

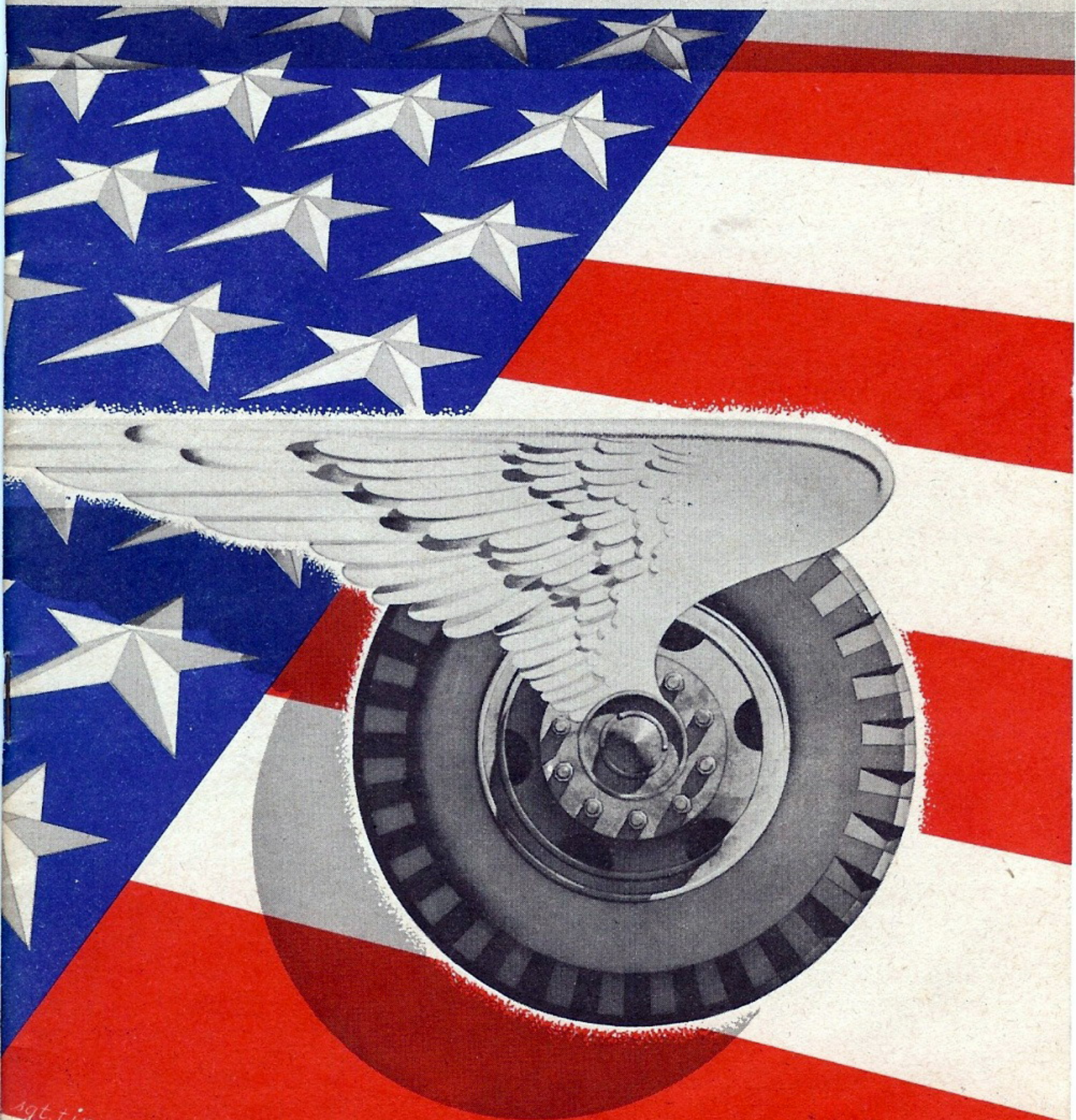
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# ARMY MOTORS

VOLUME 5

SEPTEMBER 1944

NUMBER 6



*Sgt. Tirman*

# Do Your Duck A Good Turn

YOU KNOW what happens if your GMC 2-½-ton 6x6 amphibian loses the steering-cable-spool shear-pin. When the pin shears, the connection between the steering gear and rudder linkage is broken—and there you are, with no rudder to guide you.

This happens because your duck's got too much front-wheel turning angle or the rudder cable is out of adjustment. Here's how to check it:

(A) Make certain the steering gear is centered when the duck's front wheels are in a straight-ahead position. Then (while the wheels are straight-ahead) check the rudder control-lever back in the stern compartment. Its right-hand side should be directly below the left-hand side of the tiller lever (TM 9-802, page 486, 1 Sep. 43). If it isn't, adjust the steering cable in the end of the tiller shaft and get the rudder control-lever in just exactly the right position. **The steering cable should be tight.**

(B) Now call Charlie over to climb in the driver's seat and turn the steering wheel to the left, while you keep an eye on the rudder-control-lever ball in the stern compartment. When the ball is approximately 1½" from the end of the slot in the rudder control-lever (Fig. 1), tell Charlie to stop turning and hold the steering wheel right where it is.

(C) Crawl under the duck and see if the steering-knuckle stop-screw (left wheel) is tight against the steering knuckle (Fig. 2). If it isn't, there's your trouble.

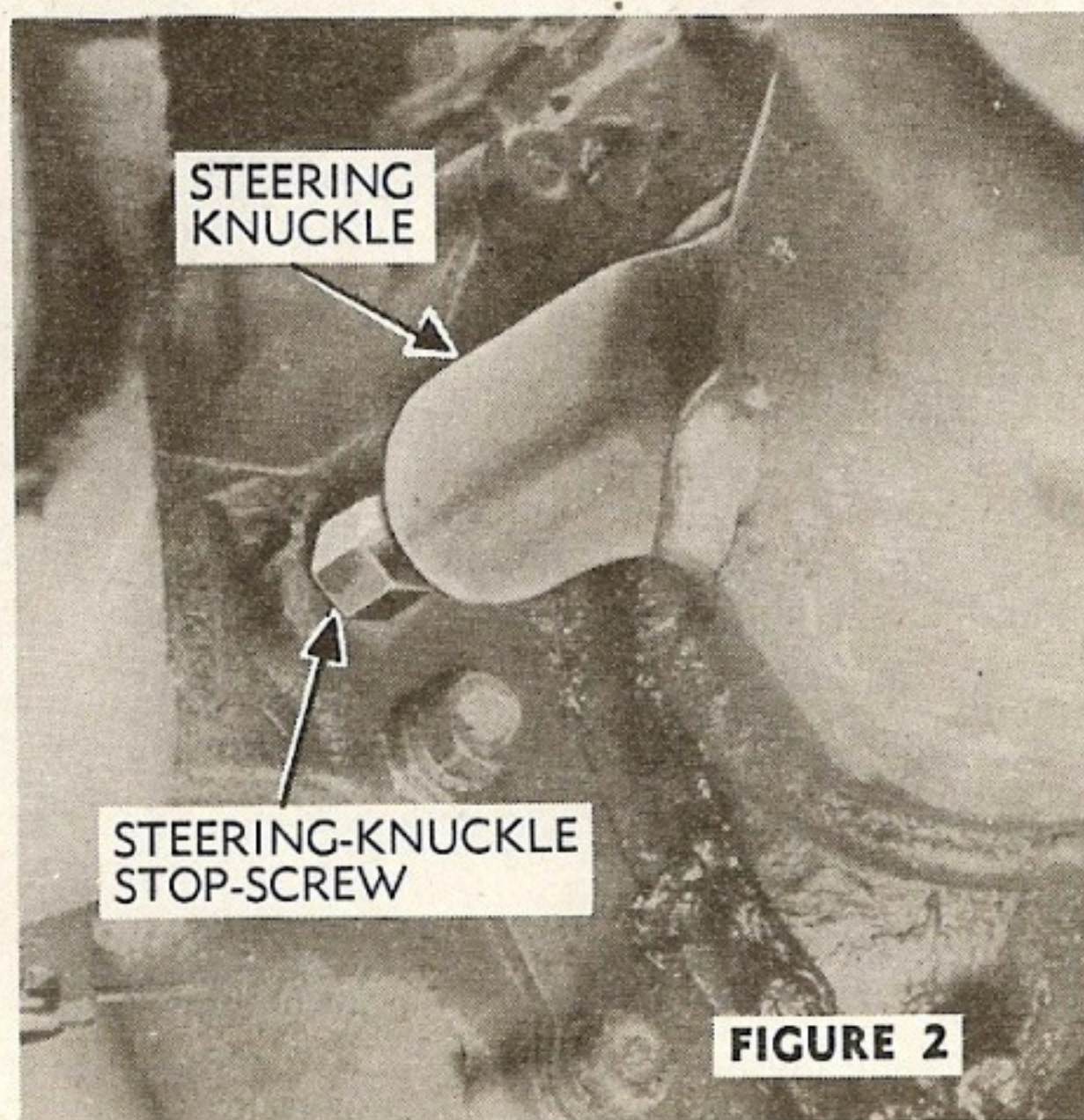
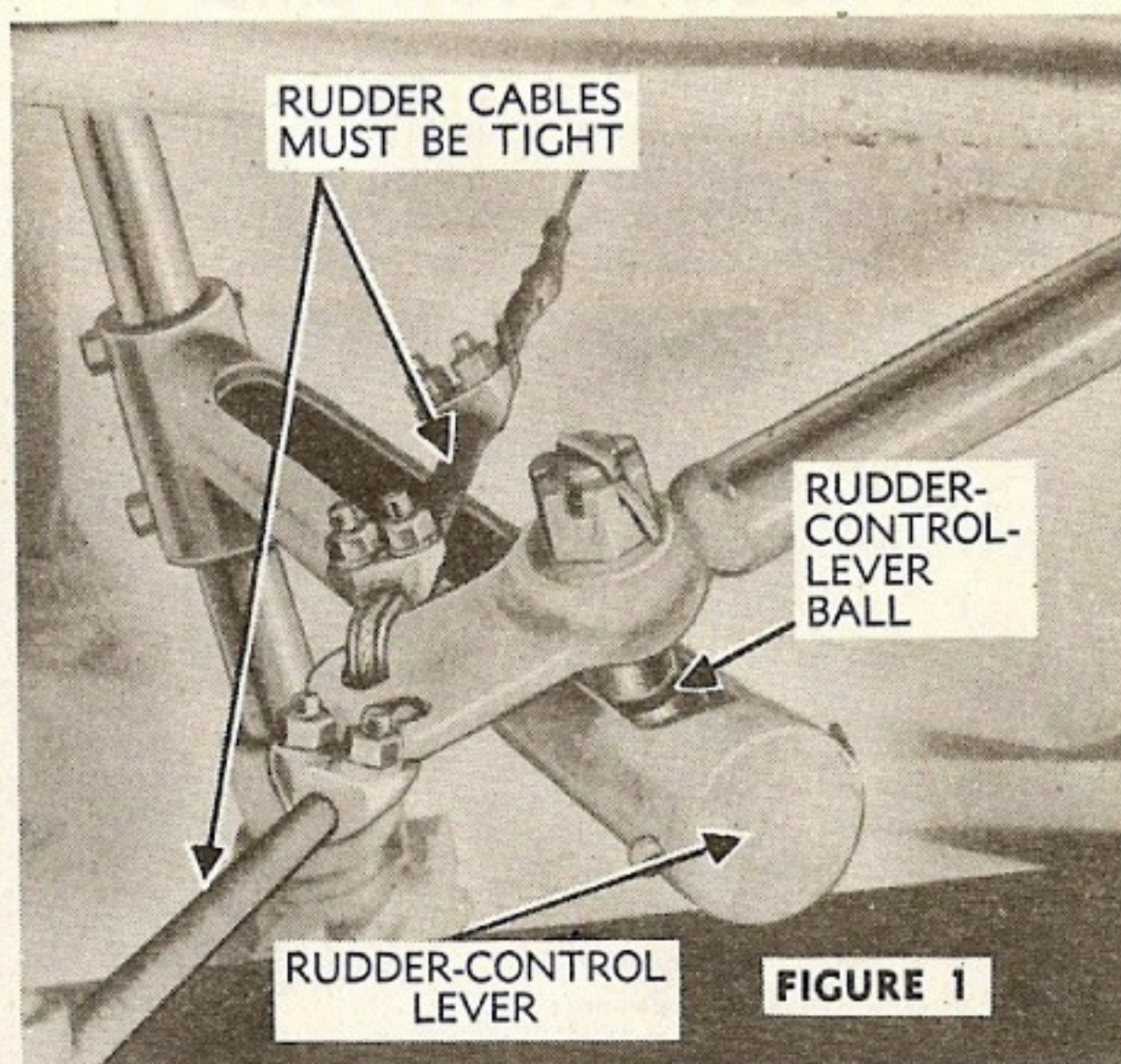
You can fix it either one of two ways: (1) Break the weld holding the screw, adjust the screw so that its head contacts the steering knuckle, and then re-weld; or (2) build-up the head of the screw by welding until it does contact the steering knuckle.

