed plates. Damn soon that bolt will get plain tired of the whole thing and give up.

The squeezing isn't doing the plates any good either—they'll keep some of the disfiguration after they're released from the connection. Wouldn't that 250-pounder have a bright red dent in his belly from the too-tight pants? And while a dent around his middle would disappear after a while because he's alive—a dent in the metal wouldn't disappear because it hasn't that living quality. So at the same time you're getting a permanent stretch in the bolt, you're ruining the plates.

If you aren't careful when you use a torque wrench, you get this same condition of too much tightness. Unless you apply a **steady pull** on a torque wrench—you don't get a correct reading. A jerk on the wrench won't register on the indicator, and by the time you get the reading up to where you

want—you've got the bolt **too tight**.

Now, **measuring** the length of a bolt for proper tightness is all well and good if you've got a micrometer to measure those thousands of an inch—if you haven't—you're no better off than you are with a torque wrench and no torque specifications. You know darned well that torque wrench in your hand is no good when you're staring a bolt in the face and all the TM says is, "insert bolt and tighten securely."

So this time you haven't a micrometer either—there you are again—how tight is tight? Tight is when you can feel the bolt stretching. It's a signal as positive as the blast of reveille. And somewhere—there's bound to be one in every outfit—is a man who knows how. A man who can feel, for all his brute strength, that little signal running through the bolt, through the wrench and up into his hands—telling him the bolt has been tightened just exactly right.

Are you that man? If you aren't—you **can** be. We can't **tell** you how to recognize the feel, but we can **show** you a way to **develop** it. Practice is what does it—and here's how.

The set-up is shown in the photographs. Borrow a microm-

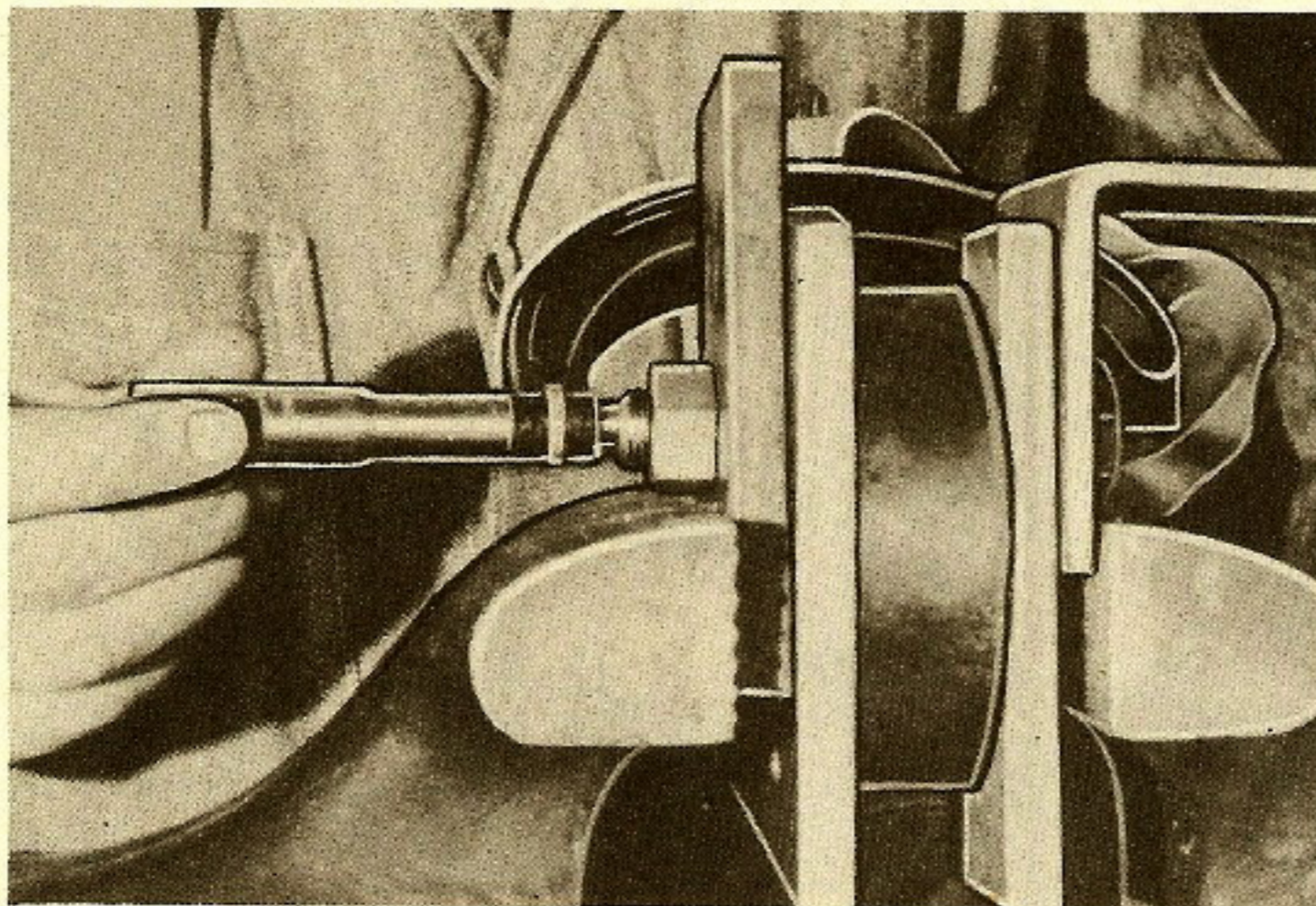


Fig. 5—When you think you "feel" the tightness—measure the bolt again. If the bolt has the right amount of stretch for its length—then what you felt was the real thing, soldier.

eter somewhere to do the measuring. Any old pieces of scrap iron into which you can insert a bolt will do for the connection—the nut and bolt, though, must be good, hard, heat-treated steel, which is standard equipment for critical assemblies.

A few things to check **before** beginning practice: the nut and bolt threads should be in good condition—**clean and lubricated**. This lubrication, if overlooked, is another thing that makes tightening with a torque wrench unreliable.

A torque wrench measures the friction between the nut and its threads and between the nut and the surface against which it's being tightened. If the threads are dry, this friction is about **seven** times as great—that's going to throw the fixed torque specification for that bolt way off. You'll get a correct **reading** on the wrench, but the bolt will be about 1/7th as tight as the torque wrench indicates.

If you're depending on the bolt **stretch** for tightness—the friction doesn't count. The only reason for lubing the threads in this case is to make the job easier and to keep the nut and bolt in good condition.

To get a true reading on the micrometer when you're measuring the bolt length, it's a good idea to **polish both ends** of the bolt with emery cloth or paper, and **get the surfaces smooth**. Maybe rough surfaces will throw the reading off only a few thousandths of an inch, but that's enough to snafu the whole deal.

Another thing that will take the joy out of feeling—is interfering motion of the vise itself, or of the connection in the vise. Fasten the connection for all you're worth and don't let the vise wiggle on the bench.

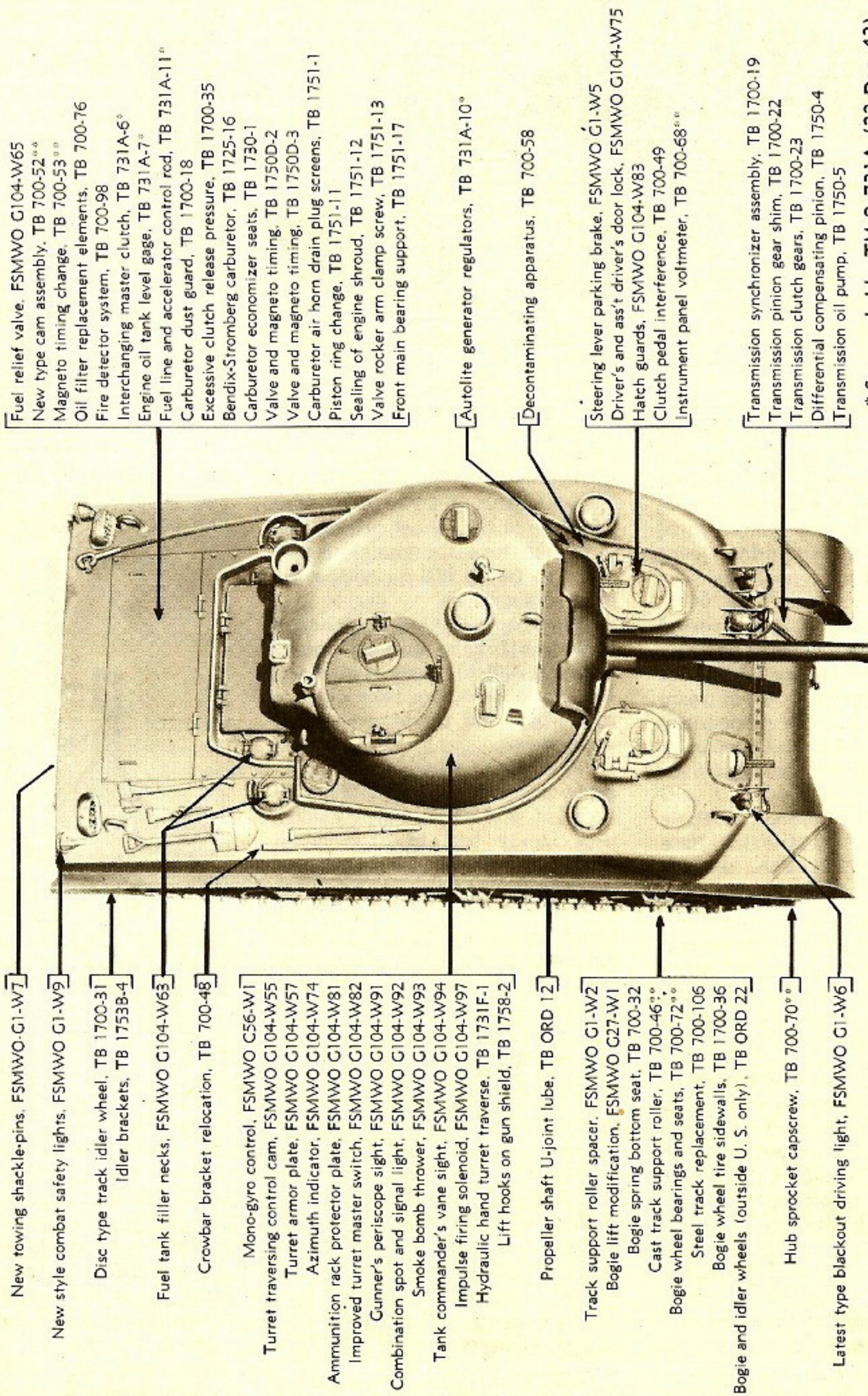
Now to begin operations. Measure the length of the bolt as shown in Fig. 3—write down the measurement if you can't keep it in your head. Bolt it up like you always do—insert the bolt, add the nut and tighten it finger tight, then use the wrench (Fig. 4).

