# ARMY MOTORS

VOLUME 5 AUGUST 1944 NUMBER 5

## Combat-Size

You are now reading the "pony"—or pint-size—edition of ARMY MOTORS. About three months ago, we published a pony edition for overseas distribution to get more copies of the magazine, faster, to the theaters of operation. We ran a questionnaire in the first couple issues to give the workingman overseas a chance to tell us what he thought of the midget book. He liked it. As a matter of fact, he liked it better than the regular size book. His opinion was that it was easier to carry and work from under combat conditions. "Makes a more compact file and believe me, space is at a premium in our outfit." "Easier to handle in the field." "It fits the dash compartment." "Can be carried in a field jacket pocket."

One man writing from the Normandy front line said, "I'd better write right now and tell you that I think the little book has good camouflage value—in the place where I am, tomorrow may be too late."

All this sounded like a directive—the man in the field was pointing the way. Next thing you know we were asking each other could we take a dare—could we make the USA edition pony-size—**combat-size,** seeing how the boys on the line talked about it. Well, two and two makes four, and the paper shortage makes six, and here it is, ARMY MOTORS, combat-size.

We save 18,580 pounds of paper a month with the little book, or an annual paper saving of 111 tons! We save 59,200 cubic feet of shipping space per edition!

Besides the giant economy (and don't think we don't feel patriotic as hell about it) we, like most of the people in the field who've seen it, are tickled silly with the new little book. It's fightin' size. "Fits easy in a .014 mechanic's tool kit," another letter from overseas says. Carries easy, easy to work from, files easy. Why didn't we think of this before!

ARMY MOTORS, combat-size, is the same magazine it's always been, containing the same fat amount of automotive maintenance dope and hot news—99% of it fresh from the troops or rooted out, investigated, and prepared by the home team. The only difference is in the size.

Take it away, Chum, it's all yours. If you got any more suggestions, leave us hear from you.

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**ARMY MOTORS is published monthly in the interest of organizational maintenance by the Preventive Maintenance Branch, Maintenance Division, Office, Chief of Ordnance-Detroit.**

**ARMY MOTORS is glad to get your ideas for articles or illustrations, and is glad to answer your questions. Just write to: ARMY MOTORS MAGAZINE, Office, Chief of Ordnance-Detroit, Detroit 32, Michigan.**

# TANDEM HITCH

## A NEW HOOK-UP COUPLES TWO JEEPS TOGETHER TO SERVE AS A PRIME MOVER FOR THE 105MM HOWITZER

The ¼-ton jeep is about to blossom out as a full-blown prime mover for the 105mm howitzer and similar pieces of heavy equipment. Not one jeep but two jeeps, hooked together by means of a new **tandem hitch,** will do the job formerly the exclusive business of the 2½-ton truck.

The tandem hitch (Fig. 1) has been alloted to certain Field Artillery, AA, Airborne, and other units on T/O&E's. It is now available in kits to units authorized to get it by their T/O&E. Requisition **hitch, tandem for ¼-ton 4x4 truck, Fed. Stock No. 8-H-1825.** Any questions on issue or availability of the kit can be answered by the Tool and Equipment Distribution Unit, St. Louis Ordnance Depot, St. Louis, Missouri.

Installation instructions on the hitch come with every kit. Installation takes less than an hour; here's about what you do: since the hitch includes a special bumper, take the present bumper off your jeep and throw it into salvage. Place the tow bar and frame bracket assembly of the hitch in position over the frame bumper gussets and, using the nuts and bolts that held the old bumper, hook up the hitch.

To keep the hitch up out of the way when the jeep is used solo, the kit contains a bracket (Fig. 2) which attaches to the jeep's grill.

Because the loads that will be towed with the new tandem set-up put an extra strain on pintle hooks, the pintle hooks of all jeeps hitch-equipped, must be reinforced. The kit contains a reinforcing plate.

Last but not least is a caution plate for the driver (Fig. 3). Mount this on the instrument panel. The caution plate warns the driver not to go over 30 mph in tandem over

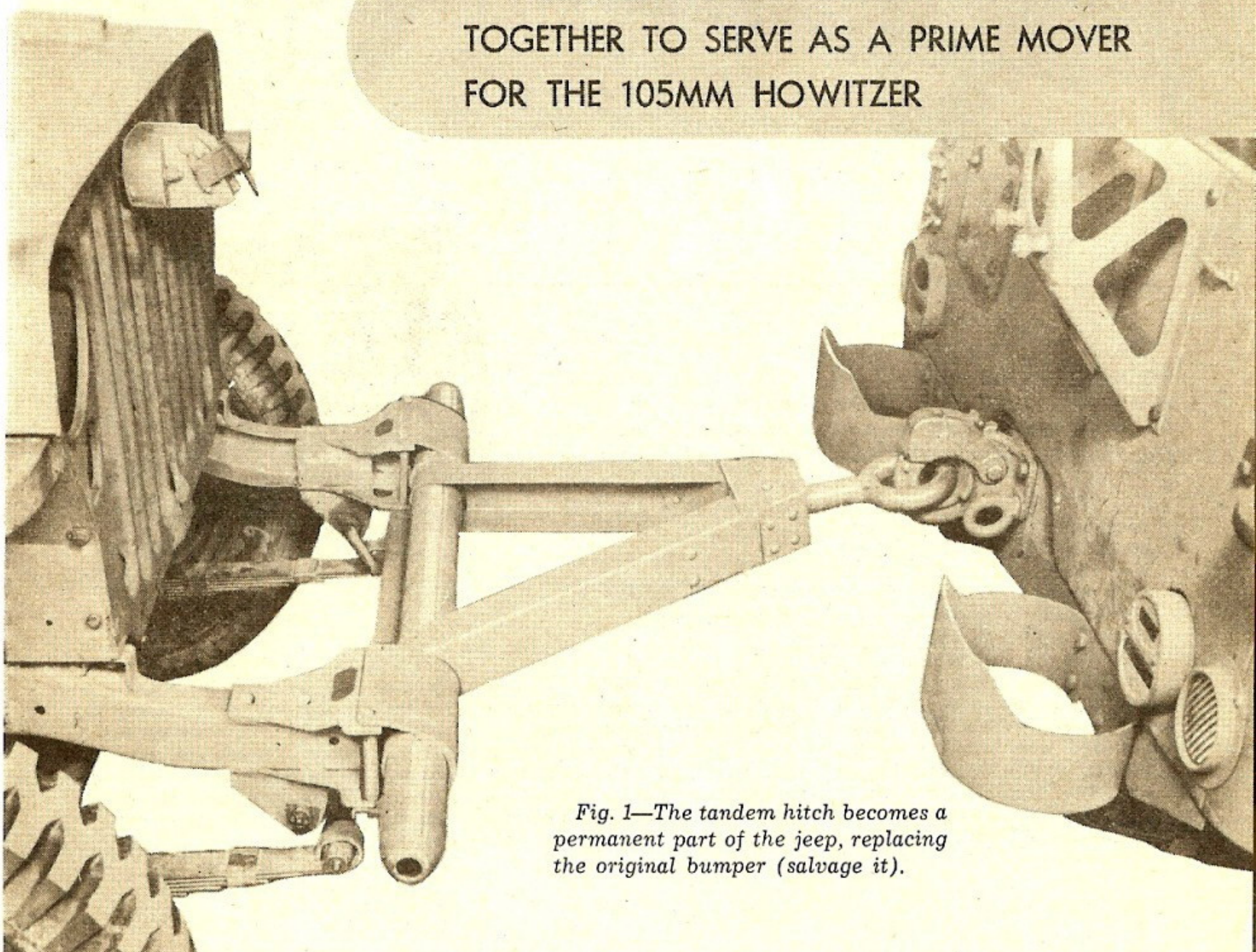


*Fig. 1—The tandem hitch becomes a permanent part of the jeep, replacing the original bumper (salvage it).*

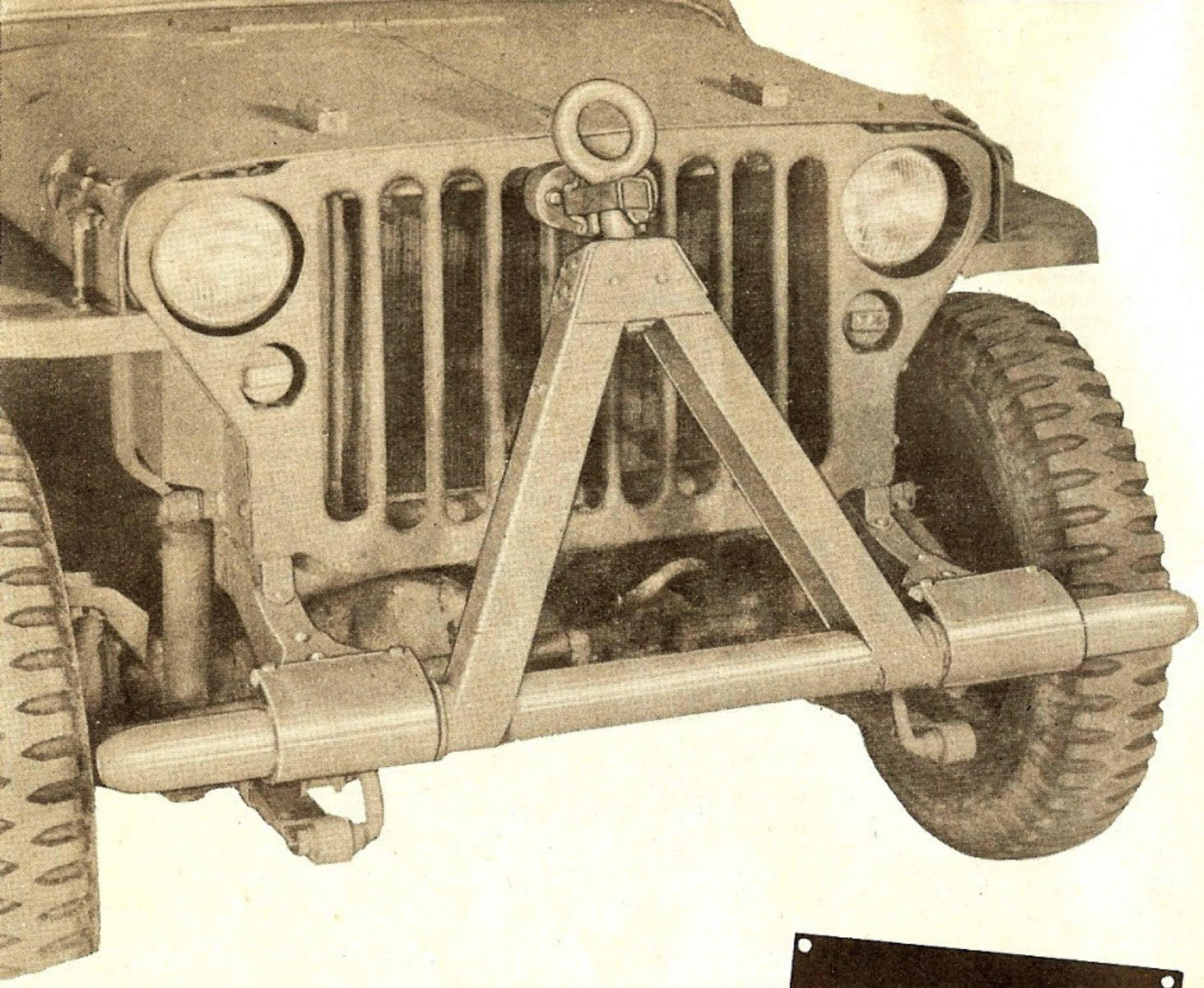


*Fig. 2—The hitch is no handicap when the jeep is used solo. Just tuck it up out of the way—the grill bracket will keep it from flopping all over the road.*


*Fig. 3—Driving in tandem calls for extra care. Besides learning all the tricks of maneuvering, the driver must give strict heed to this caution plate which comes in the kit for installation on the instrument panel.*

level ground, and not over 10 mph downhill. At the time the hitch was tested, two tandem-hitched jeeps towing a 105 howitzer down a 10% grade, were speeded up to about 20 mph. The first thing the driver of the lead vehicle knew, his jeep was swerving wildly from side to side and suddenly flipped over into a ditch. The towed howitzer went into a sideslip, turned butt over wheels and upset the second jeep. In other words, two jeeps are friskier than one and you'll have to learn to drive them in tandem. A couple of tips: in applying the brakes, apply the brakes of the second jeep first. Also, the turning radius of tandem and towed load is about 37 feet.

The drawbar of the new hitch is good for pushing, say for pushing stalled jeeps. A hitch-equipped jeep can also be towed by means of the drawbar—although you've got to be careful in choosing your towing vehicle. For one, the jeep cannot be towed behind the 2½-ton truck because the height of the 2½-ton's pintle will allow the jeep to run under it.

## Hydraulic Jack and Hoist Fluid

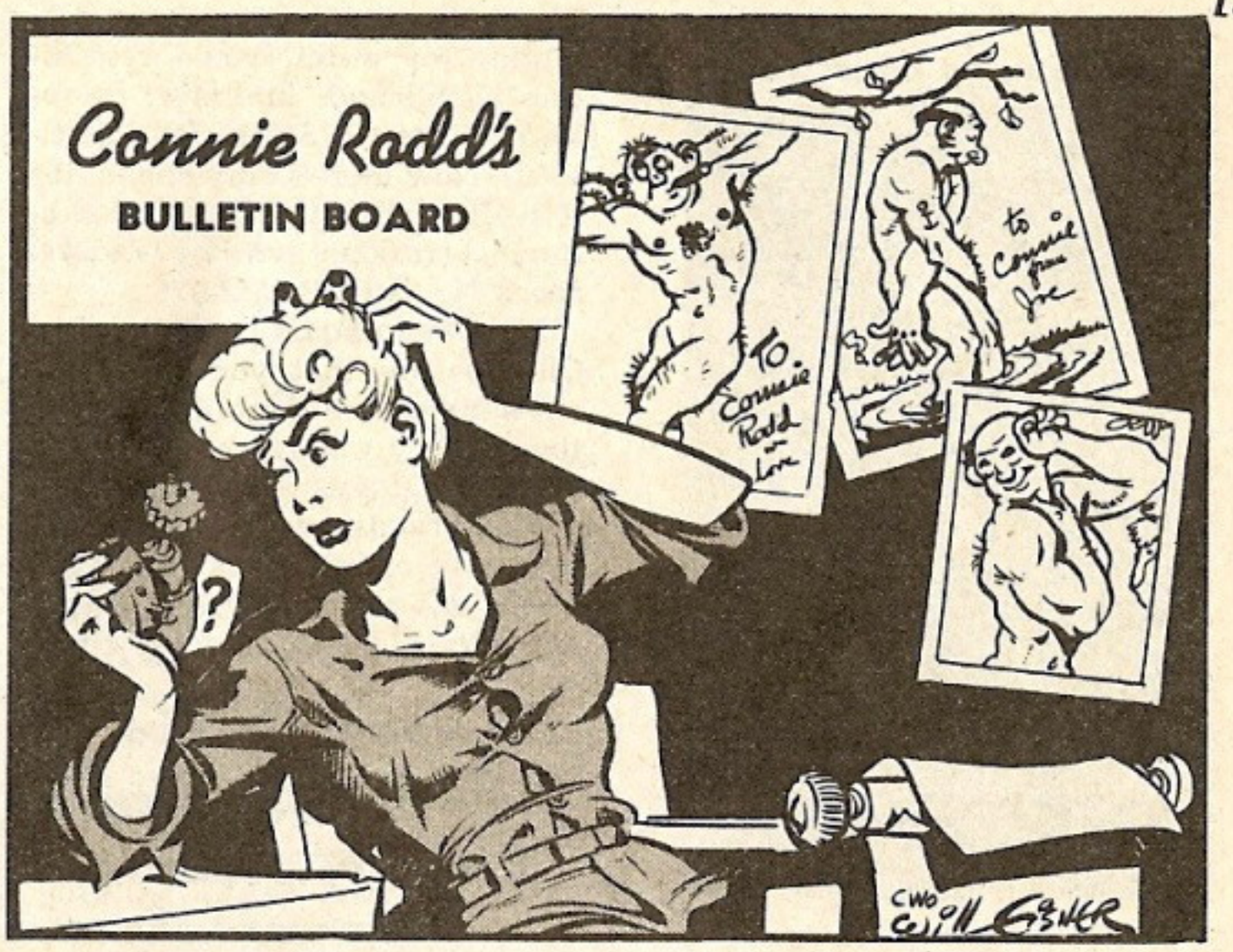
If you think hydraulic jacks, hoists, and brakes all get a lift from hydraulic brake fluid, you'll have to change your way of thinkin'. Don't let the word "hydraulic" fool you. It doesn't mean you can go around putting brake fluid in jacks or hoists. The only jacks that use **any** brake fluid are Vickers. Give them a mixture of 85% brake fluid and 15% castor oil when you're completely refilling the jack (the 15% probably keeps the innards from getting rusty). To **keep** it at the full mark, use brake fluid.

To add to your troubles, there used to be more different kinds of fluid for hydraulic jacks and hoists than you could shake a requisition at. But TB ORD 104 has come to the rescue—you no longer have to fool around with special stuff for every jack in the box.

If you want to keep all your jacks (other than Vickers') from letting your truck down gently on your foot, rising unexpectedly and bashing your face, or just refusing to work, put in OIL, hydraulic.

There's still a little variety for hoists. I'd hate to have you sprain your back someday shoveling a load off a dump truck because the hoist wouldn't hoist. Especially when I'm not there to rub your back. So use OIL, engine, OE 10 between 0° and 32° F., OE 30 above 32°, and OIL, hydraulic, below the zero mark.

Connie doesn't have to tell you not to put hydraulic jack oil into brake systems.




## Oil Pressure Gage Interchangeability

If the electric type oil pressure gages on M4 medium tanks and gun motor carriages built on M4 series tank chassis haven't been working right, chances are you're using a wrong combination of the engine sending unit and instrument panel unit.

If the sending unit has worn out and you've replaced it with another that has the same Ordnance Piece Mark, even though it fits into place and fits the wire connections—the gage will still give wrong readings and cause trouble if it's not paired up with the right panel unit—and vice versa.

TB ORD 96 (22 May 44) says engine sending unit: Stewart-Warner 438030, Ord. Piece Mark A248060 can only be used with instrument panel unit: Stewart-Warner 444087, Ord. Piece Mark B259562.

| You'll use any of these engine sending units: | With any of these instrument panel units: |
|---|---|
| AC No. 1506597 | AC No. 1506501 |
| Ord Pc Mk A248060 | Ord Pc Mk B259562 |
| AC No. 1506597 | AC No. 1506501 |
| Ord Pc Mk A297238 | Ord Pc Mk B196013 |
| SW No. 438053 | SW No. 444149 |
| Ord Pc Mk A297238A | Ord Pc Mk B208795 |
| | AC No. 150667 |
| | Ord Pc Mk B208795 |

From now on when you order oil pressure gage units for your medium tanks M4, M4A1, M4A3, cargo carrier M30, or gun motor carriages M7, M12, M18 and M10A1, **be sure to specify manufacturer's name and piece mark as well as Ordnance Piece Mark.** (You'll find the manufacturer's name and number stamped on each unit—SW for Stewart-Warner, AC for AC Spark Plug Division, GMC.)

If the depot **can't** fill your requisition for a particular unit, they'll send you either an interchangeable unit or a complete new assembly (engine and panel unit).

## Last Word on GMC Clutch-Pedal Free Play

**Here, again, is the latest dope on GMC 6x4 and 6x6 clutch-pedal free play. The correct free play is 2½ inches.**

## Sharpeye That Gunner's Periscope on M4 Tanks

Step right this way for the latest fix to increase the accuracy of the gunner's periscope on your M4-series medium tank. ARMY MOTORS told you in April how to get one jump ahead of the Krauts by taking the backlash out of your gunner's periscope. Now, here's how to keep that periscope from acting like an ol' rockin' chair and put yourself **two** jumps ahead.

After it's had a couple of hard knocks, you've noticed that there's too much play between the periscope and the holder. Maybe you've even forced little hunks of wood in between to keep it steady. That isn't such a good idea, though. When you try to remove the periscope, you'll find it's jammed tight.

Aberdeen sends this idea along

# Let's Talk Turkey About Your Duck

## "BATTLE MAINTENANCE" AND "FIELD EXPEDIENTS" TO KEEP YOUR AMPHIBIAN ROLLING, COME HELL OR HIGH WATER

You've really got a job if you drive a GMC 2½-ton 6x6 amphibian. It's a job that won't stomach goldbricks. You've got a triple responsibility and a triple amount of work. First, there's the mission; second, **vehicle** maintenance; and third—because you've got such a special vehicle—**ship** maintenance.

That's enough to keep **three** men busy. But there aren't three men for the job. There's only you and your assistant driver . . . or you and the driver. The third man has to be the smart teamwork between you. It **has** to be.

You drag that duck over more elements than **any** vehicle has ever been over before. It operates in crucial moments, when you're landing troops or supplies through a wild sea onto a treacherous beach—at times when you can't afford to have the duck drop dead. But under that strain, no duck can live without enough stimulant to keep it going. It needs maintenance like you need a belly full of food.

But you can make your job easy. When you're pressed for time, you can get away with doing just a minimum amount of maintenance. The duck can take it—just give it the bare necessities—the things it **must** have to keep running.

There's an instruction plate on the instrument panel of your duck (or there should be—GMC Part No. 2201968) that shows the "Minimum Driver Maintenance for Continuous Operation." Most of the items listed on the plate (Fig. 1) are just check routines or servicing items. If you're interested in doing a really good job of minimum maintenance, then the following tips and field-fix hints will help you . . . and make for less work in the long run.