Repeat this check for the right-hand turning angle—turn the steering wheel to the right and fix the steering-knuckle stop-screw on the right-hand wheel.

It's as simple as all that. Just remember: when the front wheels are turned far as they'll go, the rudder-control-lever ball should never be closer than 1½" from the end of the slot in the rudder control-lever.

P.S. Tell Charlie he can get out of the duck, now.

**CHECK THE TURNING ANGLE OF THE FRONT WHEELS—SO YOU WON'T FIND YOURSELF RUDDERLESS IN MID-OCEAN.**

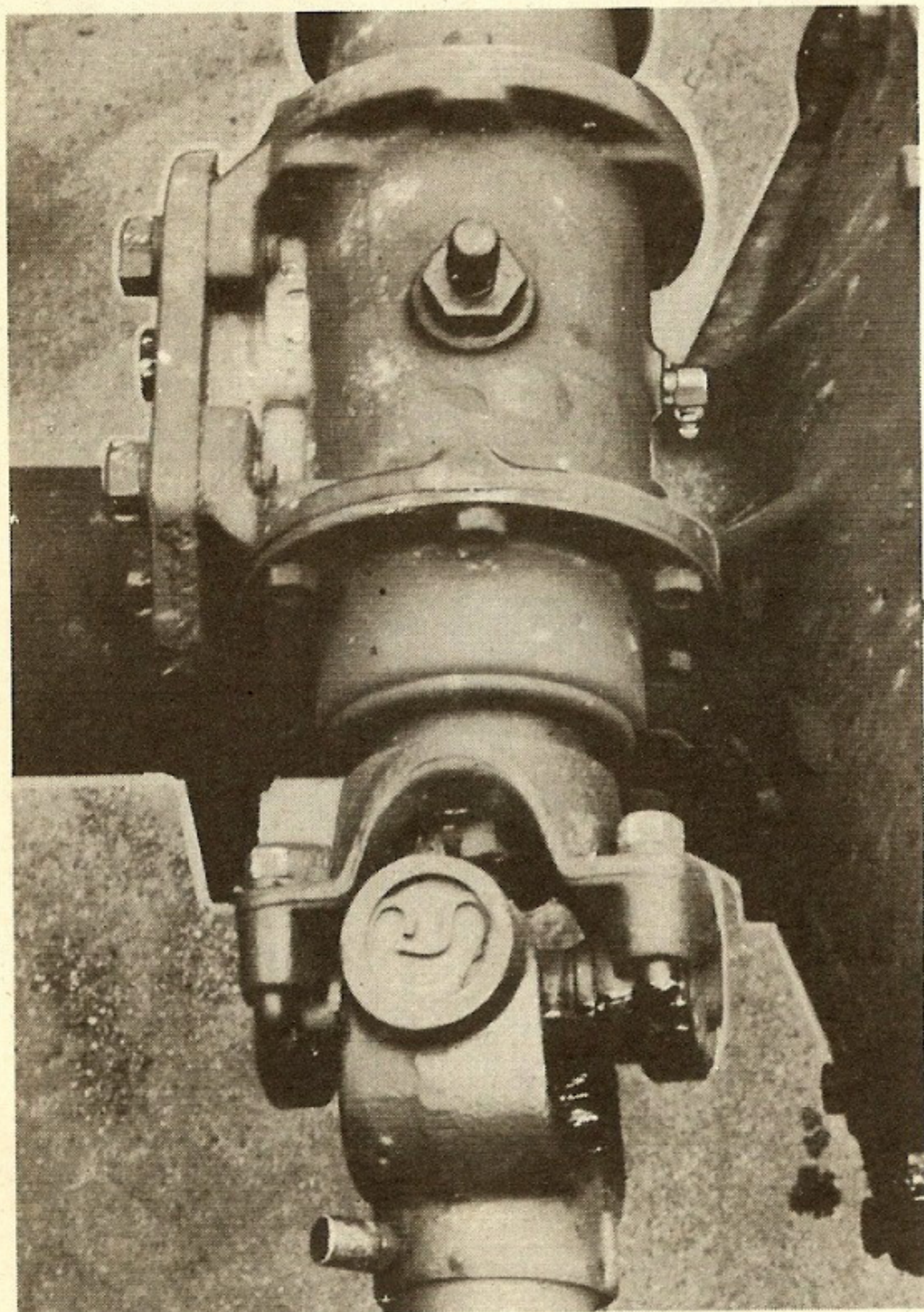


# Grease for Your Pillow Block

**FROM NOW ON, YOU'LL BE USING GREASE INSTEAD OF OIL IN THE PILLOW BLOCK OF YOUR 2½-TON GMC.**

**P**illow block assemblies on 2½-ton 6x6 and 6x4 trucks will now be lubricated with grease instead of oil—CG No. 1 at temperatures above 32°, CG No. 0 below 32°.

This makes the use of grease in pillow blocks practically unanimous on all our popular priced trucks from the 1½-ton Dodge on up.\* Studebaker and Reo 2½-



*The pillow block will look like this after you replace the plug with an angle body and grease fitting.*

tons, some of which may be in your neighborhood, are also included in the change.

Authority for the change is TB ORD 127 which is now on the way.

The lube change will require that you install a grease fitting in the pillow block (see Fig.). Done in the following manner: remove the level plug from the side of the pillow block and install a 90° angle-body fitting Fed. Stock No. 4-2-504202, and grease fitting 4-2-504208. Position the fitting so that it points toward the rear of the truck and down about 15° below horizontal.

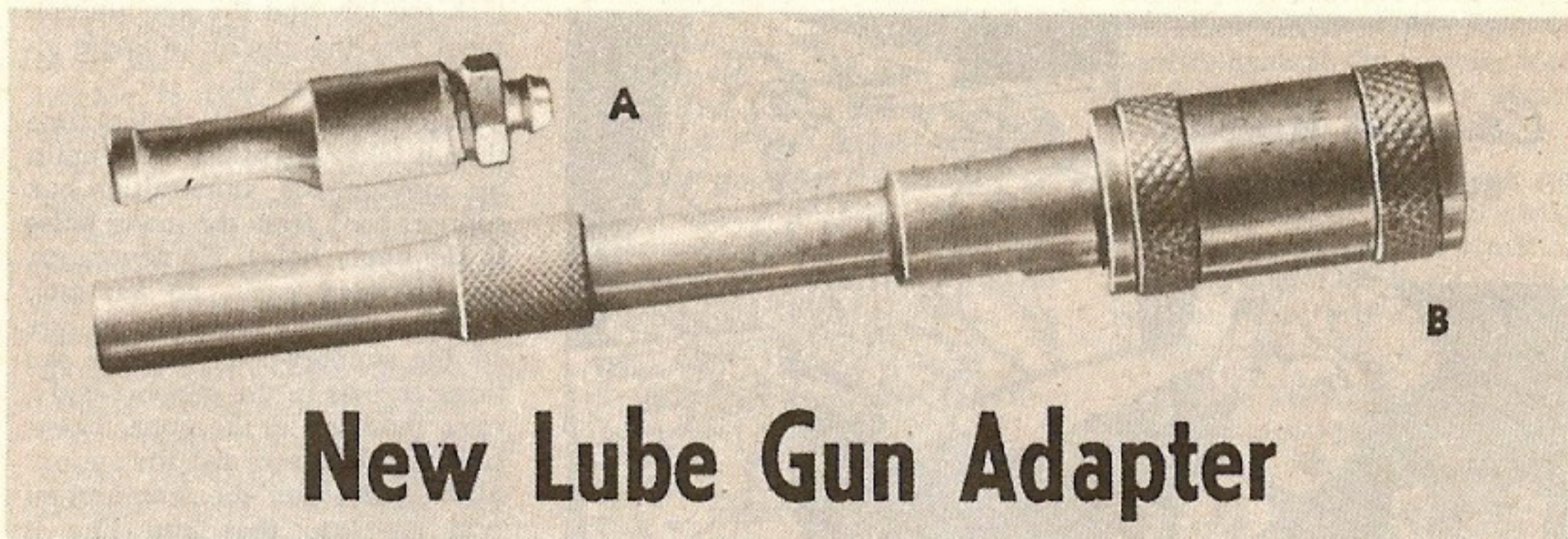
The next exercise is filling the pillow block: attach grease gun and fill the pillow block with the proper grease for your temperature until grease comes through the breather on top of the pillow block. If seals leak badly during this operation, they'll have to be replaced. Lubricate the pillow block this way every 1,000 miles. Any questions?

Reason for the big change from oil to grease is threefold. First, oil used to leak out of the pillow block too fast. Second, water used to get in and rust the little hubs of the pillow block flanges. The oil seals in the pillow-block cover-assembly ride on these hubs and the rust would soon ruin the seals (also letting oil escape). Third, grease being better able to withstand the ravages of water than oil, the water that always gets into the pillow block when the truck is operated in wet areas, won't do the damage that water ordinarily would do. Water gets in because when a pillow block, hot from running, suddenly strikes cold water, a partial vacuum is created in the pillow block and water is sucked in.

Severe tests show that grease is right for the job. The pillow block was run burning hot, ice cold, and at high rpm's.

Don't be afraid to use it.