The length of leverage used is up to you. You want to be sensi-

(Continued on last page)

How's Your Sherman, Herman?

If it's a Tank, Medium, M4—here are the visible changes that should have been made by now. Check your score—and chase whatever's missing.



- New towing shackle-pins, FSMWO G1-W7
- New style combat safety lights, FSMWO G1-W9
- Disc type track idler wheel, TB 1700-31
Idler brackets, TB 1753B-4
- Fuel tank filler necks, FSMWO G104-W63
- Crowbar bracket relocation, TB 700-48
- Mono-gyro control, FSMWO C56-W1
- Turret traversing control cam, FSMWO G104-W55
- Turret armor plate, FSMWO G104-W57
- Azimuth indicator, FSMWO G104-W74
- Ammunition rack protector plate, FSMWO G104-W81
- Improved turret master switch, FSMWO G104-W82
- Gunner's periscope sight, FSMWO G104-W91
- Combination spot and signal light, FSMWO G104-W92
- Smoke bomb thrower, FSMWO G104-W93
- Tank commander's vane sight, FSMWO G104-W94
- Impulse firing solenoid, FSMWO G104-W97
- Hydraulic hand turret traverse, TB 1731F-1
- Lift hooks on gun shield, TB 1758-2
- Propeller shaft U-joint lube, TB ORD 12
- Track support roller spacer, FSMWO G1-W2
- Bogie lift modification, FSMWO C27-W1
- Bogie spring bottom seat, TB 700-32
- Cast track support roller, TB 700-46**
- Bogie wheel bearings and seats, TB 700-72**
- Steel track replacement, TB 700-106
- Bogie wheel tire sidewalls, TB 1700-36
- Bogie and idler wheels (outside U. S. only), TB ORD 22
- Hub sprocket capscrew, TB 700-70**
- Latest type blackout driving light, FSMWO G1-W6
- Fuel relief valve, FSMWO G104-W65
- New type cam assembly, TB 700-52**
- Magneto timing change, TB 700-53**
- Oil filter replacement elements, TB 700-76
- Fire detector system, TB 700-98
- Interchanging master clutch, TB 731A-6*
- Engine oil tank level gage, TB 731A-7*
- Fuel line and accelerator control rod, TB 731A-11*
- Carburetor dust guard, TB 1700-18
- Excessive clutch release pressure, TB 1700-35
- Bendix-Stromberg carburetor, TB 1725-16
- Carburetor economizer seats, TB 1730-1
- Valve and magneto timing, TB 1750D-2
- Valve and magneto timing, TB 1750D-3
- Carburetor air horn drain plug screens, TB 1751-1
- Piston ring change, TB 1751-11
- Sealing of engine shroud, TB 1751-12
- Valve rocker arm clamp screw, TB 1751-13
- Front main bearing support, TB 1751-17
- Autolite generator regulators, TB 731A-10*
- Decontaminating apparatus, TB 700-58
- Steering lever parking brake, FSMWO G1-W5
- Driver's and ass't driver's door lock, FSMWO G104-W75
- Hatch guards, FSMWO G104-W83
- Clutch pedal interference, TB 700-49
- Instrument panel voltmeter, TB 700-68**
- Transmission synchronizer assembly, TB 1700-19
- Transmission pinion gear shim, TB 1700-22
- Transmission clutch gears, TB 1700-23
- Differential compensating pinion, TB 1750-4
- Transmission oil pump, TB 1750-5

* Superseded by TM 9-731A (23 Dec. 43)
** Included in TM 9-731A (23 Dec. 43)

Sorry our list couldn't quite Tell All. For details on the above additions, subtractions, and modifications, you'll have to consult the TB's and FSMWO's themselves. There are plenty of other TB's you should have seen, too—full of fascinating facts on M4 operation, identification, lubrication, adjustments, cautions, and assorted SOP's.

You'll find all these cataloged in the latest edition of OFSB 1-1, under "pertinent publications" for the Tank, Medium, M4. Anything else is impertinent, including that remark you just made about having so much to read.

CONTRIBUTIONS



Dear Editor,

We were unable to get new steering bell-crank bearings for the ¼-ton 4x4 and had almost stripped our salvage yard, before we discovered this way of repairing the bell crank. Since then, we've fixed over a hundred jeeps and have had no comebacks.

After removing the old bearing, press in a GMC front spring bushing, Part No. 1150005, and saw off the part which is sticking out of the bearing hole. Then ream the bushing to fit the pivot pin—this allows you to get a perfect fit whether the pin is worn bad or just a little.

T/4 Raymond E. Toole
3103rd Ord. Base
Arm. Veh. Mn. Co.

(Ed. Note—It's a good idea. We'll add that once the bushing's in, you drill a hole through the bushing at the grease fitting and then groove the inside of the bushing—so's the grease can flow around the pin.)

From a long list of suggestions, which S/Sgt. James Cease, 25th Ord. Co., MM, submits from overseas where he's "learned some of the peculiarities of U. S. Army vehicles," we've picked a few of the best:

"When we lack repair tape, we wrap torn generator and starter field coils with one-inch bandage and then coat it with shellac. Naturally we use more layers of bandage than of tape.

"I've often seen a mechanic ruin a GMC or Chevrolet rear brake-drum while trying to remove it

when the cylinder was frozen or there were broken adjusting cogs and scores in the drum (caused by the brake shoes catching). It's a cinch to remove the drum if you first take out the two capscrews which hold the wheel cylinder on and then turn the complete cylinder as far as it'll go with a ⅝" open-end wrench.

"Since salt-water corrosion causes sticking and sometimes makes it difficult to remove or use the pintle hook, we take out the pintle-pins and machine or grind them down.

"I've found that wrapping a screwdriver blade with 15 or 20 turns of #16 or #14 wire makes it a handy tool to have when working around distributors, starters, generators, etc. I connect the ends of the wires momentarily to a 6 or 12-volt battery, magnetizing the blade enough to aid in removing and replacing screws, washers, etc."

(Ed. Note—It's a practical suggestion; but be careful—you're liable to get burned.)

Dear Editor,

WD Circular No. 384 (rescinded by WD Cir. 202, 7 Sept. 43) and TM 31-200 say two types of tires shouldn't be mounted on the same vehicle, but they don't say anything about one type of tire having different tread patterns.

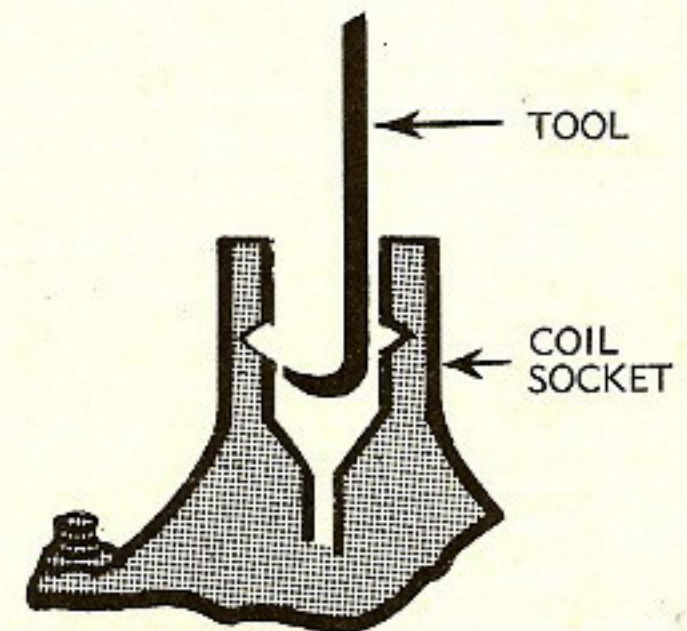
A new S-tread (7.50x20) is 2½" less in circumference and ¾" less in diameter than a new MS non-directional tire of the same size when mounted on a wheel with 55 pounds of pressure. So there's

enough difference in the distance of travel per revolution to cause wind up, scuffing and fast tread wear.

Many vehicles are coming into our camp with both tread patterns on the same vehicle, making tire rotation impossible, since the larger tire carries all the load when mounted in dual. We remove all of one pattern and are placing them together on one vehicle, and are putting the odd two or four tires on 1-ton trailers to save rubber. To say nothing of a few transfer cases, gears, etc.

L. J. Wickersham
Civilian Automotive Advisor

T/5 William Kendrick, H/S Co., 383rd Engr. Bn. incloses this sketch of a tool he uses to clean out the clip-type distributor and coil sockets when they're dirty and corroded. It's made from a



piece of baling wire, flattened at one end and bent up as in the Fig. File and round out the end like a spoon, and you have a gadget which not only scrapes the corrosion from the sides of the coil, but also dips out the waste particles which fall to the bottom.

Dear Editor,

I have just returned from a 16-months' tour of duty in Iceland. While there, I was a unit Motor Sergeant and was constantly plagued with water freezing in the gas. This water in the gas is common to that climate, due to atmospheric breathing of the containers.

However, I believe the problem should be attacked when the fuel is put into the vehicle. Inclosed is my idea of a device to exclude

water from the fuel as it is poured into the vehicle tank.

**T/4 Harold D. Blake
75th Infantry Division**

(Ed. Note—Sergeant Blake inclosed a drawing of a funnel-and-screen filter arrangement. However, we feel that whenever possible the time to eliminate water is when the fuel is drawn from storage tanks. Draw-off lines should be far enough above the bottom of the storage tanks to prevent water and dirt from coming out with the gasoline. That licks the problem (or helps to) right there, before the fuel gets near the vehicle fuel tank. In other words, if you keep water out of the big cans, you're less likely to find it in the little ones. While we're on the subject, we'll mention that another constant source of trouble are traps in the fuel lines. These traps are formed in manufacture by improper or sloppy installation and should be taken out by straightening or even by re-positioning the lines—the sooner the better.)