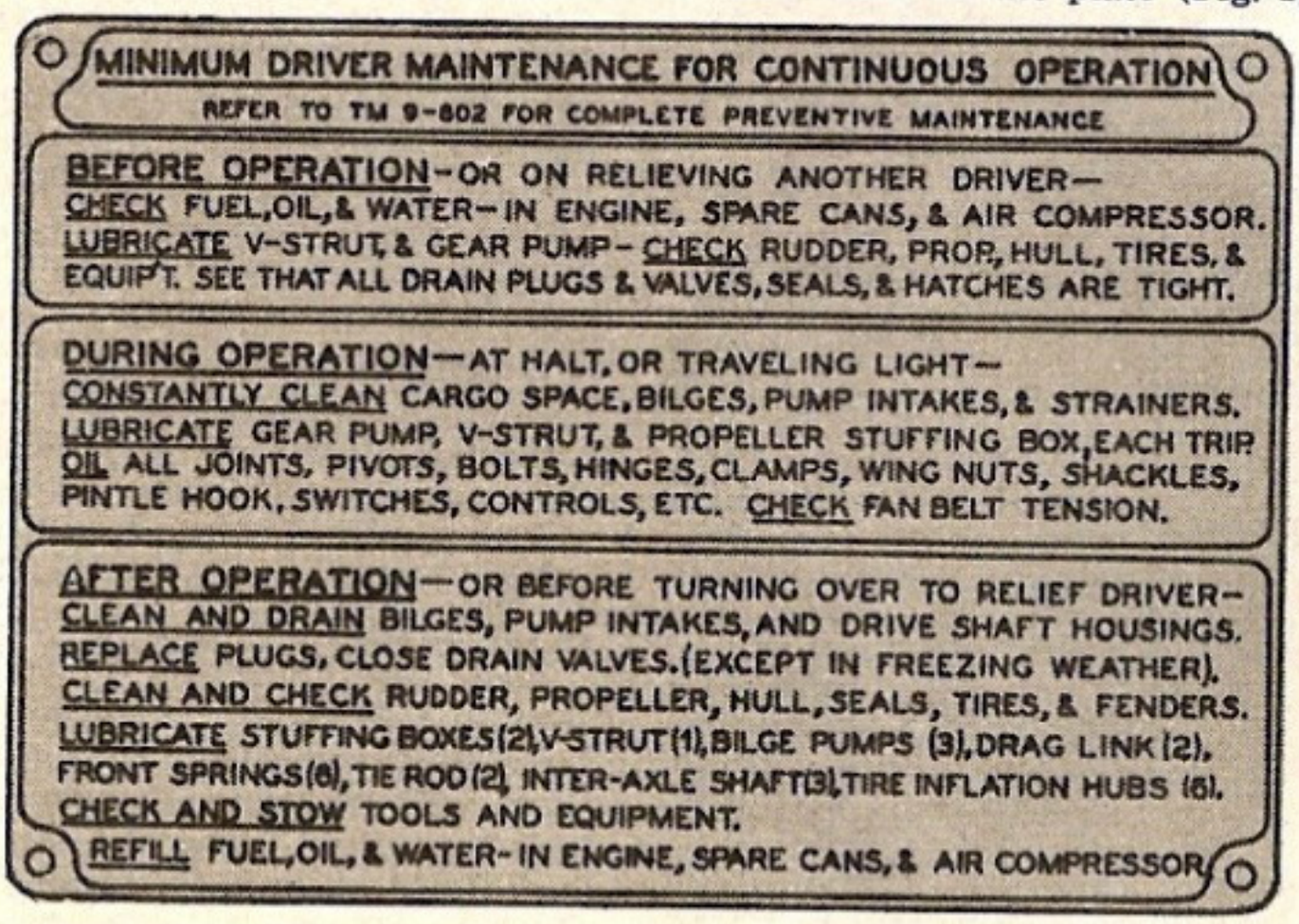



*Fig. 1*

### AIR COMPRESSOR

Don't overlook the air compressor—it needs oil often. A lot of guys who've been ignoring this two-cylinder job in the bow compartment will wake up some day and find the tire inflation system won't respond to a touch. Then, it's too late to remember.

The compressor is driven constantly while the engine is running and since it takes only a pint of oil it can't afford to use much before getting in the danger zone. Whenever you check or change the engine oil, do the same for the compressor's crankcase—the same oil at the same time.

While you're tickling the compressor with oil, give the attaching parts a quick once over. Drop two or three drops of OE in each governor oil-cup. Check the compressor for unusual noises and if you hear any you'd better kick in a report to your higher echelon and have the unit replaced. Every once in a while tighten the compressor-support bolts.

### TIRE PRESSURES

When the duck's 5,000 lb. payload is exceeded, the tire pressures specified on the dash instruction-plate should be **increased one**

**pound for each 1,000 lbs. of overload.** This is just as important as the change of pressure for different terrain.

"Payload" includes every human being in the duck as well as personal equipment, the spare parts, spare fuel, oil, water, boxes, nets, and what-not. These items usually weigh between 500 and 1,500 lbs. without other cargo.

Where conditions are rough and tough, it's not good to let the payload get over 5,000 lbs. And never, not even in cases of extreme emergency, should more than 10,000 lbs. be carried on land or in the water.

Payloads for your duck and different weather and terrain conditions that affect the payload are written up in detail in WDC 228 (7 Jun. 44).

## FUEL TANKS

When you've got a heavy load in the duck, or when you're bucking rough water, better make sure the fuel-tank cap is in good condition. Unless it's tight, and well lubricated against corrosion, you'll ship water in the fuel tank. Any water that might have sneaked in the tank should be drained about once a week after the duck's been standing—to play it safe.

Sometimes (on early models between Chassis Serial No. 001 and 346) the fuel tank develops a bad habit of springing leaks. That's because some of the tanks are defective in construction—you can tell the bad tanks by looking at the edges (Fig. 2).

The tanks can be repaired when they spring a leak, but the repair won't hold forever—it's impossible to repair them permanently. The thing you can do to lengthen the life of the repair is take special care of the "V" strut bearing, propeller shaft, and water propeller. Keep these items in shape and vibration will be lessened, then the tanks won't be so apt to spring leaks.

The repairs are only expedients, anyway—you can't go on forever repairing and re-repairing leaks—so replace the fuel tank with a new one of good construction: Official Stock No. G501-30-96299 (GMC Part No. 2182011).

Incidentally, talking about vibration, the duck should **never** be operated with a damaged propeller or propeller shaft or strut bearing. The vibration would play hell with the hull and rudder as well as the fuel tank. Even slight damages should be fixed pronto.

## SPARE FUEL CONTAINERS

The practice of storing spare fuel cans in the hull of the duck is a bad one. They're liable to upset and spill or leak all over the bilge. Strap them in the fuel container brackets on the rear deck where they belong. If there aren't any brackets (ducks before Chassis Serial No. 335) then lash the containers to the rear deck. Use a lashing eye on each side.

If you think it's too much trouble lashing the containers, then get some fuel-container brackets for your duck—Federal Stock No. 42-B-22590. But whether you lash the containers or get the brackets, the rear deck has to be reinforced with 1"x1" angle iron (or 2"x2" hardwood). Weld or bolt (using caulking compound) the 38" long angle iron to the underside of the deck to distribute the weight of the fuel containers (Fig.

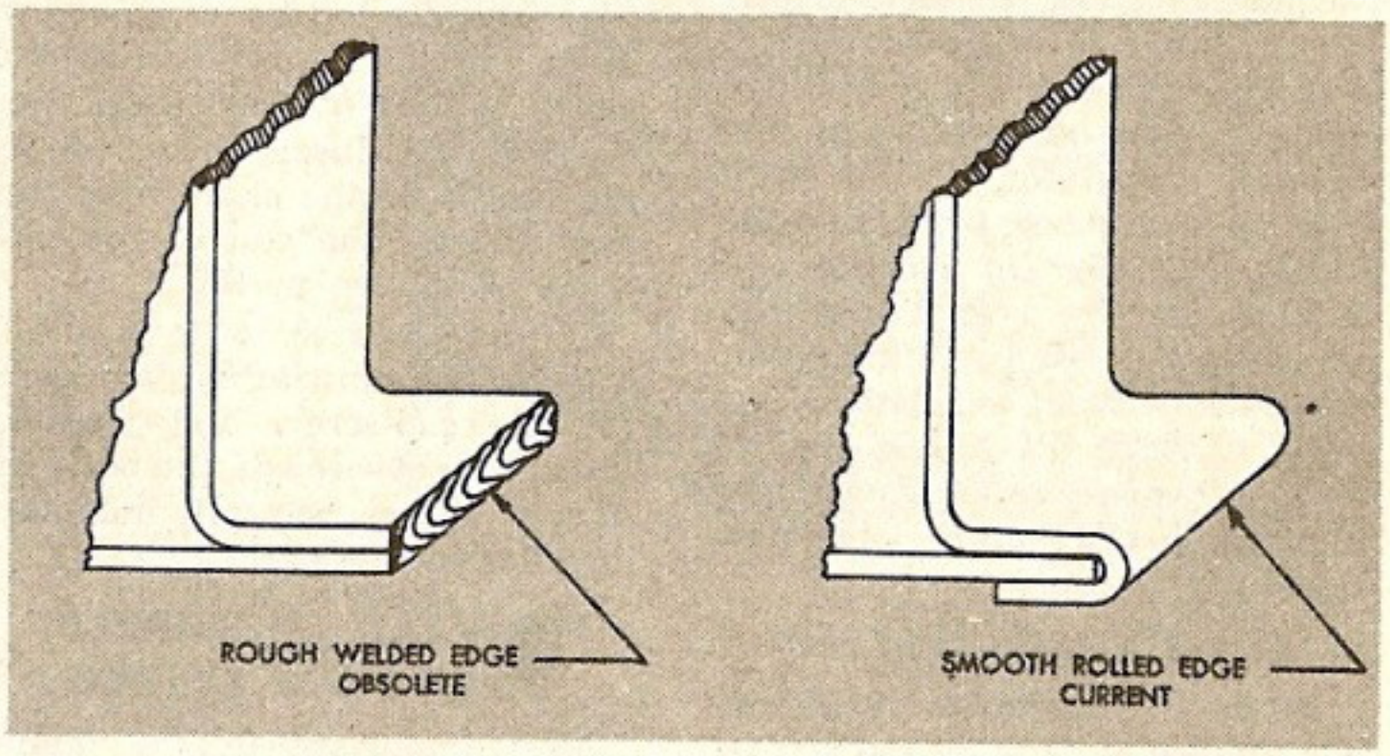



*Fig. 2*

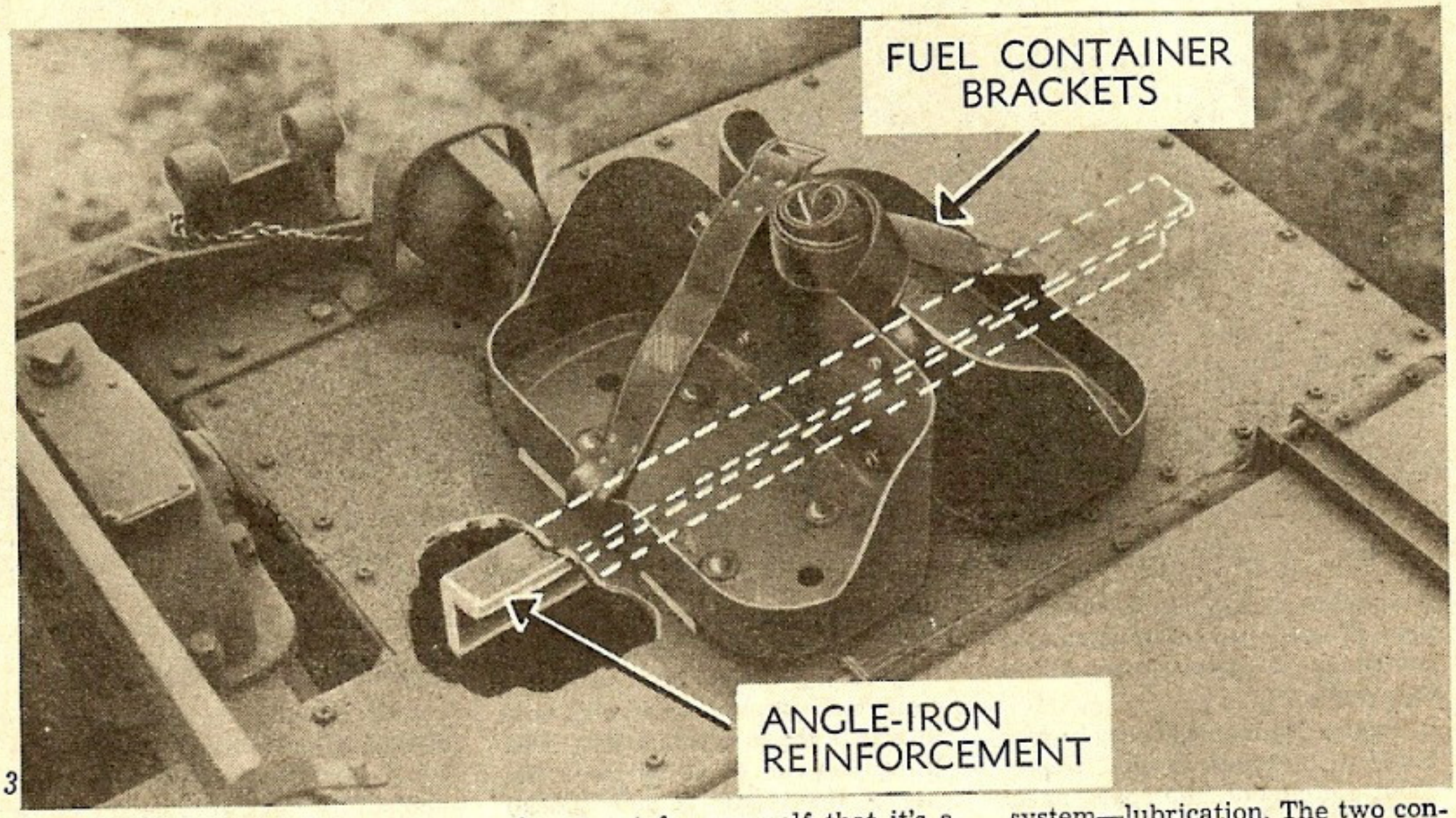



*Fig. 3*

3). The distance from the center of the angle iron to the edge of the stern compartment should be 9-9/16".

Whatever you do, **don't store containers in the hull**—they make a terrific fire hazard.

## AIR-CLEANER ELEMENTS

Salt water corrosion again—this time it's breaking the air-cleaner element into tiny pieces. If you've got the steel gauze type of element in the air cleaner (for the die-cast-type carburetor) on your duck, better keep checking it.

At the very first sign of rust, replace the element before all the small pieces of steel get sucked into the engine and make trouble. Requisition a new element Official Stock No. G501-01-69092 (GMC Part No. 1529653) element for the clamp-on-type air cleaner on the die-cast carburetor.

In an emergency, if you find the steel-gauze element rusting and falling apart, **remove it from the air cleaner.** Less harmful to run the duck without an element instead of risking a ruined engine. But do this **only** in an emergency, and then get another element quick as you can.

## BILGE PUMP SYSTEM

No doubt you've been yelled at and howled at (and maybe you've found out for yourself that it's a pretty smart idea) to keep the pump strainers clean. And also keeping the bilge clean so the screen won't get blocked with junk, two or three inches thick, on its outside.

But what to do if the screen on the centrifugal pump gets sucked out of place? Sure, it's simple to keep replacing it, but in between times muck and dirt's being pulled into the pump. So wire the screen in place as shown in Fig. 4 and make it easier for yourself. Make it easier on the pump at the same time.

Something else you can do for the pumping system: if the pump impeller isn't fastened securely, get yourself a left-hand cap-screw (Official Stock No. G501-03-82035) and a washer (Official Stock No. H1-15-23003). Insert the screw in the center of the shaft with the washer over the end of the impeller as shown in Fig. 5.

The **set screw** (3/16" to ¼" dia.) in Fig. 5 is a substitute if you can't get the cap-screw and washer. Insert the set screw in the position shown. Either one will hold the impeller securely.

## FORWARD (MANIFOLD) BILGE PUMP SYSTEM

Most important in the pump system—lubrication. The two conventional grease cups on the manifold pump should be kept full and turned down generously before each water trip. If the trip's more than a mere jaunt, the cups should be turned down every half hour

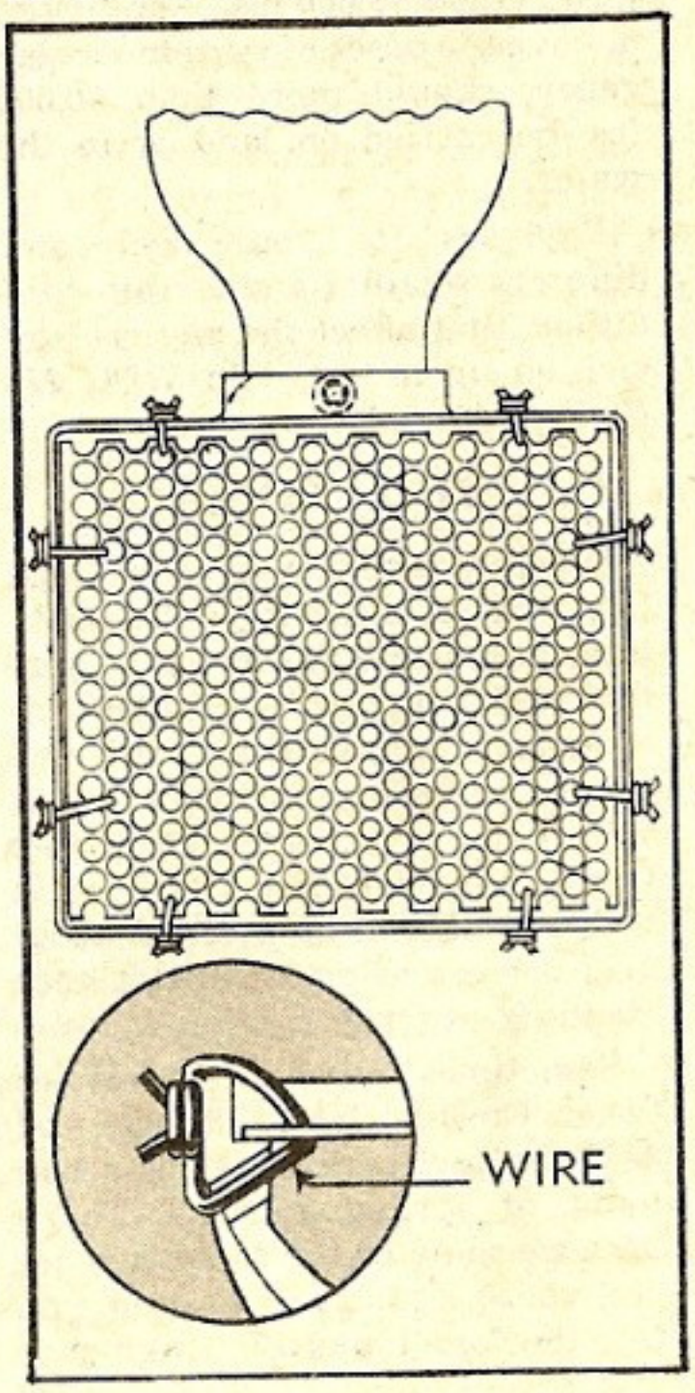



*Fig. 4*

and even more often if the pump starts overheating.

Some guys have found it a little awkward to get at the grease cups, so they've installed pressure type fittings in place of the cups. Anything to make you happy and keep you lubing the pump.

Some pumps have spring-loaded automatic-feeding grease cups that must be filled daily—more often for constant water operation. When these automatic grease cups don't feed freely, the pump will overheat. In this case, take the feeder apart and cut off the unnecessary carrot-shaped metering pin at its thinnest part (just below the feeder plunger). That'll take care of the trouble.

You know, there are only two reasons for a good pump to jam: (1) because it's hot and dry from no lubrication, and (2) because dirt and muck and every other kind of trash has been getting through the intake screens and dual strainers.

But before these conditions cause the pump to jam, you'll smell the pungent odor of an overheated belt. When you do, reverse the pump momentarily—maybe that'll free it and you'll save the belt. If reversing **doesn't** free the pump, take off the belt and hang on to it until the pump can be fixed.

In an emergency—when you don't smell the trouble in time to save the belt—and a new duck belt (Official Stock No. G501-01-18254, GMC Part No. 2182650) is not available; any belt of similar section that's close to 53" in length can be used temporarily. Or if the pump has a chain drive (beginning with Chassis Serial No. 4202), a motorcycle chain can be used. Of course the pump mountings may have to be doctored a little to take care of the difference in center distance if you use a substitute belt. Don't forget it's only a temporary belt or chain —after the emergency, get things back to normal fast.

Incidentally, there are a lot more emergency field expedients in TB ORD 5.

## WHAT DO YOU KNOW ABOUT THE DUCK?

What you know about the duck can help someone else . . . the manufacturers, our engineers, and other guys like you who've been having a tough job keeping the duck going. You've been driving the duck for a long time now, and you know what's good for it and what's bad for it.

You've probably been in more than one stew when something went snafu and you had to sweat it out—when you had to find a quick fix to keep the duck floating or rolling. You probably know something about the duck that **nobody** else knows—and at the same time, somebody else knows a few things that **you** don't know. Why not swap ideas? Like the following that came in a couple letters from the field.

**Lt. Colonel Leonard D. Boyce** observes: "Inspection of vehicles engaged in unloading operations in ———, showed many of them had sprung front-axle housings; the left side always being bent. Result: reverse camber.

(1) It is believed this condition was caused by hitting the beach too hard when leaving the water, especially during a heavy swell.

(2) The particular land routes traveled, while not in first class condition, were not bad enough to account for the bent housings.

(3) A number of these ducks were serviced by a Medium Maintenance (Q) Company. Not having replacement axles available, they improvised a brace—from the extreme left, just short of the outer end of the axle housing, to the differential housing. This forced the housing back into a straight line. While the job was extremely crude, it prevented further bending of the axle at this point."

Here's something from **Lt. Warren F. Ray:** "Anyone having any dealings with equipment in salt water can vouch for the deterioration it causes. The chassis of the duck are constantly subjected to salt water—and we have to pull the wheels every 15 days. They have to be cleaned well, processed, and packing grease used freely.

