ARMY MOTORS

VOLUME 4 FEBRUARY 1944 NUMBER 10

AAF Declares Another War

In a sensational document labeled AAF Regulation 75-6 (12 December 1943), Army Air Forces Commanding General Henry H. Arnold announces that "Lack of traffic control and gross abuse of vehicles in many instances are causing the destruction and premature, unnecessary wear of vehicles and their component parts."

"This unnecessary injury, destruction, and waste are impeding the war effort and must be discontinued," the Regulation states. "Steps will be taken by all officers to enforce the provisions of this Regulation."

This ought to erase any doubts that may have been in the minds of soldiers at airfields. Preventive maintenance is the order of the day—not just for planes, but for every motor vehicle that runs on the ground, from the C-2 wrecker down to the little tow-motors.

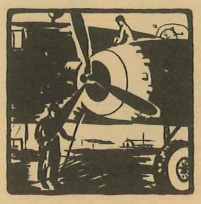
Some of the specific punches in 75-6:

1. Nobody under the AAF's control is allowed to pilot a vehicle unless he has been trained in driver maintenance and holds a GI operator's permit (WD 00 Form 7360). The Regulation reminds you that FM 25-10 and TM 21-300 provide the standards for this.

2. An official driver will be assigned to each vehicle, and he alone will be responsible for its first-echelon maintenance. It's also up to him to see that the vehicle goes to second echelon for its lubrication and preventive maintenance services on schedule—and to help the second echelon mechanic as much as possible.

3. Governors will be set at the prescribed speeds, and sealed.

4. All preventive maintenance services and inspections will be performed regularly, and the appropriate "paper work" done in accordance with AR 850-15 (which, in turn, refers you to TM 9-2810).



5. Local traffic regulations will be observed.

6. "Corrective measures will be taken" to eliminate eleven most-common forms of abusive vehicle driving.

They're figuring on enforcing it, too. The same AAF regultion sets up a system of "spotters," each equipped with a pad of traffic tickets. Only officers can be spotters. They'll operate like traffic cops, stopping vehicles for traffic violations, but that's not all. **They also stop vehicles at random to check on the driver's preventive maintenance.** If he's slipped on his PM, he'll get a ticket just as promptly as if he had driven through a "stop" sign.

The regulation reminds CO's that general vehicle abuse within an organization is a failure of command, and it reminds everybody of the provision in AR 35-6640, that "If any article or property is lost or damaged through the fault or negligence of any officer or enlisted man, he will be required to pay the value thereof . . ."

And the final paragraph carries the stinger: "All provisions herein apply with equal force to officers, enlisted personnel, and civilian drivers of military vehicles."

The "Burma Road"

We've covered the cover of this issue with a bombardier's eyeview of the driver training course at Camp Wolters, Texas.

This spectacular steeplechase was dreamed up and laid out by Major Steve M. Divich, Commandant of the Camp Wolters Chauffeurs' and Mechanics' Schools. The specially-posed picture we've reproduced was sent in by Brigadier General E. W. Opie, Assistant Center Commander of the Camp Wolters IRTC.

We're hitting you in the eye with it, guys—not because we think you can build or blast one pronto in your own back yard, but because this model course points up the need for thorough-going practice in driving techniques. You won't find many hazards of terrain, anywhere on earth, that aren't at least hinted at right here.

Every Army truck driver should recognize the shape of things to come. The more he tries his hairy hand at obstacles like these, the sooner he'll get where he's going—and you know where that is. So if some star features of this Lone Star "Burma Road" should spring up all over the continental U. S., you won't hear **us** complaining.

Stop us if you've heard this one—but driving a vehicle skillfully is just as important as keeping it fit to drive.

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The Organizational Mechanic Does a Job of

CLEARING UP STATIC

On Radio-Equipped Vehicles

Through all the battle hubbub as a vehicle jounces along—the chattering of the 50 calibers, the bellowing of hundreds of horsepower, mixed with the clanging racket of moving iron and metal parts—the radio operator must be able to hear signals through the earphones clear and distinct. Battle orders are coming over the phones . . . communications on changes in tactics . . . messages all important to the success of the campaign and to the lives of the men. A noisy vehicle can clog the earphones full of static and blot out the messages as effectively as turning off the radio.

A radioman has to put up with some of the frying and bubbling noises that snafu reception. In recent encounters the Nazis broadcast radio waves intended to distort reception. Nothing he can do. But the radioman can do something when he suspects the static and interference is coming from the **vehicle itself.** He can get his organizational mechanic to trouble-shoot the noise. That's part of his job.

After listening, it's easy for some mechanics to blame the static on sunspots, on iron ore in the ground, or on those three silver fillings in the driver's teeth. Then tell the radio operator to go peddle his radio trouble to the Signal Corps boys. The organizational mechanic who understands every inch of his vehicles knows the earache can come right from the engine compartment. For when the radio suppression system on the engine is maintained, not one peep of noise will sneak out and over into the radio receiver. When there's noise, something's wrong.

Static and interference start with the electrical system of the vehicle. Every time there's a spark in the system, as when a circuit is opened, the spark broadcasts a radio wave. With all the electricity crackling around inside the engine compartment, there's plenty of waves. And they take two routes into the earphones. 1) They radiate from the spark and are picked up by the radio antenna on the vehicle. 2) They flow through the wires back to the battery and up the hot lead into the radio receiver (Figure 1).

The suppression systems on Army vehicles are designed to sop up and fade out these static waves

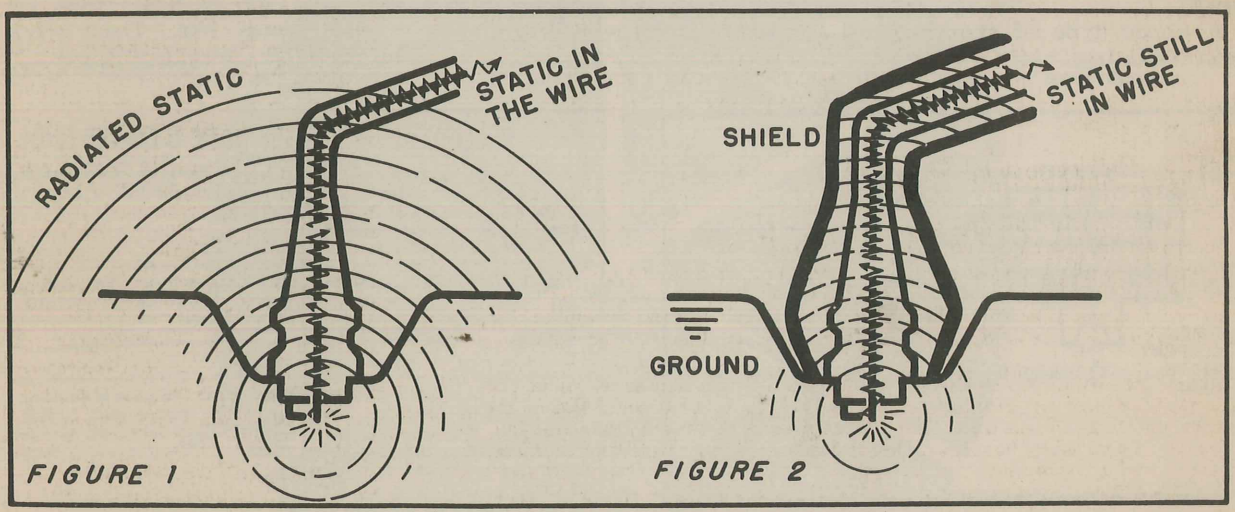


Figure 1. Static waves whirling out from the unsuppressed plug stop at nothing. They shinny down the antenna and buzz out the earphones.

Figure 2. Imprison the plug in a grounded shield and the radiated waves fizz out. Static in the wires keeps on 'til it's grounded out by a condenser, or filter.

at **both** sources. How? By quickly grounding the waves. Any static that might get **radiated** to the antenna is grounded, any that might get **carried** up the plus lead into the receiver is grounded. That's the secret of squelching the static waves . . . **ground them.** Then with the racket strained off to a ground, the operator gets clean reception.

One type of suppression on a lot of combat vehicles—tanks, half-tracks, armored cars, scout cars—uses a system of braided metal shields (Figures 6, 7, 8a). All the wires and units that radiate static are canned by these metal shields, conduits, and cases—each grounded. Any interference spattering out quickly dissolves when it meets the grounded shields (Figure 2). The shields only kill static that's radiated . . . not the static that the spark sends racing back through the wires. Filters, or condensers, in parallel with the circuit—do that job (Figures 6, 7). They clean up static by giving it a quick short path to a ground. Don't let anybody tell you filters or condensers cut down engine performance. Filters and condensers are in **parallel** and can't interfere with direct current flow. The purpose of filters and condensers is to give the alternating static waves an easy place to ground . . . and quick death (Figure 3).

A newer type of suppression system using "resistor-suppressors" is replacing the shielding used on half-tracks, scout cars, trucks, and some tanks (Figures 4, 5, 9). Instead of shielding the individual wires and units, radiated static is mopped up two ways, by resistor-suppressors, and by the engine compartment itself. The resistor-suppressors are a high resistance in the ignition line—one at each plug, and one in the secondary cable (Figure 9). The resistance isn't high enough to slow down the current even a little, so you don't have to worry about the effect on engine performance. The suppressors prevent static from forming. So, when the spark occurs, there's no static spread out.

Any odds and ends of radiated static on these vehicles doesn't get any farther than the engine compartment. The compartment is one large, well-grounded shield. The hood, side walls, radiator, and firewall are all grounded together by straps (Figure 8b), and by tooth-type lockwashers that scratch through the OD and ground the separate pieces of metal together. The whole works is bonded to the frame. Any waves radiated get smothered right in the compartment.

This type of suppression system also depends on filters and condensers to get rid of static that may come into the receiver through the lines (Figures 4, 5). In addition, the resistor-suppressors weed out any static from the ignition system that might try to come back through the wires.