\*Except the 2½-ton amphibian which will be the subject of a giant-sized TB coming soon.



## New Lube Gun Adapter

If you have three hands, you don't have any trouble using the little adapter (A in Fig.) that lets you poke the nose of your grease gun up into tight places. But if your personal T/O&E gives you only two hands, you'll welcome the news that a new "thin-stem, rigid-type" adapter (B in Fig.) for your vehicle lubricating gun is

now standard equipment in vehicle tool sets.

In addition to having a longer snout than the old, the new adapter develops a couple thousand pounds pressure which the old one didn't.

Fed. Stock No. of the new **Adapter, Gun, Lubricating (thin-stem, sleeve-type) hydraulic to push type** is 41-A-14-800.

# Pop-off pops off too soon

## A LITTLE TRICK WITH A SCREWDRIVER WILL GET THE GREASE TO THE BEARING

There's a pop-off or grease relief-valve right in the middle of the cross in the propeller-shaft universal-joint of the 2½-ton 6x6 truck. This pop-off valve is set to let go at 80 pounds pressure. But here's the catch, as so many of you have already found out: it takes about 400 pounds to force grease down to the end of the crosses and into the needle bearings. You poke your grease gun up to the fitting, pump away, the relief valve opens, and all that happens is that most of the grease pops out the valve.

To correct this condition, there is already in the works a new relief valve with a higher setting which will hold tight till the grease gets

to the bearings. We hear they'll be manufactured under a blitz program and sent to the field by the bushful (we'll tell you more about how to get these later). But until you get the new relief valves, here's a little trick they've been doing in New Guinea to keep the pop-off from spilling the grease

before it gets to the ends of the U-joint cross. While one man applies the grease gun, another man holds the pop-off valve closed with a screwdriver. In this way, the U-joint can be neatly lubricated until the grease shows around the ends of the cross. With the pop-off held closed, the man with the hand gun cannot work up enough pressure to blow out the U-joint seals.

Speaking off the record, we hesitated to print this little tip because sure as God made little heads, some guys will take this to mean that it's a good idea to hold relief valves shut. This is about as wise as holding safety valves on steam boilers shut. Never hold relief valves shut—the only reason we're telling you to do it on the U-joint cross of the 2½-ton 6x6, is that the present valve is not the right one for the job.

### NEW COLD WEATHER TB

If you're operating now or are scheduled to operate in sub-zero temperatures (between 0° and -65°), you'll be interested in War Dept. TB ORD 126 "Cold Weather Lubrication and Service of Combat and Transport Materiel" (19 Jul. 44), which replaces old OFSB 6-11 on cold weather operation. Among the newer tips in the new bulletin, is the information that oil should be used in the oil-bath air-cleaners in sub-zero operation (except on certain tanks). The old bulletin said use the cleaners dry.



### *Air-Intake Manifold on Ford GAA Engines*

Did you know there's a right way and a wrong way to install the air-intake manifold on the Ford GAA engine (all M10A1's and M4A3's with the air cleaner in the engine compartment)?

It's easy to do it right—just remember that the short end goes toward the front carburetor, and the long end (naturally) goes to the rear carburetor.

Air intake manifolds **without** elbows for the intake hose, **can** be installed in reverse position, but that will only make the air cleaner hose too short. And when the air cleaner hose is too short, engine vibration will help disconnect the hose and you might as well be without an air cleaner.

### *Machine-Gun Feed Interference on M15A1's*

I've seen a lot of cal. .50 machine guns on the M15A1 International half-track quit firing in mock battles around here because the ammunition-box support body was too low to let the ammunition feed

freely. I sure hope this isn't happening in real battles because the fix is so quick and simple.

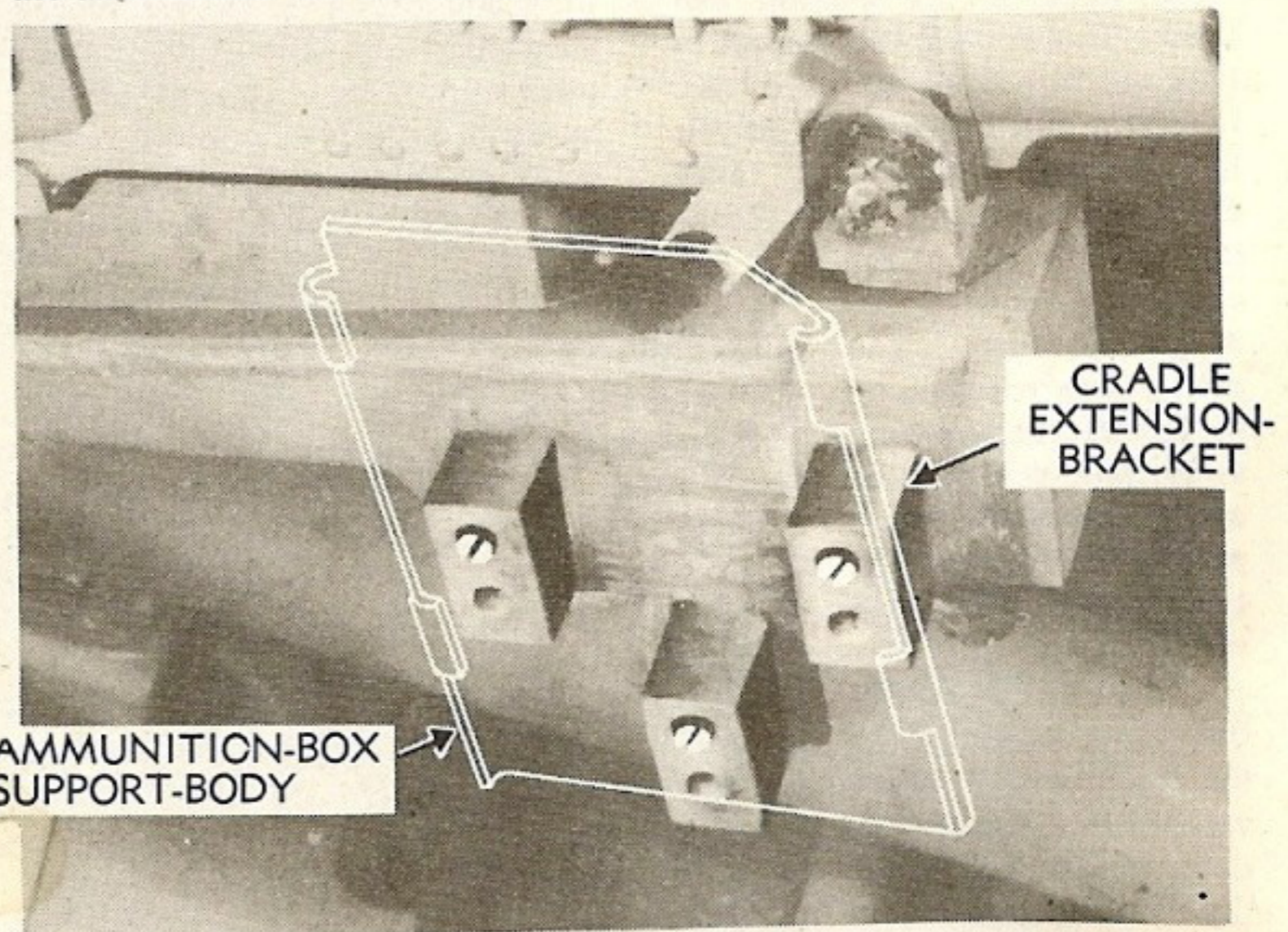
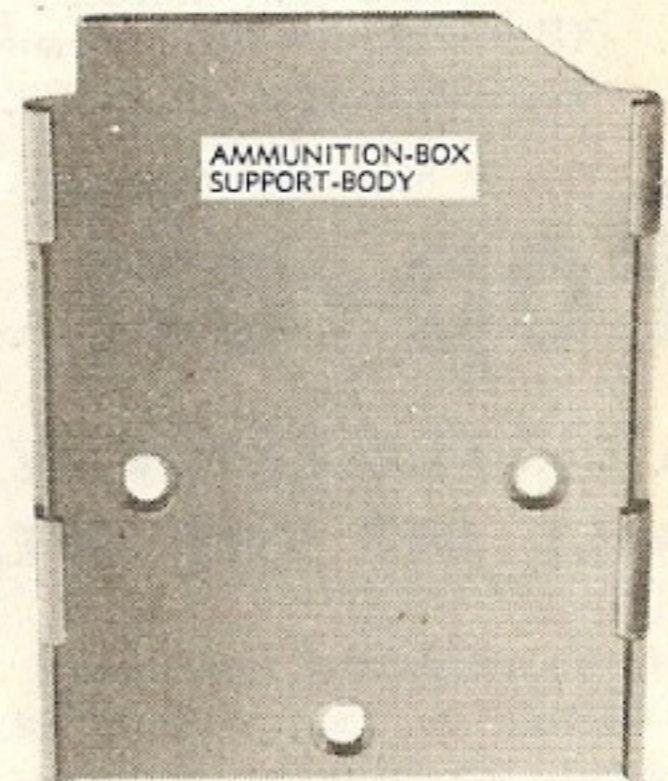
The support body (Fig., right) that holds the ammunition box is fastened to the cradle extension-bracket (Fig., below). The extension-bracket has two sets of holes; upper and lower. When the M15A1's left the factory, the ammunition-box support body was fastened in the **lower holes**. That's what causes the trouble, because the ammunition box sits about an

inch too low and the ammunition feeds into the gun at an angle instead of on a level.

You can correct this, in less time than it takes me to paint my nails, by moving the ammunition-box support body **from the lower holes to the upper holes**. No new parts, no discarded parts, no anything . . . just lift the ammunition box off the support-body, remove the three screws in the support-body, raise the body to the upper holes, replace the screws and the ammunition box. And the ammunition will zip into that gun like it should.

### *Sodium Valves*

You hear all kinds of stories about eyes being blown out, arms



being torn off, etc., when guys try to cut themselves some kind of a tool out of the high grade metal of a discarded sodium-filled exhaust valve. The reason for the trouble is that sodium, when brought into contact with even the least little bit of moisture, gives off highly inflammable hydrogen gas.

The sodium valve hazard has now been increased a couple hundred per cent as Ford, taking advantage of the higher cooling efficiency, goes in for sodium-filled exhaust valves in their engines.

Previously, radial engines using sodium valves included: (1) Continental Model W-670-9A; (2) Continental Wright Models R-975EC2, R-975C1 and R-975C4. In-line engines included: White Model 160A in half-tracks.

The announcement is now made that 20% of the following Ford engines coming off the production line will contain sodium-filled exhaust valves:

GAA Engine with Engine Serial Nos. above 10,000, in the M4A3-series medium tank, gun motor carriage M10A1, and M36 (T71).

GAF Engine, after Engine Serial No. 77, in the medium tank T25E1, T26E1.

GAN Engine, after Engine Serial No. 250, medium tank T23.

You can usually identify sodium-cooled exhaust valves by the extra-thick stem. Whenever they've been pronounced N.G., or if somebody ever gives you an un-serviceable one to play with, drop it into the deep blue sea or bury it a foot or so in the ground where nobody is likely to dig it up.