"If the propeller shaft, which operates through a strut bearing, is not adequately greased and not properly cared for—it becomes a menace. Not only does it wear out the bearing, but also causes play in the shaft itself. This in turn causes wear on the rubber gasket and stuffing box. The same thing

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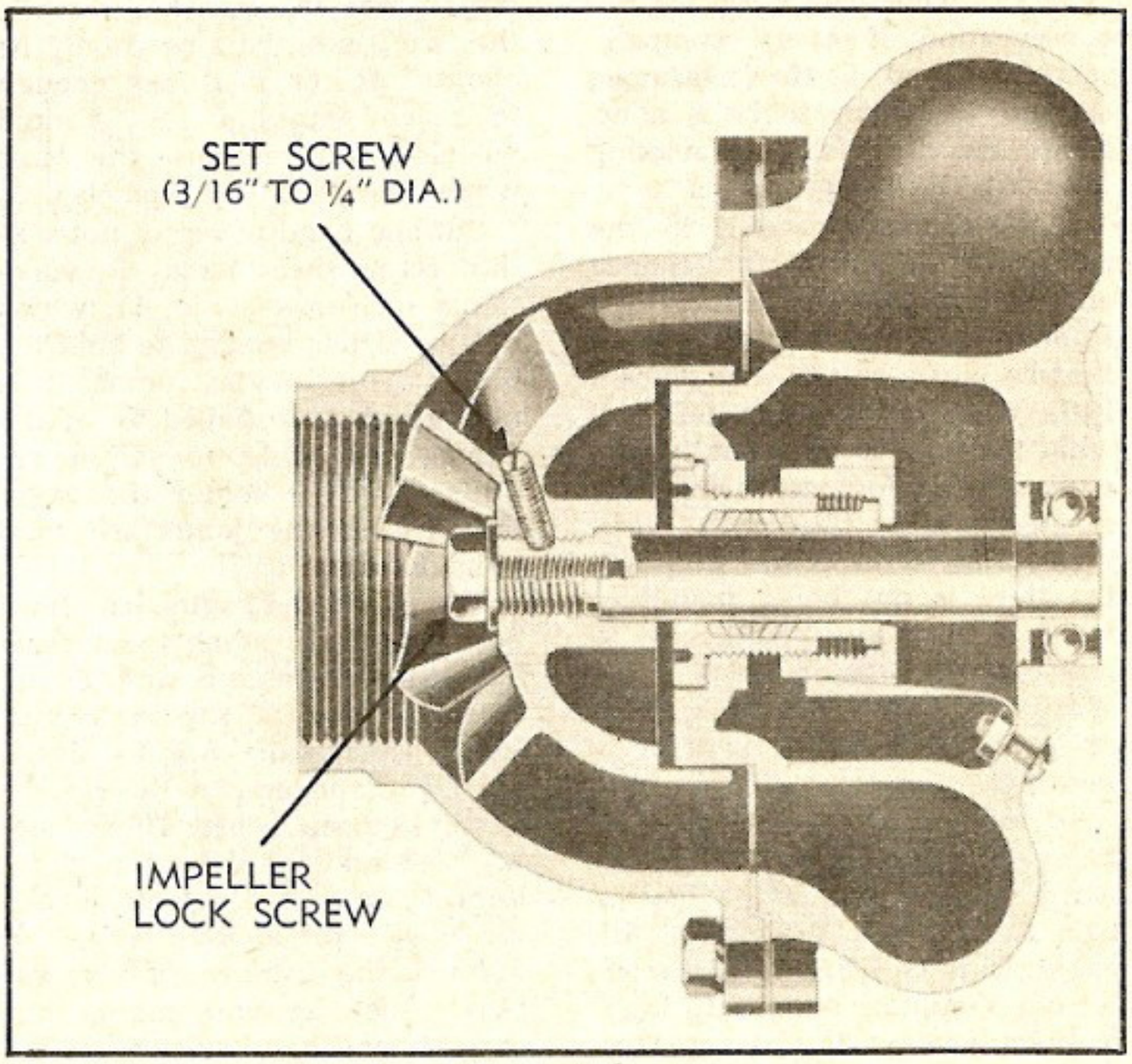


*Fig. 5*

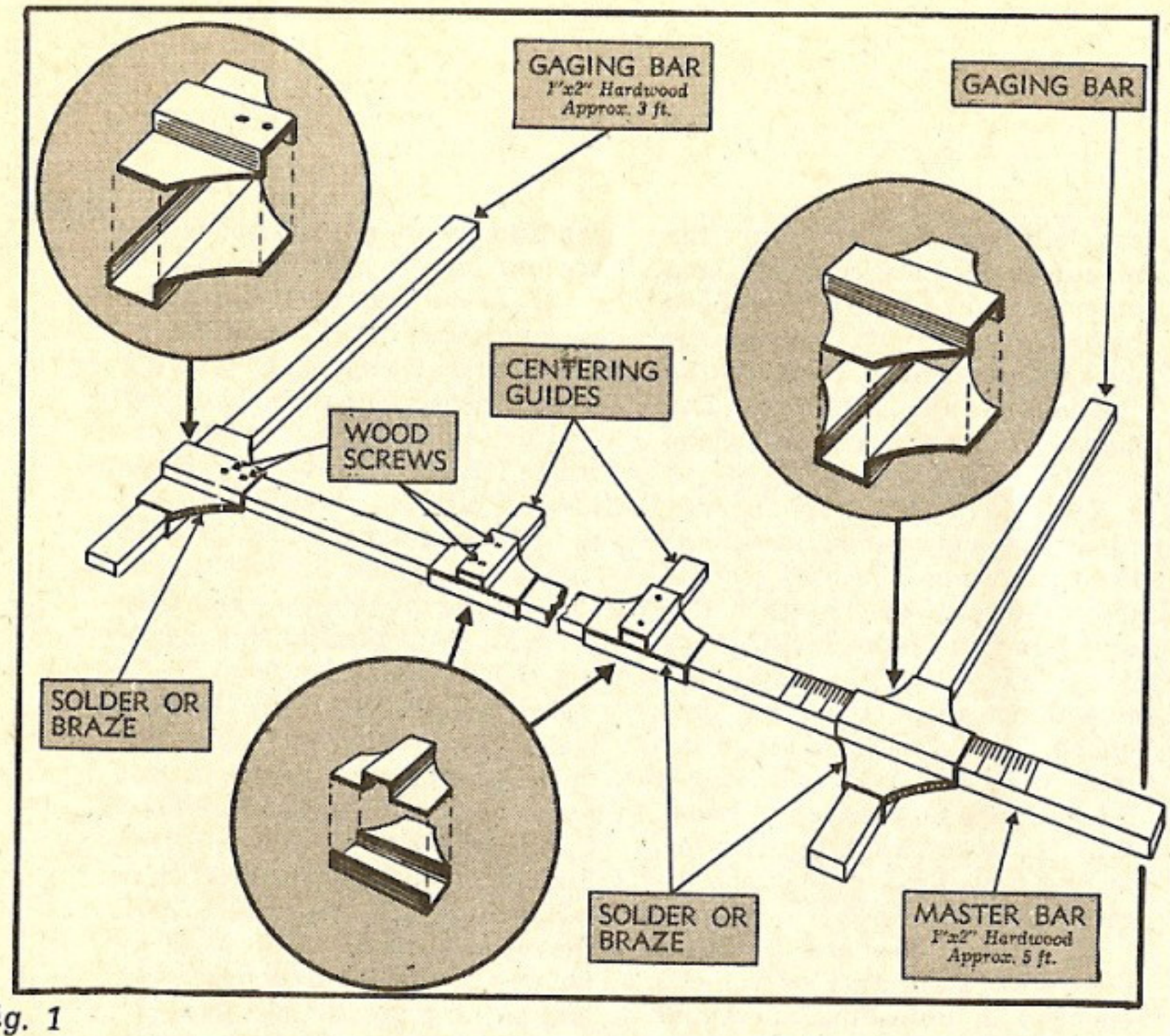


*Fig. 1*

# Take The Work Out of Tire Measuring

What a wonderful thing for tire conservation if every company mechanic had a tire-measuring device. But since there is none, here's the directions for making the next best thing.

You'll probably see it in the revised TM 31-200 ("Maintenance and Care of Pneumatic Tires and Rubber Treads"). But the powers-that-be let us borrow the plans a little early, so we can tell you what the soon-to-be officially-recognized-tool-for-measuring-tire-diameters looks like.

But first—**don't** requisition one, the item is not being manufactured or stocked. You'll have to make it from scratch—some 1" by 2" hardwood bars and a few pieces of scrap sheet metal are all it takes.

To make it, you'll need three fairly long pieces of 1"x2" hardwood stock—one for the master bar, two shorter pieces for the gaging bars (see Fig. 1). The master bar should be about 5 ft. long, or long enough to measure the largest size tire you have; while the two gaging bars need only be about 3 ft., or just long enough to reach across a set of dual wheels (you measure the tires while they're on the vehicle).

Cut and bend pieces of not-too-thin scrap sheet metal to make joints (see insets, Fig. 1), which will be strong enough to hold the bars at right angles for accurate measuring, and shaped to let the gaging bars slide up and down. Then braze or solder the edges together, so the joints are solid (Fig. 1).

The right hand gaging bar slides back and forth along the master bar, as well as up and down. That's so you can use the device for measuring **any** size tire. Mark the righthand end of the master bar in quarter inches. Then when you've found the diameter of the largest tire on the vehicle, center the device on another tire, and measure the distance (if any) between the tire and gaging bar with a small hand rule. Or when

This easy-to-make tire-measuring tool fits all sizes—for single and dual wheels. All it takes is a little scrap and some ingenuity

you've found the diameter of the largest tire in a set of duals, you can easily check the other tire with the hand rule. The difference in the diameter of tires mounted on one vehicle should never vary more than ¼".

The two centering guides (Fig. 1 again) are mounted on the master bar to hold it parallel with the side of the tire, since the slightest slant will throw off your whole measurement. The guides, made from short lengths of the same size woodstock you used before, are long enough to straddle any hubs that stick out from the wheels. The guides are mounted on sheet metal joints and slide along the master bar so they'll fit around any size hub.

Figure 2 shows the position of the gaging bars and centering

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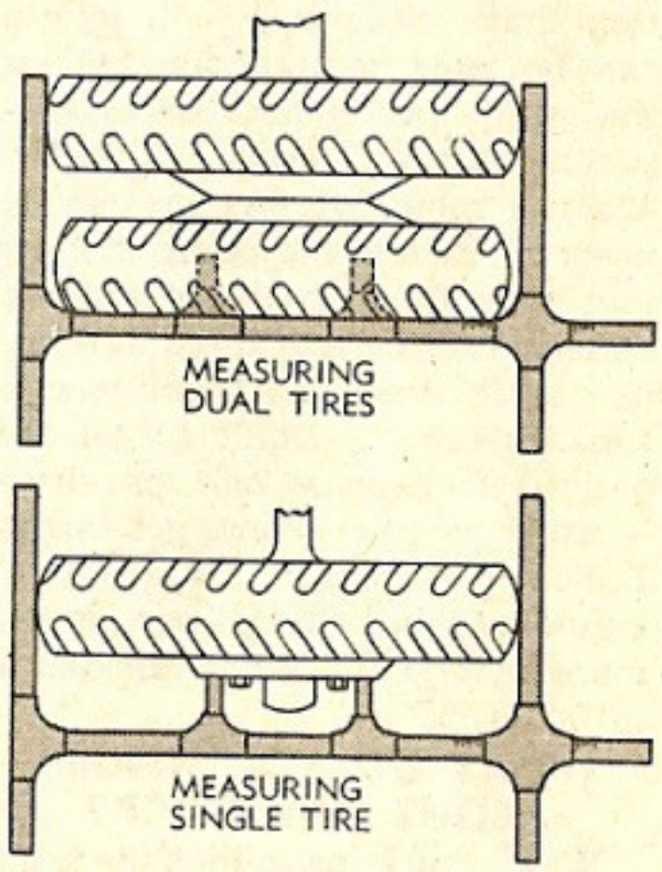



*Fig. 2*

# COUNT THE CHANGES ON YOUR CHEVROLET
# Bomb Service Truck M6

## HAS SHE GOT HER NEW WINCH? HER RUBBER GEAR-SHIFT-LEVER SEAL? HER PINTLE-HOOK REINFORCEMENT? AND EVERYTHING ELSE SHE NEEDS?

She may look like a skeleton but her framework's got what it takes—unless you take it out of her first. And the surest way to dead-line her is to overlook all the changes she should have. Your M6 has a new winch coming to replace the one that won't work—and a reinforcement for the pintle hook to keep the cross-member frame from being pulled out of shape—and a little change so the fuel gage will register (if it doesn't now)—and lots more.

Has **your** M6 got all that's coming to her? If not, you'll find what she **should have** and **can have** right on these pages. The rest is up to you.

### WINCH REPLACEMENT

First of all, what kind of winch do you have on your M6 now? If it's a Beebe or a Holan #2 winch, you've got nothing to worry about. But, if it's a **Braden** or a **Holan #1** winch, you've got work to do.

The Braden winch and the Holan #1 winch **must** be replaced, according to MWO ORD G85-W14 (9 May 44), because they're n.g. Replace them with a **Holan #2.** Requisition Kit, winch assembly, MWO ORD G-85-W14, (Official Stock No. G-85-5700410). Send your requisitions (through channels) to Stock Control Branch, Office, Chief of Ordnance-Detroit, Detroit 32, Michigan.

Return discarded winch assemblies (Holan #1 and Braden) to Letterkenny Ordnance Depot, Chambersburg, Pennsylvania. They're no good for spare parts.

Switching the winches after you get the new one is simple: (1) Unwind the winch cable and stretch it on the ground. (2) Remove the cable clamp and pull the cable from the drum. (3) Remove the four bolts that go through the I-beam, and the four bolts holding the winch base to the truck. (4) Remove the old assembly and install the new winch over the same bolt holes and replace the bolts. (5) Clean, lubricate, and rewind the winch cable.

Now, the winch assemblies—good or bad—were not built to lift more than 4,000 lbs. That means bombs weighing more than 2 tons are out of the picture as far as your M6 is concerned, else your M6 will be out of the picture. The front end will go up into the wide, blue yonder while the rear end gets spread out.

Another bad practice is carrying bombs on the **floor of the M6.** It's dangerous. One day a fused bomb will roll off, spinning—and you won't be around to tell about the explosion.

### GEARSHIFT-LEVER SEAL

Because the cab on the M6 is open, the inside is exposed to all the ravages of weather. The gearshift lever especially, then the whole transmission, because rain slides down the lever and through the crack between the lever and the transmission cover. The water carries dirt with it, and it all goes into the gears. Then a grinding and gnashing of teeth ends up with something like Fig. 1. Besides, the dirty water freezes in cold weather and you can't even shift gears.

To stop this, a rubber seal was put on all trucks in production beginning with Ordnance Serial No. 6168, U. S. Registration No. 0061751; but trucks built before the change are suffering. They'll keep suffering until you requisition them a rubber seal, Manufacturer's Part No. 591379 (Seal, gearshift lever). The seals won't be available until **after September 1st,** so hold your requisitions until then.

Before you put the seal on, though, unlock the gearshift-lever cap and remove the lever assembly from the transmission so you can clean it. Use the gearshift-lever remover KM-K353. Fit the lugs in the remover into the slots in the gearshift-lever cap, push down on the remover and turn it slightly to the left. This unlocks the gearshift-lever cap, and the lever can be raised out of the transmission cover.

The rubber seal goes on over the top of the gearshift lever, so the lever knob and the reverse-latch finger-lever must be removed first. Cut off the two rivets at the finger lever and remove the lever and spring. Then slide the rubber seal over the gearshift lever and the reverse-latch rod. Be careful not to damage the rubber.

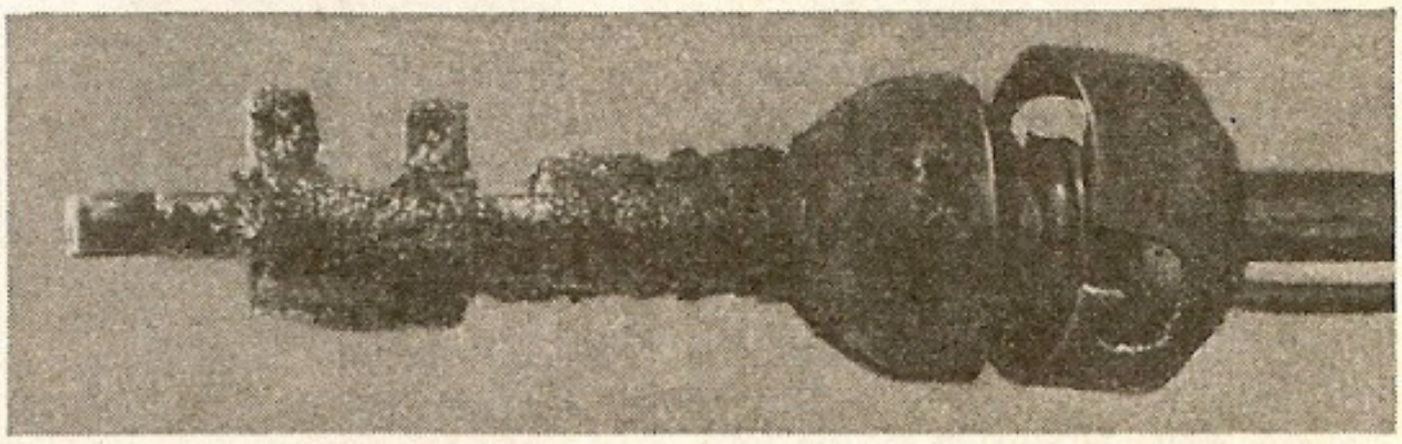


*Fig. 1*

Now, replace the reverse-latch finger-lever and spring — you'll need two new rivets 3/16"x11/16" (Item Stock No. H1-09-24079). Replace the gearshift lever in the transmission and use the removing tool—this time turn the remover to the **right** to lock the gearshift-lever cap.

Be sure you fit the rubber seal in the right position (Fig. 2). The

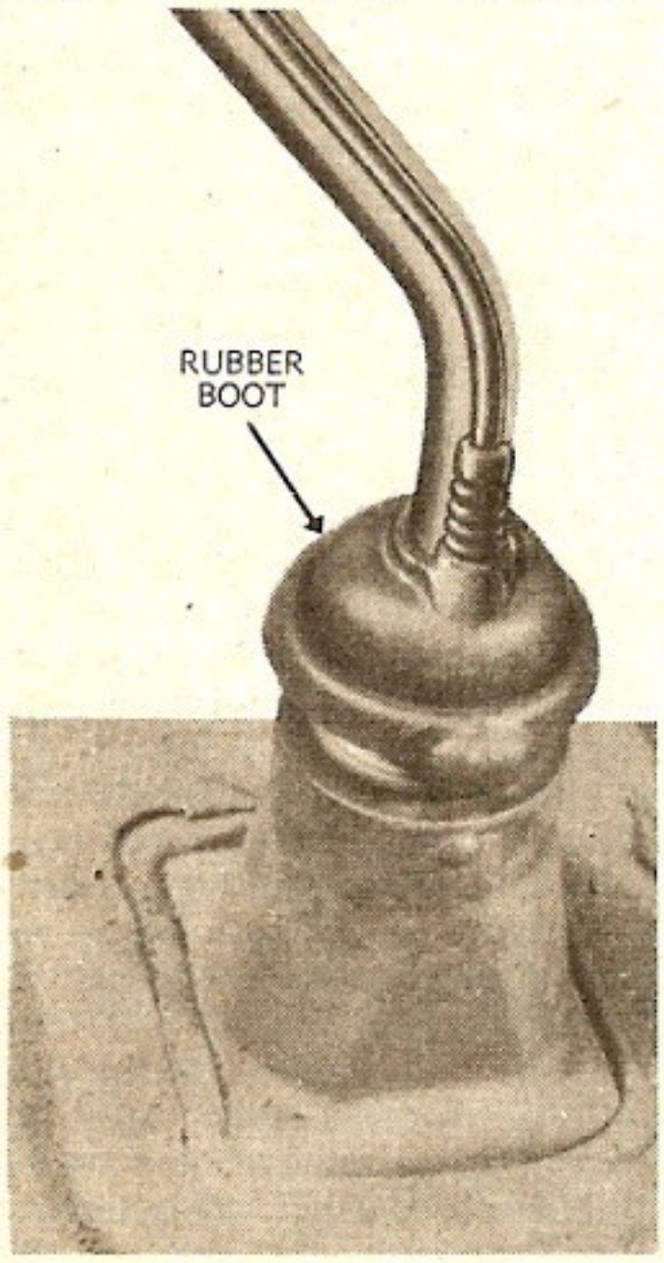



*Fig. 2*

upper edge of the seal surrounding the gearshift lever should be 2" above the transmission cover—the upper edge of the seal surrounding the reverse-latch rod should be 2-⅞" above the transmission cover. In this position, the rubber will be a watertight seal and you'll have no more dirty transmission trouble.

## FUEL GAGE

If the fuel gage system has been short circuiting and the fuel gage registers "empty" when you know damwell you just filled both tanks, take a look at the seat-riser cover-panel. On all vehicles with serial numbers up to, but **not** including 3008, the seat-riser cover-panel should be modified according to FSMWO G85-W13 (12 Oct. 43).

The short circuiting occurs because the cover panel rubs on the fuel-gage connection, located on top the gas tank. But all the panel needs is a little peening, and you can do a bang-up job in a few easy steps:

1. Unscrew the four wing screws and remove the two seats.
2. Unscrew the panel from the seat riser (all 14 screws).
3. Put the panel on two blocks (of anything), about four inches apart, with the **underside of the panel up.**
4. Draw a line through the center of the old boss, **across the width** of the panel, and mark the line about 9" from the edge of the panel. That gives you the center point for the new boss.
5. With a 3 lb. ball-peen hammer, bang out a 3" circle (about 1" deep) around the center point.
6. Replace the panel and the seats, and watch the fuel gage start gaging.

When you replace the seat-riser cover-panel, instead of putting all 14 screws back, substitute some nuts and lockwashers and bolts. (These items have brand-new stock numbers, so you'd better use both the new and old when you requisition.) The bolts (10-32x½ slotted, Item Stock No. H1-10-30584 was Item Stock No. H1-51-48851) and the lockwashers (10-32, Item Stock No. H1-15-18005 was Item Stock No. H1-70-25625) and the nuts (10-32, Item Stock No. H1-07-16610 was Item Stock No. H1-41-35681) will hold the cover panel a lot tighter than the screws did.