If the radio suppression system had its way, the radio would be clear as chimes. When it keeps tuning in on bedlam, the suppression system's the place to start checking. Next time a radioman complains about buzzing noises, take him for a fast drive, at least 100 feet from any other vehicles. The first test will let you know whether the noise is coming from the vehicle itself, or from some outside sources. Turn off the engine and have the operator turn on the radio. Any noise you get is coming from an outside source—**off** the vehicle. Forget it. Turn on the engine. If the receiver gets noisy right then, you know the vehicle itself is the cause. Next test is to tell which of the two routes the static is taking to get into the earphones. Disconnect the antenna lead a moment. If the noise **stops**, you know the static was being **radiated** from the engine and was picked up by the **antenna.** If the noise **doesn't** quiet down when you disconnect the antenna, the static's riding up **the wires** through the lead from the battery into the radio receiver. Now that you know which road the noise is taking, find the unit sending out the static. Squint your ear and try to hear what the noise sounds like. Then check what you hear against this:

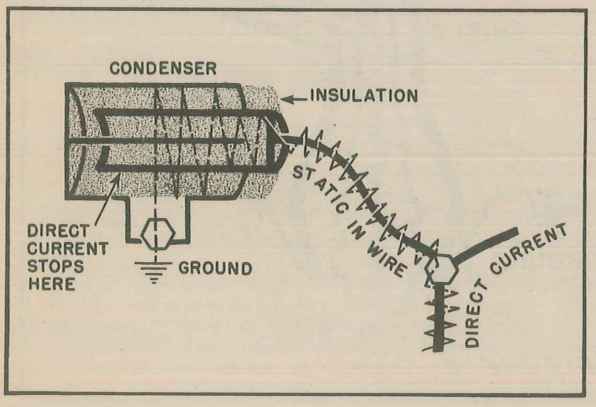
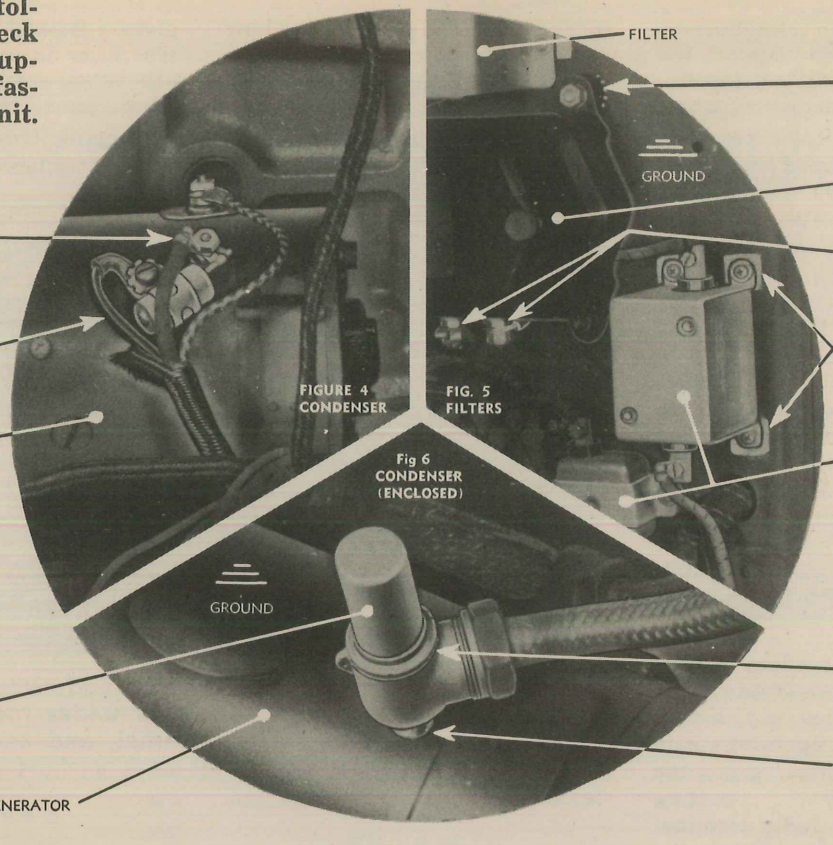


Figure 3. Direct current inside a condenser (or filter) runs up against a stone wall of insulation. Alternating static waves wiggle through and ground out.

IF YOU HEAR	THE STATIC IS COMING FROM
Clicks . . . regular clicks that speed up when you speed up the engine, and stop **abruptly** the second you turn off the switch.	**Ignition System.** Clicks are spark plugs firing, or points opening.
Clicks . . . irregular clicks that speed up when you speed up the engine but **continue** a moment **after** you turn off the switch.	The **generator regulator.** Clicks are contacts opening and closing.
A whine . . . moaning sound that rises in pitch as you speed up the engine, and **continues** for a moment **after** you turn off the switch.	**Generator.** Whine is coming from the make and break contact of brushes on armature.

After you've tracked down the static to the spark plugs (and distributor), generator, or regulator, find the suppression equipment attached to the unit. Now . . .

If the static's seeping in through the wires, follow the photos—check these points on the suppression equipment fastened to the noisy unit.



SHOULD BE TIGHT AND CLEAN

WIRE TO GROUND

GENERATOR

IF THIS DOESN'T WORK, TRY A NEW CONDENSER . . .SAME SIZE, SAME TYPE, MOUNTED THE SAME WAY.

CONDENSER ENCLOSED HERE

GENERATOR

FILTER

SHOULD BE TIGHT. TOOTH-TYPE LOCKWASHER SCRATCHES THROUGH OD, GROUNDS REGULATOR TO FIREWALL.

GENERATOR REGULATOR

LEADS SHOULD BE CLEAN AND TIGHT.

NO PAINT SHOULD BE HERE, SCREWS TIGHT. FILTER GROUNDS TO FIREWALL.

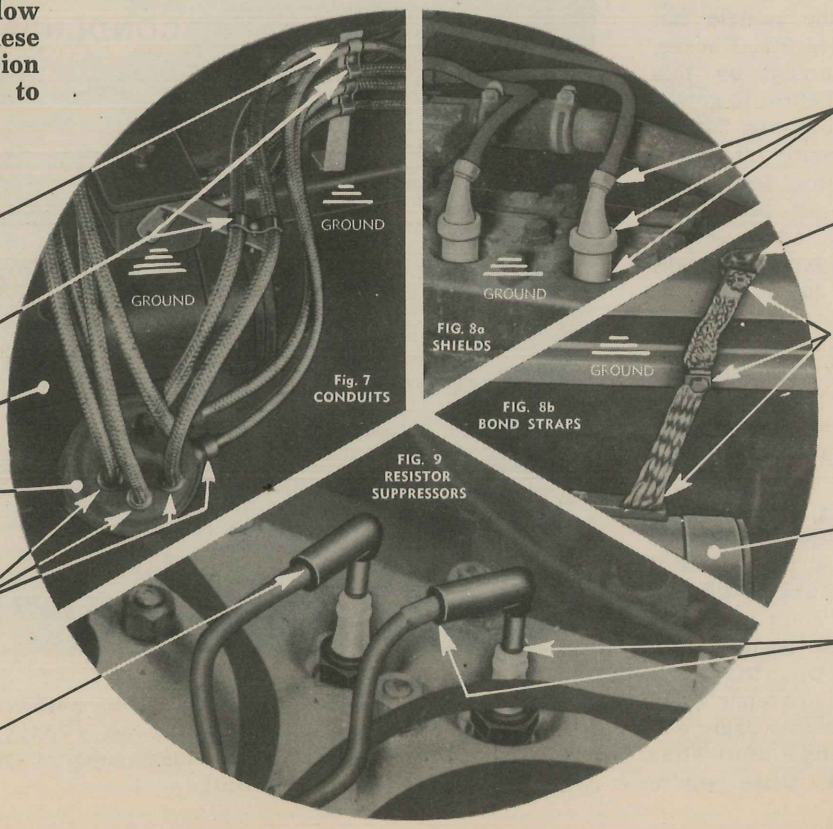
FILTERS

IF THIS DOESN'T CLEAR UP STATIC, TRY NEW FILTERS . . . ONE AT A TIME, SAME TYPE, AND MOUNTED SAME PLACE.

SHOULD BE CLEAN AND TIGHT

CONDENSER GROUNDS TO GENERATOR HERE. SHOULD BE TIGHT AND CLEAN.

If the static's coming in over the antenna, follow the photos — check these points on the suppression equipment fastened to the noisy unit.



CONDUIT BRACKET GROUNDS TO HEAD.

CLAMPS SHOULD BE TIGHT, CONDUITS PAINT-FREE AND CLEAN TO MAKE GOOD GROUND.

GENERATOR GROUNDED TO BLOCK

DISTRIBUTOR

SHOULD BE TIGHT AND CLEAN

EXAMINE SUPPRESSORS FOR CRACKS AND SCORCHED PLACES.

SHOULD BE TIGHT AND CLEAN. SHIELD SHOULD GROUND AGAINST HEAD.

ENGINE COMPARTMENT DOOR GROUNDED BY STRAP.

SHOULD BE TIGHT, CLEAN AND MAKE GOOD GROUND.

TOOTH-TYPE LOCKWASHERS SHOULD BE TIGHT AND SCRATCH THROUGH PAINT.

GENERATOR GROUNDED BY STRAP

SHOULD BE TIGHT AND CLEAN

A MISSING CYLINDER IS ANOTHER CLUE TO BAD SUPPRESSOR. WHEN TESTING, DON'T OVERLOOK THE SUPPRESSOR ON THE SECONDARY CABLE. TRY A NEW SUPPRESSOR IF YOU'RE IN DOUBT.

In addition to ignition and generating system static, the operator may complain about occasional static . . . like when the turret's traversed . . . or when the ventilator's turned on . . . or when the auxiliary generator is in operation. No electrical unit should give off its own brand of static. Try them all when you're trouble-shooting. They're all suppressed. Probably the grounds on filters or shields have shaken loose. A case of traversing noise we know of, was caused by a poor ground in the conduit between the slip-ring box and the radio terminal box. Stabilizer noises on another job happened because the paint on the conduits leading into the control box, didn't let them ground against the clamps.

Following the reading matter above on the separate static noises you've sifted out should dry up the radio operator's earache. If it doesn't, you've got one more ace to play . . . putting condensers in the radio terminal boxes (junction boxes). Any interference that manages to steal by the filters and condensers strewn through the vehicle can be trapped in the terminal boxes, and quickly grounded by this added condenser before it gets a chance to make reception fuzzy.

Signal Corps recently hit on this as a good cure-all for static. Vehicles coming off production lines will now have condensers in the radio terminal boxes. It might be a good idea to follow suit and put condensers in **all** your radio-equipped vehicles as they come in for 1000-mile maintenance. That'll save you a job trouble-shooting for static later on. Tell you how to get condensers in a minute.