### *Tool Changes on M4 Series Tanks*

I'm going to do you M4 tank mechanics a favor and tell you how to combine two bulky tools into one (like they're now doing at the factory).

Just cut the head from your Wrench, Spanner, Track Support, Roller Lock Ring (Federal Stock No. 41-W-3260) and braze it to the back of your Wrench, Spanner, Track Support, Roller Retainer (Federal Stock No. 41-W-3261). See Fig. at right. It won't be

quite as light as the new manufactured tool, but it's lots better than carrying two tools.

Another tool that's being changed in production is the Spark Plug Insert Remover (Federal Stock No. 41-R-2384-60). The undercut has been lengthened  $\frac{1}{4}$ " so it'll work even if the insert threads have been damaged. It's not much of a job; fix yours as shown in the drawing below.

### *Electric Brake Controls for 2½-Ton GMC's*

Controlling a trailer that has electric brakes when the towing vehicle doesn't have control equipment just can't be done.

If you have any trailers, semi-trailers, or other Ordnance materiel with electric brakes—and no control equipment on your towing GMC, then requisition (through channels) Kit, Official Stock No. 8-A-8000. The kit consists of load control, hand control, hand lever

assembly, steering-post mounting-bracket, wire with clamps, 10 terminals, clips, an eye bolt, field installation instructions, parts list, service manual. Or, in other words—all necessary parts for installation on one 2½-ton 6x6 GMC.

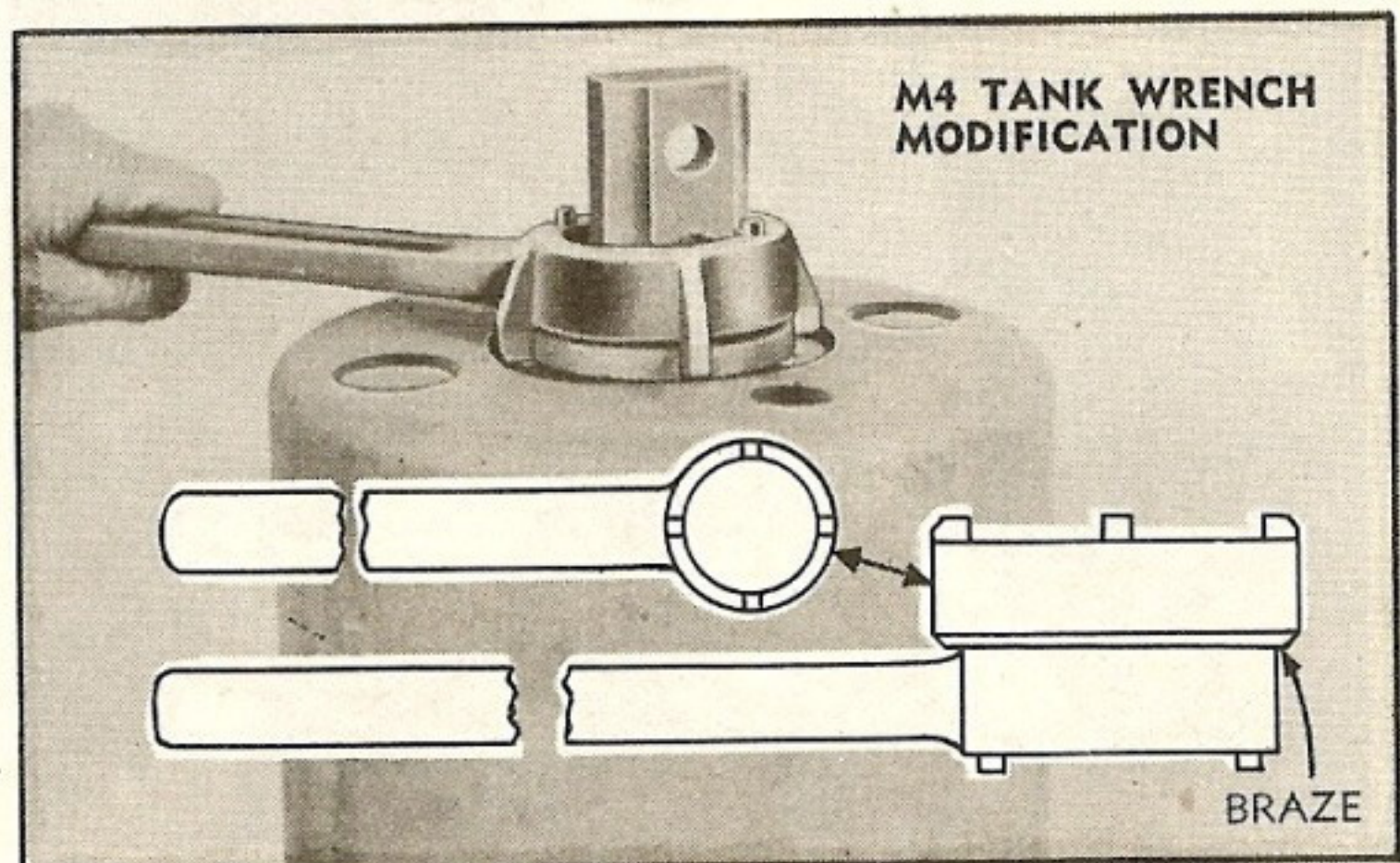
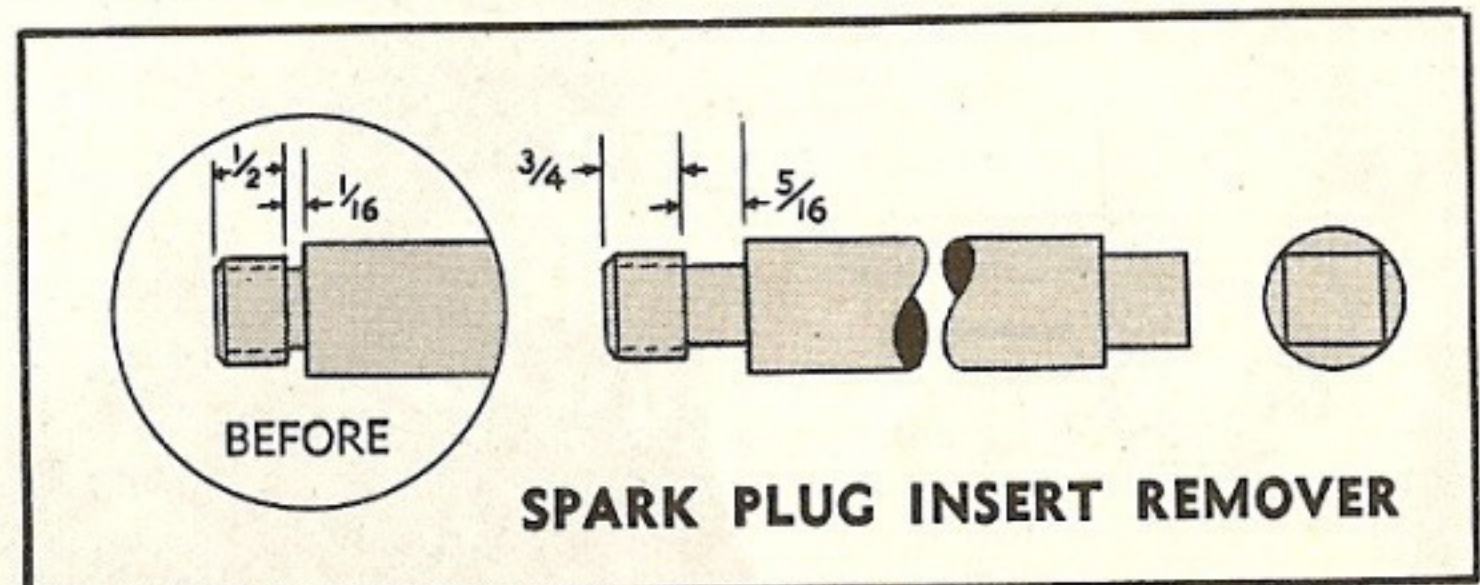
The ground, taillight, and stop-light contacts of the four-contact coupling socket on the truck, are connected into the truck electrical system. The brake contact isn't connected.

So says TB 9-801-9 (25 Apr. 44) which supersedes WDTB 9-801-8 (5 Jan. 44).

### *"Second" Tires and Tubes*

Sometime real soon you guys in the States are going to notice that the tires and tubes you get in exchange for un-serviceable tires and tubes will be marked SECOND.

Reason is that the tire and tube shortage is now so critical that the Army's having to buy sub-standard tires to meet all demands.



These seconds will give about 75% normal new tire service.

They'll be issued in exchange for unserviceable tires and tubes on the same basis as regular repaired tires and tubes. Only thing is, when you turn in a combat tire, you won't get a second combat tire back—you'll still get a new or repaired first grade one. Combat tires marked **SECOND** will be exchanged for unserviceable regular mud and snow or standard highway tires; use them as you would a standard tire—on your regular vehicles and without beadlocks. Incidentally, **never use beadlocks with any tires marked SECOND.**

You'll know these seconds, because tires will be branded **SECOND** over or near the serial number one side, and over or near the size marking on the other side. Besides that, there'll be a 3½" x 1½" label reading "LIMITED SERVICE TIRE, to be Classified as a Used Tire for Domestic Use

Only, **DO NOT SHIP OVERSEAS**" fastened to each side of the tire. As for tubes—**SECOND** will be stenciled on both sides near the valve.

All this according to WD Circular 293 (12 Jul. 44), which supersedes Section III, WD Circular 268 (26 Oct. 43).

### *Trigger Trouble on M4 Tanks*

If the coaxial-mounted cal. .30 machine gun on your M4 tanks just won't fire—don't look for big things to be wrong. Maybe the curve of the trigger is all that's wrong. If the trigger doesn't contact the solenoid firing plunger right on the nose—there'll be no shooting (see Fig. below).

The solenoid plunger should have 3/32" free travel (with or without the trigger contact, before the sear release engages) in order to trip the sear release.

Since the solenoid is not adjustable, the only thing to do is fix the trigger. Remove the trigger, hold it firmly on the flat rectangular section just ahead of the finger grip portion, and tap the finger grip end of the trigger **very gently** to get the correct positioning of the trigger. Put the trigger back on the gun, and I'll bet next month's lunch money, she'll fire like a charm.