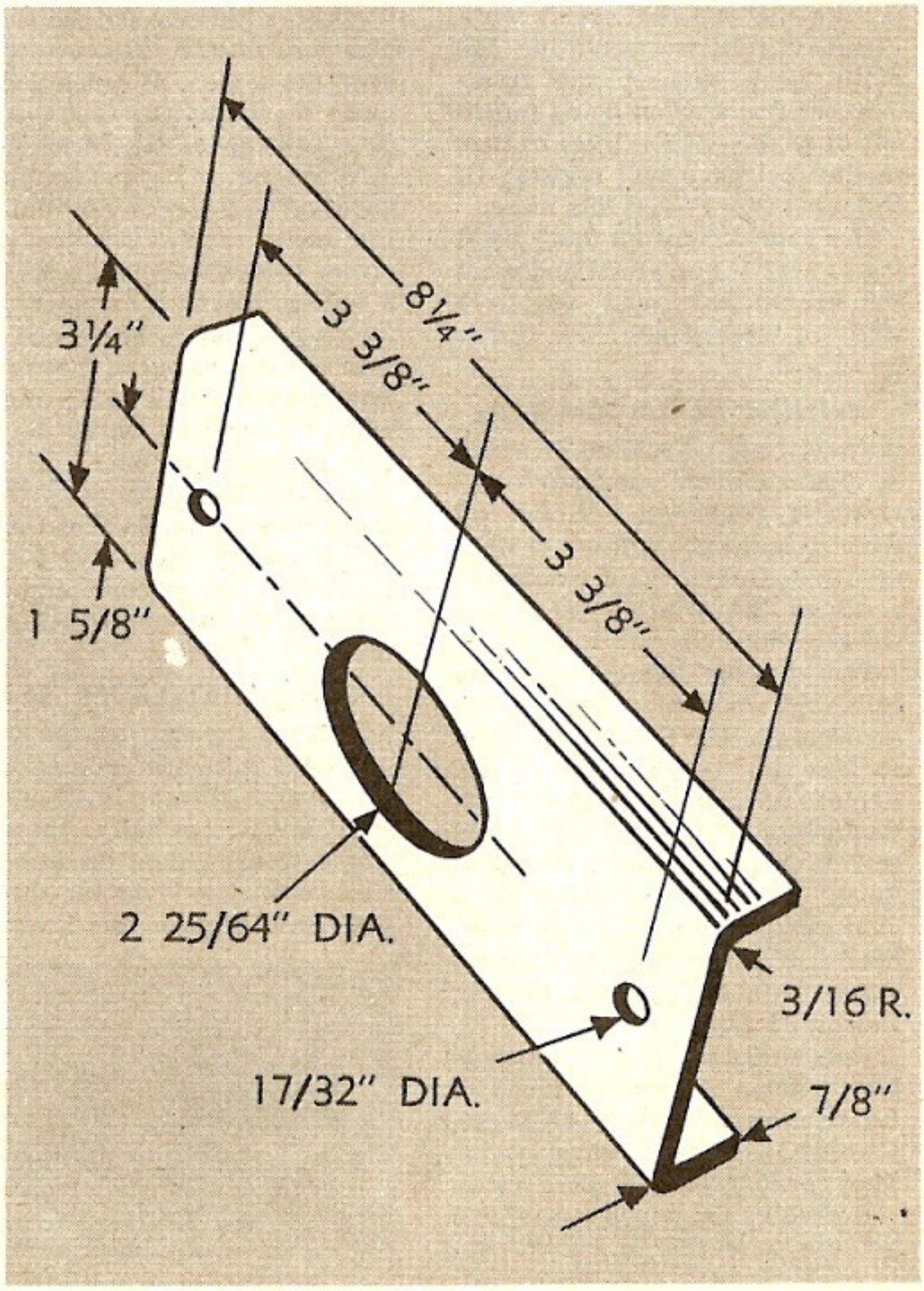



*Fig. 3*

If you're energetic enough to do the job right and substitute the bolts for the screws, better make the holes in the panel a little larger — about 13/64" diameter. Then the bolts will fit.

## PINTLE-HOOK REINFORCEMENT

When you're towing a lot of tonnage with the M6, it could be that the cross-member frame holding the pintle hook does a little bending with the terrific pull. There's a sure way to fix the difficulty: reinforce the cross-member frame behind the pintle hook.

Use scrap steel for the brace—it should be 3/16" thick, 4½" wide, and 8¼" long. It needn't be anything fancy as long as the holes and the bends are in the right places. Work with the dimensions in Fig. 3.

Heat the steel, then drape the edges over something solid and bang them down to get the squared effect on the sides. (Fig. 3 shows the completed reinforcement.) Then weld the reinforcement on the cross member as shown (Fig. 4).

It won't take long to make the reinforcement—and it should be sufficient to hold the cross-member frame in shape when you're hauling those huge block-busters.

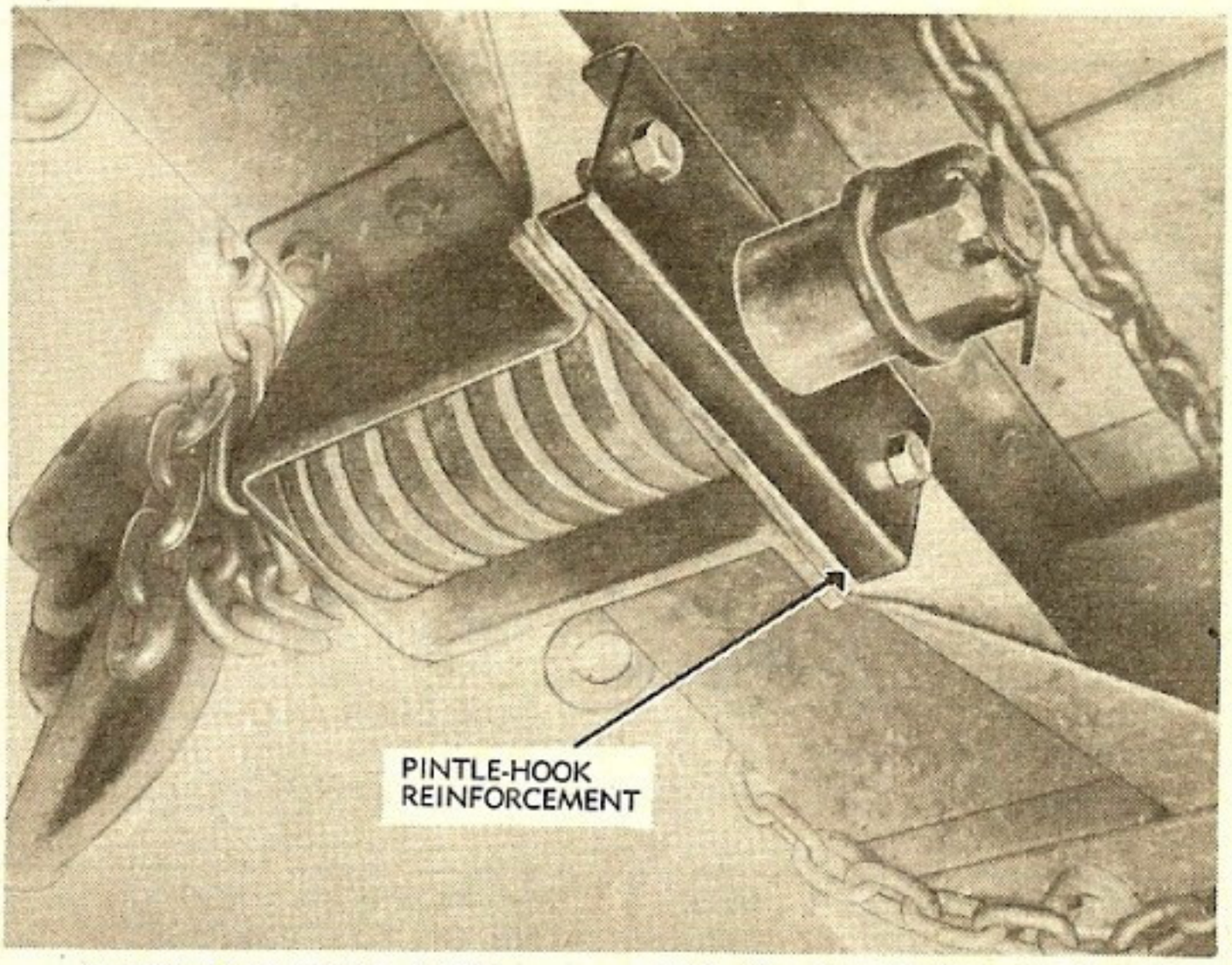



*Fig. 4*

## MUFFLER TAIL-PIPE

It's possible that a lot of you have been having trouble with the muffler tail-pipe — it isn't clearing the left-hand, rear step-hanger. Well, strictly for your convenience, the muffler tail-pipe was lengthened approximately 1" in production so it **would** clear. And that **means** strictly for your convenience, because the tail pipe wasn't too short to begin with. The trouble comes with the installation of the pipe.

Maybe you removed the pipe to clean it—it's got to be kept clear because a clogged pipe knocks hell out of engine performance—then when you put it back on, you **slid the pipe too far over the muffler outlet-tube.** Result: the tail pipe wouldn't clear the step hanger. Solution: just take it easy. Don't slide the tail-pipe too far over the outlet tube and you'll have no trouble—short pipe or long pipe.

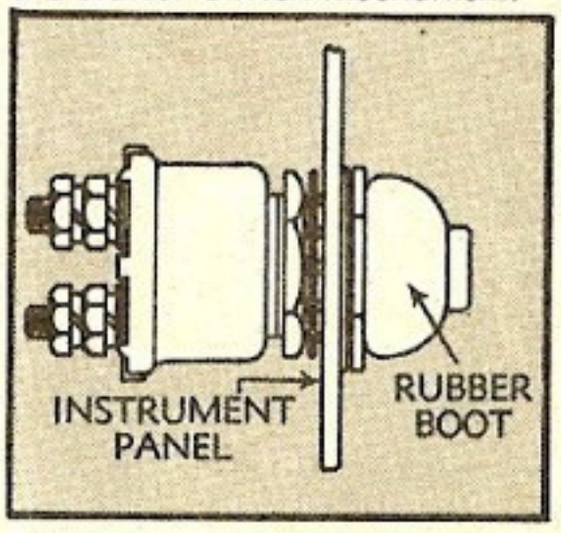
# *Dustproof Switch for Solenoid Starters*

If you're driving a heavy truck, take an extra look at the starter switch. A dustproof, moistureproof switch is appearing on Ordnance vehicles with solenoid starters (vehicles from about 4 tons up).

The switch will be on new vehicles only, but if you absolutely **have** to replace the one on your old truck, ask for the dustproof starter (Item Stock No. G103-1793650). Here's how to install it:

The flat mounting nut and shakeproof washer go on the back of the instrument panel. The flat washer and grooved mounting nut go on the front of the panel. Adjust the mounting nuts so that the outside flange of the groved nut is about ½" from the end of the plunger (see Fig.). Most important thing to remember is the rubber boot. It goes on easy when you turn it wrong side out, slip it on the plunger, and then flip it over.

You shouldn't have any more trouble with dirt and moisture creeping in and screwing up the starter-switch mechanism.



JOE DOPE

CHAPTER 6 OF THE GREAT SPARE PARTS MYSTERY

The FIENDS OF FLOSDURF

CWO BY Will EISNER IRONWORK

SOMEWHERE EAST OF SUEZ, BURIED IN AN OPAQUE FOG THAT SCREENS IT FROM THE OCCASIONAL SEA TRAFFIC LIES THE ISLE OF FLOSDURF BONG

ALTHOUGH NEVER MENTIONED BY EITHER RAND OR Mc NALLY, THIS LATRINE OF THE EARTH IS INFAMOUS AMONG SEAMEN .... IN FACT, THE MERE MENTION OF **FLOSDURF ISLE** BRINGS THE FOLLOWING REPLY.....

WHOT

FLOSDURF?

EEGADS

HERE, IN THIS TROPICAL HELL HOLE, OUTCASTS OF THE EARTH SEEK REFUGE AND OBLIVION..... ONCE ON THE ISLAND, MEN SEEM TO EITHER SHRIVEL-UP GROW INSANE OR DIE FROM DREAD **FLOSDURF FEVER !!**

ONE MORNING, THOSE STILL ALIVE ON FLOSDURF ARE STARTLED BY THE ARRIVAL OF A NEWCOMER ——- ONE, **WARD B. ATE**

IS THIS FLOSDURF, SIR?

YEH

WELL, WHAT DROVE YOU OUT **HERE** ?

NOW DON'T GIVE US THE OL'... " WE WUZ FRAMED "... WHEEZE !

DIDJA CROAK YR GRANMAW OR SUMPIN?

IT MUSTA BEEN SUMPIN' DAT DROVE YOU TO DIS PLACE..... SPILL IT CHUM

·OH, - SOB ·- LET ME BE !! I WANT TO FORGET -YES **FORGET**, DO YOU HEAR ?!

I OWE IT ALL TO A CHARACTER I NEVER MET ... NAMED **JOE DOPE**

IT STARTED WHILE I WUZ AN EDITOR IN A SUPPLY DEPOT.... IT WAS A CRUCIAL YEAR.... THE FIELD TROOPS WUS MAKIN' A BIG PUSH AND THEY WERE SCREAMIN' FOR SPARE PARTS ON EVERY FRONT...

AT AN ADVANCE BASE, THIS HERE NOW JOE DOPE BEGAN TO REKAZISHUN REPLACEMENT PARTS FOR TOOLS AND STUFF

PUT THOSE REQUISITIONS THROUGH AT ONCE, JOE... WE'VE GOT TONS OF STUFF TO REPAIR..... AND USE T.M.'S AND S.N.L's

O.K. SARGE

AINTCHA GONNA USE THEM BOOKS, JOE?

NAH...I BEEN IN THIS ARMY FOR THREE YEARS... I KNOW EVVY PART IN THE RACKET.... I AINT IGORINT, BUB

WELL - A FEW WEEKS LATER WE GOT HIS REQUISITIONS FOR TOOLS AND PARTS..... IT WAS HORRIBLE !!

HE WANTS A GEAR FOR A LATHE!

BUT WHAT **KIND** OF A GEAR? WHAT MAKE - MODEL LATHE NUMBER? STOCK NUMBER? AINT THERE NO CLUE?!

SEARCH ME, PAL. ALL I KNOW IS -- YOU'D BETTER GIT THEM AND FAST

OOOOH! I DON'T FEEL WELL

SLAM

WELL, SINCE 'ITEM CODE NUMBER' IS NO LONGER USED TO IDENTIFY TOOLS I COULDN'T EVEN USE **THAT** CLUE! - IF HE'DA SENT IT!! — SO I PHONED EVERY MAKER OF LATHES IN THE U.S., STUDIED EVERY S.N.L. — AND AT THE END OF A MONTH'S SEARCH

HA ~~~ AT LAST.... THIS - MUST - BE - THE - GEAR!

I MAILED THE PART TO PVT. DOPE AND LEFT AT ONCE FOR FLOSDURF.... TO END IT ALL !!

BUT WARD, WHAT ABOUT ME AND THE KIDS?

I HATE THE WHOLE WORLD — GOOD BY!

THAT SURE IS A SAD STORY... BOY THAT'S EVEN WORSE'N MY TROUBLES!

HEY, LOOK! SOMEONE ELSE IS LANDIN' ON **FLOSDURF**

WHAT ARE YOU HERE FOR?

I'M LOOKIN FOR A GUY NAMED **WARD ATE**

THAT'S ME!

**WHAT THE HECK IS THE IDEA OF SENDING ME THE WRONG SIZE GEAR**.. BOY, YOU DEPOT GUYS ARE A BUNCH OF SAPS!

# OVERLOADING tak

By WD Circular 212 (29 May 44), you are now permitted to haul overloads on all-wheel-drive general purpose cargo trucks up to and including the 2½-ton 6x6, when operating over smooth hard-surfaced highways.

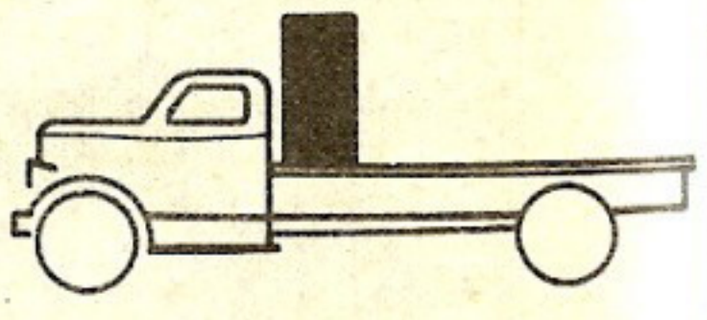
"Military cargo vehicles have been developed primarily to give satisfactory performance when operating under cross-country conditions and are powered to negotiate unusually steep grades."

Thus, given a smooth hard-surfaced highway, a military truck can be expected to do a little more. Circular 212 authorizes loads greater than the rated capacity. All-wheel-drive cargo trucks up to and including the 2½-ton 6x6 are now permitted to carry overloads up to 100% on clean hard roads. Trucks towing trailers are limited to a 60% overload. Trailers may not be overloaded, except under certain airborne and similar conditions. Overloads are also not permitted on 2½-ton 6x6 COE with 15-foot body or with 17-foot stake and platform body. In no case will vehicles operating cross-country, or on anything less than smooth hard-surfaced highways, be overloaded.

Stated coldly, all this is the legal basis for overloading. But—the wise motor officer and motor sergeant, realizing that much of the safety margin built into a vehicle disappears under overloading, will stop and think twice about the skill of his drivers before entrusting them with overloads. A well-trained or experienced driver won't have any trouble; a less experienced or less careful driver might discover that an overload is the straw that broke the camel's back. To keep the camel's back intact, weigh the skill of your drivers against the work to be done. If you've got a couple of drivers on the green side, it might be wiser not to take advantage of the new circular. If your work and equipment situation demands that you go to overloads, call a general meeting of the company and discuss the new responsibilities

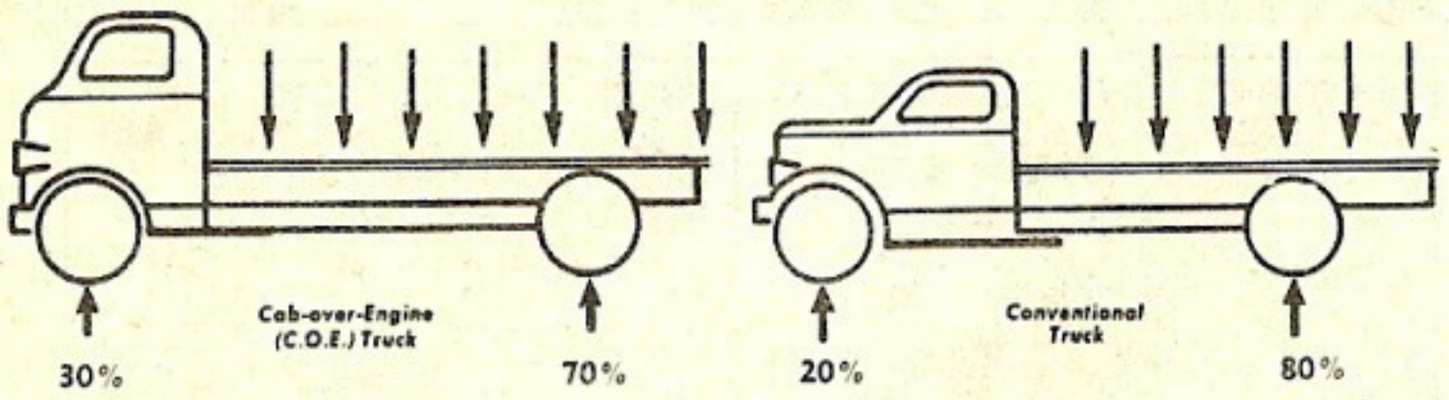
## HOW TO LOAD A TRUCK

A truck feels about a cockeyed load like you'd feel on a ten-mile hike carrying a full pack lopsided. Shown here are the rights and wrongs of loading. To apply this same poop to overloading (story above), imagine that the loads shown in the drawings represent only the heaviest part of the total load on the truck—in other words, there's a lot of other stuff on board, but the loads shown indicate the point of greatest strain.

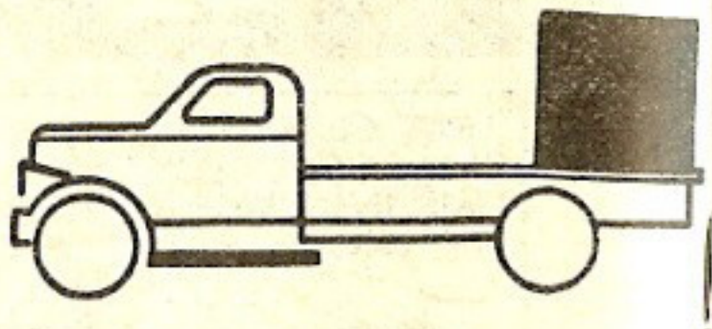


**WRONG**

This will bend the frame, overload front tires, make steering harder.

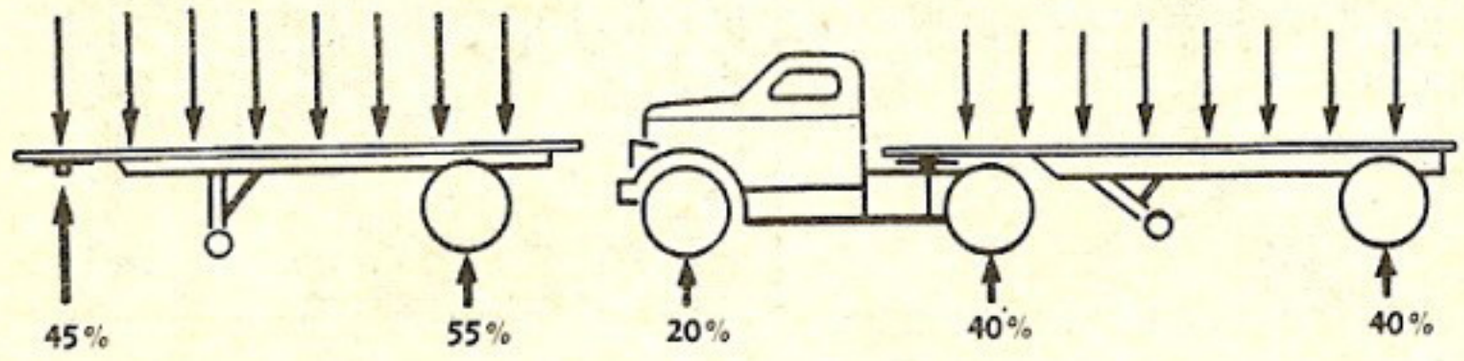



Tires, axles, frame, etc., are designed to carry a load distributed as above.

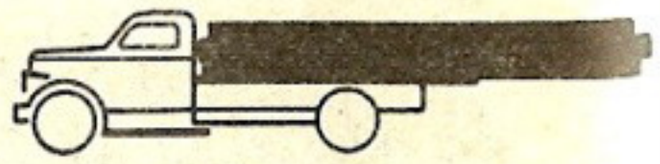


**WRONG**

This kind of weight distribution bends the frame, overloads rear tires and makes steering almost impossible.




Distribute trailer loads equally between the rear tires and the fifth wheel. This transfers the load to the tractor.



**WRONG**

The right vehicle

# kes a good driver

WD Circ. 212 specifies heavier freight for cargo trucks operating on smooth highways. Grade A drivers won't have any trouble.

that go with heavier tonnage.

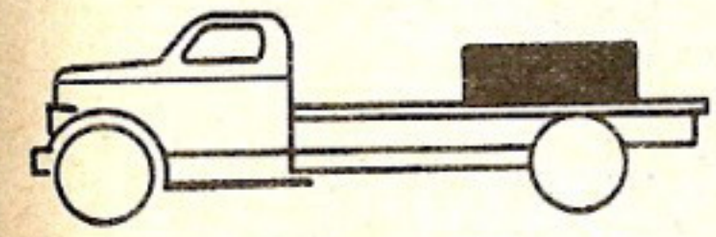
In the first place, you can't overemphasize that much of the safety margin built into trucks is lost with overloading. To the driver, this means that the same hole in the road he hit with 2½ tons without doing any immediate damage to the truck may now, with 5 tons, result in a broken spring or spell ruin to a neglected shock absorber. The element of greater "shock-loads" enters the picture. Twice as much load comes down twice as heavy on the power train, on the chassis and body—loose bolts shear like soft cheese. Keep 'em tight. Even "smooth hard-surfaced highways" can be expected to develop chuck holes here and there—the driver must learn to baby his load, avoid rough spots or take 'em easy.