Before you start hunting down the terminal boxes, turn off the power cutoff switch. That'll keep you from getting a stiff jolt (on vehicles that don't have this switch, remove the positive lead from the battery). Open the terminal box in the photographs (Figures 10 and 11 on this page, and Figure 12 on page 300) that matches up with those you're working on. The photos show how many condensers each box needs, and where. If your supply sarge doesn't have metal-case condensers that look exactly like the ones here, it's OK. Take any one he gives you, any capacity, whether it's .1, or .2, or .5, or anything else. What matters is getting the condenser to **fit** inside some of the narrow crowded boxes. Next

(Continued on page 300)

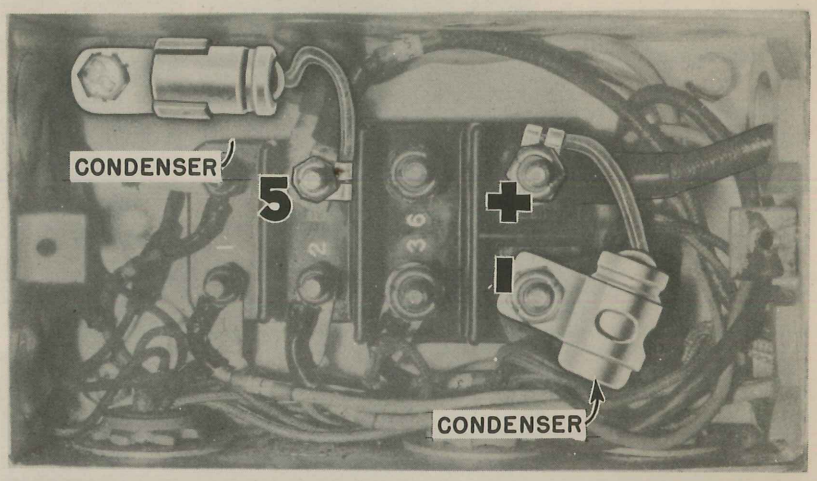


Figure 10. Terminal box on tanks and armored cars. *These need two condensers—one grounded under the mounting bolt with a lead direct to No. 5 terminal, and another condenser mounted on the minus terminal with a short lead to the plus terminal.*

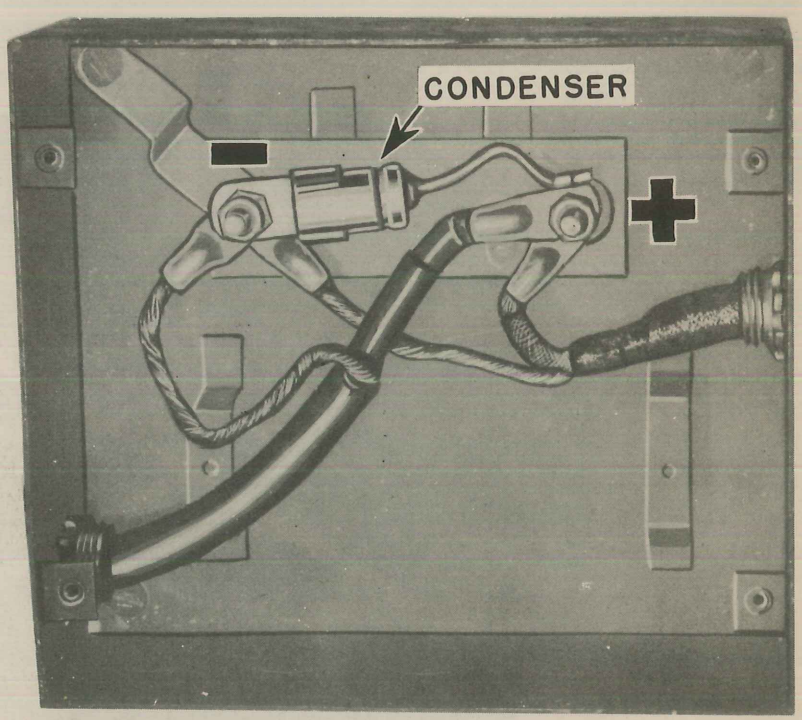


Figure 11. Terminal box on some half-tracks, scout cars, and trucks. *One condenser will do here. Plenty of room—nearly any size will fit. Just so the lead takes a fast short route from the condenser to the plus terminal.*

Gun Rings

Though your truck has a thin skin, it's got (or will have) sharp teeth. You can fight it against airplanes or ground attack. The reason is gun rings. These mount a .50 cal. machine gun and have been standard equipment on many trucks up front for some time. By TB 1800-5, more trucks will now get them. The gun rings come in kits—if your T/BA says you're entitled to them, you'll get them but not otherwise. TB 1800-5 "hereby grants authority to modify the vehicles affected and install the gun ring mounts in accordance with instructions contained in each kit."

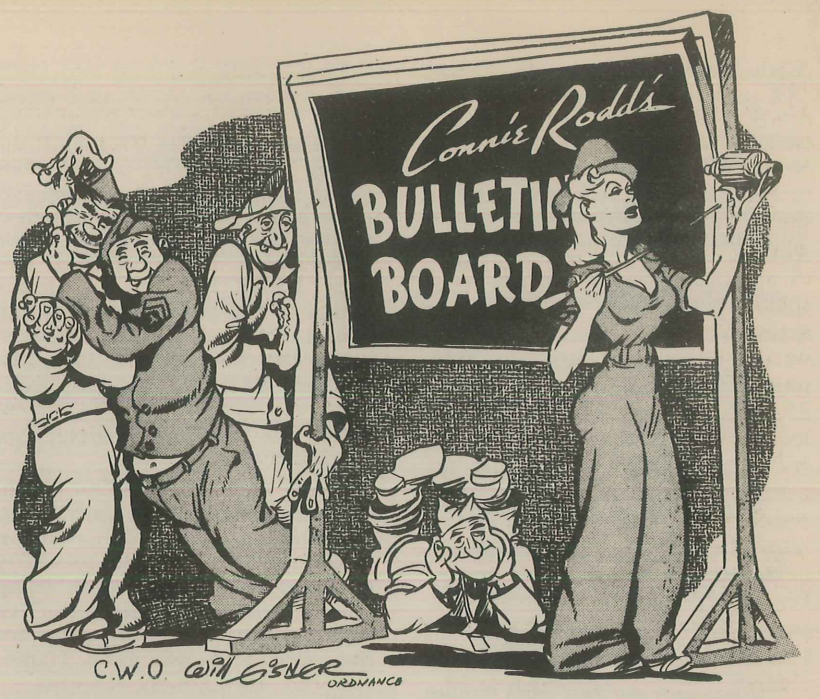
Following is a list of the kit numbers and vehicles affected:

Vehicle	Kit No.
Truck, ¼-ton, 4x4 (Willys and Ford)	M31 and M48
Truck, 1½-ton, 6x6 (Dodge)	M50
*Truck, 2½-ton, 6x6, L.W.B., closed cab (GMC)	M32
Truck, 2½-ton, 6x6, L.W.B., open cab (GMC)	M36
Truck, 2½-ton, 6x6, S.W.B., open cab (GMC)	M36
Truck, 2½-ton, 6x6, C.O.E., open cab (GMC)	M36
Truck, 2½-ton, 6x6, amphibian (GMC)	M36
Truck, 2½-ton, 6x6, open cab (Studebaker)	M36
*Truck, 2½-ton, 6x6, S.W.B., closed cab (GMC)	M37
Truck, 2½-ton, 6x6, S.W.B., closed cab, with wood bodies (GMC)	M37A1
Truck, 2½-ton, 6x6, L.W.B., closed cab, with wood bodies (GMC)	M37A2
Truck, 2½-ton, 6x6, with 700-gallon water tank and 750-gallon gasoline tank, camouflaged (GMC)	M37A3
Truck, 4-ton, 6x6, open cab (Diamond T)	M36
Truck, 4-ton, 6x6, L.W.B., open cab (Diamond T)	M36
Truck, 4-ton, 6x6, open cab wrecker (Diamond T)	M36
Truck, 4-5-ton, 4x4, open cab tractor (Federal)	M36
Truck, 4-5-ton, open cab tractor (Autocar)	M36
Truck, 5-6-ton, 4x4, open cab tractor (Autocar)	M36
Truck, 6-ton, 6x6, open cab prime mover (White)	M36
Truck, 6-ton, 6x6, open cab prime mover (Corbett)	M36
Truck, 7½-ton, 6x6, open cab prime mover (Mack)	M36

*With conventional steel bodies.

White Stars

Don't let it upset you, Joseph, if you notice that some of the vehicles pictured in Army manuals don't have national emblems (white stars) painted on them. In overseas theaters, it's still up to the CO to determine whether vehicles (camouflaged or not) will show white stars. The Theater commander has authority to order the stars painted on or taken off permanently; the organization commander can order them temporarily hidden. This question has worried some people so much that special changes to some of the manuals are now being issued to explain the situation.



Training

In training, the idea is to come as close as possible to actual combat conditions so that under actual combat conditions, everything will have been well rehearsed and come off smoothly (well, reasonably smoothly) without fumbling around. This however, is leading to a little trouble in one case we know of involving training of an Armored Artillery Battalion equipped with the 105-mm Howitzer Motor Carriage, M7.

In problems, the motor carriage is moved into position and the engines are stopped quickly so the chief of the section can hear commands. In some cases, in order to stop the engine even more quickly, the transmission is placed in 5th gear and the clutch is let out with the steering brake on to kill the engine.

All this is being done without the prescribed idling period necessary when cutting the engines of tanks. Sooner or later (and probably sooner) it's going to lead to trouble.

Far be it from us to tell anybody how to train anybody's unit, but if we were anybody, we would hold this kind of business down to a minimum and even cut it out.

Backing Up

How fast and how far can you back up? You can back up only just so fast and so far and then your engine and transmission goes to hell. Cadillac, talking about its M5, M5A1, and M8 vehicles, sets up the following specifications for driving in reverse:

Never drive in reverse for more than 1,000 yards.

Don't rev the engine to more than 3,500 rpm when driving in reverse.

The caution plate gives you all the limitations on driving in forward speeds but doesn't say anything about reverse. Might help to type up the above specs and paste them somewhere around the caution plate.

Spring-Stop Bracket for 2½-ton GMC

If you replace an old 2½-ton GMC engine with the new deep-sump-oil-pan type engine, and you don't bother to put in a set of spring-stop brackets first, you'll find the new deep-sump oil-pan

bashed in by the bouncing springs. All new and reconditioned engines with the deep-sump oil-pan will be tagged, so you know them when you see them.

According to TB 801-7, 809-1, dated 20 December 1943, the split-type axle calls for one installation, the banjo-type axle for another.