### *Reclaiming Bellows-Type Thermostats*

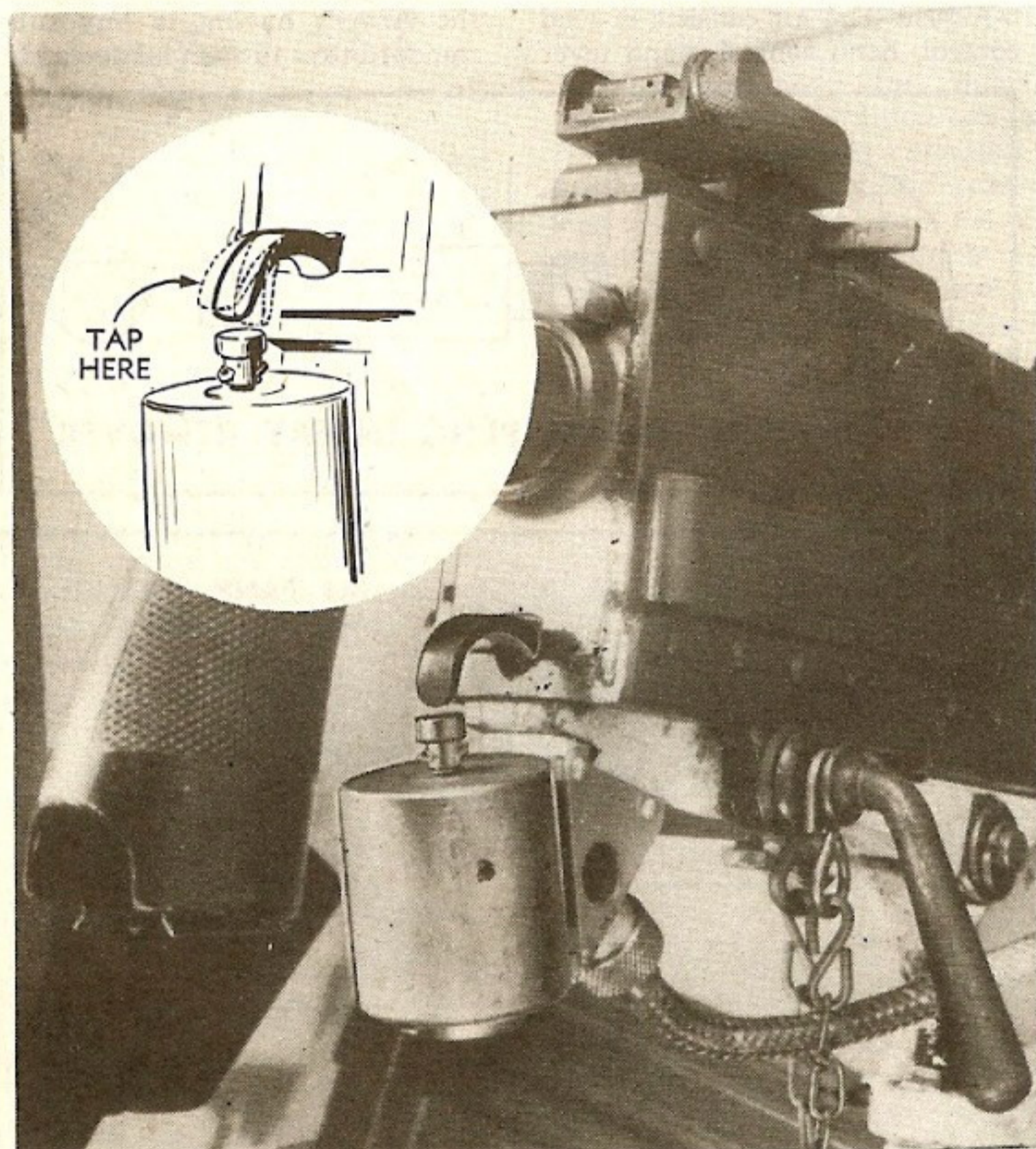
Was complaining to some of the boys at the shop the other day about not being able to get replacements for bellows-type thermostats, when one of them said he'd show me how to fix damaged bellows.

First he gathered all the old thermostats that he had around, cleaned them up, and looked them over for defects. Those that were really banged up or too worn for reclamation were donated to the scrap drive.

But if a thermostat simply had a punctured bellows and no water in it, he just sealed it up with solder. If there was water in the bellows, he boiled it out before he soldered the hole shut.

Then he separated all the repaired thermostats into groups according to operating temperatures. He put all those in one group in cold water with a serviceable master thermostat of the same operating characteristics and with a standard vehicle heat indicator. (He could have used a thermometer.) Then as he slowly raised the water temperature, he checked the valve openings of the reclaimed units with that of the master thermostat. They all should open at about the same time. And to be serviceable, they should be fully open at a temperature of 20 or 25 degrees above that recorded at the beginning of the valve opening.

He did the same thing with each group that had a different operating temperature. Then he told me where he found out how to do it—TB 9-2830-57 (6 May 44).



# M4 Engine Sling

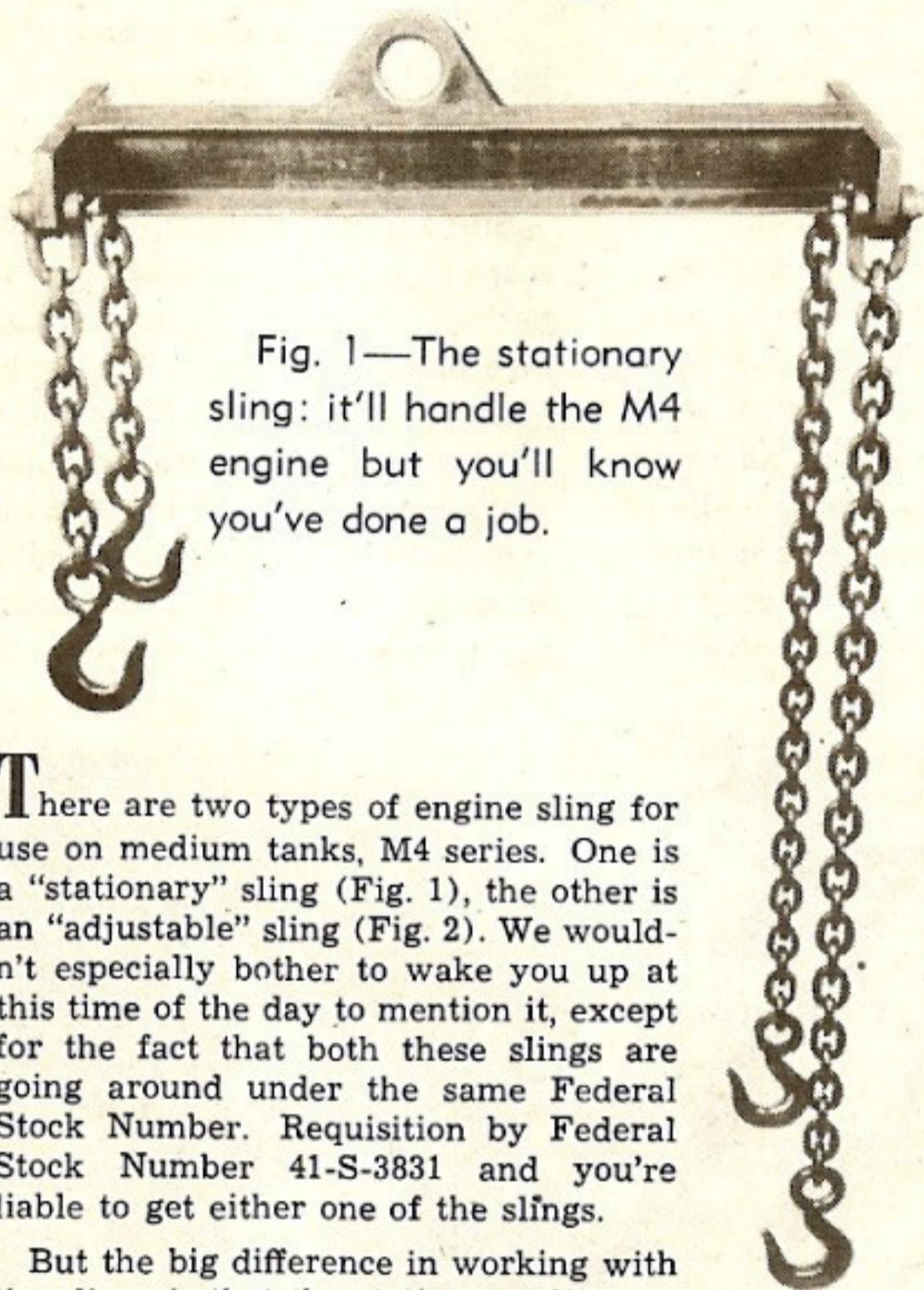


Fig. 1—The stationary sling: it'll handle the M4 engine but you'll know you've done a job.

There are two types of engine sling for use on medium tanks, M4 series. One is a "stationary" sling (Fig. 1), the other is an "adjustable" sling (Fig. 2). We wouldn't especially bother to wake you up at this time of the day to mention it, except for the fact that both these slings are going around under the same Federal Stock Number. Requisition by Federal Stock Number 41-S-3831 and you're liable to get either one of the slings.

But the big difference in working with the slings is that the stationary sling requires a half-dozen or so extra chores before you can coax the engine out. And makes re-installation a harder job than it has to be. The adjustable sling allows you to get right down to business without so much preliminary fiddlin' around.

Whether you've got the stationary or the adjustable sling is a matter of your own good luck—there's not much you can do about trading the one for the other. However, if you've got the stationary sling, the following little jobs are necessary before you can get the engine out of your M4-series vehicle. You've got to remove:

- (1) the subfloor over the propeller shaft.
- (2) the flange nut on the clutch shaft.