Dear Editor,

On the first monthly check made by this organization on two trucktractors, 4 to 5 ton, 4x4, COE Federal (Model 94 x 43) which we had received as substitute equipment, the spare tires mounted on

the spare tire rack behind the cab were found to be worn. The trucks had been driven 8,838 and 8,200 miles respectively when received and an additional 700 miles and 300 miles before the monthly check.

We found the worn spot on four tires was due to the weight of the tire resting wholly on the bottom plate of the spare tire rack. The "T" standard in back of the tire was used only to hold the tire in an upright position.

These tires were completely ruined.

A suggested modification is shown in the photo inclosed. We welded 1/2" steel plate, cut into the circular shape shown, against the horizontal part of the tire rack. The holding bolts were cut out and welded so they can be used to hold the tire on the plate, the plate supporting the weight of the tire. The horizontal support (on which the circular plate was mounted) was raised 4" by changing the bolts on the upright supports. The tires as now mounted do not touch the bottom plate of the spare tire rack.

Maj. J. H.

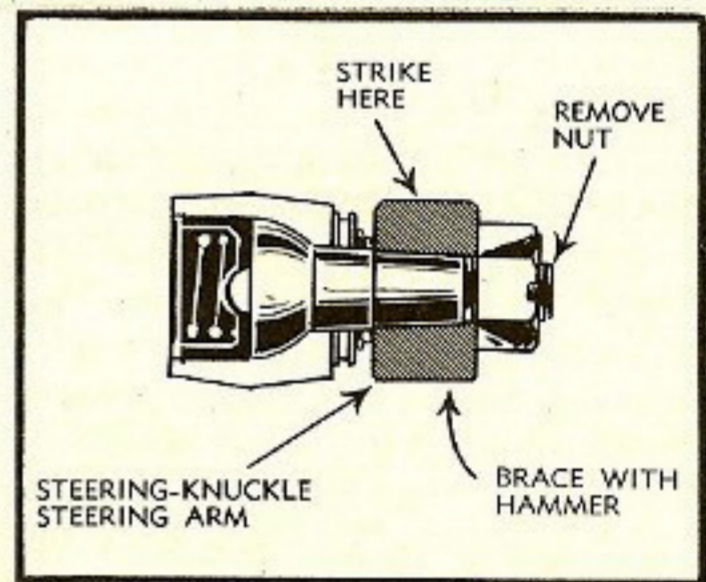
(Ed. Note—While we've never had a report of this happening on any of the other 150,000 spare-tire racks in the field, we are willing to be convinced. We have never

seen tires worn this bad except by being dragged on a locked wheel. But if it's happening as the Major says, his alteration is sound.)

Dear Editor,

Our mechanics have often found it necessary to remove the tie-rod end from the steering-knuckle steering-arm on Dodge vehicles; but they've found it a tough job because of the tight fit and tapered construction.

Lt. H. Soule, Operations Officer here, points out that a sharp blow with a hammer (at the spots indicated in the inclosed sketch)



will loosen the tie-rod end. The tie-rod end nut gets removed first, though. Of course, you'll steady the steering-knuckle steering-arm (damn nomenclature, anyhow) to prevent distortion. I might add that the same procedure can be used for similiar ball-stud assemblies on other vehicles.

**Lt. Edward R. Stanko
Tank Destroyer School**

Dear Editor,

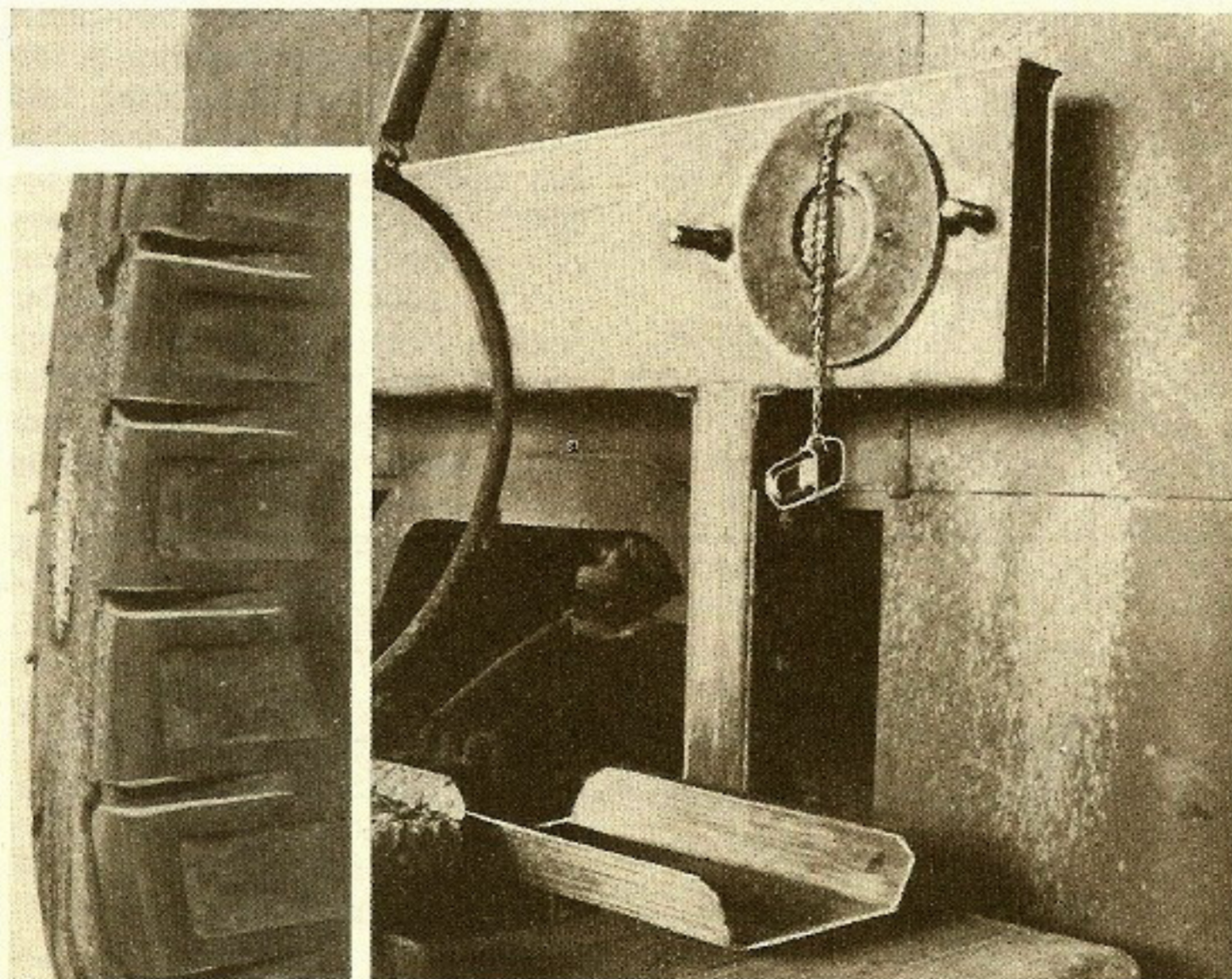
With apologies to the designer of the Collar, Throttle Control, Part No. 375437 on GMC vehicles, we've come up with an emergency version of it.

It's made by drilling a small hole in the terminal nut of a decapitated, worn-out sparkplug. For a set screw use the section of the stud you got when you cut the sparkplug. With a hacksaw, slit one end, so you can use a screwdriver on it.

We also make a little loop on the end of the throttle control wire to prevent losing the collar, should the setscrew come loose.

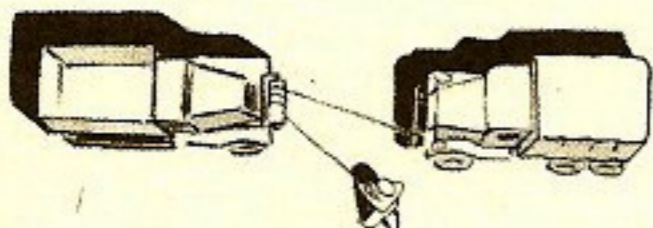
This gadget can also be used on the Chevrolet.

**Pfc. Jerome J. Winkler
706th Ordnance Co.**



Recently we got some new half tracks and found that the front rollers were frozen tight, so we worked out the following procedure for loosening them.

We first oiled the bearings and then fastened a strong rope to the tow hook of a truck, wrapped the rope around the frozen roller several times, and had one of the fellows pull at the other end.



Then, as the truck moved slowly back and forth, the fellow also moved back and forth and the roller was loosened. Maybe the drawing makes it more clear. This was not only a fairly easy process, but it didn't harm the roller.

Cpl. Chas. H. Creamer
Hq. Btry. 796

(Ed. Note—The bearings on the front rollers are apt to become rusty or dirty when the roller's not used much. Oiling them with engine oil every thousand miles will prevent them from freezing again.)

Dear Editor,

In your December issue there was an article on the production of plated brake-wheel-cylinder parts on the GMC. We don't feel justified in replacing the present

cylinders since the procedure we're using has eliminated most of our trouble with them.

As fast as we can get to the vehicles which haven't been serviced or given a 6000, we pull the wheels, clean the brakes and backing plates. We then paint the backing plate to prevent damage from moisture, rust, or dirt. After thoroughly cleaning the brake cylinder, we put a thin coat of water pump grease on the outside end of the cylinder and on the inside of the cylinder-end cover, (being careful not to slop any inside the cylinder or on the rubber cups), and on the adjusting screw.

We check these points every thousand miles by turning the adjusting nut five or six notches to make sure it hasn't stuck; then we turn it back to the original setting so that the brake adjustment isn't disturbed.

Leslie T. Brown
Civilian Automotive Advisor

(Ed. Note—Your idea is good—but we suggest you leave the greasing of parts out—too apt to gum up the works.)

Dear Editor,

We have a good way for installing and timing distributors on GMC and Chevrolets which have a tongued distributor shaft driving the oil pump.

We proceed with the installation of the distributor the regular way, disregarding whether or not the tongue of the shaft fits into the slot in the oil pump shaft. We then locate the position of the rotor and the No. 1 segment on the distributor cap.