For vehicles with the split-type axles, you'll need the following parts:

Name	Piece Mark	Quantity
**BRACKET, spring stop	*GM-2195968	2
NUT, hex., semi-fin., 3/8-16 NC-2	BBAX1C	2
NUT, hex., semi-fin., 1/2-13 NC-2	BBAX1E	4
SCREW, cap, hex., hd., 3/8-16 NC-2x1 1/4	BCAX4AE	2
SCREW, cap, hex., hd., 1/2-13 NC-2x1 1/4	BCAX4AC	4
**STOP, spring	GM-2197246	2
WASHER, lock, 3/8x1/8x3/32	BECX1K	2
WASHER, lock, 1/2x11/64x1/8	BECX1M	4
WASHER, steel, 1/2	BEBX2E	2

*GM—General Motors Corp. piece mark symbol.

**If you can't get these parts through regular supply channels, go ahead and make them. Figures 1 and 2 show you how.

First, locate and drill two 17/32 inch diameter holes on each lower flange on the right and left hand frame side rail (Fig. 3). Install the spring stop bracket, GM-2195968, on the lower flange of the left hand frame side rail and attach it with two screws BCAX4AC, two lockwashers BECX1M and two nuts BBAX1E. On the lower flange of the right hand side rail install the spring stop bracket, using the two screws, **two flatwashers BEBX2E,** the two lockwashers and two nuts. Be sure to place the flatwashers under the head of the capscrews.

Insert one screw BCA4AE, in the counterbore of the spring stop GM-2197246, and weld as shown in Figure 2. Install this assembly on the spring stop bracket, using one lockwasher and one nut. This same installation holds good for the right and left hand frame-side-rail spring-stop brackets.

Paint all the parts.

For vehicles with the banjo-type axles, you'll need the following parts:

Name	Piece Mark	Quantity
**BRACKET, spring stop	GM-2195968	2
NUT, hex., semi-fin., 1/2-13 NC-2	BBAX1E	4
SCREW, cap, hex., hd., 1/2-13 NC-2x1 1/4	BCAX4AC	4
WASHER, lock, 1/2x11/64x1/8	BECX1M	4
WASHER, steel, 1/2	BEBX2E	2

**If you can't get this part through regular supply channels, go ahead and make it. Figure 1 shows you how.

The installation on the banjo-type axle is a little different from the split-type axle job; there's a spring stop bracket, all right, but **no spring stop.** The procedure: Drill two 17/32-inch diameter holes on each lower flange on the right and left hand frame-side-rail (Figure 3). Install the spring-stop bracket on the lower flange of the left hand frame-side-rail and attach it with two screws, two lockwashers, and two nuts. Do the same on the lower flange of the right hand frame-side-rail, complete with two screws, **two flatwashers,** two lockwashers and two nuts. Be sure the flatwashers are under the head of the capscrews.

Paint all the parts.

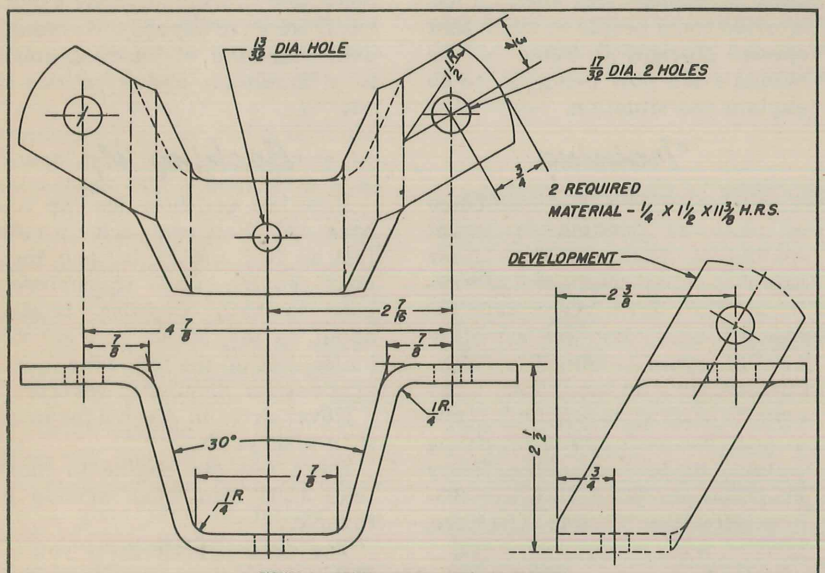


FIGURE 1—SPRING STOP BRACKET—GM-2195968

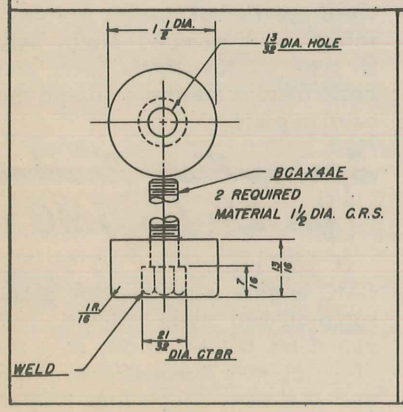


FIGURE 2—SPRING STOP—GM-2197246

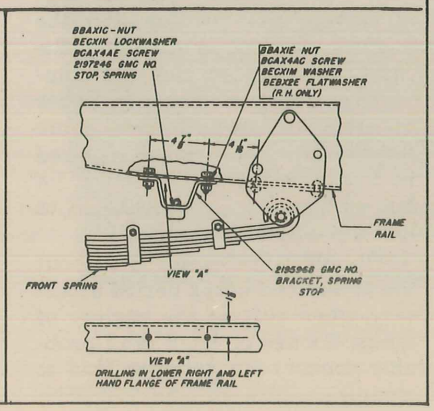


FIGURE 3—INSTALLATION OF SPRING STOP BRACKET

I'm Gonna Buy A Paper Gasket for My Sponson Door

If you've been singing the blues because the rubber seals for the sponson doors leading to the air cleaners on the M5A1 and M8 stick to the hull, you can change your tune. This sticking usually takes place when the vehicles are in storage for a considerable while.

A paper gasket is now being installed in production to keep this seal from coming directly against the sponson floor. Leave the paper gasket in place until you're ready to use the vehicle; remove the gasket the first time you open the sponson doors to service the air cleaners.

WD Circulars

If you happen to be keeping a set of Army Regulations up to date, watch the newest War Department Circulars. Minor changes to AR's and some other publications are now being published in WD Circulars to save paper, and that naturally means you'll want to

pencil a note on each AR that's changed, for quick reference to the latest information.

M10 and M10A1 Crew Hand-Holds

If you've been flying out of the M10 and M10A1 gun motor carriage for lack of something to hold on to, you can stop flying now. Ordnance Field Service TB 731G-12, 752-10, dated 24 December 1943, tells you it's OK to weld five hand holds (out of scrap, of course) to the turret and one in the assistant driver's compartment. The drawings on this page show you how and where they go.

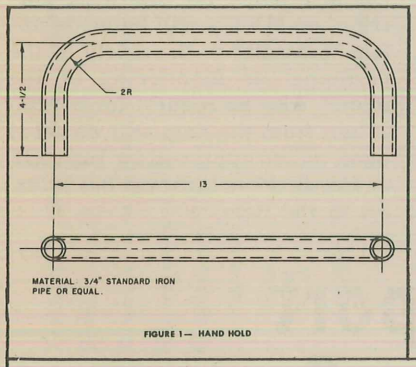


FIGURE 1— HAND HOLD

If You Don't Need 'Em... Send 'Em Back

Can you imagine **thirty-two hundred** modification kits hoarded away in a post warehouse when the whole Army is screaming for them?

That kind of thing does happen, and don't ask me how I know. I could show you plenty of dark corners where bootleg kits are hidden.

Now, the number of kits manufactured is just about equal to the number needed (and the War Department has production figures and vehicle density reports as a basis for pretty shrewdly guessing the needs). Therefore there naturally isn't much of a surplus available for such useless purposes as hoarding.

Ship excess modification kits back to Fort Wayne Ordnance Depot, Detroit, Michigan, so somebody else can use them!

New Steel Gasket

The cylinder-head gasket on the JXD Hercules engine in the 2½-ton, 6x4 and 6x6 Studebaker trucks, in the M8 Armored Car and in the Scout Car, is being changed in production from the old type copper-asbestos to a new steel-asbestos gasket. The new steel-asbestos gasket calls for a new tightening specification: 75 foot-pounds of tension on your torque wrench. The old copper-asbestos gasket called for 55 to 60 foot-pounds.

This information is from TB 807-2, 11 December 1943, and TB 9-743-4.