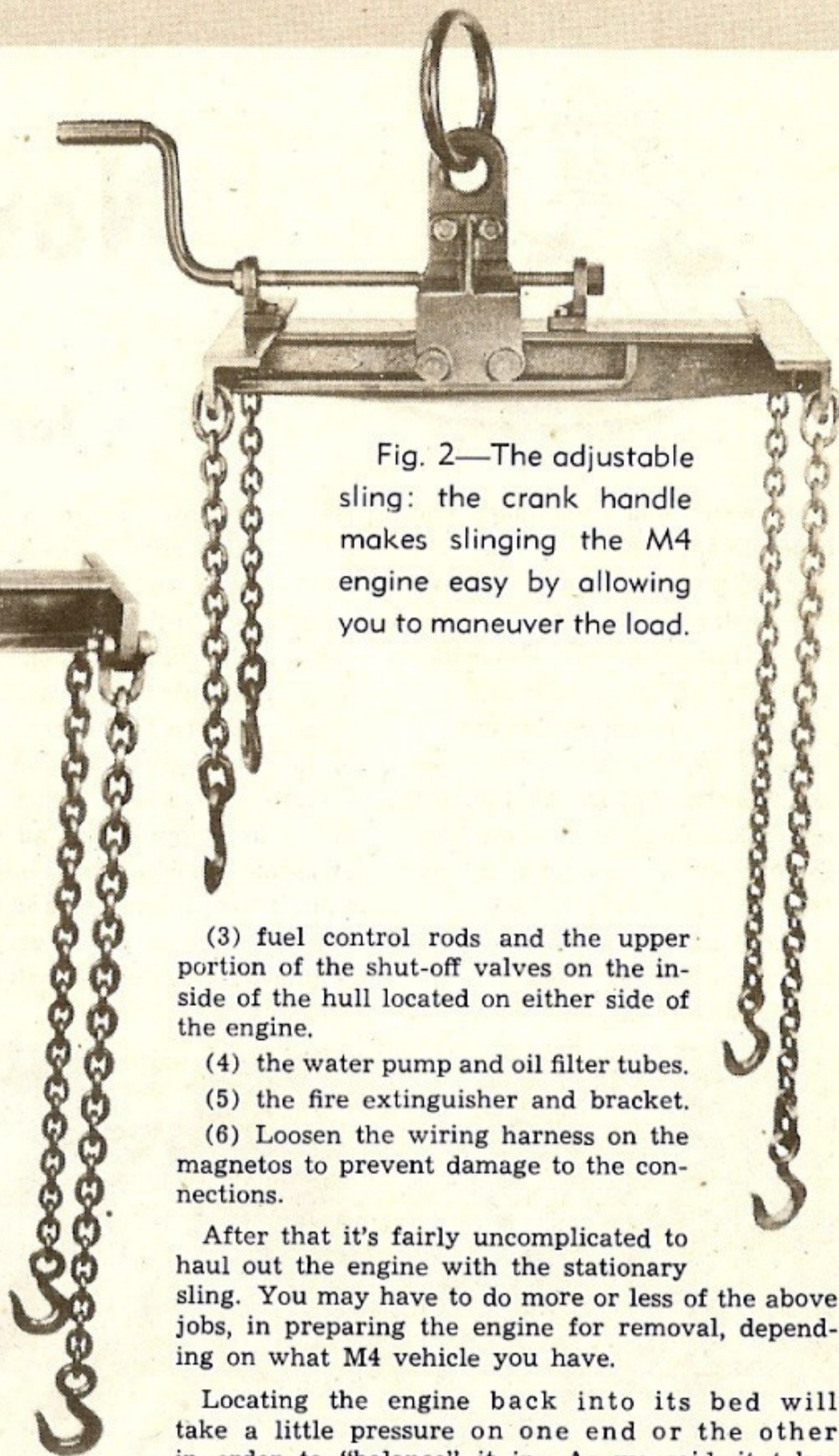


Fig. 2—The adjustable sling: the crank handle makes slinging the M4 engine easy by allowing you to maneuver the load.

(3) fuel control rods and the upper portion of the shut-off valves on the inside of the hull located on either side of the engine.

(4) the water pump and oil filter tubes.

(5) the fire extinguisher and bracket.

(6) Loosen the wiring harness on the magnetos to prevent damage to the connections.

After that it's fairly uncomplicated to haul out the engine with the stationary sling. You may have to do more or less of the above jobs, in preparing the engine for removal, depending on what M4 vehicle you have.

Locating the engine back into its bed will take a little pressure on one end or the other in order to "balance" it in. As we said, it takes work.

With the adjustable engine sling, life is much simpler—you can dodge all or most of the above preliminaries with the crank handle on the sling. Putting the engine back on its mountings is a pleasure.

**. . . TWO SLINGS GO  
BY THE SAME FEDERAL  
STOCK NUMBER. ONE  
MAKES THE JOB EASY.**





# Now You See It

... Some battle-tested tips on  
for drivers who like to keep

**Y**ou won't find camouflage and concealment listed on your PM Work Sheets—but they're preventive maintenance items just the same. If keeping your vehicle hidden from enemy bombsights and gunsights isn't a "correction of failures before they occur," we don't know what is. All the 1000 and 6000-mile services in the book can't restore a truck, tank, or half-track smithereneed by HE.

Sure, camouflage is the Engineers' job. They work out the methods and hand out the mate-

rials—but only up to a point. From there on it's up to you, brother, and you can't duck the assignment any more than you can take "evasive action" in a poorly concealed bivouac. Sometimes you'll be told exactly what to do. But there'll be other times—just once is enough—when you'll find your buggy sitting all by its ownsome, smack in the middle of a bull's-eye. Right then and there, the best trick in the driver's bag is knowing how to make a vehicle disappear.

That big trick is the sum of a lot of little ones. For instance:

## SITING GETS YOU SET

Siting means sizing up the landscape to spot the one best place to park—to take the fullest advantage of natural cover. It may be a clump of jungle, a haystack, a tall hedge, a farmhouse, anything that's part of the scenery and big enough to hide beside or beneath. In wooded areas, you drive under the thickest growth of trees. In open agricultural country, you



Fig. 1 (A)—Oh, what a beautiful target! Here's how vehicles pop out of a landscape when they're driven around aimlessly like doodlebugs.

## No. 1 Maintenance Problem

We asked the question recently, "What is your No. 1 maintenance problem?" and a fella said, "The first sergeant." Another man wrote in a long and heartfelt gripe about his maintenance sergeant who, he said, tossed the juicy ratings in his section to his "personal friends," passing



over men of greater experience and ability, "men who preferred to do K. P. than be knocked around at their own game by people who never had a home till they got in the army."

Now, we don't want to take off into a foam-flecked diatribe against first sergeants, section leaders, etc., it would be an injustice to the many fine men we've seen in these jobs. However, the personal experience of any of us who have ever been joes will testify that the subject can bear a little kicking around.

The tradition of the "tough" sergeant is an old one in the army. It springs out of the need for discipline . . . discipline necessary for split-second and unquestioned obedience when dealing with masses of men in a state of emergency.



However, by the merest flick of the wrist, this principle can be turned into what our lacy old grandmother used to call food for the birds. This happens when the job of leadership falls to the man with the biggest mouth and the most formidable belly, the "keeper" with the extensive vocabulary consisting entirely of "No," who operates on the assumption that the men under him are criminals who will make work or trouble for him.

Then there's the sincere and conscientious man who is so intent on doing the job and doing it full and right, that he loses the sense of human values. Back in training, this was the leader who made us GI the barracks floor till it gleamed, then made us GI it again just to make sure. By that time, any pride the men might have had in the cleanliness and good looks of their quarters, disappeared under the drudgery.

Whatever the case, the effect on the men under such leadership is the same. For a while—even for a long time—they may swallow hard and bear it, but life under the thumb has its affect: resentment and fed-uppedness that is a dragging brake on a man's work and attitudes.

All right, Sergeant, this is only part of the story; we know all about the natural-born goof-offs that ornament the rank and file, we know all about the malcontents and cranks never satisfied. Believe us, we know all about the unthinking and senseless authority that many a leader himself endures.

But we're speaking today for the defenseless joe who may be on the dirty end of your stick, consciously or unconsciously. He may be the fresh kid who talks a lot, the guy who keeps his mouth shut to keep out of trouble, the college kid, or the know-it-all mechanic. Whatever he is he can be made to give out for you, **willingly**. Because he is a human being, he's got a kegful of enthusiasm inside him. Tap it and he'll knock himself out for you. **You won't be his No. 1 maintenance problem. He won't be your No. 1 maintenance problem.**

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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.

# —Now You Don't!

**camouflage and concealment  
their vehicles in one piece**



settle for a single tree or a high hedgerow, the edge or corner of a field (Fig. 1). In what the romping Red Army calls "populated places", you snuggle up to the shady side of a building (Fig. 2). In barren terrain, you do the best you can with scattered gulleys, rocks, and shadows.

In any situation, you try your damndest to picture how the layout looks from the air. Then you decide where to put your war wagon so it won't disturb the pattern. **The idea is to make it look**

**as much as possible like nothing at all, or at least like nothing suspicious.** The better you case the countryside, the better your vehicle's vanishing act can be.

## WATCH THOSE TRACKS

Tires make tracks and tracks make tracks and little krautzy divey. When you pull off the road, heading for cover, it doesn't take a Tracy to follow your trail. Those tracks on the ground point straight to your hideaway like an arrow on a map—unless you're

smart enough not to let them. Don't cut corners. Don't streak across open fields. Pick your way to the shelter of trees or buildings or whatever by sticking close to hedges, fences, lanes, or other normal breaks in the terrain. To cross a plowed field, drive in line with the furrows when you can, and along the very edge of the field in any case. If your tracks are still conspicuous (and you'd better assume they are), it's a good idea to continue them on beyond your point of concealment, to an-