With the distributor clamp loose, one man steps on the starter while another pushes down on the distributor. As the distributor shaft turns, the tongue lines up with the

slot in the oil pump shaft and drops into place.

After tightening the distributor clamp, we connect the neon timing light with the No. 1 cylinder, start the motor and set the timing in the usual manner.

Lt. John N. Harmon
45th QM Truck Regiment

Dear Editor,

The removable combination headlight and blackout lamp on the M5 and M9 half tracks has given us a lot of trouble when driving over rough terrain. The contact prongs are worn thin by the joggling of the vehicle. Result: a poor connection and lights blinking off and on. We remedied this by simply building up the prongs with solder.

Lt. Fred A. Pollack
Co. A, 66th Arm. Inf. Bn.

(Ed. Note—Apparently you've got the early M5's and M9's; since April 1943, a spring-loaded, ratchet-type screw has been used in production. We've had no complaint on these later models.)

Dear Editor,

I have a gadget that I think the fellows in the field might be able to use. It's made from a six-inch steel scale, and is very handy and accurate in cutting out circles with a cutting torch.

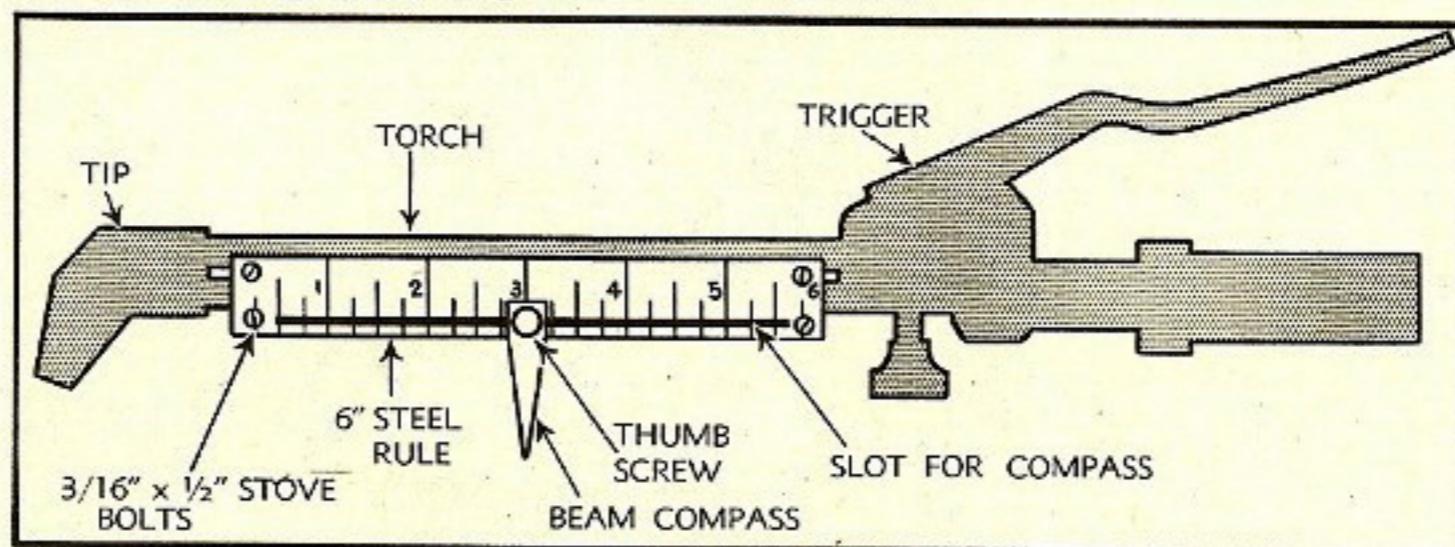
This little jig gives the operator of an acetylene torch additional control which enables him to follow the line to the letter, and thereby avoid burning away of any unnecessary metal due to the torch straying off the scribed line.

Emil Gross
Co. B, Maintenance Bn.

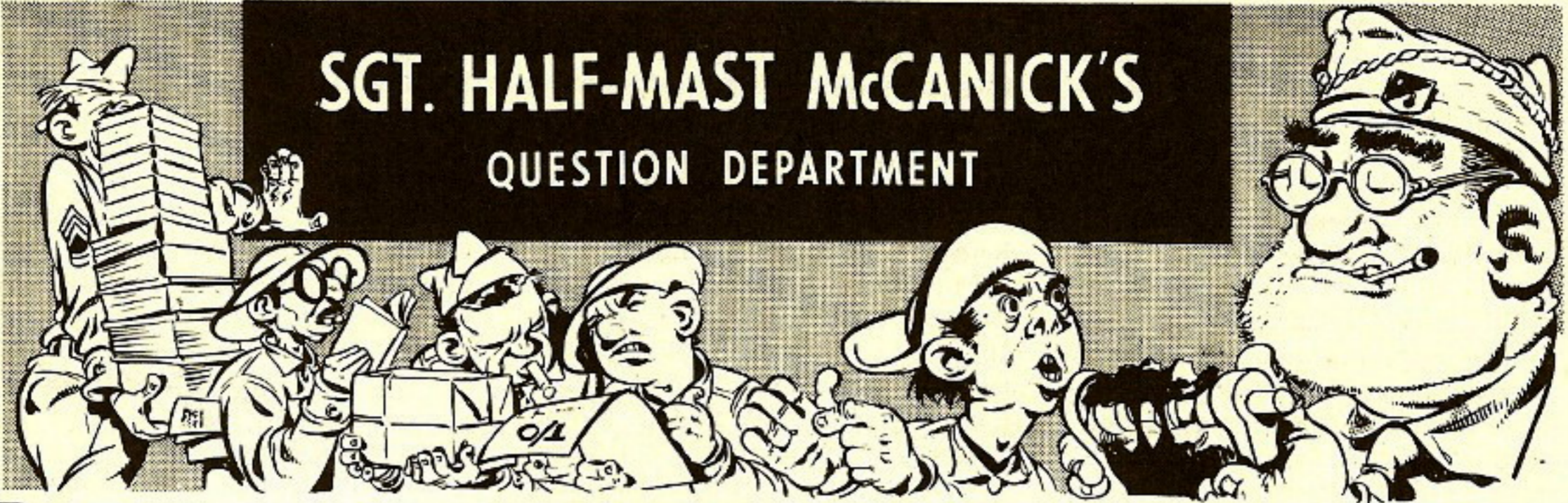
(Ed. Note—If you do enough work of this nature you'll find the time well spent making up this little gadget for your cutting torch.)

ARE YOU A GENIUS?

Or maybe just a plain common-sense guy who has worked out a way to do your job easier and better? You got any tricks of your trade? Many of the contributions and suggestions sent in by the boys in the field have won the admiration of the engineers and technicians at the top of the automotive show. Show the world you're on the ball and help the other guys in the field. Friends, motormen, countrymen, lend us your ideas. If we like your idea, you'll get a personal subscription to **ARMY MOTORS**.



SGT. HALF-MAST McCANICK'S QUESTION DEPARTMENT



Dear Half-Mast,

During the last two months we've been in the midst of an epidemic of clutch trouble on the GMC 2½-ton CCKW.

We find almost every clutch with a broken diaphragm spring, but are unable to find the cause of the trouble.

Could it be green drivers, faulty material, or wrong adjustment? We're making clutch adjustments to comply with GMC Maintenance Manual, TM 10-1501.

Sgt. H. J. R.

Dear Sergeant,

It's easy to see why you're having trouble with the clutch diaphragm spring, if you're still using TM 10-1501 as your guide. The manual you **should** be using is TM 9-801 (12 April 43), complete with instructions for adjusting GMC clutch pedal free-play at 2½", instead of the former 1".

The change prevents flexing of the clutch diaphragm spring fingers beyond the point necessary to release the clutch—which was making the spring break.

GMC clutch pedal free-play is being set at 2½" at the factory and when new facings are installed. Keep it there as long as you get good clutch release.

Of course, as the clutch facings wear and the diaphragm spring fingers get closer to the throwout bearing, the amount of pedal free-play is automatically reduced.

When you don't get full release of the clutch, then adjust the pedal free-play until you get it. When you find it'll have to be below 1", it's time to have new facings put on the clutch disc—which isn't a 2nd-echelon job.

Loosen the check nut on the adjusting link and turn the adjusting nut to get the correct play. Then turn the check nut back up against the adjusting nut to hold the adjustment.

Half-Mast

Dear Half-Mast,

The battalion motor officers keep asking me why our Field Artillery battalion, 105 MM, has no 4-ton wreckers—and I'm passing the buck to you. The last time we were on maneuvers we certainly could have used a 4-ton wrecker, as we had a devil of a time with a converted 2½-ton job.

Lt. M. J. S.

Dear Lieutenant,

If I was Mandrake, the Magician, I'd reach right into my back pocket and pull out a nice, shiny 4-ton wrecker for you—but I ain't. Instead, I'll have to try to tell you why you haven't got the vehicle you want.

The main reason is that there aren't enough 4-ton wreckers to go around, so the outfits that need the vehicles bad are given priority over those outfits that only use them once in a while.

4-ton wreckers are furnished to using organizations as listed in the Tables of Organization and Equipment; but if you're absolutely sure you need one, you can recommend through channels that the TO/E be changed—giving actual cases and reasons why you could use the 4-ton job.

Half-Mast

Dear Half-Mast,

Can't some definite procedure be set up for filling out the GI driver's license (WD OO Form No. 7360, old WD QMC Form No. 228, Army Motor Vehicle Operator's Permit)?

We can't find any specific instructions for filling out this form, so every time a unit moves from a tactical to a non-tactical situation, or vice versa, new permits have to be issued. Of course, the POM's require that identification of unit be removed from the permits when a unit moves overseas—but we're still without instructions for here in the states.

Why not leave those spaces calling for organization, station and place blank for security reasons? And why not substitute Army Serial Number instead?

Second: Do any states authorize men in the armed forces to use the GI license in place of civilian permits on their private cars?

Third: Is there any authority for servicemen to use last year's civilian permits instead of applying for new ones in their present location or sending home for new ones?

WOJG I. E. M.

Dear Mr. M.,

I've stopped over fifty guys from trying to find out just what the deal is on Operator's Permits—and it's always the same. Most guys carry the old form—QMC 228 which still calls for organization, station and place; while the few No. 7630's which I saw, simply call for name, rank and serial number.