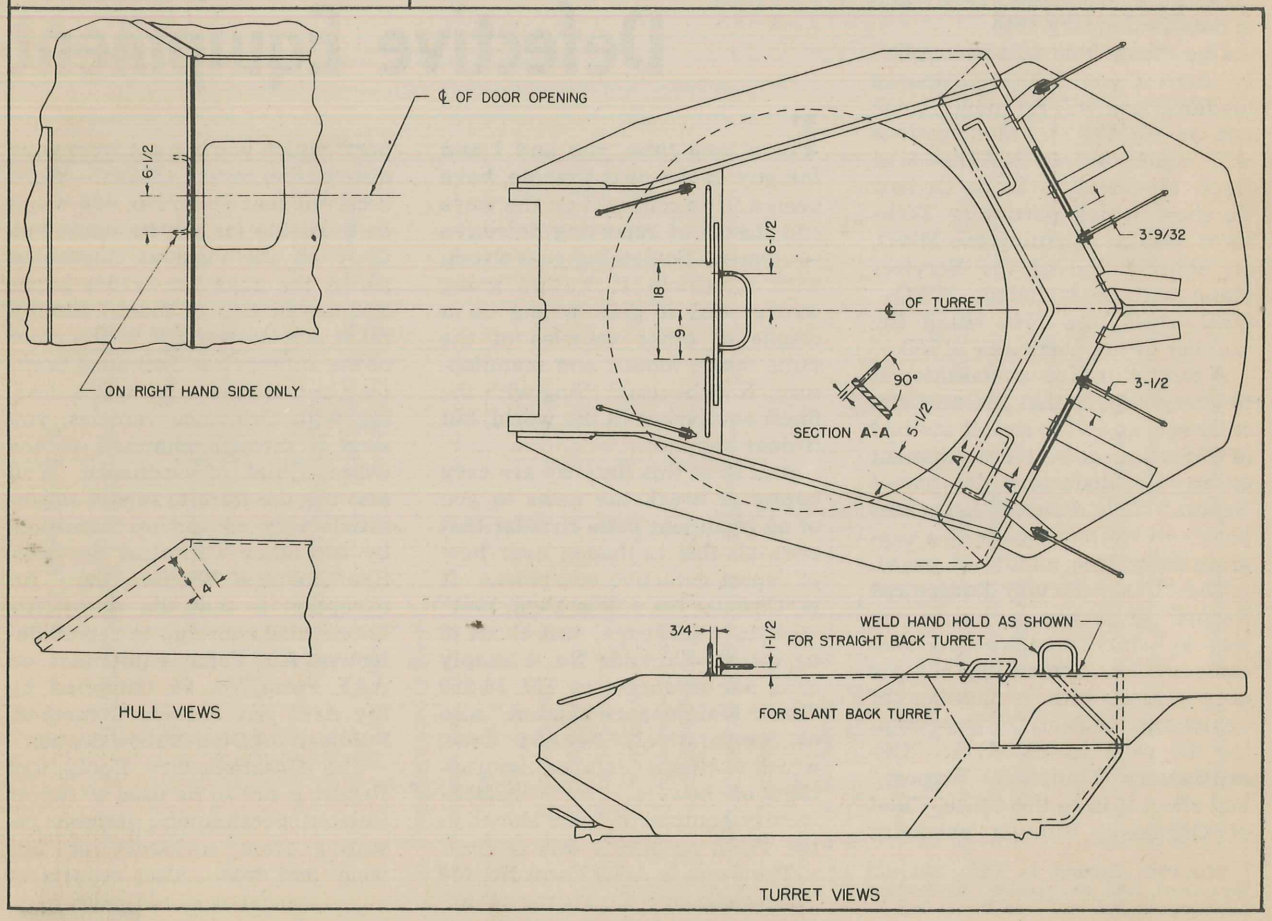


FIGURE 2—LOCATION OF HAND HOLDS

No More FSMWO'S

War Department Modification Work Orders (MWO'S) to Modify All Army Equipment

A new War Dept. circular on the modification of U. S. Army materiel has just cleared the Adjutant Gen's Office and is due to hit the field shortly.

The significant thing about the new circular is that it sets up a system identical with the Ordnance Dept's system of "Field Service Modification Work Orders" and with a few changes makes it standard modification procedure for all Technical Services in the Army.

The new modification procedure will apply to Signal Corps, Medical, QM, etc. equipment as well as Ordnance equipment.

The new circular is called "Circular No. 4, War Dept., 1944*" and is dated 4 January 1944.

One change that will particularly interest you is that Ordnance modifications will no longer come out as FSMWO's. Modifications will come out as MWO's—War Dept. Modification Work Orders. To show which particular Technical Service is issuing the MWO, an abbreviation of the Services name will be included: MWO—ORD.—1645, the 1645 being the number of the particular MWO.

A second item of special interest to everybody, is that the new circular sets up a very simple method of reporting defective equipment on an "Unsatisfactory Equipment Report." This deserves extra emphasis so we have made it a separate story (see middle of page).

The "Unsatisfactory Equipment Report" gives you a clue to one way in which modifications may come about. Something chronic goes wrong with a number of vehicles in the field; the guys owning the vehicles fill out an "Unsatisfactory Equipment Report," and shoot it in to the Office, Chief of Ordnance, through channels. An investigation is made and if the boys are right, a MWO goes out to the entire field. Everybody's equipment is fixed up, everybody's happy.

Getting back to the new Circular No. 4, the rest of it is devoted to a round-up of general information concerning modifications, such as responsibility for modifications, progress of modifications reports, reports of status of Ordnance materiel, etc. But except for a slight re-wording to make this business apply to the entire Army, the modification rules and regulations are just as you remember them from past circulars.

However, since the problems of supply are sufficiently complicated now, a recent Ordnance Dept. order lays down the following doctrine: no MWO's will be made unless "essential to the safety of the personnel or functioning of the item." Also no request for modification from the field will be acted upon unless approved by Hq, AGF or Hq, AAF—whichever has interest in the item.

*Rescinds Section II, Circ. No. 124 War Dept, 1943, as amended by Section IV, Circular No. 248, War Dept, 1943.

How To Report Defective Equipment

For a long time, you and I and the guy in the next foxhole, have been a little confused on the ways and means of reporting defective equipment. Something goes wrong with a vehicle, it keeps going wrong, and it goes wrong on a couple of other vehicles of the same make, model, and manufacture. Not the usual thing with the finest equipment in the world, but it does happen.

And so at this time we are very happy to break the news to you of an imminent little circular that ends all this confusion over how to report defective equipment. It is "Circular No. 4, War Dept. 1944" (see story this page) just about to be issued. Circular No. 4 simply calls our attention to TM 38-250 "Basic Maintenance Manual," also of comparatively recent issue, which contains detailed instructions on how to report "unsatisfactory equipment," and shows us the Form on which this is done.

The Form is AGO Form No. 468 "Unsatisfactory Equipment Report" which you can get from your distribution center. (Flash!—Word received that Form No. 468 won't be available for a little while yet. Copy off the form as illustrated across the page, on 8x10½ paper and use in lieu of form.) Simply fill it out and send it to the chief of the appropriate Technical Service (in this case since we're dealing with Ordnance vehicles, you send it through channels to the Office, Chief of Ordnance. You also use the form to report on unsatisfactory equipment furnished by the other Technical Services, like Chemical Warfare, etc.) An exception is that the Army Air Forces will continue to report defective Air Force equipment on AAF Form No. 54 (supplied by the Area Air Service Command, Publications Distribution Section).

The Unsatisfactory Equipment Report is not to be used to report isolated breakdowns, defects resulting from accidents, or fair wear and tear. Also, reports of

(Continued on last page)

WAR DEPARTMENT

Unsatisfactory Equipment Report

For.....Materiel
(Technical Service)

From:.....Station.....Date.....
(Organization)

To:.....Station.....
(Next Superior Headquarters)

.....equipment is reported unsatisfactory, as listed below:
(Technical Service)

1. Complete major item:

Nomenclature.....

a. Type.....
b. Model.....
c. Manufacturer.....
d. USA Reg. No.....
e. Serial No.....
f. Date received.....
g. Equipment with which used (if applicable).....

2. Nomenclature of defective component:.....

a. Part No.....
b. Type.....
c. Manufacturer.....
d. Date installed.....

3. Length of Service:

a. Date of initial trouble.....
b. Total time installed.....Years.....Months.....Days
c. Total period of operation before failure.....Years.....Months
(Fill in where applicable)
.....Days.....Hours
.....Miles.....Rounds

4. Description of trouble and probable cause:

(Give type of failure; mechanical, electrical, workmanship, material, design.)

5. Unusual service conditions: (Give brief description.)

6. Training or skill of Using Personnel: (Check one.)

Poor.....Fair.....Good.....

7. Description of any remedial action taken:

8. Recommendations:

Originating Officer:

Signature.....
Name.....
Rank and Title.....
Organization.....

1st Ind.

.....
(Office) (Station) (Date)

To: Chief.....
(Technical Service)

Name.....

.....
(Station)

Rank.....

Instructions

1. It is imperative that the Chief of Technical Service concerned be advised at the earliest practical moment of any constructional, design, or operational defect in materiel. 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 materiel with a view to improving and correcting such defects, and for use in recommending modifications of materiel.

3. This form will not be used for reporting failures, isolated material defects or malfunctions of materiel 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 Mal-functions and Accidents involving ammunition will continue to be submitted as directed in the manner described in AR 750-10 (Changes No. 3).

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 inclosures 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 assure 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.

UNTIL YOU GET THE PRINTED WD AGO FORM 468, COPY THIS!

How To Wash A Truck

Everything Comes Out in the Wash – Except the Water. That's the Hell of it.

Don't get us wrong. We're just as ready as the next guy (who happens to be a fanatical inspector) to o-o-h and a-a-h over a spic and span truck. We've always maintained that a reasonable amount of spit-and-polish is a boon to both vehicle maintenance and driver morale.

But we hear evil rumors that some GI's are overdoing the spit. They're washing trucks too often —or just too damn thoroughly. And those spotless trucks are winding up on the deadline, or heading for it fast, thanks to water in the electrical system, water in the gear lube, or water on the knee.

Seems there are three popular ways to wash a truck—(1) with high-pressure hose, (2) with higher-pressure steam or vapor, (3) in babbling brooks. Seems pretty clear, too, that there's a right way and a wrong way for each way. And the wrong way, of course, is the one we keep hearing about.

Even that snazzy wool knit toque we wear to the office can't filter out the blood-curdling cries that come in with our mail. "They wash every piece of equipment every afternoon, whether it's dirty or not!" . . . "Drivers climb up on the bumper, hoist the hood, and squirt the hose smack on the engine!" . . . "That high-pressure stream gets in more places than you can shake a stick at, gear vents included!". . . "We're beating our paint to a pulp!"

And here's one from a Civilian Automotive Advisor, letting off steam about steam:

"I've begged, pleaded with, cajoled, cried, laughed, teased, and cussed at drivers, mechanics, motor sergeants, motor officers, and regimental commanders until I'm a mere shadow of my former robust and jolly self—and so far have accomplished exactly nothing toward stopping the merry practice of steam cleaning anything that comes to hand in a motor park that has just been issued a brand-new steam cleaner. In my twenty-odd years as a shop foreman, I've found steam cleaners a very useful piece of equipment when properly used. Now don't tell me to be sure to have the boys remove or protect all electrical equipment before cleaning the engine. I've told them that in three languages—English, Spanish, and Profane—and still they raise the hood and let the steam fly. I've seen hundreds of tarpaulins with all the waterproofing washed out of them and quite some curled up leather-covered seats. But boy, were they clean! Not a spot of grease or dirt on the vehicle anywhere.

"Of course they finally wind up in Maintenance Battalion for a nice 3rd-echelon job of replacing a few rusty starters, generators, control boxes, distributors, and other such useless impedimenta.

"Personally, I think the Army's vehicles would be in better running condition if all steam cleaning equipment were picked up from every unit except Maintenance Battalions, Post Ordnance, District Motor Transport Shops, and such places that need to remove dirt from the outside of units to be opened for inspection or repairs. I've never yet seen an engine worn out by dirt on the outside. It's that dirt that gets inside that hurts."

It all adds up to a not-so-pretty picture of too-pretty trucks with a maximum of sparkle and a minimum of spunk. How about your vehicles, chum—have they got that washed-out feeling, too? Vitamin pills won't help, but maybe we can.

WHO, WHY, HOW, WHEN

Who does all this truck washing, anyhow? Well, according to AR 850-15, par. 24a (2), cleaning is a "primary responsibility of driver; will be performed by higher echelons prior to issue or return of vehicles to using organizations."