Overloading means more starting, stopping, and gear shifting. The driver must be careful in picking up the load with the clutch. Up hills, the engine will be working harder at pulling the freight—proper gear ratios must be strictly observed.

Running over highways means running at sustained high speeds—check the lube in the gear boxes more often and keep the vents open. Highway operation means it's now twice as important to stay out of front-wheel drive—to prevent the difference in travel between the front and rear wheels from scuffing off rubber.

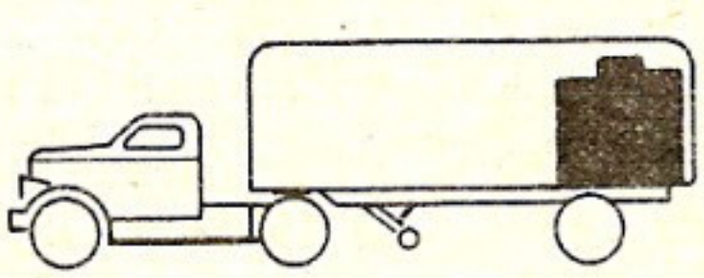
Speaking of tires, it won't be necessary to pump in more air since our tires already carry just about maximum pressure. But it will be a lot more important to keep them up to regulation since an overload will flex low tires to death and you'll be running into more flats than you like to think of.

In other words, what overloading needs is stricter preventive maintenance and more of it. Remember, overloading calls two strikes against you—one false move and you're out. (See story below.)



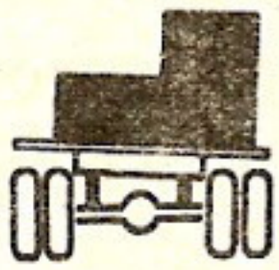
**RIGHT**

Place heavy part of load near rear axle for proper tire loading and to keep frame from bending.



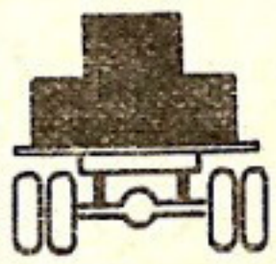
**WRONG**

This overloads trailer rear wheels, brakes won't brake properly, rubber scuffs away. Distribute the load over the full trailer floor.



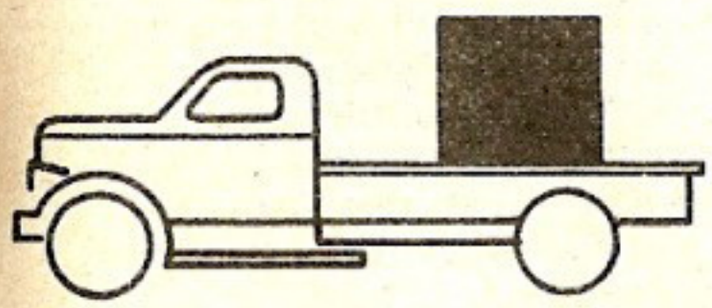
**WRONG**

This overloads one spring and set of tires. Brakes lock on the light side, cause skids.



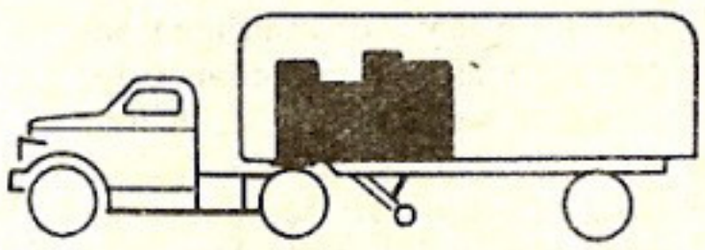
**RIGHT**

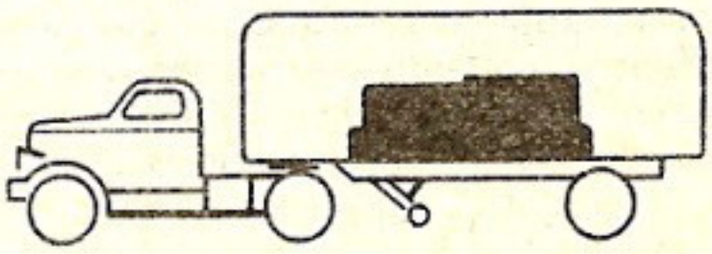
Nothing overloaded, frame won't twist and loosen cross-member rivets.



**RIGHT**

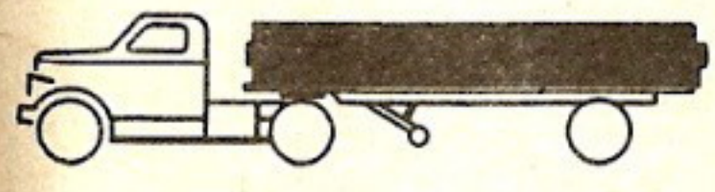
Set a concentrated load just ahead of the rear axle with, if possible, the longest side on the floor.





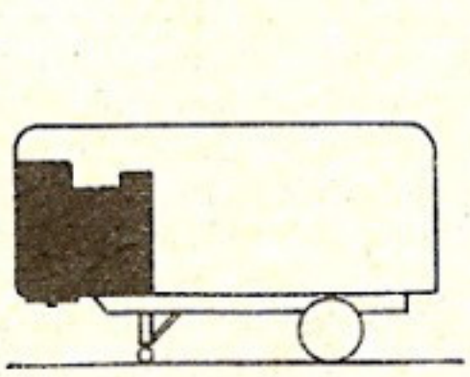
**WRONG** **RIGHT**

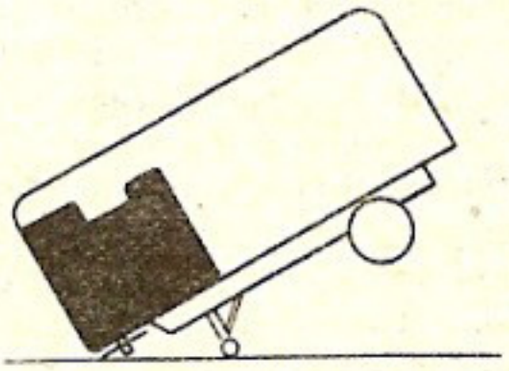
This overloads and shortens tire life, bends the truck rear-axle housing. Applying the trailer brakes may lock the wheels, cause flat spots and skidding.



**RIGHT**

e for the right job.





**WRONG**

No matter how much you preach against it, this is always happening.

SLAVE KIT MOUNTED ON THE JEEP

## WHEN ZERO IS BELOW, JACKSON FROST STIFFENS THE JOINTS OF TANKS AND TRUCKS. HERE ARE DEVICES DESIGNED TO WARD OFF RIGOR MORTIS. ALL READY FOR ISSUE.

In the bitter cold of sub-zero temperatures, ordinary lubricants stiffen to crude rubber, metals grow cold and brittle as old bones, men move around like statues.

Though the war has moved away from the cold regions, there are still organizations posted where the temperature runs from zero to —65 below. For these lucky people, for "Vehicles used in territorial areas having an average temperature below +5F during the coldest month of the year," (WD Supply Bulletin 9-16, 2 Mar. 44) we have Winterization equipment—to help you start and keep your vehicles going.

Although a big chunk of our Winterization equipment has already been issued, some organizations that need it still haven't requisitioned it, other organizations have obtained only part of their winterization equipment. The chart on page 147 gives the latest dope on procurement. If your equipment is incomplete, you can fill it out by ordering the kits specified. If you need, but don't have the equipment, the chart tells you what to order. Incidentally, the dope on the chart will be contained in a revised edition of OFSB 2-25 coming up.

Outfits already winterized will be happy to learn of modifications to their existing equipment—for instance, a kit with a new electric igniter for lighting the Perfection heaters usually installed on motor transport vehicles. (See last item on chart, page 147.) Also coming up, but not quite ready is a modification for the Evans Under-Chassis Heater to eliminate the fire hazard found in these heaters. Until this modification kit is available, all kits that use the Evans Under-Chassis Heaters — Quickie Kit, half-tracks, scout car, medium tractor M4, 6-ton 6x6, 10-ton 6x6 and M1 wrecker—have been temporarily frozen in stock. When you get your Winterization Kits for the above vehicles, you will also get a modification kit for the heaters. The same modification kit will then be available for under-chassis heaters already in the field.

Valuable poop on sub-zero operation is, of course, contained in old faithful OFSB 6-11, including much good talk on special fuels and lubricants needed for cold operation. WD Supply Bulletin 9-16 "General Supply: Winterization Equipment For Automotive Materiel," is a general runover on Winterization equipment, and includes the information that spare parts for this equipment will be available only on the heaters supplied with each kit—no spare parts are available for the other items in the kits. It also reveals that Winterization equipment will be installed by Ordnance personnel.

Winterization equipment falls into two classes. Class "A" is equipment installed in production and includes holes drilled and brackets installed for future installation of winterization devices. Class "B" is equipment to be requisitioned and installed on vehicles already in the field.

At your disposal there are three kinds of Winterization Kit: First, the "Interim" or "Quickie" kit which consists simply of a gasoline-burning heater to be hooked under the engine, and a canvas shroud to be thrown over the hood

# WINTERIZATION KITS

## APPROVED FOR STOCK AT MASTER DEPOTS

Effective Date, 1 June 1944

1 – (M) designated Master Depot for all Kits.

2 – Depots will receive requisitions as indicated in latest revision to "Sources of Supply Chart" (War Dep't Supply Bulletin SB-9-17)

3 – Depots will issue kits as authorized by SB-9-16, War Dept Supply Bulletin, dated 2 March 1944, and which is approved for stock at that depot. If out of stock on any such item, depot will back-order and place C.F.D on stock control point. (See F.S.Div. Bulletin No. 15-44 for detailed instructions.)

4 – Depots receiving requisitions for kits not authorized for stock at their depot will extract direct to the master depot indicated by an (M) in accordance with F.S.Div. Bulletin No 15-44, dated 5 April 1944.

5 – Depots will report Winterization Kits under kit number in column 14 of this chart until such time as official "G" stockage number, column 15, has been released through proper channels.

6 – *EXPLANATION OF TYPE OF KIT in column 2:*
BASIC – May be used alone to winterize a vehicle.
PARTIAL – This is but part of a basic kit. Must be completed by a supplementary kit. Partial plus Supplementary equals Basic.
SUPPLEMENTARY – This added to a patial equals a Basic.
AUXILIARY – An addition to a basic kit, but not necessary to winterize a vehicle. Will be supplied if wanted.
FULL – A Basic kit plus an Auxiliary kit.
GENERAL – This is a full kit applicable to all vehicles.

| MAJOR ITEM APPLICATION (1) | TYPE OF KIT (2) | ANNISTON (3) | ATLANTA (4) | FT. WAYNE ANNEX (5) | FT. WAYNE (6) | LETTERKENNY (7) | LINCOLN (8) | RED RIVER (9) | ROCK ISLAND (10) | ROSSFORD (11) | ST. LOUIS (12) | TERRE HAUTE (13) | WINTERIZATION KIT (14) | OFFICIAL-G STOCKAGE NO. WHEN RELEASED THRU-PROPER CHANNELS (15) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRUCK, 1/4 TON 4x4 WILLYS FORD | Basic | | | | | | | | M | | | | WKT 100 | 503-5700701 |
| TRUCK, 1/4 TON 4x4 WILLYS FORD | Aux. | | | | | | | | M | | | | WKT 100 A | 503-5700702 |
| TRUCK, 1/4 TON 4x4 WILLYS FORD | Full | | | | | | | | M | | | | WKT 100 X | 503-5700703 |
| TRUCK, 3/4-1/2, 4x4, 6x6 DODGE 6V | Basic | | M | | | | | | | | | | WKT 101 | 502-5700704 |
| TRUCK, 3/4-1/2, 4x4, 6x6 DODGE 6V | Aux. | | M | | | | | | | | | | WKT 101 A | 502-5700705 |
| TRUCK, 3/4-1/2, 4x4, 6x6 DODGE 6V | Full | | M | | | | | | | | | | WKT 101 X | 502-5700706 |
| TRUCK, 3/4 TON 4x4 DODGE 12V | Basic | | M | | | | | | | | | | WKT 102 | 502-5700707 |
| TRUCK, 3/4 TON 4x4 DODGE 12V | Supplement | | M | | | | | | | | | | WKT 102 C | 502-5700708 |
| TRUCK, 3/4 TON 4x4 DODGE 12V | Full | | M | | | | | | | | | | WKT 102 X | 502-5700709 |
| CAR, GUN MOT. 3/4T. 4x4 M6 DODGE | Basic | | M | | | | | | | | | | WKT 103 | 121-5700710 |
| TRK. BOMB SERV. 1/2T. 4x4 CHEV. M6 | Partial | | | | M | | | | | | | | WKT 104 | 85-5700711 |
| TRK. BOMB SERV. 1/2T. 4x4 CHEV. M6 | Supplement | | | | M | | | | | | | | WKT 104 C | 85-5700712 |
| TRUCK, 1/2T. 4x4 CHEV. | Basic | | | | M | | | | | | | | WKT 105 | 506-5700713 |
| TRUCK, 1/2T. 4x4 CHEV. | Full | | | | M | | | | | | | | WKT 105 X | 506-5700714 |
| TRUCK, 2 1/2T. 6x6 G.M.C. | Basic | | | | | | | | M | | | | WKT 106 | 508-5700715 |
| TRUCK, 2 1/2T. 6x6 G.M.C. | Aux. | | | | | | | | M | | | | WKT 106 A | 508-5700716 |
| TRUCK, 2 1/2T. 6x6 G.M.C. | Aux. | | | | | | | | M | | | | WKT 106 B | 508-5700717 |
| TRUCK, 2 1/2T. 6x6 STUDE. | Basic | | | | | | | | M | | | | WKT 107 | 630-5700718 |
| TRUCK, WRECK 4T., 6x6 DIAM. T. | Basic | | | M | | | | | | | | | WKT 108 | 509-5700719 |
| TRUCK, 4-5T, 5-6T, 4x4 AUTOCAR | Basic | | | M | | | | | | | | | WKT 109 | 510-5700720 |
| TRUCK, 4-5T, 4x4 FEDERAL | Basic | | | M | | | | | | | | | WKT 110 | 513-5700721 |
| TRUCK, 6T, 6x6, BROCKWAY, WHITE CORBITT | Basic | | | M | | | | | | | | | WKT 111 | 512-5700722 |
| TRUCK, 6 TON, 6x6 MACK | Basic | | | M | | | | | | | | | WKT 112 | 582-5700723 |
| TRUCK, 10TON 6x4, WHITE | Basic | | | M | | | | | | | | | WKT 113 | 642-5700724 |
| TRUCK, 10TON 6x4, MACK | Partial | | | M | | | | | | | | | WKT 114 | 528-5700725 |
| TRUCK, 10TON 6x4, MACK | Supplement | | | M | | | | | | | | | WKT 114 SI | 528-5700726 |
| WRECKER, M, WARD LAFRANCE | Basic | | | M | | | | | | | | | WKT 115 | 116-5700727 |
| TANK, MED., M3, M3AI | Basic | | | | | | | M | | | | | WKC 200 | 104-5700728 |
| TANK, MED., M4, M4AI | Basic | | | | | | | M | | | | | WKC 201 | 104-5700729 |
| CARR. MOT., 105mm. HOW., M7 | Basic | | | | | | | M | | | | | WKC 202 | 128-5700730 |
| TANK, MED., M4A2 (USSR) | Basic | | | | | | | M | | | | | WKC 203 | 104-5700731 |
| CARR. MOT, 3" GUN, M10 | Basic | | | | | | | M | | | | | WKC 204 | 130-5700732 |

| MAJOR ITEM APPLICATION (1) | TYPE OF KIT (2) | ANNISTON (3) | ATLANTA (4) | FT. WAYNE ANNEX (5) | FT. WAYNE (6) | LETTERKENNY (7) | LINCOLN (8) | RED RIVER (9) | ROCK ISLAND (10) | ROSSFORD (11) | ST. LOUIS (12) | TERRE HAUTE (13) | WINTERIZATION KIT (14) | OFFICIAL-G STOCKAGE NO. WHEN RELEASED THRU-PROPER CHANNELS (15) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TANK, MED., M4A3 | Basic | | | | | | | M | | | | | WKC 205 | 104-5700733 |
| CARR., MOT., 3" GUN, M10A1 | Basic | | | | | | | M | | | | | WKC 206 | 170-5700734 |
| TANK, MED., M4A4 | Basic | | | | | | | M | | | | | WKC 207 | 104-5700735 |
| TANK, LIGHT, M3 | Basic | | | | | | | M | | | | | WKC 208 | 103-5700736 |
| TANK, LIGHT, M3A1 | Basic | | | | | | | M | | | | | WKC 209 | 103-5700737 |
| TANK, LIGHT, M3A3 | Basic | | | | | | | M | | | | | WKC 210 | 103-5700738 |
| TANK, LIGHT, M5, M5A1 | Partial | | | | | | | M | | | | | WKC 211 | 103-5700739 |
| TANK, LIGHT, M5, M5A1 | Supplement | | | | | | | M | | | | | WKC 211 S1 | 103-5700740 |
| CARR., MOT., 75mm HOW., M8 | Supplement | | | | | | | M | | | | | WKC 211 S2 | 127-5700741 |
| CAR, SCOUT, M3A1, WHITE | Basic | M | | | | | | | | | | | WKC 212 | 67-5700742 |
| CAR, HALF TRACK, WHITE & AUTOCAR M2 | Basic | | | | | | | | | | | M | WKC 213 | 102-5700743 |
| CARR., H-T, PERSONL AUTOCAR | Basic | | | | | | | | | | | M | WKC 214 | 102-5700745 |
| CARR., H-T, 81mm MORT, M4, WHITE | Basic | | | | | | | | | | | M | WKC 215 | 102-5700747 |
| CARR., MOT., H-T, MULTI GUN M13, WHITE | Basic | | | | | | | | | | | M | WKC 216 | 102-5700748 |
| CARR., MOT., H-T, 75mm HOW., T30, WHITE | Basic | | | | | | | | | | | M | WKC 217 | 102-5700749 |
| CARR., MOT., H-T, MULT. GUN, M15, AUTOCAR | Basic | | | | | | | | | | | M | WKC 218 | 102-5700750 |
| CARR., H-T, PERSONL., M5, I.H.Co. | Basic | | | | | | | | | | | M | WKC 219 | 147-5700751 |
| CAR, H-T, M9, I.H.Co. | Basic | | | | | | | | | | | M | WKC 220 | 147-5700752 |
| CARR., MOT., H-T, MULT. GUN, M14, I.H.Co. | Basic | | | | | | | | | | | M | WKC 221 | 147-5700753 |
| CAR, ARMORED, M8, FORD | Basic | | | | | | | | | | | M | WKC 222 | 136-5700754 |
| CAR, ARMORED, M20, FORD | Basic | | | | | | | | | | | M | WKC 223 | 176-5700755 |
| CARR., MOT., 76mm GUN, M18, (T-70) BUICK | Basic | | | | | | M | | | | | | WKC 224 | 163-5700756 |
| TRACTOR, MED., M4, A-C | Basic | | | | | M | | | | | | | WKTR 307 | 150-5700757 |
| TRACTOR, MED., M5, I.H.Co. | Basic | | | | | M | | | | | | | WKTR 308 | 162-5700758 |
| 5-PASS. SEDAN, LIGHT, FORD | Basic | | | | | | | M | | | | | WKP 400 | 522-5700759 |
| 5-PASS. SEDAN, LIGHT, CHEV. | Basic | | | | M | | | | | | | | WKP 401 | 520-5700760 |
| 5-PASS. SEDAN, LIGHT, PLYM. | Basic | | | M | | | | | | | | | WKP 402 | 521-5700761 |
| 5-PASS. SEDAN, MED., PACKARD | Basic | | | | | | | | M | | | | WKP 403 | 644-5700762 |
| MOTORCYCLE, HARLEY-DAV. | Basic | M | | | | | | | | | | | WKMC 500 | 523-5700763 |
| QUICKIE KIT (INTERIM) SLAVE KIT | General | | | | | M | | | | | | | WKQ 50 | 9-5700764 |
| AUX. COLD STRT'G. AID KIT | General | | | | | M | | | | | | | WSK 100 | 9-5700765 |
| ELEC. IGNITOR KIT FOR PERFECT HEATER FOR ALL GEN. PURPOSE VEHICLE AND ARMORED CAR M8, M20 | Basic | | | | | M | | | | | | | WKSP 100 | 9-5700766 |

**Note: Kit WKT 102 C and Kit WKT 100 together give you the kit for the Dodge ¾-ton carryall. To get the proper equipment for the 75mm M8 gun motor carriage, order Kits WKC 211 and WKC 211 S2.**

Winterization Kits

to keep the heat in. The Quickie Kit is used for vehicles that don't have "tailor-made" kits. Second, the "Auxilliary Cold Starting Aid Kit" or "Slave Kit" which is organizational equipment mounted on a ¾-ton weapons carrier for mobility, and distributed about one to every 50 vehicles. The Slave Kit consists of a high-output Petro heater which furnishes a blast of hot air to quickly heat up engines; eight six-volt batteries to operate the heater or start vehicles with dead batteries; a switchboard to adapt the output of the batteries to six, 12, or 24-volt vehicles; a Homelite generator for charging the batteries; and specially designed leads to reach from Slave Kit to the vehicle to be heat-treated. Third, there are tailor-made "Winterization Kits" specifically designed for certain models of vehicles.

The equipment in the tailor-made "Winterization Kits" is fitted onto and becomes a permanent part of the vehicle. These kits contain, first, an engine heater, which for motor transport vehicles is usually a gasoline-burning "Perfection" coolant heater. Tanks usually get the same "Petro" heater mentioned above which throws a hot blast of air at the engine and quickly heats it up. In the engine coolant heater, the coolant circulates through the heater, gets warmed up and distributes the warmth throughout the engine.

It is the Perfection coolant heater that gets the kit containing the new electric igniter. If your vehicles have the old torch-ignited heater, requisition the "Electric Igniter Kit WKSP100," Item Stock No. G-9-5700766, available through channels from the Lincoln Ord. Depot, Springfield, Ill. (See last item on chart, page 147.)

Maintenance on the heaters includes keeping ice, dirt and snow out of the fuel lines not only for the obvious reason of allowing a free flow of gas to the vehicle engine, but also to allow a flow of gas to the heater. There is also a combination sediment bowl and filter usually located directly under the fuel tank — clean it often. On the Perfection heater, clean the carbon out of the "pot" or burner part of the heater every 150 to 200 hours operation, being especially careful to poke the carbon out of the air holes and out of the heat-exchanger.