What most guys haven't real-

ized is that when the old QMC 228 was changed to an Ordnance number, the form itself was revised. And what's confusing the whole works is that most permits in the field today are still the old 228's—even though you call them Form 7360's. Take another look at the number on yours.

WD Circular 329 (20 December 43) says that organization and station data will be blacked out on GI Licenses before overseas movement; and even though it specifies Form 7360, it must mean Form 228. Because on the 7360's I saw, there was no such thing to black out.

I hope the next batch of Operator's Permits you get will be the gen-u-wine 7360's. In the meantime, you'll just have to black out or simply not fill in all the unit identifications.

In order to give you really solid answers on your other two questions, I'd have to write to all 48 states—and you ain't gonna ask me to do that, are you? Especially when the auto club (AAA) in the city nearest your post has any information you want about civilian permits—at least for the state you're in.

Half-Mast

Dear Half-Mast,

I'd like to know the regulations on parking fuel trucks at airfields.
S/Sgt. A. E. K.

Dear Sergeant,

The best answer I can get for you is in Army Air Force Regulation 85-6, paragraph 1b (3 May 43):

"Gasoline trucks, whether load-

ed or empty, will neither enter nor be stored in hangers; nor will they be parked within a distance of 100 feet of hangars, paint and dope shops, fuel storage systems, or other critical installations except for the time necessary to load or unload their cargo."

Further information on parking, for all Army vehicles, is in TM 10-460, "Driver's Manual." Further information on fuel truck handling is in FM 25-10, "Motor Transport," appendix V. Then you might read up on gasoline-handling precautions in AR 850-20 if you want the whole story.

Half-Mast

Dear Half-Mast,

What bad effects, if any, will result from mixing OE-10 and OE-30 to get OE-20?

Is there any Army regulation or directive prohibiting mixing of lubricants?

What are the reasons for using or recommending OE-20?

Is GO 80-140 still issued? A recent circular mentions GO 80-90; yet TM 9-801, TM 9-808 and related charts don't mention either one.

Lt. C. T., Jr.

Dear Lieutenant,

I can't say that anything awful will happen by mixing OE-10 and OE-30. On the other hand, I won't guarantee what SAE range you'll get by mixing them—but it ain't likely to be OE-20.

And I don't know of any directive prohibiting mixing different grades of oil, but I do know that the TM's specify SAE 10, SAE 30 or SAE 50. Then there's AR 850-

15 that says only prescribed lubes will be used. (Hate to drag out the law on you, sir.) Of course, there were some older TM's that called for other grades—but they've all been superseded.

Any guys who want to use OE-20 probably have a hangover from civilian days or else they're still using superseded manuals.

Half-Mast

Dear Half-Mast,

While working for the Armored Force Testing Board, I noticed a jar of large white crystals, which were used (I imagine) to prevent corrosion or to replace grease on battery terminals.

I've heard that some new substance is now used on battery posts—could it be the crystals I'm trying to identify?

Cpl. J. B.

Dear Corporal,

Those white crystals you saw were probably plain old sal soda—used to neutralize battery acid. Dissolved in water, sal soda's great for washing tops of batteries, terminals and battery holders to remove corrosion. But I still stick to using grease to prevent corrosion on battery posts.

You can find Soda, Ash, Type I listed in SNL K-1—it'll do the same job as sal soda. Put enough in the water so there's some of the soda left undissolved in the bottom of the mixing container. Item stock number is K001-10-96630 for a one lb. package; K001-10-96635 for a 100 lb. box or drum.

Half-Mast

Dear Half-Mast,

Over here in Italy we've found that on ¼-tons the No. 1 needle and seat assembly in the Carter Carburetor Model No. WO 539s float circuit was causing a lot of trouble. A bakelite needle is now used in place of the metal ones that were on the first models. I can understand the needle and seat wearing in due time causing the carburetor to flood out, but we've had cases like this with the bakelite needle when the vehicle only has 5,000 or 7,000 miles.

Who does the chaplain see when he's got trouble?

Half-Mast. Who's the original answer man? Half-Mast. Who hates chicken and never gives a T. S. Slip? Half-Mast. Something going wrong that you can't figure out? Is there something you wanta know? Ask the sarge. His time is your time and he'll drive himself crazy getting you an answer. Write "Dear Half-Mast," Army Motors Magazine, Office, Chief of Ordnance-Detroit, Detroit 32, Michigan.

Why the change from metal to bakelite, and what is the advantage of it?

Sgt. C. K. S.

Dear Sergeant,

I don't think there was any advantage to the bakelite needle except that metal just wasn't to be had and the best substitute was used—bakelite. Now the situation has eased up and the metal needle is back in production.

Half-Mast

Dear Half-Mast,

We'd like to find out why the maintenance manuals on lubrication of the 1/4-ton Ford and Willys differ as to correct wheel-bearing grease. TM 10-1349 (Ford) shows #3 Army Spec. 2-110 for wheel bearings. TM 10-1513 (Willys) shows CG #1 Army Spec. 2-107 for wheel bearings.

We've found that even on desert operations, the #3 Army Spec. 2-110 seemed too heavy and caused bearing scuff.

Civilian Automotive Advisor
W. E. P.

Dear Advisor,

The differences have been corrected in the current WD Lubrication Guides for these jeeps. The lube now specified is neither CG-1 or WB-3, but WB-2 (Grease, general purpose, No. 2-U. S. A. Spec. 2-108).

This oughta standardize 1/4-ton lubrication.

Half-Mast

Dear Half-Mast,

Recently one of my drivers reported a little play in the steering gear of his Willys 1/4-ton. After completing the adjustment so that we had the proper amount of drag at high center, according to the manual, we found the wheels were turned about 10° left.

I checked a couple of more jeeps and discovered they were the same way—what's the reason?

T/4 H. A. B.

Dear Sergeant,

Drag out your manual again and I'll try to put my greasy fingers on the trouble. TM 10-1513 (1 September 43) says, "Install

pitman arm to lever shaft so that the line across the face of arm and end of shaft correspond, with the ball end down." Later in the instructions: "When installing the steering wheel the steering gear should be at its mid position when the front wheels are in the straight ahead position."

It looks to me like you overlooked one of these two things. If the lines match up, you're in mid position on the steering gear and the wheels should be straight ahead; but if the lines don't match (and there's a chance they won't), just disregard them and use the mid-point of the steering gear in a straight position.

In case you don't know how to check the mid position of the steering gear without removing the gear housing cover, turn the steering wheel as far as it'll go to the right and then as far as it'll go the left, counting the total number of turns. Now turn the wheel back one-half of the total number and the gear will be in mid position. Simple—huh?

Could also be that the pitman arm is bent or that the grooved end of the lever shaft assembly is twisted. Then, too, the ball seats in the steering connecting rod might be out of place because

of mud and dirt packed in behind them. This would stop the safety plugs and ball seats from going back far enough (making the rod too long).

Half-Mast

Dear Half-Mast,

In your November issue, the article on "Hydraulic Fluids" states that all FLUID, Brake, Hydraulic, will be under Spec. 2-111A.

The Parts Common Manual has always listed FLUID, Brake, Hydraulic, under Class 51-H as Spec. ES-377B. All brake fluid I've ever seen coming through automotive channels has had this Spec. ES-377B.

Civilian Automotive Advisor
T. C. B.

Dear Mr. B.,

Like we said, FLUID, Brake, Hydraulic, is now being procured and issued under U. S. A. Spec. 2-111A. Spec. TAC ES-377B (the one you're familiar with) was rewritten into 2-111A. So don't worry your busy head about it. All materials issued under either specification are similar and can be used interchangeably.

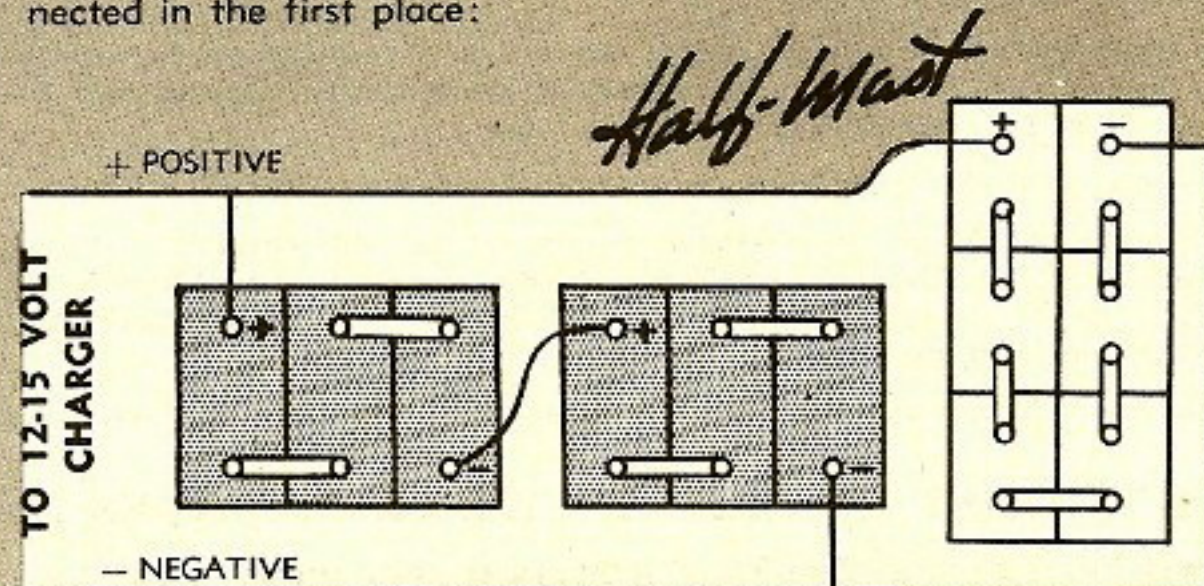
Half-Mast

BATTERY HOOK-UP MIX-UP

We've been giggling ourselves like game little soldiers ever since we released Fig. 1 on page 347 of the March issue.

That diagram of a parallel charging arrangement might well have been captioned: "How to burn out 6-volt batteries in one easy lesson." Well we learned our lesson—that hook-up was dead wrong, and don't ask us how it happened.