Why and **how** should the cleaning be done? FM 25-10 (Basic Field Manual, Motor Transport) puts it this way (par. 24): "a. A motor vehicle should be cleaned after operation to prevent hardening of dirt accumulations and to keep dust and other foreign particles from working into the bearing surfaces. The body and exterior parts of the chassis should be washed, using a hose if available. **Water should not be played on the engine as ignition troubles may result. Dirt should be wiped from the engine and its subunit assemblies.** (The boldface type is our own idea.—Ed.) Gasoline will never be used as a cleaning agent; cleaning solvent is recommended because of its greater safety. Gas and oil lines should **not** be pol-

ished, since pressure incident to polishing is apt to loosen or break the joints . . .

"**b.** Unless the vehicles are very dirty, they should be inspected **before** being washed. This facilitates the detection of loose parts and assemblies, because broken dust films are the best evidence of looseness. Scheduled lubrication should be performed **after** washing so that any water or dirt which has entered bearing surfaces may be forced out by the pressure of the new lubricant."

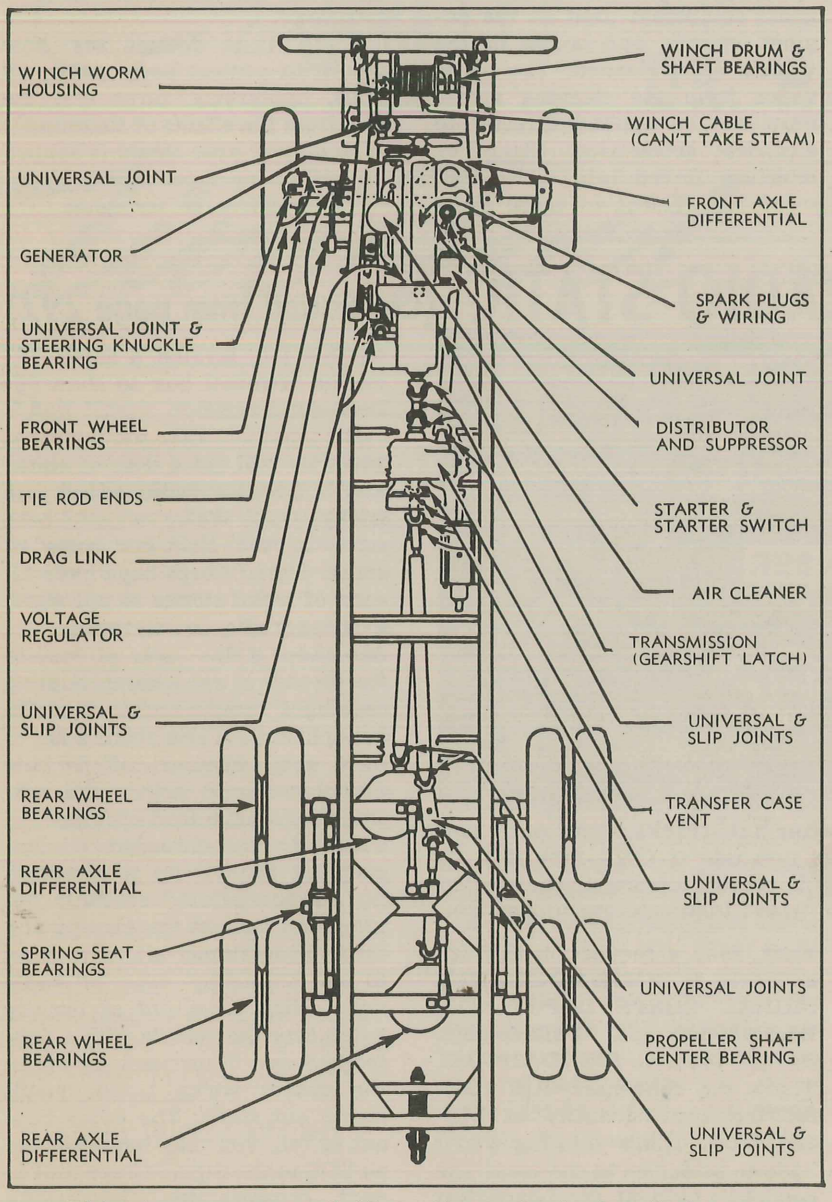
(We've had a long letter about **that,** too. The writer says it's "inconsistent and contradictory" to require washing after operation—which could mean every day—and also to suggest that scheduled lubrication is wise after every washing. We can't answer that one, offhand.)

When vehicles should be cleaned, however, is pretty well clarified by TM 9-2810 (Motor Vehicle Inspections and Preventive Maintenance Services). Item 84, one of the driver's **daily** After Operation services, reads: "CLEAN ENGINE AND VEHICLE—(a) Clean dirt and trash from inside of cab and body. Remove excessive dirt or grease from the exterior of the engine. . . (b) **Weekly.** Wash the vehicle when possible. If not possible, wipe off thoroughly. Do not rub lusterless paint enough to create a shine that might cause reflection. If the vehicle is washed in a stream, river, or lake, care must be taken to see that water or dirt does not get into the wheel bearings, gear cases, or brakes."

That's the punch line of this story, right there. Truck cleaning, like so many other things, boils down to a preventive maintenance proposition. **Dry-clean your truck every day, after using it, and in 9 cases out of 9½, it won't need a wet-wash more than once a week. Wipe off your engine every day, and it may never have to be hit over the head with a hose.**

(Of course, that's assuming the engine was really clean to begin with. If you have to get it that way, for a fresh start, scrape off the dirt and oil coating with a flat-edged piece of wood, like a shingle—or use a putty knife **gently.** Don't scrape off the paint, mind you, just the dirt. Then swab it down with a rag or a brush that's been moistened—not soaked—with dry-cleaning solvent (Fed. Spec. P-S-661a). Then wipe the engine dry. This procedure will remove dandruff, B. O. and 1700 shadow. From then on, stick to that **daily** wiping with a dry rag—or one just oily enough to absorb dust—and you'll be ousting dirt, rust, and trouble all at once.)

But let's take up those three most common cleaning methods, and mention a few precautions it doesn't pay to forget.



This gives you a rough idea—if you don't already have one—how many parts of a typical truck can be kayoed by water-on-the-loose. How's your washmanship?

HIGH-PRESSURE HOSE

"I think just plain water and a pressure hose is the best truck cleaner going." So writes a Battalian Transportation Officer from overseas—and we, in a word, concur. The important thing, when you're wielding a hose, is how well you aim it. High-pressure

H_2O shouldn't be turned loose under the hood—perish forbid!—or inside the cab, either. It shouldn't be shot point-blank at air cleaners or gear-case vents or brake drums. If you happened to ask why, we'd probably take you on our knee and spell out the Facts of Life—all about the birds and bees, the vulnerability of electrical devices to moisture, the tendency of metals to rust, and the effect of water on the effectiveness of grease. The higher the pressure, the more sense it makes not to hit your truck where it hurts. If a hose merely drooled on a vehicle, it might never do any harm.

STEAM OR VAPOR

The best precaution to observe with steam cleaning is: **Don't let your truck get filthy enough to need it.** As the letter we've quoted points out, steam cleaners have plenty of virtues in shops—for delousing vehicle parts and whatnot—but as over-all vehicle cleaners, in 1st-echelon hands, they're a hot, damp, ill wind that blows nobody good.

We might as well let TB 700-23, 850-6 give out with the gruesome details: "When using vapor and/or steam cleaning devices, particular attention should be directed to the proper protection of all electrical equipment used on the engines, chassis, and bodies of the vehicle being cleaned. The jet of vapor from the cleaning nozzle must not be applied directly to electrical accessories. Steam or moisture forced into the equipment is sufficient to cause short circuits and corrosion of the internal parts."

Also, "generator regulators, generators, starters, distributors, etc., should be cleaned with solvent, dry-cleaning. These electrical accessories should either be removed prior to cleaning the vehicle with any type of high-pressure steam or vapor cleaning machine (Don't forget to plug up the holes left behind.—Ed.), or have adequate protection provided to preclude the entrance of moisture during the operation of cleaning."

Even that doesn't say how you're to protect body paint, oil seals, upholstery, tarps and the like from the effects of steaming—especially if your steam is souped up with some super-strong clean-

(Continued on last page)

CLEARING UP RADIO STATIC (Continued from page 292)

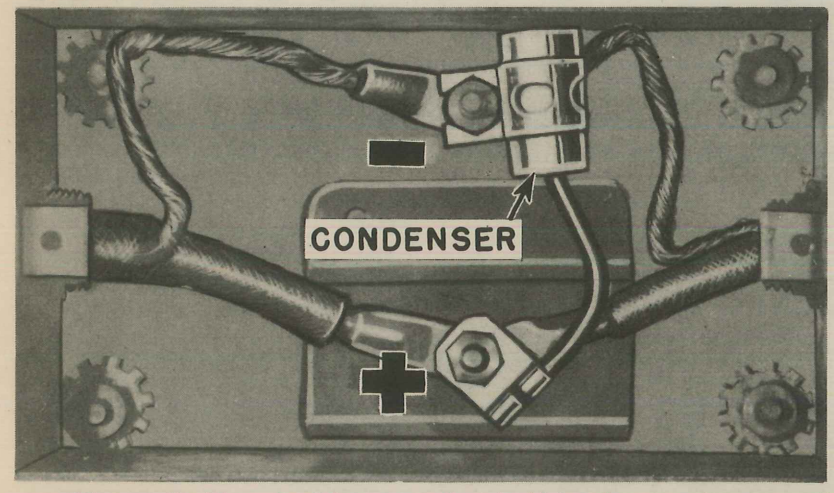


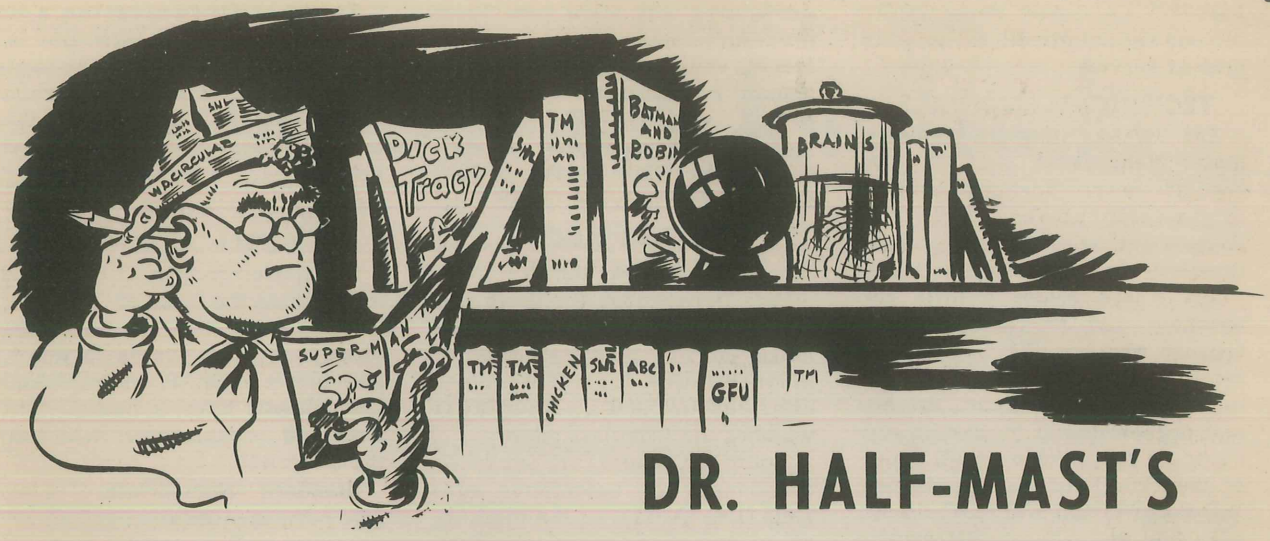
Figure 12. Terminal box on other half-tracks, scout cars, and trucks. *Whichever size condenser you use is OK—mount it as here. Shorten the lead to make it fit straight from condenser to plus. Mounting bolts should have "star" lockwashers under 'em.*

most important is making the lead **short—direct** from **condenser** to **positive terminal.** Unless the static gets grounded **quickly,** it can start radiating right from the lead.