The Perfection heater feeds its gasoline down to the burner through a float bowl. Some of the boys discovered last year that a bit of dirt or foreign material may wedge the float open or closed, causing difficulty with starting or stopping. It was found that a couple of taps on the bowl were enough to dislodge the dirt causing the trouble.

Since gasoline is a helluva fire hazard, fuel lines to the heater must be kept tight. And with the engine coolant flowing through the heater, hose connections must be watched for leaks, and the level in the vehicle radiator checked often.

Tailor-made winterization kits include arrangements for keeping the battery from freezing. These arrangements may consist of relocating the battery under the hood on vehicles where the battery is out in the cold, installing the battery in an insulated heated box, placing a heating pad or plate under the battery, running a hot-air duct off the exhaust and blowing hot air around the battery, or simply hanging a heater under the battery. Whatever arrangements are used, the battery must be kept in a fully charged condition, since a partially charged battery will freeze up tighter than a drum.

Because gasoline loses volatility in sub-zero temperatures, hand-operated primer pumps are either installed in production or furnished in the tailor-made kits. The primer pumps, which are installed right handy to the driver, lead from the vehicle fuel tank and squirt gasoline through jets directly into the intake manifold. Maintenance as with any other

(Continued on last page)

Dear Editor,

Some of the older half-tracks have no lube fittings on the transfer case levers, and it's necessary for the men to brace their broad backs on the seat and give—but mightily—with their size 13's to shift into low range or front wheel drive.

**T/4 Crowder** of our organization fixed the levers this way. Remove the two levers (front-drive shift lever, Ord. No. D48159, and underdrive shift lever D48160) and drill and tap each for ⅛" pipe thread lube fittings (see Fig. 1). Install 90° elbows on standard Ordnance fittings. Then file the shaft (B184277) on which the levers rotate just a trifle flat—don't overdo it—under the fittings to make lubing easier.

**Lt. John P. Peters**
**465th AAA, AW Bn.**

(*Ed. Note*—Practically the same thing's been done in production since November 1942—only a 45° elbow is used.)

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Dear Editor,

We have what we think is the missing tool on ¼-tons. It's a gadget to remove grease and dirt from the three hardest places to keep clean: (1) front of the motor support, (2) mud guard or shield under the fan belt, (3) skid plate under the engine.

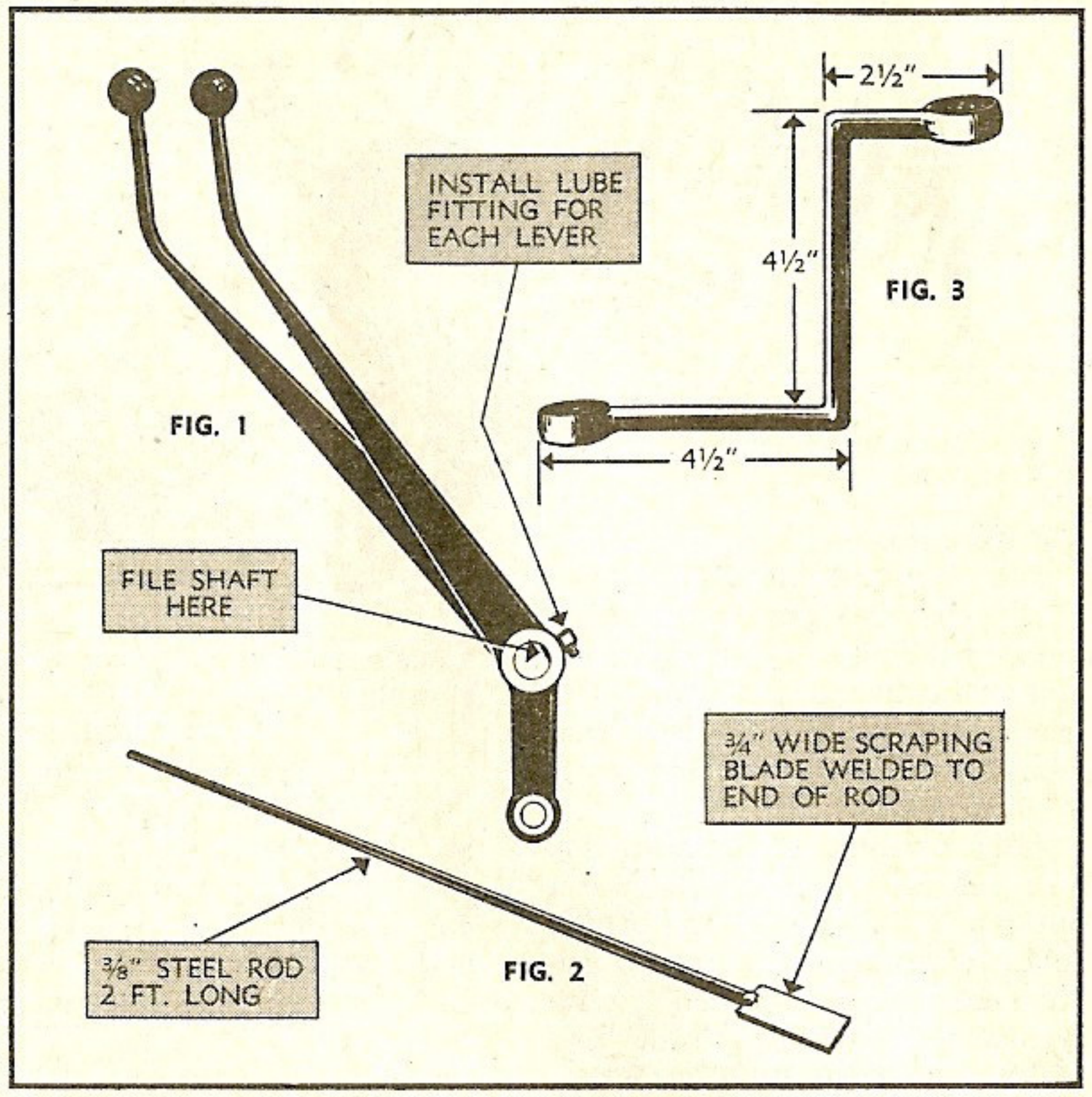


FIG. 1

FIG. 3

FIG. 2

Any driver who's really doing his 1st-echelon maintenance job knows these spots are "knuckle busters."

A scraping blade (¾" wide) welded on the end of a ⅜" steel rod (2 feet long) makes the tool (see Fig. 2). It'll save lots of knuckles, to say nothing of gigs and extra duty at inspections.

**T/5 Mack D. Parker**
**58th Sig. Bn.**

(*Ed. Note*—It sure looks like a handy device for any surface that needs to be scraped free of grease and mud.

The bottom of the oil pan is another grease and mud catcher that should be kept clean. Accumulated grease and mud act as insulation, so the oil can't dissipate its heat. That's bad because one of the oil's functions is cooling the engine.)

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Dear Editor,

I have a suggestion for all mechanics who are having so much trouble tightening the strut rods on GMC banjo-type axles.

Simply take an 11/16" and 3/4" box-end wrench (11½" long) and bend it as shown in Fig. 3. The results are very satisfactory and the strut rods can be tightened with ease.

**T/5 Lester L. Raines**
**75th QM Co.**

(*Ed. Note*—Good idea, but use the right method for bending the wrench—remember, it's heat-treated steel. Heat the wrench and bend it. Then, give it an annealing treatment (subject it to high heat and cool it gradually), after you bend it. This will remove any strains in the metal caused by the first heating.

Before you start bending wrenches, though, make sure you have more than one of that particular size, because you can't use a bent wrench for all your wrenching jobs. Keep a straight one on hand—requisition Wrench, tappet, double-end, 11/16" and 3/4", (Federal Stock No. 41-W-3582.)

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Dear Editor,

When I was first assigned to a Field Artillery unit, the outfit was having clutch trouble on the 105-mm howitzer motor carriage M7.

## BUILT A BETTER GIMCRACK LATELY?

Have you worked out a new wrinkle that makes a tough job easier to do? We pay off heavily for valuable—or even just helpful—maintenance dope from the field. For a good printable tip, you'll get a personal subscription to ARMY MOTORS. For a real heavyweight idea, we'll send you the "Little Jim-Dandy Athlete's Foot Scratcher" with which you can tear your toes to ribbons. Get on the ball, Jack, don't keep them good ideas to yourself—shoot 'em in and we'll spread 'em out for everybody to use.

So I got out the trusty old TM 9-731E to check clutch adjustments.

Imagine my surprise when I found the clutch adjustment procedure described on page 177, item 111 (c). It violates all rules of mechanics. Instead, I adjusted the clutches as described in TM 9-731**A**, for medium tanks M4 and M4A1. This cleared up the trouble.

Will you please bring this error in TM 9-731E to the attention of the proper authorities?

**M. M. Hornsby**
**Civilian Automotive Advisor**

(*Ed. Note* — The clutch pedal free play adjustment shown in TM 9-731E is wrong. It will be corrected in the new TM for the howitzer motor carriage M7, scheduled for publication in August, or thereabouts. Meanwhile, follow clutch linkage adjustment instructions on page 248, paragraph 117 (b), TM 9-731**A**.)

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Dear Editor,

Our unit is often short of hydrometers to check battery fluid and antifreeze. This shortage hasn't been the fault of the issuing agencies—they've shipped them to us. But half or more of every issue arrive with the float or the outside glass broken. This was true of the ones we received in Africa, as well as here in England. I've checked different units nearby, and they're all having the same trouble.

I'd like to suggest a few modifications to make these hydrometers more sturdy. The float and tube should be made of thicker glass, or better yet, fuzed quartz. Or, if this can't be done, I'd suggest inserting both the globe and stem into a disk of rubber, cork, or some other acid-resisting, shock-absorbing material. This would prevent the float from sticking against the tube, and keep it from breaking, both in transit and when it's used.

**M/Sgt. Edward G. Blackmore**
**Armd. Rcn. Bn.**

(*Ed. Note*—Sergeant Blackmore's letter (together with one from **Pvt. Walter J. Hess** of the AAA School) got results—an investigation of both the product and its packaging. The outcome: an entirely new set of instructions for packaging hydrometers. You'll get the same type hydrometers, but with no glass broken or rubber cracked.)

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Dear Editor,

About two years ago, a T/5 in a Field Artillery Battalion showed me how to cure the troublesome rhythmic fluctuation of the brake pedal that Cpl. William H. Maxwell refers to in the March ARMY MOTORS.

The wheels on ½-ton, 4x4 Dodges have balance lugs put on them at the factory when they're balanced for front hubs. When the wheel is installed on the rear brake drum, the lug distorts the drum circumference enough to cause erratic brake pedal action. When the wheel's removed, the drum returns to its original shape.

To remedy this trouble, simply knock the balance lug off the wheel.

**Charles A. Newding, Jr.**
**Transporation Office**
**Galveston Army Air Field, Texas**

(*Ed. Note*—C. G. Collins, Tyndall Field, Florida, and G. A. Richey, McChord Field, Washington, also came up with the same solution to Cpl. Maxwell's problem—which shows you readers are right on the ball.)

Dear Editor,

In the past, I've had trouble getting windshield header-panels (Part No. 909664) for ½-ton Dodge weapons carriers.

Having some salvaged command car tops, I took the front header-panels (which have the same dimensions as the weapons carrier header-panels), and installed top grommets. By using these I was able to take several jobs off the deadline.

**T. B. Segner**
**1358 Serv. Command Unit**

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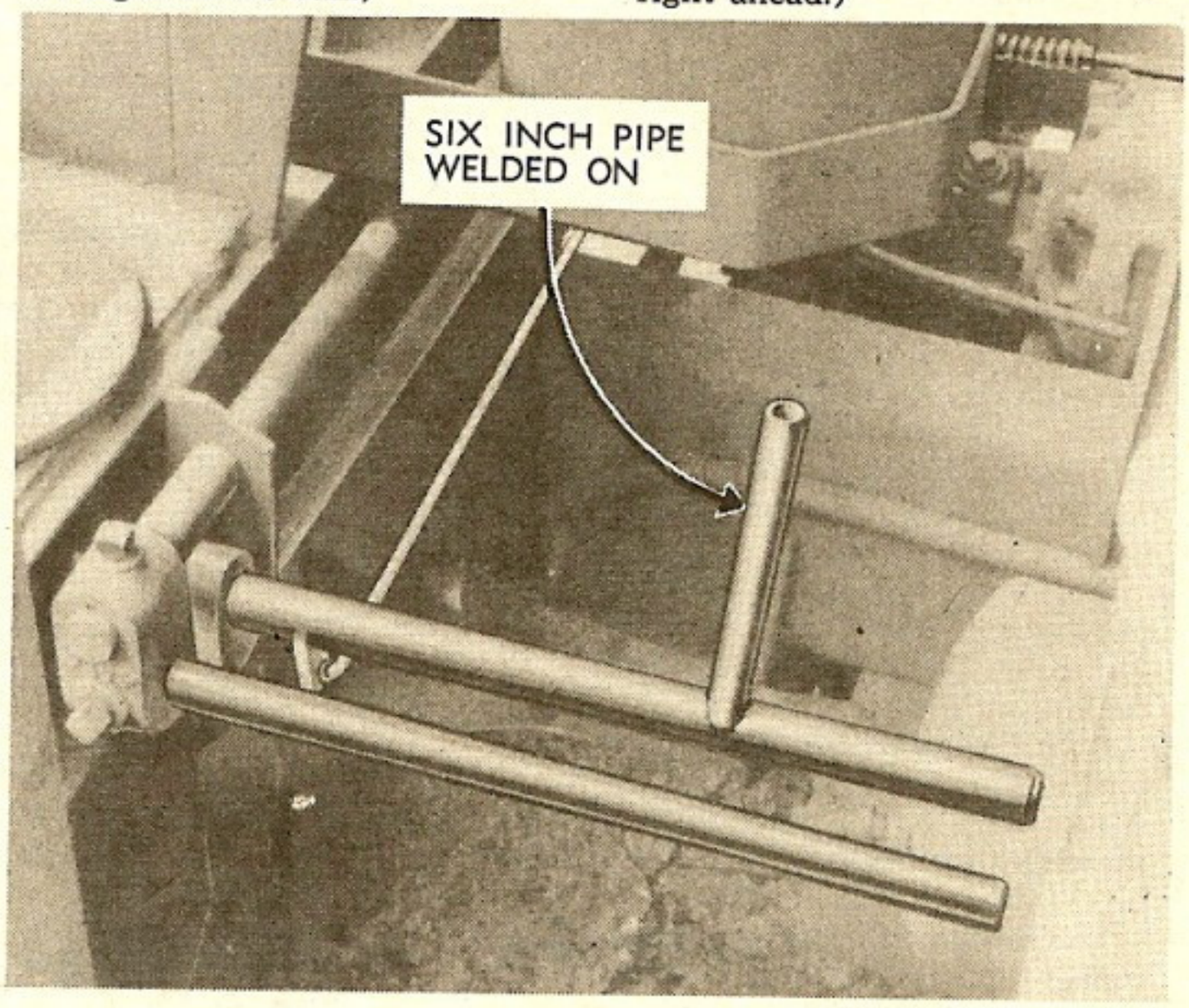
Dear Editor,

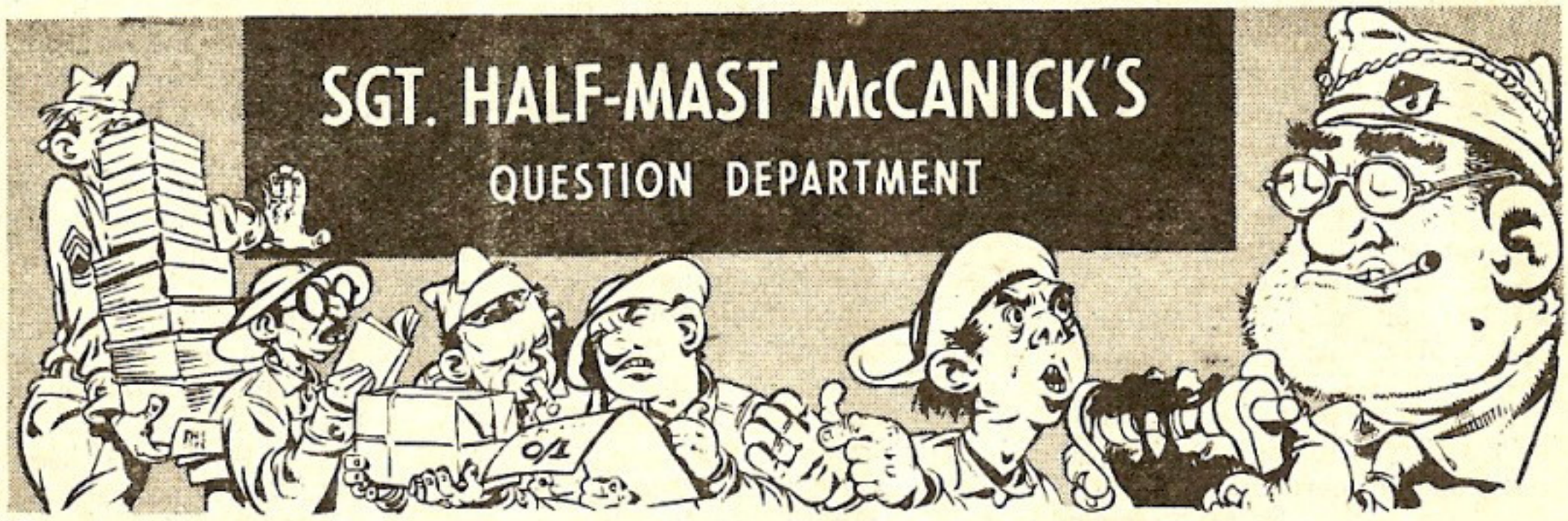
I drive a 4-ton Diamond T wrecker somewhere in the Aleutians and have a lot of trouble with the throttle control on the winch control levers. Why not weld a piece of ½" pipe, about 6" long, on each control lever (see Fig. below) in order to accelerate the winch more easily?

Also, why not give the boom adjusting cables (from the winch frame to the end of the boom) a paint job to keep them from rusting? Since the cables aren't wound, grease or oil wears off pretty fast.

**Cpl. E. J. Boyd**
**Ord. Sv. Comp. Co.**

(*Ed. Note*—Sure, why not? Go right ahead.)






Dear Half-Mast,

We have some K-28-A Radar-mount trailers that have 7.50-15 10-ply tires. Some of the boys have been putting 70 lbs. of air in them, while others just put in any amount. TM 31-200 (Maintenance and Care of Pneumatic Tires and Rubber Treads) doesn't list a 7.50-15 10-ply. What's the correct air pressure?

And what about putting a bigger engine on the portable air compressor? We've worn out three engines in the last year—the compressor seems to be too much of a load for them.

We've also been having trouble with the rubber battery-water jars. Every one we get wears out at the kink in the hose near the base of the jar. Would putting a little tape or copper tubing around the kink do any good?

Cpl. E. M.

Dear Corporal,

You'd better pass the word around that the correct air pressure for those 7.50-15 10-ply tires is 50 lbs. I guess the reason this ain't shown in TM 31-200 is that K-28-A trailers were supposed to be replaced by other trailers with 7.50-20 tires—but I guess yours weren't.

As for the portable air compressor—running the engine too fast when there's no load on the compressor will wear it out in a hurry. I hear there's a move on foot to modify the engine so the speed will be governed when there's little or no load—that could be the answer to your problem.

You're right about the tape and copper tubing—I've found the best way to stop wear of that rubber battery-water-jar hose is to put a piece of copper tubing over the kink in the hose, then tape the tubing to hold it in place. The edges of the tubing oughta be rounded, so they won't cut the rubber.

Half-Mast

Dear Half-Mast,

I might as well put in my two-bits' worth about how long an outfit should keep its Form 48's (Trip Tickets).

In your June issue you state that it's up to the unit commander and that the average is about six months.

I think you have overlooked War Department Pamphlet No. 12-5 (10 Mar. 44), which states that Drivers' Trip Tickets will be retained for three months and then disposed of.

Capt. C. D. G.

Dear Captain,

Overlooked is right. I rapped my librarian's pretty knuckles for not having that WD Pamphlet on her shelf long ago. It sure enough tells you to file Trip Tickets, Daily Dispatch Records, and Duty Rosters (when used as lube records) for only **three** months.

Just to foul things up again, I see that AAF Regulation 75-4 says to retain Trip Tickets and Daily Dispatch Records for **six** months Guess it all depends, like I said in the first place.

Thanks for wising me up on Pamphlet 12-5, Captain. And that goes for you other guys who sent in the same correction.

Half-Mast

Dear Half-Mast,

The spring-seat bearings on our 4-ton Diamond T have been leaking grease. We are now using No. 90 grease. What authority states we can use a grease fitting and what grease to use?

Lt. F. M. N.

Dear Lieutenant,

Gear oil, and not grease, is the dope for these spring-seat bearings, according to War Department Lube Orders. Lube Order 507 (24 Dec. 43) specifies gear oil for these housings—GO 80 when the temperature is between 0° and 32° F., GO 90 when it's above 32°. Try that from now on.

Oil cartridges are used in the spring seats, and grease won't feed to the bearings. Don't worry about a little lube leakage—if you lubricate every 1,000 miles, the oil cartridges will get soaked enough to lube the bearings until the next time.

Half-Mast

Dear Half-Mast,

The article, "Laxative for Light Tank Turret," in ARMY MOTORS (April 1944 issue) has me confused. It says to pack the turret bearings with grease to give the turret more zip.

I read the article two or three times and it didn't seem right to me so I checked with TM 9-727, page 321. The TM states definitely not to oil or grease the turret bearings.

Who's right?

S/Sgt. A. E. R.

Dear Sergeant,

That ain't an easy question to answer. I've heard a lot of arguments on whether to pack or not

to pack the turret bearings, but no decision ever gets reached. Six guys say **don't** pack the bearings with grease, and another half-dozen say **do** pack the bearings with grease. They're all guys who know what they're talking about, so it's tough to say who's right.

If you're asking for **my** opinion, though, go ahead and pack the bearings. I think a little grease is better than no grease, and makes for less turret freezing.

There's supposed to be a War Department TB published soon covering lubrication and adjustment of the turret.

Half-Mast

Dear Half-Mast,

We've been having trouble holding the head gasket on the ¼-ton 4x4. The head gasket allows water to seep through into the crankcase. In TM 10-1349, it tells you to apply 60-65 ft. lbs. to the head bolts. However, we found out that by increasing the ft. lbs. to 85 or 90, we had no further trouble.

Is there anything in the books that says it's permissible to increase the torque lbs.?

S/Sgt. S.