If you were about to drop a correction in the mail, thanks just the same. Here's the way those batteries should have been connected in the first place:



Install

The Month's Directives

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

WAR DEPARTMENT AGO PUBLICATIONS

AR—Army Regulations
FM—Field Manual
TM—Technical Manual

TC—Training Circular
WDC—War Department Circular

Distributed through Post Adjutants by AG Depots in each Service Command:

594-596 Commonwealth Avenue, Boston 15, Mass.
111 Eighth Avenue, New York 11, N. Y.
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Distributed to AAF Activities by Publications Distribution Branch of Area Air Service Commands (see AAF Reg. 5-9).

Distributed outside Continental United States by Ports of Embarkation.

Ordnance TM's and FM's distributed in Central Pacific Area by Ordnance Officer, CPA (see address below).

ORDNANCE FIELD SERVICE PUBLICATIONS

FSMWO—Field Service Modification
Work Order
OFSE—Ordnance Field Service Bulletin
TB—Ordnance Field Service Technical
Bulletin

SNL—Standard Nomenclature List
List of All Parts (LAP)
Organizational Spare Parts and
Equipment (OSPE)
Service Parts Catalog (SPC)

Distributed through Ordnance Officers by AG Depots listed above.

Overseas units (other than Central Pacific Area) with San Francisco APO's request on Publications Supply Officer, Overseas Supply Division, Warehouse B—Oakland Branch, San Francisco Port of Embarkation, Oakland, Calif.

Central Pacific Area units request on the Ordnance Officer, Hq. U. S. Army Forces, Central Pacific Area, APO 456, % Postmaster, San Francisco, Calif.

Overseas units with Seattle APO's request on Military Publications Supply Officer, Ordnance Unit, Overseas Supply Division, Seattle Port of Embarkation, Warehouse No. 7, Seattle 4, Wash.

Overseas units with New Orleans APO's request on The Adjutant General Publications Supply Officer, New Orleans Port of Embarkation, Poland and Dauphine Streets, New Orleans 12, La.

Overseas units with Miami APO's request on Atlanta AG Depot (address above).

Overseas units with New York APO's request on (a) the Ordnance Officer, Ordnance Section, Hq. MBS, Depot 150-0, APO 600, c/o Postmaster, New York, N. Y., if located in territory served by this APO, and (b) on New York AG Depot (address above) if located elsewhere.

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

**OFFICE, CHIEF OF ORDNANCE-DETROIT, DOES NOT
DISTRIBUTE PUBLICATIONS TO THE FIELD**

ARMORED CARS

CAR, ARMORED, LIGHT, M8
TB 705-13, Engine interchangeability.

SCOUT CARS

CAR, SCOUT, M3A1
TB 705-13, Engine interchangeability.

GUN MOTOR CARRIAGES

CARRIAGE, MOTOR, 75-MM
GUN, M3
TB 710-22, Fuel filter.

CARRIAGE, MOTOR, 75-MM
GUN, M3A1
TB 710-22, Fuel filter.

CARRIAGE, MOTOR, 105-MM
HOWITZER, M7
FSMWO G128-W15, Canvas top.

CARRIAGE, MOTOR, 75-MM
HOWITZER, M8
FSMWO G127-W10, Differential bushings.
SNL G-127, OSPE, C2 (3 Dec. 43).

CARRIAGE, MOTOR, 3-IN. GUN,
M10

FSMWO G130-W15, Azimuth indicator.
FSMWO G130-W16, Stowage for grousers.
SNL G-130, OSPE, C1 (20 Dec. 43).

CARRIAGE, MOTOR, 3-IN. GUN,
M10A1

FSMWO G170-W8, Stowage for grousers.
FSMWO G170-W11, Azimuth indicator.

CARRIAGE, MOTOR, 155-MM
GUN, M12
SNL G-158, ORD 7, OSPE (8 Jan. 44).

CARRIAGE, MOTOR,
MULTIPLE GUN, M13
TB 710-22, Fuel filter.

CARRIAGE, MOTOR,
MULTIPLE GUN, M14
SNL G-147, Vol. 5, OSPE, C1 (12 Jan. 44).

CARRIAGE, MOTOR,
MULTIPLE GUN, M15
TB 710-22, Fuel filter.

CARRIAGE, MOTOR,
MULTIPLE GUN, M15A1
TB 710-22, Fuel filter.
SNL G-102, Vol. 16, OSPE, C3 (21 Dec. 43).

CARRIAGE, MOTOR,
MULTIPLE GUN, M16
TB 710-22, Fuel filter.
SNL G-102, Vol. 14, OSPE (29 Nov. 43).

CARRIAGE, MOTOR,
MULTIPLE GUN, M17
SNL G-147, Vol. 6, OSPE, C2 (12 Jan. 44).

CARRIERS

CAR, HALF-TRACK, M2
TB 710-22, Fuel filter.
SNL G-102, SPC (30 Sep. 43).

CAR, HALF-TRACK, M2A1
TB 710-22, Fuel filter.
SNL G-102, SPC (30 Sep. 43).
SNL G-102, Vol. 2, OSPE, C2 (25 Dec. 43).

CARRIER, PERSONNEL,
HALF-TRACK, M3
TB 710-22, Fuel filter.

- CARRIER, PERSONNEL, HALF-TRACK, M3A1
TB 710-22, Fuel filter.
SNL G-102, Vol. 4, OSPE, C2 (25 Dec. 43).
- CARRIER, 81-MM MORTAR, HALF-TRACK, M4
TB 710-22, Fuel filter.
- CARRIER 81-MM MORTAR, HALF-TRACK, M4A1
TB 710-22, Fuel filter.
SNL G-102, Vol. 6, OSPE, C1 (28 Dec. 43).
- CARRIER, 81-MM MORTAR, HALF-TRACK, M21
TB 710-22, Fuel filter.
- CARRIER, CARGO, M30
SNL G-158, ORD 7, OSPE (8 Jan. 44).

HALF-TRACKS

(See Individual Vehicle Listings)

LIGHT TANKS

- TANK, LIGHT, M3A1
TB 726C-3, Magneto timing.
SNL G-103, Vol. 5, OSPE (17 Dec. 43).
- TANK, LIGHT, M3A3
TB 726C-3, Magneto timing.
SNL G-103, Vol. 7, OSPE (2 Dec. 43).
SNL G-103, Vol. 7, OSPE, C1 (2 Dec. 43).
- TANK, LIGHT, M5
FSMWO G103-W34, Transfer unit.
TM 9-732, Operation and maintenance (27 Nov. 43).
- TANK, LIGHT, M5A1
FSMWO G103-W34, Transfer unit.
TM 9-732, Operation and maintenance (27 Nov. 43).
TB 727C-15, Turret traversing mechanism.
- TANK, LIGHT, T9E1
TM 9-724, Operation and maintenance (17 Nov. 43).
SNL G-148, OSPE, C2 (22 Dec. 43).

MEDIUM TANKS

- TANK, MEDIUM, M3A1
SNL G-104, ORD 7, Vol. 12, OSPE (22 Dec. 43).
- TANK, MEDIUM, M3A2
SNL G-104, ORD 7, Vol. 12, OSPE (22 Dec. 43).
- TANK, MEDIUM, M4
FSMWO G104-W74, Azimuth indicator.
FSMWO G104-W93, Smoke bombs.
- TANK, MEDIUM, M4A1
FSMWO G104-W74, Azimuth indicator.
FSMWO G104-W93, Smoke bombs.
- TANK, MEDIUM, M4A2
FSMWO G104-W74, Azimuth indicator.
- TANK, MEDIUM, M4A3
FSMWO G104-W74, Azimuth indicator.
FSMWO G104-W93, Smoke bombs.
SNL G-104, Vol. 8, OSPE, C2 (19 Jan. 44).
- TANK, MEDIUM, M4A4
FSMWO G104-W74, Azimuth indicator.
- TANK, MEDIUM, M4A6
FSMWO G104-W74, Azimuth indicator.

HEAVY TANKS

- TANK, HEAVY, M6
SNL G-118, ORD 7, Vol. 1, OSPE (24 Dec. 43).

TRUCKS

- TRUCKS, DODGE
SNL G-657, SPC, Master parts book (1 Dec. 43).
- TRUCKS, GMC
SNL G-655, SPC, Master parts list (1 Nov. 43).
- TRUCKS, INTERNATIONAL
SNL G-659, SPC, Master parts book (15 Sep. 43).
- TRUCK, 3/4-TON, 4x4 (DODGE)
FSMWO G502-W7, Top deck replacement.
SNL G-502, OSPE, C2 (17 Jan. 44).
- TRUCK, BOMB SERVICE, M6 (CHEVROLET)
FSMWO G85-W14, Winch replacement.
- TRUCK, 1 1/2-TON, 4x2 (CHEV. 4403, 4408, 4409 and 4412)
TM 10-1678, Parts list (1 Jun. 43).
- TRUCK, 1 1/2-TON, 6x6 (DODGE)
SNL G-507, OSPE, C1 (22 Jan. 44).

**IS YOUR
Vehicle TM
UP-TO-DATE?**

As you can see by these lists of Directives, new vehicle Technical Manuals keep coming out all the time—but they're seldom for new types of vehicles. The TM for **your** vehicle may have been superseded by a newer edition—which is something you should get your grasping mitts on.

So, if you see a TM listed here for your vehicle, check our date against the date on your well-thumbed TM. If the one we list is **later**, requisition a copy through your Post Adjutant. Specify the **date** of the manual you want, so you'll be sure to get the new one. And turn in the old one when you do.

You can't have an up-to-snuff vehicle without an up-to-date TM.

- TRUCK, 1 1/2-TON, SMALL ARMS REPAIR, M1 (GMC)
SNL G-72, C3 (17 Jan. 44).
- TRUCK, 2 1/2-TON, 4x2 (MACK)
SNL G-624, ORD 7, OSPE, (30 Dec. 43).
- TRUCK, 2 1/2-TON, 4x2 (FEDERAL)
TM 9-821, Operation and maintenance (9 Oct. 43).
- TRUCK, 2 1/2-TON, 6x4 and 6x6 (GMC)
TB 801-7, Spring stop bracket.
- TRUCK, AMPHIBIAN, 2 1/2-TON, 6x6 (GMC)
FSMWO G501-W20, Engine hatch cover seal, etc.
FSMWO G501-W23, Tire inflation device.