If your supply section doesn't have the condensers, have them go through this routine. 1) Try the Ordnance outfit—maybe their supply section will have some condensers. 2) Try the Signal Corps unit—maybe their supply section will have them. 3) If none of these work, send a requisition through channels to **PHILADELPHIA SIGNAL CORPS DEPOT, 5000 Whissahickon St., Philadelphia, Pa.** Ask them for **FIS-3DA100-143.** That's the condenser. Ask them for the same quantity of **FIS-3Z12031-2.** That's the lug you'll have to solder on to the lead. The condenser will fit the boxes, but the leads will have to be shortened, and the lugs soldered on.

Before you put your tools away on this job, scratch a small "S" on the terminal box to show it's been suppressed.

It's possible, after all this, that you may still get a dose of static. That's because radio noises are tricky items. We've covered here some of the clear-cut cases of static. Signal Corps boys have all sorts of weird stories to tell about locating radio interference . . . one about a fine layer of ooze in the threads of a shielding coupling causing a terrific racket over the headphones . . . one about a sliver of a cowl trimmed off by the manufacturer to save metal, setting up a wagon load of noises . . . about a cross-threaded conduit coupling fouling up a reception . . . about painted conduits not grounded against the clamps and other little things all amounting to an unhealthy case of radio noise. Nine times out of ten, by going over the vehicle with a fine-toothed ear, then checking up on the causes we've listed, you'll stamp out static. The other time out of ten, you may have to send an SOS to the Signal Corps unit in your organization. The radio's their baby . . . they won't mind helping you take the bawl out of baby.



DR. HALF-MAST'S Five-Foot Shelf

Publications every young (and old) motor officer or sergeant should have or know about

Half-Mast's brains are made of paper. AR's, TM's, FM's, SNL's, books, books, books, paper, paper, paper. People keep asking, where the hell does Half-Mast get his information? Half-Mast ain't secretive (?), he'll tell you—it's all in the book.

Just what book, or books, is something every little motor officer and sergeant should know. Without further ado, Half-Mast herewith presents the publications that have to do with motor vehicles. Any officer, non-com, or joe who is on speaking and reading acquaintance with this set of publications, is strictly on the ball, a wizard. Look them over, get them, and keep them close to your heart. You, too, can be a mastermind.

Best thing of all, these publications are free—free for the asking (see article on Page 316, "How to Get Publications").

ARMY REGULATIONS

These are the basic Army laws. They have higher authority than any other Army publications, and for that reason often speak in general terms. Publications of lesser authority show just how the AR's apply. Here's the ones you motor boys'll need:

AR 1-5, Index to Army Regulations (1 Jan. 43). A 548-page guide to the AR's—tells you where to find anything you want in the AR's.

AR 850-5, Marking of Clothing, Equipment, Vehicles and Property (5 Aug. 42). Where to paint the white star, what organizational markings to use, the latest doctrine on naming vehicles, etc.

AR 850-10, Registration of Motor Vehicles (1 Sept. 42). What to do if a vehicle's identity is changed.

AR 850-15, Motor Vehicles (28 Aug. 43). **The** bible on motor vehicle operation, maintenance, supply, and paper work.

AR 850-18, Storage of Motor Vehicle Equipment (1 Sept. 42). Limited storage and dead storage —how to keep vehicles from failing when not in use.

AR 850-20, Precautions in Handling Gasoline (20 May 40).

FIELD MANUALS

These go into more detail on the subjects covered in general by the AR's:

FM 21-6, List of Publications for Training (1 Jan. 44). Covers War Department AGO publications only; additions are published monthly in Training Circulars. FM 21-6 is revised every six months. Also see OFSB 1-1.

FM 21-7, List of Training Films, Film Strips, and Film Bulletins (1 Jan. 44). Additions are published monthly in Training Circulars. Revised every six months.

FM 25-10, Basic Field Manual: Motor Transport (12 March 42). An encyclopedia of advice and instructions on operation and maintenance, including convoy operation, traffic management, security, and field expedients. This applies to all arms and services.

Your arm or service Field Manuals, such as FM 2-10 (Cavalry Mechanized Elements) or

FM 17-5 (Armored Force Drill) include special directions for your arm or service.

TECHNICAL MANUALS

TM 9-2800, Standard Military Motor Vehicles (1 Sept. 43). A regular Sears Roebuck catalog of practically all the vehicles the Army's got, with pictures, measurements, and characteristics.

TM 9-2810, Motor Vehicle Inspections and Preventive Maintenance Services (21 Oct. 43). A complete list of the preventive maintenance operations drivers and organizational mechanics are supposed to perform on all types of vehicles. Explains how to use WD Form 48 and WD AGO Forms 461, 462, and 463 as PM worksheets. Also gives the low-down on command inspections, spot checks, technical inspections, and new vehicle run-in.

TM 9-850, Cleaning, Preserving, Lubricating, and Welding Materials and Similar Items Issued by the Ordnance Department (13 April 43). What they are and how to use them.

TM 21-300, Driver Selection and Training (10 Nov. 42). A course in operation and preventive maintenance of vehicles, together with teaching devices and tests. Includes a Snellen chart for testing vision. (Note: In using this TM, Half-Mast always substitues the newer Preventive Maintenance directives published in 9-2810 in place of those in 21-300. However, he thinks the rest of the manual is swell).

TM 31-200, Maintenance and Care of Pneumatic Tires and Rubber Treads (1 April 43). Covers all kinds of tires, track blocks, and band tracks—even airplane tires. Changes No. 1, on standard pressures, and No. 2, on chains and traction devices, are important.

TM 38-250, Basic Maintenance Manual (Aug. 43). Theory and practice of the echelon system—whose job it is to do what, and why.

Vehicle TM's. The 9-700 and 9-800 series of manuals are "Operators' Manuals", and cover first and second echelons of maintenance only. The newest of these contain preventive maintenance procedures, and show how these procedures apply in detail to the specific vehicle. (TM 9-2810 covers general PM procedures as applied to all vehicles alike.) Some motor transport vehicles are still covered by TM's of the 10-1000 series. For details see OFSB 1-1.

OTHER AGO PUBLICATIONS

War Department Circulars pop up every few days with brief notes on the administration of maintenance, including minor changes to AR's. Half-Mast watches the Circulars closely.

Training Circulars are published occasionally on automotive subjects (like TC 117, on the marking of bridges and vehicles). Each month there's a TC listing some of the latest AGO publications, and another TC on new films and film strips.

Technical Bulletins published by the AGO are something new. They take the place of the old Ordnance Field Service TB's, and cover a lot of other subjects besides. Their main job is to provide additional information on a piece of equipment that has been learned since the TM was published. They will bear the number of the TM, plus another number. For instance, if you see TB 9-808-14, you'll know it's the fourteenth TB published on the ¾-ton Dodge. Note: When a TM is revised, all pertinent TB's are picked but the numbering system goes on.

Table of Organization and Equipment for your own unit is, of course, absolutely necessary. How else would you know when to howl if you don't get all the men or equipment you're entitled to?

ORDNANCE FIELD SERVICE PUBLICATIONS

These are the special tidbits of information the Chief of Ordnance has published for the information of anybody that wants to know, and has a right to know. (And who should have a better right than the organizations who use the materiel?)

Standard Nomenclature Lists give parts identification and allowances, as well as special tools (if any) for each vehicle. The older SNL's were published in separate volumes, of which 2nd echelon shops needed a **List of All Parts** or a **Service Parts Catalog, plus** the Organizational Spare Parts and Equipment. Newest SNL's have all this information, plus a lot more, in a single book (for details, see the January, 1944, ARMY MOTORS). Some Motor Transport vehicles for which SNL's have never been published are still covered by Parts Lists issued in the TM 10-1000 series (AGO publications). Half-Mast always makes it a point to have SNL's for each vehicle he services, plus the following:

SNL "H" group, covering Parts Common.

SNL "K" group, including cleaning, preserving, lubricating, and welding materials.

SNL N-19, Motor-transport tool sets.

SNL G-19, Interchangeability Chart of Organizational Special Tools for Combat Vehicles.

Organizations (2nd echelon) may use this data in order to intelligently requisition organizational special tools so that **unnecessary duplicate** tools will not be requisitioned by the organization. (You 3rd and 4th-echelon Ordnancemen need SNL G-27 "Tools, Special for Automotive Equipment.")

Field Service Modification Work Orders telling what modifications

(Continued on last page)

Overseas Units Thumb Their Nose At Mud, with these

Traction Devices for Trucks

Truck drivers who tried to outbattle the Italian mud often had to walk. Six-wheel drive didn't help. The wheels spun and made a smooth mold around the tires. Chains didn't help. They just whipped up a head on the mud. Only the Army's new traction devices thumb their nose at the mud. Clamp these steel tracks around the tires on 2½- to 4-ton trucks, and you go through like a commando.

The traction devices are a string of separate steel shoes (figure 1) cleated on the face. Each shoe clasps to the next giving you a complete track around the tire. The two bolts on each shoe are for securing the track—1) the connection bolt (figure 2) that helps hold the ends of the track together, and 2) the adjusting screw (figure 10) that takes up slack in the track by drawing up the ends of the chain into the guide.