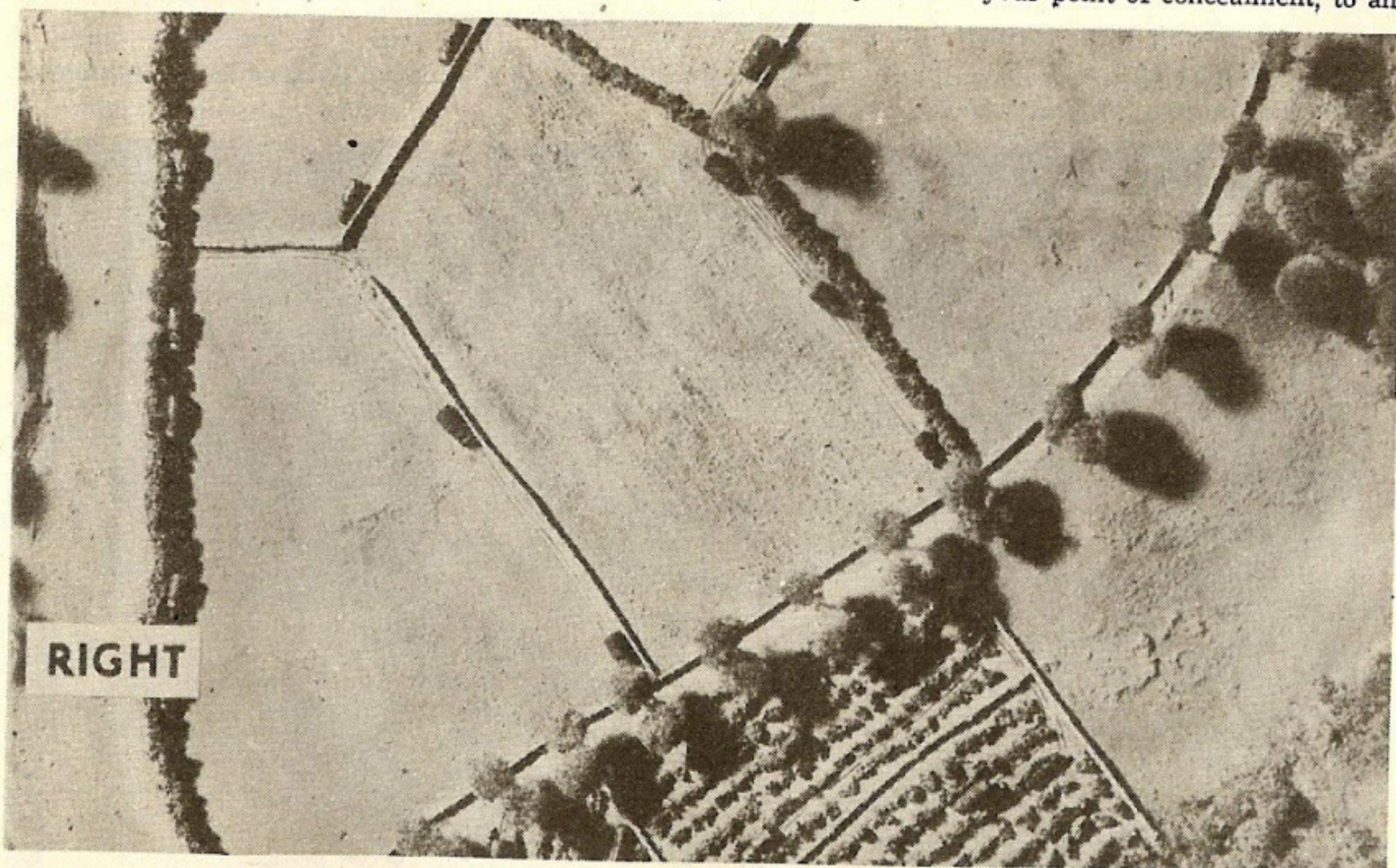
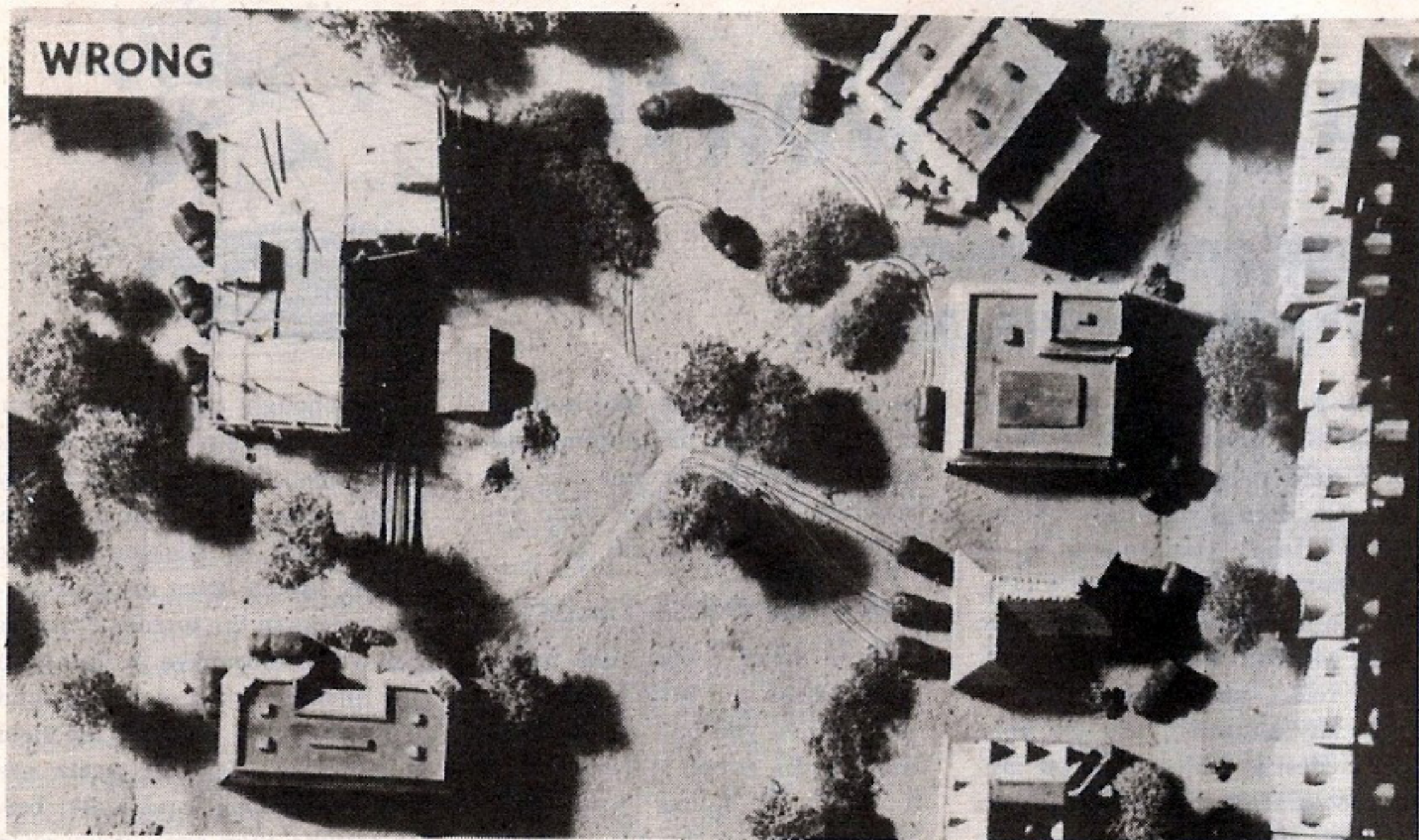
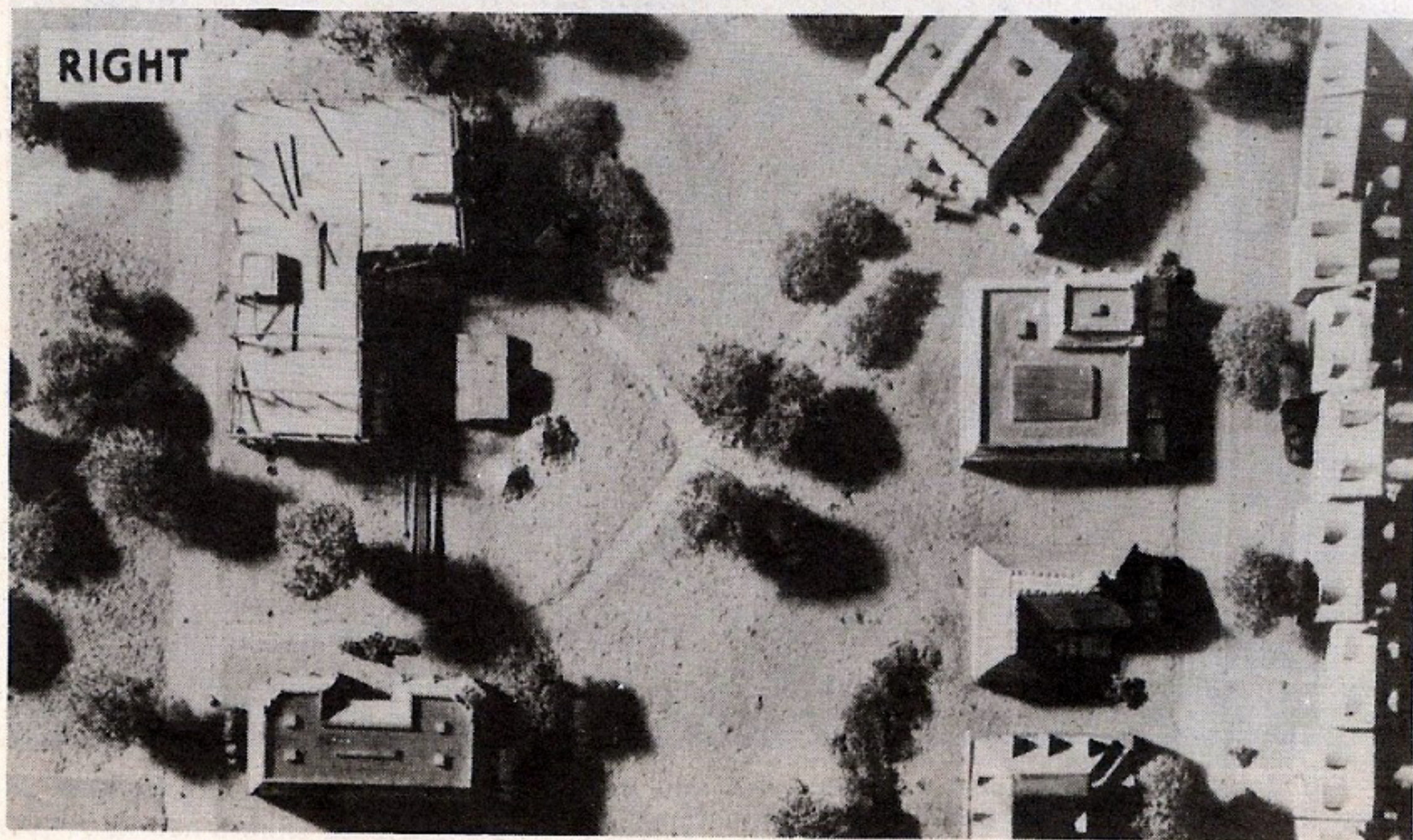


Fig. 1 (B)—Now look what happens when you keep your trucks and their tracks close to fence lines and hedge lines and rows of cultivation.



*Fig. 2 (A)—This is no way to go to town when the enemy is watching. Vehicles parked at random are almost as conspicuous as the buildings.*

*Fig. 2 (B)—Same number of vehicles taking advantage of shadows. They've been lightened up in this picture, or you couldn't see them at all.*



other road or something, and then drive back in the same tracks to your hiding place. That way, it'll look as though a vehicle went right through without stopping (Fig. 3). Short exposed tracks can be covered up with brush, leaves, or dirt, if you want to be thorough.

When the same concealment area is used by more than one vehicle, all should enter it on the same pair of tracks—so their number won't be given away. (The activities of quartering parties, such as dispersion, track-planning, and route control, are beyond the scope of this article.)

### PUT SHADOWS TO WORK

When the sun (or a bright moon) is shining, you've got shadows at your service—and they can do a swell job if you use them right. Ground shadows usually look so dark from a plane that your vehicle has a good chance of being overlooked if you've ducked into one. Of course, it has to be cast by an object (building, wall, ridge of earth, or whatnot) that's higher and longer than the vehicle itself. It pays to remember, too, that shadows keep moving and you'd better move right along (Fig. 4).

If you can't find a shadow big enough to park in, look for a smaller object to keep your vehicle's telltale shadow off the ground. **Shady side of big things, sunny side of little things—that's the formula.** If you have to stop along a road for any reason, pull over to the side away from the sun (or moon); then your vehicle's shadow will be tossed into the roadside ditch or bushes, and not clearly outlined on the flat surface of the road.