Dear Sergeant,

You won't have to increase the ft. lbs. of torque for tightening the bolts if you get hold of the new head gasket that's available (Ford Part No. GPW 6051B, Willys Part No. A8558). This new gasket has the holes around the cylinders and water passages grommeted to stop leakage into the crankcase.

There's nothing in the vehicle TMs that says not to increase the ft. lbs. of torque. They only say how much to apply. But Willys says tightening the bolts more than the specified torque wrench pull of 60-65 ft. lbs. only stretches the bolt and doesn't make the head any tighter to the cylinder block.

Half-Mast

Dear Half-Mast,

Other than the skimpy information shown in paragraph 125 of FM 25-10, I have been unable to locate a regulation that prohibits more than two persons from riding in the cab of a general purpose vehicle. Can you throw any light on this subject?

Capt. V. R. M.

Dear Captain,

Not even a flicker, as far as regulations go. It's a question of safety, and it ain't in numbers this time. The ground rules of most posts and camps I've visited allow only two, including the driver, to ride in the cab. But it depends on the type and size of the vehicle, too. Actually, the local command says how many.

Half-Mast

Dear Half-Mast,

Will you please tell me if it's proper to use detergent oil in a 1942 Packard staff car. I used regular oil for about 10,000 miles before I changed to detergent oil. Ever since then, I've been having trouble with the valves.

Sgt. H. A. L.

Dear Sergeant,

It's not the detergent oil itself that's causing your trouble, since detergent's the only OE used by the Army since 1942—it's probably the sludge loosened by the detergent oil. If the engine, crankcase and filter element weren't absolutely clean and free from sludge when you made the change, changing over from regular oil to detergent loosened deposits of dirt and sludge in the engine. In your case the loosened sludge probably collected in the valve guides and is causing the valves to stick.

War Department Training Circular 32 (22 May 42) told you exactly how to clean your engine when changing over to detergent oil (USA Spec. 2-104B). And although the circular was cancelled long ago, try to get ahold of a copy and follow the directions. If sludge **is** causing your trouble, drop the crankcase pan for cleaning, have the valves cleaned and refaced, and replace the filter element.

Half-Mast

Dear Half-Mast,

TM 9-2810 "Motor Vehicle Inspections and Preventive Maintenance Services," chapter 3, paragraph 12 C (1), says that the driver or assistant driver should accompany his vehicle when the 6000-mile preventive maintenance services are performed.

The word "should" is so indefinite that it's apt to be misinterpreted by troop commanders. Isn't there an order, a circular, bulletin or something official that **requires** the driver or assistant driver to assist in this periodic 2nd-echelon check?

Sgt. S. C. M.

Dear Sergeant,

I can't find any directive that says more than that the driver or assistant **should** accompany his vehicle during the 6000-mile check.

I'm personally all for it myself, because it helps the driver and assistant driver learn **why** and **how** things are done. But it looks to me like it's up to the troop commander to decide

## The Chaplain's Assistant

The Chaplain turns all maintenance troubles over to Half-Mast—all them aggravatin' problems that won't work out. But Half-Mast, who also plays the organ and leads the congregation in the race to the nearest bistro, will never hand you a T.S. Slip. If you've got a problem, somewhere there's an answer—and Half-Mast knows where to find it. He's got an "in" with vehicle manufacturers and there's not an Ordnance designer or engineer that he hasn't borrowed money from. Write "Dear Half-Mast," ARMY MOTORS Magazine, Office, Chief of Ordnance-Detroit, Detroit 32, Michigan.

whether the driver **has** to be with his vehicle at the time.

The usual system is to have daily and weekly servicing done by the driver, and the 1000 and 6000-mile servicing done by 2nd-echelon.

Half-Mast

Dear Half-Mast,

A few of our 1½-ton 6x6 Dodge trucks have me up a tree. These vehicles keep jumping out of high range when engaged in the power take-off. I had the unit apart, and everything looks and works okay, but when it's together, I have the same trouble all over again. Can you help me?

Lt. J. S., Jr.

Dear Lieutenant,

I've heard a couple other complaints about the 1½-ton Dodge jumping out of high gear, and it usually boils down to this; improper adjustment of the transfer-case bearings, damaged two-speed-clutch gear-teeth causing incomplete engagement in front-wheel drive, or improper adjustment of the transfer-case shifting-rods. There's a slim chance, too, that it might be misalinement in the transfer case itself.

When winching, you know, the only time the transfer case should be engaged is when the vehicle is pulling itself out with the help of the winch. Then the transfer gear should be in low range, and the transmission in first or low gear.

Half-Mast

Dear Half-Mast,

Within one week we underwent two vehicle inspections—one by Ordnance, one by our division. They didn't agree on the correct lubrication levels for **all** gear cases, as the Ordnance inspector said the specifications were changed recently. Please tell me the correct gear case levels for the ¼-ton, the ½ and ¾-ton Dodges, the 2½-ton GMC, and the 4-ton Diamond T, so we'll have them right for the next inspection.

T/4 C. A. M.

Dear Sergeant,

The last word on lube levels for gear cases is this: keep the oil in the Dodge, Diamond T, and GMC transmission, differential, and transfer case even with the plug hole when hot, or within ½" of the plug hole when cold; on the ¼-ton Willys and Ford, keep the oil level even with the plug hole at all times.

Half-Mast

Dear Half-Mast,

What's the correct interpretation of paragraph 32 (e), AR 850-15 (28 Aug. 43)?

According to the old AR 850-15, we had to fill in a shipping ticket when we turned in an unserviceable vehicle for replacement. Is it still necessary to use a shipping ticket?

Lt. J. L. C.

Dear Lieutenant,

An exchange tag is all you need to make a vehicle trade, just like a parts trade, since AR 850-15 calls only for a "tag showing general nature of unserviceability." And

in the AR's list of forms, WD 00 Form No. 7370 (Exchange Part or Unit Identification Tag) is specified for exchanging "unserviceable items for like serviceable assemblies, sub-assemblies, parts, **vehicles,** and tools." So I'd say a shipping ticket's not necessary any more.

By the way, the November 1943 ARMY MOTORS had an article on the exchange tag—you might look there for further details.

Half-Mast

Dear Half-Mast,

On arriving in the E.T.O., we were issued Willys ¼-ton, 4x4's with maintenance manual TM 10-1513, C1 (15 Jan. 43). On page 03-13, the lube chart specifies Fed. Spec. VV-L-761 SAE #90 in the steering gear housing. On page 03-15 it says to use General Purpose Grease No. 1 (Army No. 2-107 when it's above 32° F., Army No. 2-106 when it's below 32° F.).

I'd like to know which is correct. I've been using SAE 90 (VV-L-761).

Lt. L. W. C.

Dear Lieutenant,

You can trade that TM in to your adjutant for TM 9-803 (22 Feb. 44). The new TM carries a reproduction of Lube Order 501 (4 Dec. 43) which specifies GO 90 when the temperature is above 32° and GO 80 when it's between 32° and 0°. Both GO 80 and GO 90 are made to USA Spec. 2-105 which supersedes Fed. Spec. VV-L-761.

By the way, you can keep up with the Lube Orders and any changes by keeping an eye on FM 21-6 changes, which now come out the first of every month.

Half-Mast

Dear Half-Mast,

TM 10-460 "Driver's Manual" says to warm up a cold engine by idling it as slowly as it will run. Since some engines will run at idle speed or just a little above a very long time before they begin to reach operating temperature, it seems to me that there'd be oil dilution and danger of sludge forming.

Isn't there some rough, but workable rule about the actual RPM that engines should be run at while warming them up? I've heard that twice the idling speed is right for our GMC 2½-tons.

Cpl. E. M.

Dear Corporal,

Whoever said "twice the idling speed," was wrong. The right way to warm up that 2½-ton GMC is to keep the engine running at not more than 1200 RPM, without excessive choking. There are some differences of opinion about how long you'll have to run the engine, but this is certain—you just sit it out with your truck and wait until the engine reaches operating temperature. In some cases you can blanket the engine and run it at a "fast" idle—but that ain't twice the idling speed.

Half-Mast

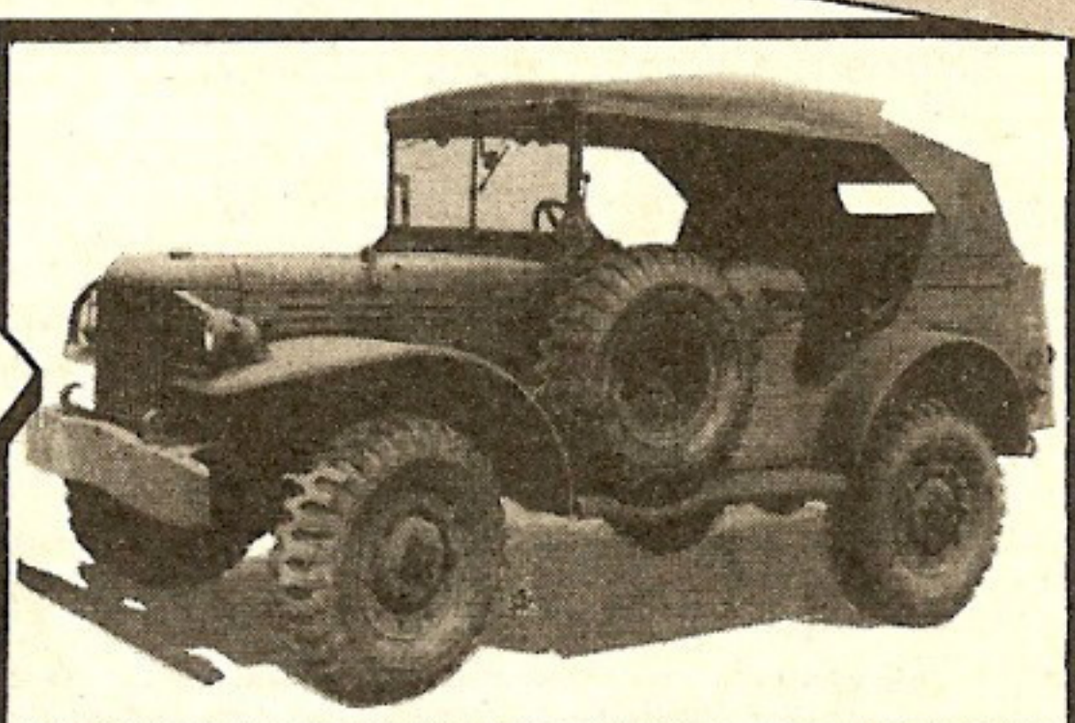
# How's Your Dodge, Rog?

As a hard-driving Dodger (not necessarily from Brooklyn), you'll have a better batting average if your Dodge has had all the improvements tallied below.

From here on out, you can check your truck's standing each month—in ARMY MOTORS' own "Month's Directives" and in changes to FM 21-6.

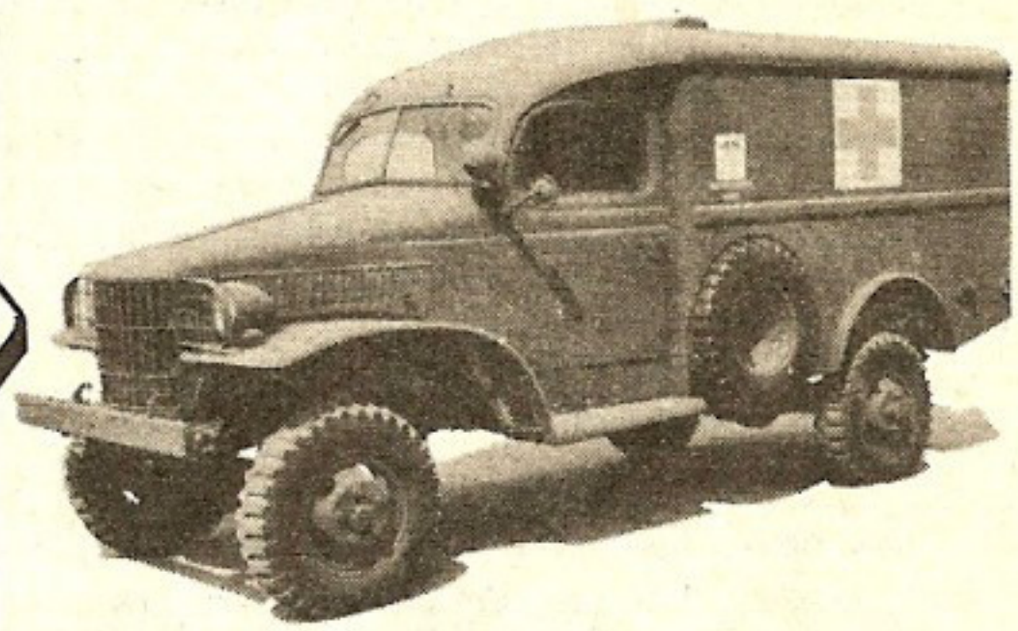
FSMWO G502-W7, Top deck replacement (Model WC-53, Carryall)
FSMWO G502-W10, Enlarged cross (Ambulance)
TB 700-68, Instrument panel voltmeter (Command and Carryall)
TB 808-1, Litter bracket and leg interference (Ambulance)
TB 808-2, Ignition distributor assembly
TB 9-808-4, Generator regulator field-terminal-filter removal

**¾-Ton 4x4**



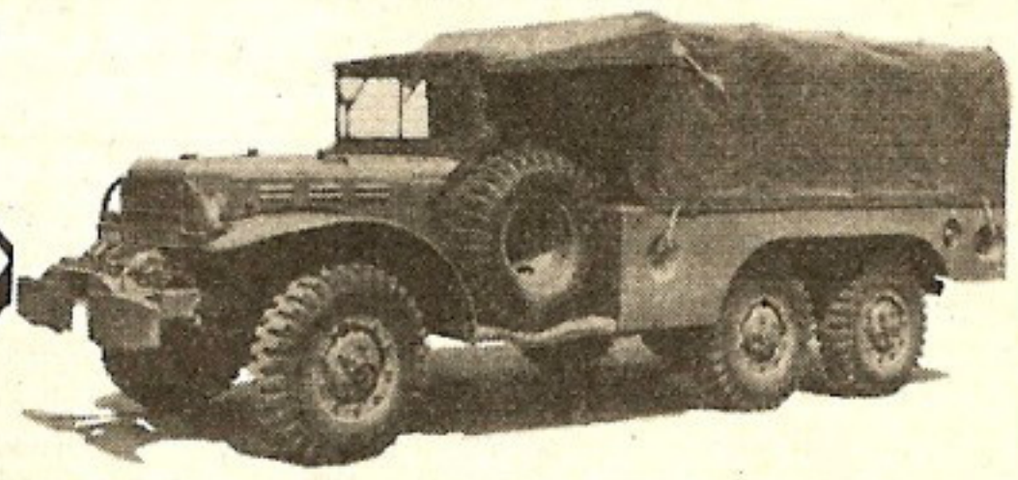
FSMWO G505-W1, C1, C2, Changing vehicle from 4x4 to 4x2 (for administrative use)
TB 10-1000-4, Front axle step-up washer

**½-Ton 4x4**



TB 9-801-1, Unauthorized use of "217" engine
TB 1800-5, Gun ring mount installation
TB ORD 26, Adjustment and lubrication of roller-type spring seat bearings

**1½-Ton 6x6**



**ALL THREE**

FSMWO G1-W9, C1, New-style combat zone safety light (overseas)
TB 700-43, 1st-echelon spare parts kit (overseas)
TB 700-56, Windshield defroster switch
TB 700-58, Decontaminating apparatus
TB 700-76, Oil filter replacement element
TB 700-84, U-joint lubricant passage
TB 700-101, Oil filter leakage
TB 700-103, Spare tire carrier lock
TB 700-105, Tire-lock-ring removing tool
TB 9-850-13, Waterproofing canvas and duck
TB 1800-2, Mounting universal rifle bracket
TB ORD 12, Propeller shaft U-joint lube
TB ORD 20, Driver's caution tags

# The Month's Directives

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

## WAR DEPARTMENT AGO PUBLICATIONS

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

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

New York AG Depot, 1926 Broadway, New York, N. Y.
(Serves both 1st and 2nd Service Commands.)

AG Pentagon Depot, The Pentagon, Washington 25, D. C.
(Serves 3rd Service Command and the Military District of Washington.)

Atlanta AG Depot, Glenn Street and Murphy Avenue, S. W., Atlanta, Ga.

Columbus AG Depot, 42-52 So. Starling Street, Columbus 8, Ohio.

Chicago AG Depot, 111 North Canal Street, Chicago 6, Ill.

Omaha AG Depot, 16th and Cuming Streets, Omaha 2, Neb.

San Antonio AG Depot, Grayson St. Station, San Antonio, Texas.

Ogden AG Depot, 2325 Wall Avenue, Ogden, Utah.

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 TB's, MWO's, SB's, and WD Lubrication Orders distributed in the ETO by Ordnance Publications Section, General Depot G-25, APO 518, % Postmaster, New York, N. Y.

Ordnance TM's and FM's distributed to APO 456 units by the Ordnance Publications Officer, Box 5, APO 456, % Postmaster, San Francisco, Calif.

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

## ORDNANCE DEPARTMENT PUBLICATIONS

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

Distributed through Ordnance Officers by AG Depots listed above.

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

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

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

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

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

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

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

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

## ARMORED CARS

### CAR, ARMORED, LIGHT, M8

MWO G136-W3, Machine gun mount and stowage brackets.
MWO G136-W4, Radio shelf on two-radio vehicles.

## SCOUT CARS

### CAR, SCOUT, M3A1

SNL G-67, ORD 7, 8, 9, C3 (2 Jun. 44).

## GUN MOTOR CARRIAGES

### ALL GUN MOTOR CARRIAGES ON LIGHT AND MEDIUM TANK CHASSIS

TB ORD 80, Rubber and steel tracks.

### CARRIAGE, MOTOR, 37-MM GUN, M6

FSMWO G121-W7, Conversion to ¾-ton 4x4 standard weapons carrier.
TB 9-750A-2, Lublication instructions.

### CARRIAGE, MOTOR, 75-MM HOWITZER, M8

FM 17-69, C1, Crew drill (31 May 44).
TB ORD 68, Temperature and instrument panel gages; simplified linkage adjustment.
TB ORD 78, New type rear main bearings.
SNL G-127, ORD 7, 8, 9 (25 May 44).

### CARRIAGE, MOTOR, 3-IN. GUN, M10

MWO G130-W18, Rocker cover breather system.

### CARRIAGE, MOTOR, 3-IN. GUN, M10A1

TB ORD 82, Lubrication instructions.
WD Lubrication Order 109 (14 Feb. 44).

### CARRIAGE, MOTOR, 155-MM GUN, M12

WD Lubrication Order 110 (28 Feb. 44).

### CARRIAGE, MOTOR, MULTIPLE GUN, M13

MWO G102-W43, Bracket for shovels and mattock.
SNL G-102, Vol. 12, OSPE, C2 (13 May 44).

### CARRIAGE, MOTOR, MULTIPLE GUN, M15

MWO G102-W43, Bracket for shovels and mattock.

### CARRIAGE, MOTOR, MULTIPLE GUN, M15A1

MWO G102-W43, Bracket for shovels and mattock.
MWO G102-W44, Gun barrel guard rail and spring-loaded grab handle.
WD Lubrication Order 158 (15 Mar. 44).

CARRIAGE, MOTOR, MULTIPLE GUN, M16

MWO G102-W43, Bracket for shovels and mattock.

SNL G-102, Vol. 14, OSPE, C1 (13 May 44).

CARRIAGE, MOTOR, 76-MM GUN, M18 (T70)

SNL G-163, ORD 7, 8, 9, C1 (15 Jun. 44).

## CARRIERS

CARRIER, CARGO, M30 (T14)

WD Lubrication Order 110A (28 Feb. 44).

## HALF-TRACKS

(See individual vehicle listings)

## LIGHT TANKS

ALL SPECIAL PURPOSE VEHICLES ON LIGHT TANK CHASSIS

TB ORD 80, Rubber and steel tracks.

TANK, LIGHT, M3A1

TB 9-727-4, Lubrication instructions.

TANK, LIGHT, M3A3

TB ORD 80, Rubber and steel tracks.

TB 9-727-4, Lubrication instructions.

TANK, LIGHT, M5

FM 17-68, Crew drill (24 May 44).

TB ORD 68, Temperature and instrument panel gages; simplified linkage adjustment.

TB ORD 78, New type rear main bearings.

TB ORD 80, Rubber and steel tracks.

TANK, LIGHT, M5A1

TB ORD 68, Temperature and instrument panel gages; simplified linkage adjustment.

TB ORD 78, New type rear main bearings.

TB ORD 80, Rubber and steel tracks.

TANK, LIGHT, T9E1

TB 9-724-3, Turret installation for emergency firing.

TB 9-724-4, Rerouting of turret interphone wiring.

SNL G-148, SPC, C2 (17 May 44).

## MEDIUM TANKS

ALL SPECIAL PURPOSE VEHICLES ON MEDIUM TANK CHASSIS

TB ORD 80, Rubber and steel tracks.

TANK, MEDIUM, M4

MWO G104-W111, Periscope holder sighting device spring.

TB ORD 80, Rubber and steel tracks.

TANK, MEDIUM, M4A1

MWO G104-W111, Periscope holder sighting device spring.

TB ORD 80, Rubber and steel tracks.

TB 9-731A-14, Towing cable locks.

TANK, MEDIUM, M4A2

MWO G104-W111, Periscope holder sighting device spring.

TB ORD 70, Descending steep grades.

TB ORD 80, Rubber and steel tracks.

WD Lubrication Order 119 (13 Mar. 44).

TANK, MEDIUM, M4A2 (76-MM GUN, WET)

SNL G-212, ORD 9, SPC (20 Jun. 44).

TANK, MEDIUM, M4A3

MWO G104-W111, Periscope holder sighting device spring.

TB ORD 70, Descending steep grades.

TB ORD 80, Rubber and steel tracks.

TB 9-759-10, Operating instructions.

TANK, MEDIUM, M4A4

MWO G104-W111, Periscope holder sighting device spring.

TM 9-754 (21 Jan. 43), C2, Operation and maintenance.

TB ORD 80, Rubber and steel tracks.



TANK, MEDIUM, M4A6

MWO G104-W111, Periscope holder sighting device spring.

TB ORD 80, Rubber and steel tracks.

## TRUCKS

TRUCKS, 6x6 and 4x4 (All Makes)

TB ORD 44, Constant velocity front axle U-joint lubrication.

TRUCK, ¼-TON, 4x4 (WILLYS, FORD)

MWO G503-W7, Conversion to 12-volt electrical system.

TM 9-803, Operation and maintenance (22 Feb. 44).

TRUCK, ¾-TON, 4x2 (CHEVROLET)

TB ORD 39, Spark plug replacement.

TRUCK, ¾-TON, 4x4 (DODGE)

TB ORD 47, Mounting 2nd-echelon tool sets (Reprint of TB 801-3, 10 Jun. 43).