- TRUCK, 2 1/2-TON, SMALL ARMS REPAIR, M7 and M7A1 (GMC)
SNL G-138, Vol. 2, OSPE, C2 (2 Jan. 44).
- TRUCK, 2 1/2-TON, SPARE PARTS, M14, LOAD A (GMC)
SNL G-144, Vol. 1, OSPE, C2 (23 Dec. 43).
- TRUCK, 2 1/2-TON, MACHINE SHOP, M16 and M16A1 (GMC)
SNL G-146, Vol. 1, OSPE, C2 (24 Dec. 43).
SNL G-146, Vol. 3, OSPE, C2 (24 Dec. 43).
SNL G-146, Vol. 4, OSPE, C2 (24 Dec. 43).
SNL G-146, Vol. 5, OSPE, C2 (9 Jan. 44).
- TRUCK, 2 1/2-TON, MACHINE SHOP, M16 and M16A1, LOADS B, B-1, B-2 (GMC)
SNL G-146, Vol. 2, OSPE, C2 (24 Dec. 43).
- TRUCK, 2 1/2-TON, ELECTRICAL REPAIR, M18 and M18A1 (GMC)
SNL G-149, OSPE, C1 (25 Dec. 43).
- TRUCK, 2 1/2-TON, INSTRUMENT BENCH, M23 and M23A1 (GMC)
SNL G-178, OSPE, C1 (22 Dec. 43).
- TRUCK TRACTOR, 4-5-TON, 4x4, COE (FEDERAL)
SNL G-513, OSPE, C1 (28 Jan. 44).
- TRUCK TRACTOR, 4-5-TON, 4x4, COE, 1941-42 (AUTOCAR)
SNL G-510, ORD 7, OSPE (25 Dec. 43).
SNL G-510, ORD 7, OSPE, C1 (25 Jan. 44).
- TRUCK TRACTOR, 5-TON, 4x2 (INTERNATIONAL MODEL KR-11)
TM 10-1687, Operation and maintenance (17 Apr. 43).
- TRUCK, 7 1/2-TON, 6x6, PRIME MOVER, W/WINCH, 1943 (MACK)
FSMWO G532-W1, Boot for rear brake chambers.
SNL G-532, OSPE, C2 (17 Jan. 44).
- TRUCK, CARGO, 10-TON, 6x4 (MACK)
FSMWO G528-W1, Boot for rear brake chambers.
- TRUCK, WRECKING, HEAVY, M1 (KENWORTH, WARD-LAFRANCE)
SNL G-116, Vol. 1, OSPE (16 Dec. 43).
SNL G-116, ORD 7, Vol. 2, OSPE (16 Dec. 43).
- TRUCK, WRECKING, HEAVY, M1 (CORBITT)
SNL G-63, OSPE (15 Dec. 43).

TRACTORS

- TRACTOR, HIGH SPEED, 13-TON, M5
TM 9-786, Operation and maintenance (19 Nov. 43).
- TRACTOR, HIGH SPEED, 18-TON, M4
TM 9-735, Operation and maintenance (1 Nov. 43).
SNL G-150, ORD 7, OSPE (30 Dec. 43).

TRAILERS & SEMITRAILERS

- TRAILER, BOMB, M5
SNL G-74, OSPE, C2 (20 Dec. 43).

SEMITRAILER, 3½-TON PAYLOAD, STAKE & PLATFORM
FSMWO G1-W11, Conversion into 2½-ton spare parts unit.

SEMITRAILER, 6-TON PAYLOAD, COMB. ANIMAL & CARGO

FSMWO G1-W12, Conversion into 4-ton spare parts unit.

SEMITRAILER, VAN, 6-TON GROSS (TRUCK ENGINEERING MODEL 2SF)

TM 10-1675, Maintenance and parts list (27 May 43).

MOTORCYCLES

MOTORCYCLE, CHAIN-DRIVE, SOLO (HARLEY-DAVIDSON MODEL WLA)

TM 9-879, Operation and maintenance (18 Oct. 43).

SNL G-523, SPC (30 Oct. 43).

PASSENGER CARS

CAR, PASSENGER (PLYMOUTH P14)

TM 10-1690, Parts list (15 Nov. 43).

GENERAL

FM 30-40, Recognition manual, armored vehicles (3 Nov. 43).

TC 8, List of publications (1 Feb. 44).

TM 9-2810, Motor vehicle inspections and preventive maintenance services (21 Oct. 43).

WDC 42, Controlled items of equipment (1 Feb. 44).

WDC 47, Motor vehicle assemblies (2 Feb. 44).

WDC 49, Use of WD AGO Form No. 478 (3 Feb. 44).

WDC 65, Petroleum products responsibilities (12 Feb. 44).

WDC 67, Ordnance materiel, maintenance responsibilities (14 Feb. 44).

WDC 78, Issue of cleaning and preserving materials for Ordnance materiel (22 Feb. 44).

WDC 85, Authorized stock levels (25 Feb. 44).

OFSB 1-1, Sec. 1-8, Index to Ordnance publications (1 Jan. 44).

OFSB 1-1, Sec. 9-14, Index to Ordnance publications (1 Jan. 44).

ORD 2, OPSI (1 Jan. 44).

TB 1, War Dept. TB's for OFSTB's.

SNL G-1, Major items, automotive and semiautomotive (7 Dec. 43).

SNL G-27, Vol. 1, Tools, maintenance for repair of automotive vehicles (15 Dec. 43).

SNL G-27, Vol. 1, C1, Tools, maintenance for repair of automotive vehicles (1 Jan. 44).

SNL N-19, C1, Tool sets, motor transport (31 Dec. 43).

CONNIE RODD [Continued from page 7]

Putting Back the M4 Escape Hatch

If you're the type of tankman smart enough to keep your escape hatch oiled and tested, you won't have any trouble taking it out. It'll work slick when you need it. The only griping we hear against giving the hatch a dry run is about the hatch being hard to get back in. Here's an easy way. Get one guy to crawl under the tank and loop a rope through the two handles on the hatch. Pass the rope up to a guy standing in the tank. One hoists, one pushes up. A little jiggling and see if the hatch won't snap in place.

No Replacement Shafts for Windshield Motors, GMC 2½-ton

What are we supposed to do when a windshield-wiper motor from a GMC 2½-ton 6x6 needs a new shaft? Several companies in the field want to know. The story is some of the units have requisitioned the regular windshield-wiper-motor repair kit, but the kit didn't include the shaft they needed. So they want an answer. Well, I don't want to be fussy, but they shouldn't have requisitioned the kit. The few the Army has in stock are needed by higher echelons for overhauling the motors. Company or regimental maintenance just call for exchange-

ing the old windshield motor for a new one. No repairs. They are right about the shaft, though. There are none in the kits. You see, when higher echelons get back motors that need new shafts, they don't overhaul them. They just cannibalize them for spare parts.

Units Overseas Who Have M8 or M20 Armored Cars

I can hardly believe my eyes. The infallible Lube Guides . . . the always perfect Lube Guides have a typographical error. The Guide for the M8 and M20 Armored Car (dated 10-20-43) says to drain the crankcase every 6000 miles. That's 6 times too long, as you've probably guessed. It should be every 1000 miles. Look at your Guide under the heading of Crankcase, Drain. If it's got 6 there scratch it out. Put in a 1 to stand for draining the crankcase each 1000 miles.

QM Takes Over Dry Cleaning Solvent

Solvent, Dry Cleaning, now belongs to QM. From here on—procurement, storage and issue of this much-used solution is on their shoulders. The Federal Specification is PS 661 and 661A, Ordnance Stock Number K-001 10-96685, 96688, and 96690.

There's a certain amount still

on hand at various Ordnance Supply Depots, and requisitions will be filled from there 'til present supplies are gone. Future shipments will be made from QM issue points.

Here's a check list of Ordnance Depots, and QM Depots so you can chase it down when you want it.

Former Ordnance Issue Points
Anniston and Augusta Ordnance Depot
Benicia and Mt. Rainier
Raritan Arsenal
Blue Grass and Rock Island
Ogden
San Antonio Ordnance Depot
Letterkenny Ordnance Depot

New QM Issue Points
Atlanta ASF Depot
Mira Loma QM Depot
New Cumberland QM Depot
Memphis ASF Depot
Utah ASF Depot
San Antonio ASF Depot
Jersey City QM Depot

Connie Slips Up

Last month I made a mistake. I told you to requisition two parts—a ball and a spring—to fix up each headlamp plug on a half-truck, tank, or armored car so the plug would stay in the socket. ("Busted Headlight Lenses" — page 324.) Well, I was right on the number of the ball (Ord. Part No. CCAX1E, or GMC No. 147489), but only half right on the number of the spring. I had one number of the GMC Part No. a little twisted. The complete and correct deal is: Ord. Part No. A281402, or GMC No. 551946. If you've already requisitioned them, you don't have to worry. You'll get the right parts because of the Ordnance numbers. If you haven't requisitioned the parts yet, use these corrected numbers. Forgive me?

PERPETUAL INDEX

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

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SUPPLY	336	295, 3C, 4C	264, 274, 282, 283, 3C	232, 240, 244, 246, 249	204, 3C			107	92	3C		361
TIRES	324, 333	303, 308, 311	282, 288	245, 247, 4C	214, 217	177	133, 155	102, 128, 3C	77, 88, 95	39, 48	32	354, 372
TOOLS	342, 350	309, 314, 315, 3C	271, 272, 277, 278, 282	230, 248	213, 215, 219	169, 176	144, 146, 153		84, 3C	58, 60, 3C	7, 8, 20	354, 368, 374
TRACK	350	306, 315	268, 288	228	196, 217, 3C	169, 3C	3C	101, 102, 3C	69, 72, 96	36, 3C	3C	
TRAILERS	343, 352	318	286	254	222	190		120		57	21, 30	367, 3C
TRAINING	321	2C, 293, 320, 4C	2C	254	222		133, 138	111				378
TRANSFER CASE			263	227, 236		180	133, 154	104, 105, 106	67, 82			360
TRANSMISSION		311		227, 230, 235, 236		3C	133, 135, 149, 156, 3C	102	90	57	18	359
TURRET		295		229			133, 135			3C		
VESICANTS		311			224					46		
WHEELS	344	303	278, 282	256	197, 215	161				57		353, 358, 361, 372
WINCH	325	312	278	245	200, 218	170	134, 135, 136, 137, 152, 154			60	22	353, 367

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

HOW TIGHT IS TIGHT?