When you can't submerge the

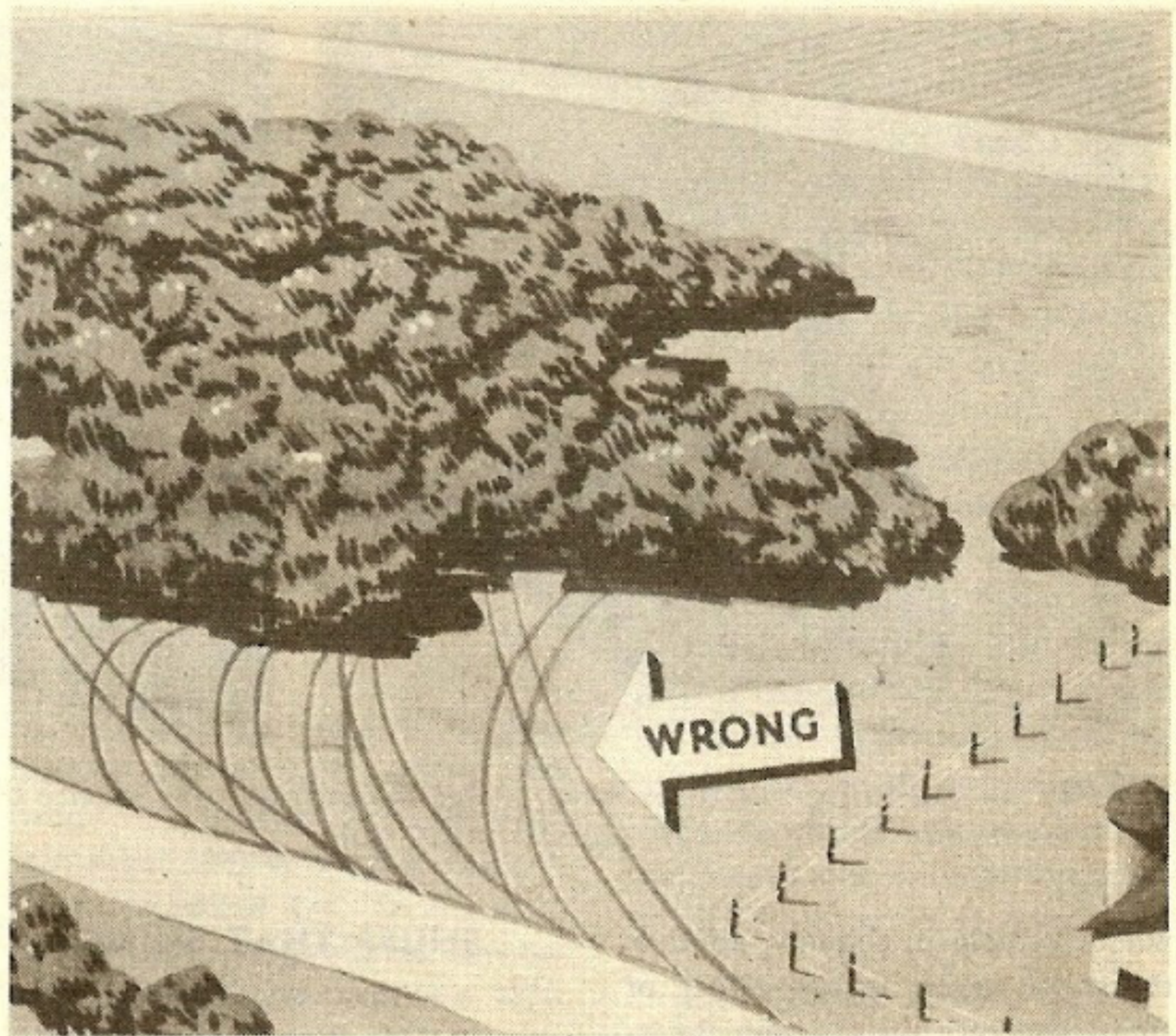
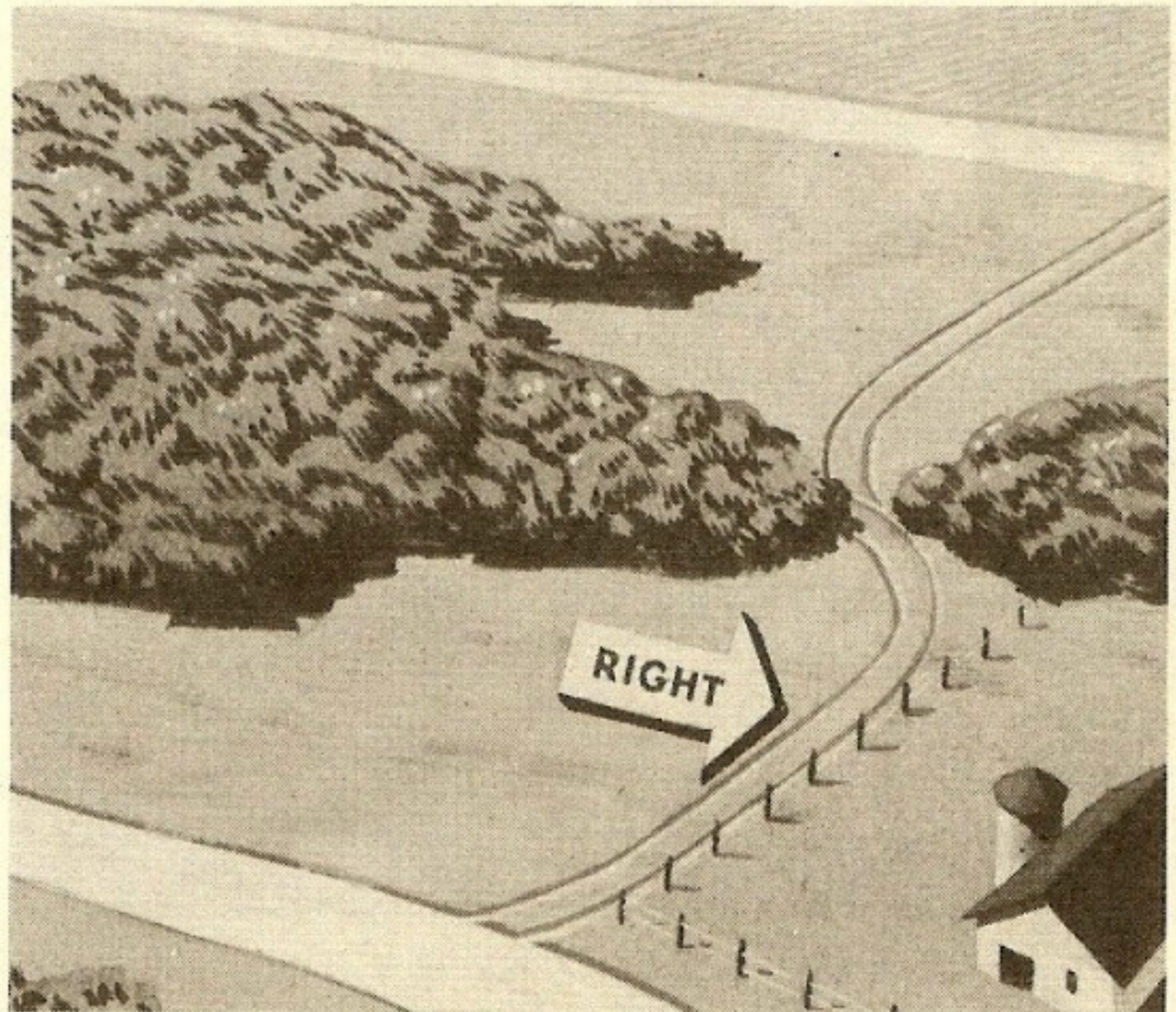


Fig. 3 (A)—Guess what's hiding in yon woods. A pilot with half an eye can tell what kind of vehicles and how many. Bombs away!

Fig. 3 (B)—Hell of a lot better, isn't it? One innocent pair of tracks that seems to cross right over to the other road. Keep it neat.



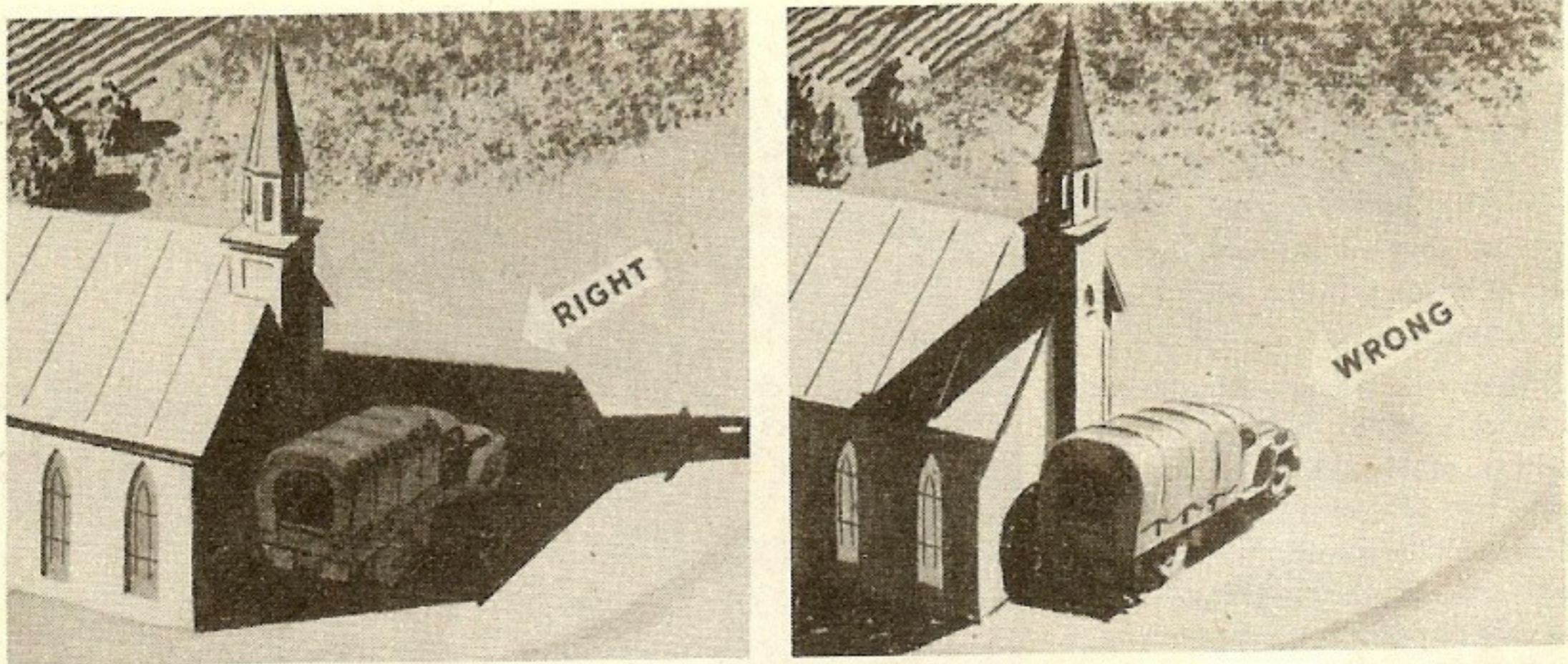


Fig. 4—Building shadows help to keep your vehicle in the dark, and the foe likewise. But the sun moves, the shade moves, and so must you.

whole vehicle in shadow, another thing to watch is the effect of small shadows on the vehicle itself, cast by one part on another. Jumbling up these shadows, with anything you can lay your hands on, will help make your truck, tank, or half-track less recognizable as such. from up yonder in the blue.

### SNUFF THAT SHINE

If you can see through your windshield, chances are that the enemy can see through your attempt to hide. Windshields—as you may have noticed—reflect light like crazy. Light from the sun, the moon, aircraft flares, the neon bars of 2nd lieutenants. In the language of camouflage, this

reflected light is called shine—and it's completely uncalled-for. No matter how carefully you site your vehicle and obscure its tracks, a little shine can light up your location like a pin-ball machine, with a gleam that can be seen for miles.

Roll down your side windows. Cover your windshield—but solid—with mud or leaves or grease or canvas. (If you use grease, don't forget to clean it off the wiper blades and any other rubber in the vicinity, before you get going again.) Canvas is neatest of all (Fig. 5). Some drivers make their own slip-covers, which come in plenty handy. So do blankets, of course, and shelter halves.

Smother your headlights, and taillights, too, with anything that'll snuff out the shine. They can be brighter by day than if you flashed them on at night.

### SPROUT LEAVES AND BRANCHES

Learn to turn your tank into a spreading chestnut tree, your jeep into a shrub. It's just a matter of making the most of natural materials. Without hacking conspic-



Fig. 5—Dousing windshield shine with canvas and headlight shine with leaves. Mud or grease will do the job, too, but they're messier.