SNL G-502, ORD 7, OSPE (8 Jun. 44).

WD Lubrication Order 508 (14 Mar. 44).

TRUCK, 1½-TON, 4x2 (CHEVROLET)

TB ORD 39, Spark plug replacement.

TRUCK, 1½-TON, 4x4 (CHEVROLET)

TB ORD 39, Spark plug replacement.

SNL G-85, Vol. 4, G-506, ORD 7, 8, 9 (15 Jun. 44).

TRUCK, 2½-TON, 6x4 (STUDEBAKER)

WD Lubrication Order 526 (14 Jan. 44).

TRUCK, 2½-TON, 6x6 (GMC)

TB ORD 47, Mounting 2nd-echelon tool sets (Reprint of TB 801-3, 10 Jun. 43).

TB 9-801-4, Removal of distributor suppressor (Reprint of TB 801-4, 24 Jun. 43).

WD Lubrication Order 504 (18 Feb. 44).

TRUCK, 2½-TON, 6x6 (GMC ACKW-CCKW)

TB ORD 85, "270" engine oil-pan types (Reprint of TB 801-2, 5 May 43).

TRUCK, 2½-TON, 6x6 (GMC CCKW 352-353)

TM 9-801, Operation and maintenance (24 Apr. 44).

TB ORD 32, Lubrication instructions.

TRUCK, 2½-TON, 6x6 AMPHIBIAN (GMC DUKW 353)

TB 9-802-7, Corrective corrosion and waterproofing procedure.

TRUCK, 2½-TON, 6x6, SMALL ARMS REPAIR, M7

SNL G-138, Vol. 1, ORD 7, OSPE, C1 (15 May 44).

TRUCK, 2½-TON, 6x6, SMALL ARMS REPAIR, M7A1

SNL G-138, Vol. 1, ORD 7, OSPE, C1 (15 May 44).

TRUCK, 2½-TON, 6x6, AUTOMOTIVE REPAIR, M8 (LOAD A)

SNL G-139, Vol. 1, ORD 7, OSPE, C1 (16 May 44).

TRUCK, 2½-TON, 6x6, AUTOMOTIVE REPAIR, M8 (LOAD B)

SNL G-139, Vol. 2, OSPE, C1 (16 May 44).

TRUCK, 2½-TON, 6x6, AUTOMOTIVE REPAIR, M8A1 (LOAD A)

SNL G-139, Vol. 1, ORD 7, OSPE, C1 (16 May 44).

TRUCK, 2½-TON, 6x6, AUTOMOTIVE REPAIR, M8A1 (LOAD B)

SNL G-139, Vol. 2, OSPE, C1 (16 May 44).

TRUCK, 2½-TON, 6x6, ELECTRICAL REPAIR, M18

SNL G-149, ORD 7, OSPE, C2 (16 May 44).

TRUCK, 2½-TON, 6x6, ELECTRICAL REPAIR, M18A1
SNL G-149, ORD 7, OSPE, C2 (16 May 44).

TRUCK, 4-TON, 6x6 (DIAMOND T)
SNL G-509, ORD 7, OSPE (10 May 44).

TRUCK, 4-TON, 6x6 (DIAMOND T, 968A CARGO, 969A WRECKER, 970A PONTON, 972 DUMP)
TM 9-811, Operation and maintenance (25 Jan. 44).

TRUCK, TRACTOR, 5-TON, 4x2 (INTERNATIONAL, MARMON-HERRINGTON, KENWORTH)
SNL G-671, ORD 7, 8, 9 (15 May 44).

TRUCK, 5-6 TON, 4x4, CARGO, (FWD SU-COE)
SNL G-638, ORD 9, SPC (15 Jun. 44).

TRUCK, 6-TON, 6x6 (MACK)
WD Lubrication Order 517 (10 Feb. 44).

TRUCK, 6-TON, 6x6 (WHITE, CORBITT, BROCKWAY)
TM 9-813, Operation and maintenance (19 Feb. 44).

TRUCK, 7½-TON, 6x6 (MACK)
TB ORD 10-1679-1, Lubrication instructions.

TRUCK, 10-TON, 6x4 (MACK NR 8 thru NR 13)
SNL G-528, ORD 7, 8, 9 (1 Apr. 44).

TRUCK, 10-TON, 6x4, DIESEL (WHITE 1064)
SNL G-642, ORD 9 (20 Apr. 44).

TRUCK, BOMB SERVICE, M1 (DIAMOND T)
WD Lubrication Order 27 (1 Mar. 44).

TRUCK, BOMB SERVICE, M1 (GMC)
TB ORD 33, Lubrication instructions.

TRUCK, BOMB SERVICE, M6 (CHEVROLET)
SNL G-85, Vol. 4, G-506, ORD 7, 8, 9 (15 Jun. 44).
SNL G-85, Vol. 4, G-506, ORD 7, 8, 9, C1 (15 Jun. 44).

ALL DUMP TRUCKS
TB ORD 59, Use of hydraulic pump (Reprint of TB 800-15, 14 Jul. 43).

## TRACTORS

TRACTOR, HIGH SPEED, 38-TON, M6
TB 9-789-1, Operating instructions.

## TRAILERS

ALL 4-WHEEL TRAILERS (FOR TRUCK, 6-TON, 6x6, MACK)
WD Lubrication Order 517 (10 Feb. 44).

TRAILER, 1-TON, 2W (FOR TRUCK, 2½-TON, 6x4, STUDEBAKER)
WD Lubrication Order 526 (14 Jan. 44).

TRAILER, 1-TON 2W (FOR TRUCK, 2½-TON, 6x6, GMC)
WD Lubrication Order 504 (18 Feb. 44).

SEMITRAILER, 6-TON PAYLOAD, 10-TON GROSS, 2W, FUEL TANK, 2000 GAL. (W/DOLLY)
TB 9-891-1, Operation and maintenance.

SEMITRAILER, 6-TON PAYLOAD, 10-TON GROSS, 2W, VAN (KNOCKDOWN BODY)
SNL G-665, ORD 7, 8, 9 (25 Apr. 44).

SEMITRAILER, 10-TON PAYLOAD, 14-TON GROSS, 2W, STAKE AND PLATFORM (1025) AND CONVERTER DOLLY, 10-TON, 2W
SNL G-676, ORD 7, 8, 9 (1 Jun. 44).

TRUCK, BOMB LIFT, M1
SNL G-189, SPC, C1 (15 Apr. 44).
WD Lubrication Order 27 (1 Mar. 44).

TRAILER, TRACTOR, CRANE, M6 (T26)
SNL G-117, ORD 9, C1 (15 Apr. 44).

TRAILER, ARMORED, M8
SNL G-157, OSPE, C1 (1 May 44).

TRAILER, TRACTOR, CRANE, M12
SNL G-117, ORD 9, C1 (15 Apr. 44).

TRUCK, BOMB LIFT, M22
WD Lubrication Order 124 (12 Feb. 44).

## LANDING VEHICLES

VEHICLE, LANDING, TRACKED, ARMORED, MK II, LVT (A) (2)
SNL G-167, G-168, ORD 7, 8, 9, C2 (15 May 44).

VEHICLE, LANDING, TRACKED, UNARMORED, MK II, LVT (2)
SNL G-167, G-168, ORD 7, 8, 9, C2 (15 May 44).

## PASSENGER CARS

CAR, 5-PASSENGER, LIGHT SEDAN (CHEVROLET)
TB ORD 39, Spark plug replacement.

CAR, 5-PASSENGER, MEDIUM SEDAN (PACKARD 160, 2003)
WD Lubrication Order 530 (4 Apr. 44).

## SCOOTERS

SCOOTER, MOTOR, 2W (CUSHMAN 53)
SNL G-683, ORD 7, 8, 9 (15 Jun. 44).

## AMBULANCES

AMBULANCE, ¾-TON, 4x2 (PACKARD)
WD Lubrication Order 530 (4 Apr. 44).

## GENERAL

FM 21-6, C4, Training publications (1 Jun. 44).
FM 21-7, C4, Training films, film strips, film bulletins (25 May 44).
FM 21-7, C5, Training films, film strips, film bulletins (1 May 44).
FM 30-40, C2, Armored vehicle recognition manual (22 Apr. 44).
WDC 206, Overseas distribution of training literature (24 May 44).
WDC 208, Lubrication orders, index, procurement, use (25 May 44).
WDC 212, Vehicles, cargo, maximum utilization (29 May 44).
WDC 227, Spare parts requirements, procurement, issue (7 Jun. 44).
WDC 228, Amphibian truck, maximum utilization (7 Jun. 44).
WDC 237, Motor vehicles, inspection and storage (12 Jun. 44).
WDC 239, Carbon tetrachloride, restriction on use; graphic training aids, distribution; property, reports of survey (13 Jun. 44).
WDC 240, Chart of responsibilities for automotive equipment (14 Jun. 44).
WDC 242, Ordnance property, reports (16 Jun. 44).
TB ORD 60, Ordnance vehicles, generator bearing lubrication.
TB ORD 75, Gasoline-powered vehicles and equipment.
WD Publication Lists, Index to General Orders, Bulletins, Circulars (Apr. 44).
WD Publications Lists, Index to General Orders, Bulletins, Circulars (May 44).
ORD 2, OPS1, Index, C1 (1 Jun. 44).
SB 9-23, Progress reports on MWO's (11 May 44).
SNL G-1, ORD 3, Major items, automotive and semi-automotive vehicles (26 Apr. 44).
SNL G-27, ORD 6, C1, Automotive vehicles, maintenance tools (15 Apr. 44).
SNL G-182, ORD 5, Kits, standard hardware, shop supplies, 2nd echelon (16 May 44).
SNL H1, ORD 5, Standard hardware (1 Jun. 44).
SNL H-2, ORD 5, C3, Miscellaneous hardware (3 Apr. 44).
SNL H-4, C1, Electrical fittings (3 Apr. 44).
SNL H-5, C1, Electrical piece material (5 Apr. 44).
SNL H-6, C2, Pipe and hose fittings (5 Apr. 44).
SNL H-7, C2, Pipe, tubing and hose (5 Apr. 44).
SNL H-8, C1, Chains, locks, hasps, hinges (5 Apr. 44).
SNL H-9, C2, Miscellaneous piece material (5 Apr. 44).
SNL H-10, C1, Ferrous metals (5 Apr. 44).
SNL J-4, ORD 5, C2, Punch, drift, fastening and scraping tools (4 Feb. 44).
SNL M-1, ORD 5, C2, Electrical apparatus units and parts (8 May 44).
SNL M-5, ORD 13, Items common to two or more groups (4 May 44).
SNL N-19, ORD 6, C5, Tool sets, motor transport (10 May 44).

## WINTERIZATION KITS

(Continued from page 148)

fuel system, includes keeping the lines clean. One tip: if the primer pumps hard, look for dirt clogging the jets. Sometimes the leather seal near the end of the plunger blows and bits of leather may clog the jets.

An "engine oil dilution system". is another tricky winterization arrangement whereby engine oil, which in sub-zero temperatures stiffens up like taffy, is thinned out with the engine fuel to a working consistency.

Extreme cold means extreme condensation. To prevent heavy sludge formation whipped up from condensed water in the crankcase, winterization equipment includes your old familiar crankcase Ventilating Systems. Crankcase ventilation also takes care of extreme blowby resulting from the sloppy fit of pistons before the engine is evenly warmed up.

Thermostats with a higher setting come in the winterization kits. These allow the coolant—and therefore the engine—to reach a higher temperature before letting go and allowing the coolant to circulate through the radiator.

All kinds and sizes of "insulation" come in the winterization kits. There are radiator and louver covers, hood and under-motor covers, tank driver's hoods, and peep-slot covers for half-tracks. For the comfort and protection of the crew, there are body side-curtains, and cab heaters—except that in most tanks, crew compartment heaters are impractical because of the blast of air running through the compartments. Among the miscellaneous devices furnished in the kits are ice scrapers for the drive sprockets and idlers of half-tracks, ice grousers to give better traction, windshield defrosters, special stowage racks, and even oversize control knobs to enable a man to operate his vehicle while wearing heavy gloves.

That operation in sub-zero temperatures is bitter enough to make strong men weep, nobody will deny, but that our equipment is as good as anything developed anywhere is evidenced by the record of one outfit up on the Alaskan Highway. This motor outfit claims operation of over 470,-000 miles on the Highway with vehicles ranging from jeeps to medium tanks, with no failures to start or operate traceable to winterization equipment.

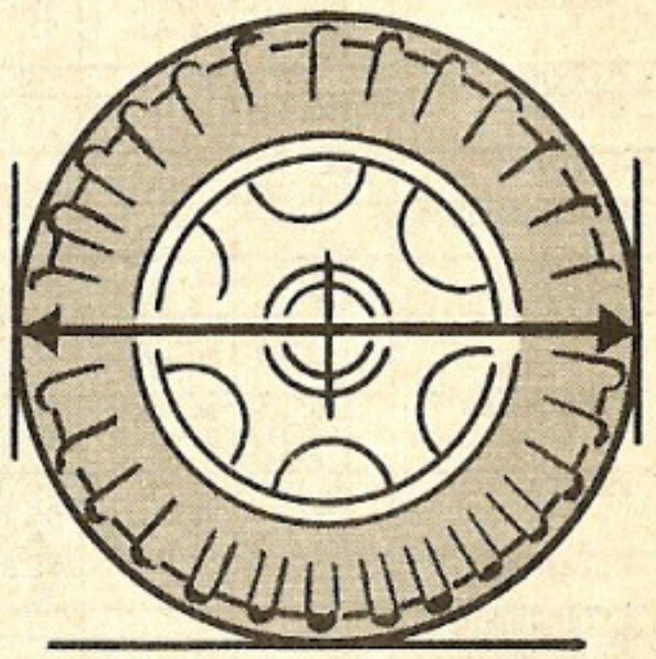
The stuff was good and the stuff was maintained.

## TIRE-MEASURING TOOL

(Continued from page 138)

guides as they'd look if you were looking straight down on a single tire and a set of duals.

Always measure tires while they're properly inflated and on the vehicle. Move the tool up and down along the tire until you locate the center, or greatest diameter (see Fig. below). The vehicle



doesn't have to be on level ground for accurate measurements.

We shouldn't have to remind you that you don't make up the difference in diameters by adding or letting out air—or that unevenly matched tires on the driving wheels of a vehicle not only wear out the tires, but can also wreck the differential or other working assemblies.

## AMPHIBIAN MAINTENANCE

CONTINUED FROM PAGE 137

applies to the rubber housing around the hull. In case the rubber housing leaks, there's no remedy except to change it.

"The rudder cable is approximately 75 feet long, and unless it's kept lubricated **all** the time, it quickly deteriorates from the salt water and strain. Once it breaks, you have to replace it. In case the cable breaks when you're alone in the water, pull out the throttle, run to the stern, open the engine hatch-cover (which is usually stuck because the hinges and cover clamps haven't been lubricated), take hold of the rudder post and hang on. Then head for shore and wish you were twins."

Information like that can come only from you. There's no place else to get it except from duck drivers and mechanics. So if stuff like that is what you guys want and need . . . then how about talking?

# • • NEWS FLASHES • •

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

One of these days you'll find yourself clutching a copy of **TM 9-834** (1 Jun. 44) to your bearded bosom—and a real bosom friend it'll be. Fact is that TM 9-834 is the first attempt at a comprehensive operation and maintenance manual for **Vehicular General Purpose Unit Equipment,** that J-group stuff you've been using with a hunch and a prayer. It's got photos and data, operating and servicing instructions on a whole slew of 2nd-echelon test and bench equipment, portable air compressors, and battery chargers.

Up to now, every piece of such equipment had (or **didn't** have, usually) its manufacturer's manual. Even if you had the book with yours, it probably wasn't standardized, complete, or up-to-date. So you ran the contraption by trial and error, and wound up with more or less woe.

There'll be no mo' woe when you get the new TM. It's earmarked for companies and higher.

* * *

Pretty soon you can stop wondering where'n hell to put things—things like your Lubrication Orders, gas cans, and pioneer tool sets. Because the answers are right there in three handy TB's just coming off the presses.

TB ORD 117 will tell you how to custom-make holders for Lube Orders and where to stow them in your vehicles.

TB ORD 92 will tell you where and how to mount brackets on your vehicles for 5-gallon gas cans. TB ORD 93 will do likewise for the pioneer tool set. This pair of TB's, by the way, will supersede the old MTTSB X-7 (15 Sep. 42)—but won't change most of the mountings you're used to.

* * *

If you have any M4 or M4A1 medium tanks or 105mm howitzer motor carriages M7, better check up on the bayonet gage for the oil reservoir tank in the left rear of the engine compartment right away. **TB ORD 106 (17 Jun. 44) Incorrect Engine Oil Gage Blade Markings** says the correct level for the reservoir is **13** gallons, instead of the 16 you've been using. Obliterate all markings on the gage above the 13-gallon mark. Just to make sure that the 13 is in the right place, put 13 gallons of oil in the tank and re-mark the gage if it's necessary.

In case you're wondering what the letters **FE** on some of the newer TB's stand for, they stand for **Field Expedient.** Those TB's contain the kind of fixes you're used to seeing in this magazine—things to do when things go wrong. They're not compulsory, like MWO's, but simply ways of stopping trouble if and when it starts.

Some will be numbered in straight sequence (TB ORD FE1, TB ORD FE2, etc.). Others, applying to one specific vehicle, will be numbered like the vehicle's TM (TB 9-808-FE3, for example). Unlike most other TB's, those in the FE series will **not** be included in later TM's. Better hang onto those you get, and file 'em behind a sentry.

* * *

A number of J-series MWO's have just been issued calling for the installation of stellite-faced exhaust valves, and cast or stellite-faced exhaust-valve inserts in all small air-cooled engines. (MWO ORD J402-W1, J406-W1, J412-W1, J439-W1, and J441-W1.)

Other MWO's have been published by other services covering the same modification on like equipment of their own. The modification will be made by Ordnance and Engineer shops.

* * *

You've probably figured it this way all along, but TB 9-2810-2 (17 Apr. 44) makes it official:

On wheeled and half-track vehicles, scheduled PM servicing will be done after one month or 1000 miles, **whichever expires first.** Also after six months or 6000 miles, **whichever expires first.**

On full-track and tank-like wheeled vehicles, do the job after so many hours, miles, or months, whichever adds up **first** to the proper interval —50 hours, 500 miles, or one month—100 hours, 1000 miles, or three months.

On motorcycles, it's one month or 1000 miles, whichever comes **first.**

On tractors calling for lubrication at 8-hour intervals or a multiple of same, 50-hour PM services will be done after **48** hours and 100-hour services after **96** hours.

All of which supersedes TB 9-2810-1 (29 Feb. 44) and sets the record straight.

# Better Than A T.S. Slip!

WAR DEPARTMENT

**UNSATISFACTORY EQUIPMENT REPORT**

(Technical service) — DATE

FOR — MATÉRIEL

FROM (Organization) (Station)

TO (Next superior headquarters) (Station) (Technical service)

**COMPLETE MAJOR ITEM**

NOMENCLATURE | TYPE

MODEL | MANUFACTURER

U. S. A. REG. NO. | SERIAL NO. | DATE RECEIVED

EQUIPMENT WITH WHICH USED (IF APPLICABLE)

**NOMENCLATURE OF DEFECTIVE COMPONENT**

PART NO. | TYPE

MANUFACTURER | DATE INSTALLED

**LENGTH OF SERVICE**

DATE OF INITIAL TROUBLE

TOTAL TIME INSTALLED — YEARS MONTHS DAYS

TOTAL PERIOD OF OPERATION BEFORE FAILURE (FILL IN WHERE APPLICABLE)

YEARS | MONTHS | DAYS | HOURS | MILES | ROUNDS

**DESCRIPTION OF TROUBLE AND PROBABLE CAUSE**

GIVE TYPE OF FAILURE, MECHANICAL, ELECTRICAL, WORKMANSHIP, MATERIAL, DESIGN

**UNUSUAL SERVICE CONDITIONS**

GIVE BRIEF DESCRIPTION

TRAINING OR SKILL OF USING PERSONNEL (CHECK ONE) — POOR — FAIR — GOOD

DESCRIPTION OF ANY REMEDIAL ACTION TAKEN

RECOMMENDATIONS

SENT IND. — OFFICE — STATION — DATE

ORIGINATING OFFICER — SIGNATURE — NAME — RANK AND TITLE — ORGANIZATION

(Technical service)

TO CHIEF

NAME — STATION — RANK

**INSTRUCTIONS**

1. It is imperative that the Chief of Technical Service concerned be advised of the earliest practical moment of any constructional, design, or operational defect in matériel. This form is designed to facilitate such reports and to provide a uniform method of submitting the required data.

2. This form will be used for reporting manufacturing, design or operational defects in matériel with a view to improving and correcting such defects, and for use in recommending modifications of matériel.

3. This form will not be used for reporting failures, isolated material defects or malfunctions of material resulting from fair-wear-and-tear or accidental damage nor for the replacement, repair, or the issue of parts and equipment. It does not replace currently authorized operational or performance records.

4. Reports of malfunctions and accidents involving ammunition will continue to be submitted as directed in the manner described in AR 750-10 (Change No. 2).

5. It will not be practicable or desirable in all cases to fill all blank spaces of the report. However, the report should be as complete as possible in order to expedite necessary corrective action. Additional pertinent information not provided for in the blank spaces should be submitted as indorsers to the form. Photographs, sketches or other illustrative material are highly desirable.

6. When cases arise where it is necessary to communicate with a chief of service in order to ensure safety to personnel, more expeditious means of communication are authorized. This form should be used to confirm reports made by more expeditious means.

7. This form will be made out by using or service organizations and forwarded in duplicate through command channels to the chief of technical service. The office of the chief of technical service receiving the report will forward an information copy to the Commanding General, Army Ground Forces or Army Air Forces, whichever is applicable, and to the Commanding General, Army Service Forces.

8. Necessity for using this form will be determined by the using or service troops.

W. D., A. G. O. Form No. 468
1 December 1942

16—37790-1

**WD AGO Form 468 (Unsatisfactory Equipment Report, above) will do you more good than a T.S. Slip. Here's the chance for you fellas who've been crying out loud, "I coulda done a better job of building this $%#& @¢*&% thing blindfolded"—to put up or shut up. Form 468 gets your complaint back to the people who can and will do something about it. Just give 'em the facts. Report chronic ailments or defects in anything—vehicles*, guns, or any old barracks bags (equipment peculiar to the AAF not included). Fair wear and tear doesn't count.**

**The February ARMY MOTORS gave you full details on how to fill out the form and send it through channels.**

**If you cured the trouble, don't keep the how-you-did-it to yourself—send it along via Form 468. It might help other suffering joes—it might be good enough to incorporate in production.**

***When it's vehicles, write us, too.***