(Continued from page 20)

tive to the tightness of that bolt, so the wrench length should be in proportion to your strength. If 220 lbs. of GI is playing with the wrench, he won't need as much leverage as a 110-pounder would. Just practice a while—you'll find the right leverage.

At a certain point of tightness, you should be able to recognize the secureness of the bolt. Maybe this is the point at which you **think** the bolt is tight—or at which you **used** to think the bolt was tight. But this is just about where the stretching will begin (you're right at the end of the bolt in Fig. 1) and although the bolt is not properly tight—it is by no means loose.

A bit more pull and you should **feel** it—you should feel the stretch. It's like an inward pull from the bolt—like a tug of resistance—it's as though the bolt were trying to push the wrench back where it came from. When this happens, that bolt has just **exactly** the right amount of tightness.

Pick up the micrometer and measure the bolt again as shown in Fig. 5. If you had the right

feeling, the bolt will be between .002" and .004" longer, per each inch of original bolt length (the figure you couldn't keep in your head), than it was when you started. If it **isn't**, you haven't got the right feeling yet—try again. And **keep** trying until you **have** developed the feel for tightness.

While you're in the practicing stage—remember that if the bolt is tightened **too** much, you'll go past its elastic limit and the bolt will **retain** a small amount of permanent stretch after it's released from the connection. The bolt has only so much elasticity—and each time it's permanently stretched, that elasticity gets used up a little more. When this happens, it becomes harder to stretch. If the elastic band in those pajama pants had **less** stretch quality—less elasticity—it would take more pull to make them fit, wouldn't it?

If this permanent stretch in the bolt is **added** to each time you over-shoot the right amount of tightness, the elasticity is getting less and less—and every time you try to tighten the bolt it will take more grunting before you feel the necessary stretch to **make** it tight. You will also feel the same stretch at maybe .002" per each inch of bolt length, that you felt at .004" **before** the bolt was permanently stretched. It doesn't matter, though, **when** you feel it as long as you feel it—and as long as **what you feel is proper tightness**—the right amount of stretch.

We know what you're thinking, soldier—but it can be done. **We know it can be done because we did it.** And it's a wonderful feeling to know you needn't put your trust in the accuracy of a torque wrench for bolt tightness, when you have a more accurate gadget—your hands.

You can show someone else the tricks of the trade when you know how—and until you know how—someone who does know can show you. The important thing is that **there is an answer to, "How tight is tight?"** and now you know it—

you know that any tanks or half-tracks or trucks you work on aren't going to stop dead and crumble in the middle of an attack because a few nuts and bolts are on the loose. You've got the answer—in your hands—use them.

PERISCOPE

(Continued from page 1)

The Army is ordering this change on all M4's. In present production, they're putting on the setup you see in Fig. 2—lug, spring, and plate. They're having the device installed on tanks now stored for shipment.

But if you're overseas now, and having trouble with your 75mm—use your Yankee ingenuity. Make this field fix and you'll have an M4 with a fast-acting gunner's periscope that's accurate and follows the gun like a shadow. Then you'll be calling your shots again.

DOUSE THAT LAMP!

That LAMP is that "List of Automotive Maintenance Publications"—a wee bonny booklet put out in December '42 by the Maintenance Engineering Unit, Halabird Ordnance Base, Baltimore, Md. It so happens that Baltimore is about the only thing mentioned which hasn't been superseded long ago.

But we get lots of evidence that lots of those little pamphlets are still floating around, giving people bum steers on publications. If there's a copy floating near you—sink it. The list is absolutely obsolete.

For up-to-date references on automotive maintenance, see the latest FM 21-6 and OFSB 1-1.

VEHICLE DENSITY REPORTS

Vehicle Density Reporters, take note: Changes 3 to AR 850-15, dated 23 February 44, call for reactivation of the celebrated Vehicle Density Report. CO's of all posts, camps, and stations (including class I, II, III, and IV installations) will again report all Ordnance vehicles on hand at the end of each calendar quarter. Vehicles are to be listed by their USA registration numbers—on a locally reproduced form as pictured in AR 850-15, C3.

Reports will be submitted through ASF Service Commands to the Office, Chief of Ordnance-Detroit, Detroit 32, Michigan. They're due from posts, camps, and stations by the 3rd day of the month following each quarter—and from Service Commands by the 10th.

So the first report, for the quarter ending 31 March 44, should be in—let's see, what time is it now?

• • NEWS FLASHES • •

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

Preventive Maintenance Service Work Sheets (WD, AGO Forms No. 461, 462, 463), were hard and fast. You had to go through maintenance services on the 1000-mile, or 6000-mile, or 50-hour, or 100-hour mark—depending on the vehicle. Not any more says TB 9-2810-1. On wheeled and half-track vehicles (WD, AGO Form No. 461), you can do maintenance service either at 1000 miles or **monthly**, 6000 miles or **6 months**. On full track vehicles (WD, AGO Form No. 462), you can go through the maintenance service either at 50 hours or **500 miles**, 100 hours or **1000 miles**. On motorcycles (WD, AGO Form No. 463), you can perform the maintenance service either at 1000 miles or **monthly**.

* * *

Joe Dope has a wonderful time confusing the depots by scratching down "Paint" on a requisition, then hoping to get the kind he needs. If it's olive-drab paint for vehicles you want, ask for this: Synthetic ENAMEL, lusterless olive drab, Item Stock No. K001-10-23465 (in 1 gal. cans), Item Stock No. K001-10-23470 (in 5 gal. cans). SNL K-1 (now being revised) takes up several pages telling about all the different kinds of paint. Unless you ask for exactly what you want you're likely as not to get back paint for ammunition, or for bombs, or for camouflage, or for targets.

* * *

If you've got a 1½-ton 4x4 truck, Chevrolet—any kind: dump, tractor, panel, cargo, telephone earth borer, telephone maintenance, with winch, without winch—you've probably been carrying around a lot of excess publications baggage. All you need are two publications: the vehicle manual TM 9-805, and the SNL G-506. They supersede this pack of maintenance manuals: TM's 10-1127, 10-1203 and changes, 10-1431, 10-1461, 10-1557, 10-1559; and this pack of parts lists: TM's 10-1126, 10-1208, 10-1284, 10-1414, 10-1438, 10-1430, 10-1460. Order TM 9-805 and SNL G-506, and throw the rest away.

Same applies to the ¼-ton 4x4 jeep, quotes WD Cir. 92. Three parts lists: TM's 10-1206, 10-1348, and 10-1512 are all superseded by SNL G-503. Part with these three parts lists and order the new SNL.

* * *

Don't get a surprised look on your face if you find the old civilian automotive advisor from your unit popping up when you get overseas. It's legal now under WD Circular 98, 8 March 1944. The advisors can go overseas when they're asked for by the theater commanders. If you're keeping up to date on the advisor program, dig a copy of Cir. 98 out of your Adjutant's IN basket. The circular rescinds parts of WD Circular 252 (Civilian Employee) issued last year.

* * *

One of the Army's largest trucks—the Tank Recovery Truck-Tractor M26—has been put out of action by a tiny item like bolts shearing off the rim flange of the wheels. The bolts popped off because some guy hadn't tightened them **uniformly**. That's a crime. There's a lot of strain on these bolts. Unless they're **all** tight, the few tighter ones take the rap and break. It won't happen when you tighten them right. With a regular socket wrench, go round the rim flange for or five times till all the bolts are tight as you can make them. With a torque wrench the torque should be between 250 to 300 ft.-lbs. But tight UNIFORMLY! (See page 18.)

* * *

One part of the vehicle manual on the T70 (recently changed to M18) Gun Motor Carriage—Fig. 63 on page 73, TM 9-755—tells you to put SAE 10 in the differential. **That's wrong**. If you've been using SAE 10, drain it out. Flushing isn't necessary this time . . . just drain. Refill with Engine Oil SAE 50 if the temperature's 32 degrees or more; with Engine Oil 30 if the temperature's anywhere from 32 degrees down to zero. (Authority: TB 9-755-9).

To hell with the gas-house gang!

Too many T/O's take that attitude toward drivers and mechanics... writes Major A. E. A.

“I don't play a violin, but during these past two years I've grown hair long enough to really let it down and cry my eyes out.

Here's the deal. Since September '42, I've been in two Infantry Divisions and seen more and more demands placed on maintenance personnel. Yet, less and less is being done toward giving them a shot in the arm. Motor Officers and Maintenance Officers have to fight with everyone from the Company or Battery Commander on up, to get time and consideration to train maintenance personnel and vehicle drivers.

Who's trying to fool who? Ratings are piled high in the line outfits—to hell with the gas-house gang at the Motor Pool! They're just a necessary evil. Why are Master Training Schedules from higher headquarters leaving out allotted time to train maintenance personnel and drivers?

Half the time, Motor Officers and Maintenance Officers are considered as over-age in grade T/5's and are not even consulted on what they need for training. The S-3 takes care of that. The Motor Pool jokers are an outcast organization—maintenance gets what's left after all other training is set.

Why? This automotive equipment is Army equipment—same as a rifle, cal.

.30, M1903, and a damn sight more expensive. These officers who think monetary value is “zero,” will, after this is over, wish they had blown another horn when they start digging.

This recent rating jump in the Infantry line outfits has caused no end of discontent. Many good mechanics who have leadership ability are slowly being drawn from the Motor Pools into the various Infantry squads because of the chance for advancement. Drivers, too, are being taken away from driving in the same manner.

What will be the result of this rating situation in the end? A few good mechanics of the go-getter type will stay, but mostly SSME's (Semi-Seated Mechanical Engineers) will prevail. And as for drivers—wow! We'll be constantly reminded of the good old days of cracker-jack drivers that were on the ball.

I have dialed 7000 so much that my finger is down to a nub—and my T/S card is punched out. On bended knee, I ask for more incentive for a man to want to be in maintenance and to drive in an Infantry Division.

Driving is a big responsibility from a monetary and physical standpoint. Every driver should at least be a T/5 by T/O. Start a crusade for the old maintenance gang and we'll back you up all the way. ”

You said it, Major. We couldn't say it better.