Listen to us talking about traction devices. If your outfit's in the States now, chances are you won't see a set—not till you're overseas, anyway. Their priority's sky-high. None are even available here for training, at present. Every set of traction devices made is rushed to the POE, booked for shipment with a using outfit. So don't try to requisition them, unless you're overseas right now. You can tell if your outfit will eventually get the tracks by browsing through your TO & E, under the heading **Motor Transport Equipment.** If you find this in the **Item** column: **Traction Devices, Set of 6,** you'll get them. That **Set of 6** is for **one** truck—3 pairs, packed one pair in a box. Twenty-two single track shoes in each box make up a pair. That's divvied out on the truck this way: one pair is for the right and left front duals, one pair for the two right rear duals, one pair for the two left duals.

You won't always need a full pair of 22 shoes. The tracks will fit around any of the following tires: 6.50x20, 7.00x20, 7.50x20, 8.25x20, and 9.00x20. You'll have shoes left over when putting the tracks on the smaller size tires. Here's a tip: the first time you try the tracks on, if the last shoes barely connect, add another shoe. You should have slack equal to at least a full shoe when you start the tightening job (Figure 10). Then you can save any extra shoes in case you break or bend one.

You'll see from the photographs on the next pages that the tracks are simple to put on and take off. It's a two-man job—two men and 24 boys. The real work is getting the tracks put on the **first time** . . . connecting all the shoes, fitting them to your truck, tightening and adjusting the track, and getting the feel of them. If you wait till an emergency—when you need them bad—you'll have trouble, **unless** you've put them on before. Reaching up from a foxhole to tighten on several hundred pounds of iron is a job we don't like. We'd prefer to uncrate the whole set and try them on right away. Maybe we'll have a smooth stretch to use, and a compressor to bring the tires up to standard air pressures. Get used to the tracks. Try them on a few times. Then when you need them fast, and no fouling around, you'll know the tricks and be all set. Follow the pictures and learn some of the tricks we picked up doing the job a couple of times ourselves.

Figure 1. This job and the one at right you'll do only once—the first time. The shoes come packed unjoined. You'll start out by stringing them together in sections. First, fit the end the top glove's holding (hook end) down into the yoke end (bottom glove).

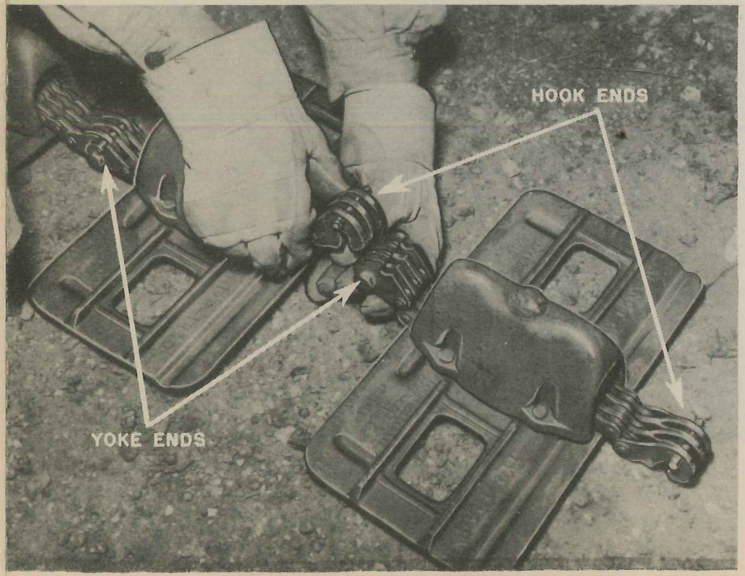


Figure 2. A hammer helped fit the ends together. Like everything else, they were tight the first time. The connection bolt he's turning doesn't need much muscle. More important: hook end should fit ALL THE WAY down on the bolt.

Figure 3. Two bruisers just dragged the track around back of the truck. Place the track so the edge of the shoe with the SHORT CLEATS FACES the tire; the edge with the LONG cleat faces AWAY from the tire.

Figure 4. Back it slooowww . . . aiming the truck so t track guide snuggles up between the duals. Keep on backi till you get one or two shoes sticking out. Stop the truck moment while . . .

Figure 6. As the tire revolves it winds the track on. Simple—no struggling. Take out as much slack as you can by holding the track LEVEL while it's reaching across to the other tire.

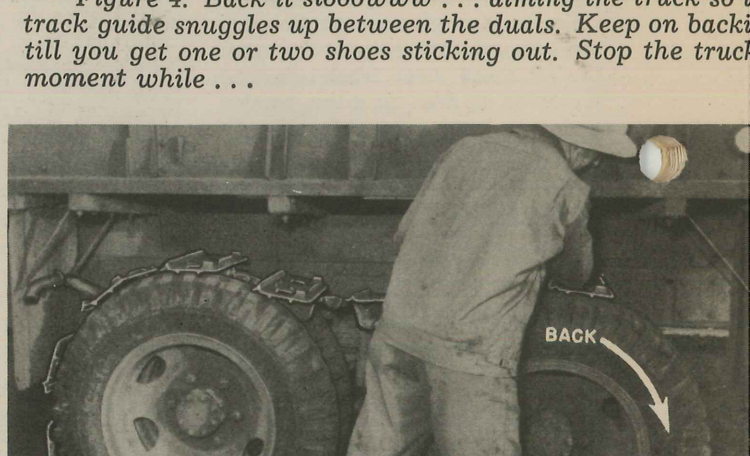


Figure 7. Still inching the truck back. The [illegible]t sho over and will go around the other side fast now, l[illegible] a ch line. He's watching his own shoes, too, staying well a from the track.

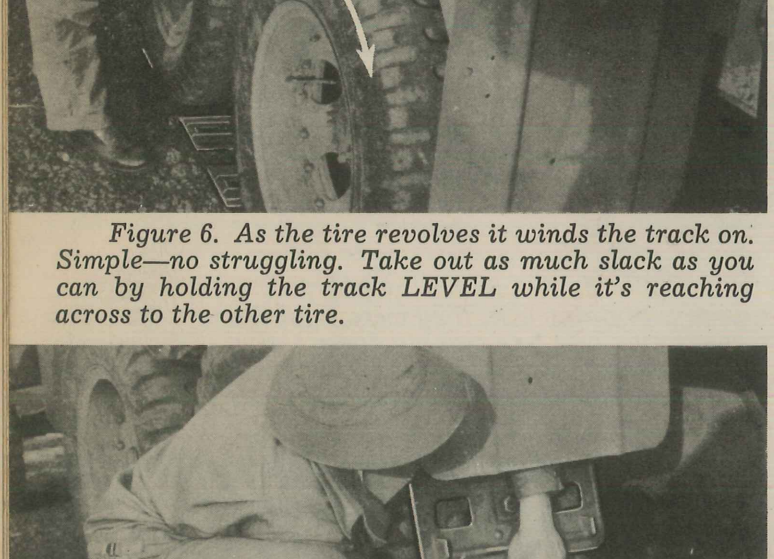


Figure 9. See what happens to the last two shoes . . . they get hitched. Be sure the hook end sits down around the connection bolt, and the yoke end up around the pin. Tighten the connection bolt.

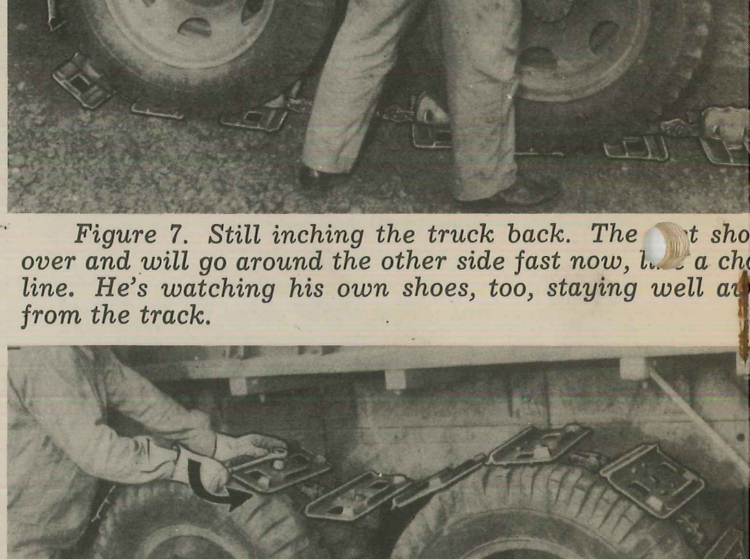


Figure 10. Mark the shoe you start on, and go arou the track giving each adjusting screw 10 or 15 turns. Ke it up till the slack's taken out of the track. Three adjusti wrenches come with each set.

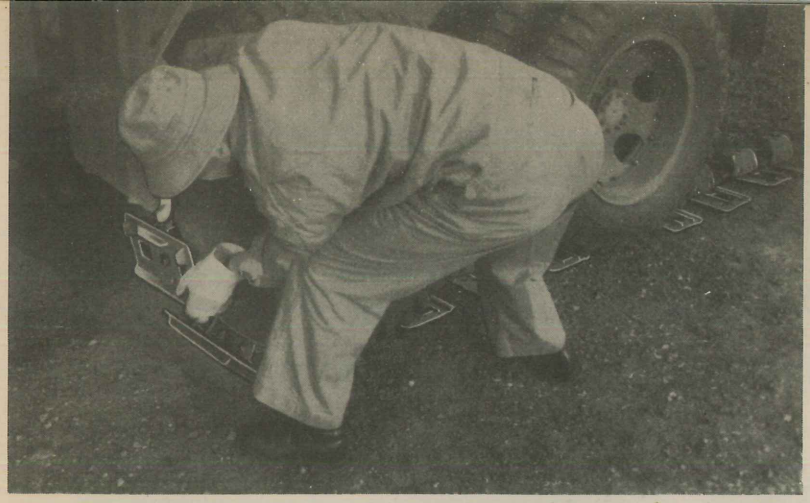


Figure 5. Joe tilts up the first few track shoes and holds them firm against the tire. When he's all set—feet away from the track—he yells, "Gung ho!" and the driver backs up some more . . . slow.

Figure 8. This is what your truck looks like if you've lagged along through the first photos. The truck is stopped right here, so only TWO shoes are left sticking out from under the tire.

Figure 11. The sway back is gone. The track FEELS snug. It even LOOKS tight. A road test will really tell. Hold your horses till you get tracks on the other rear bogie and on the front duals.

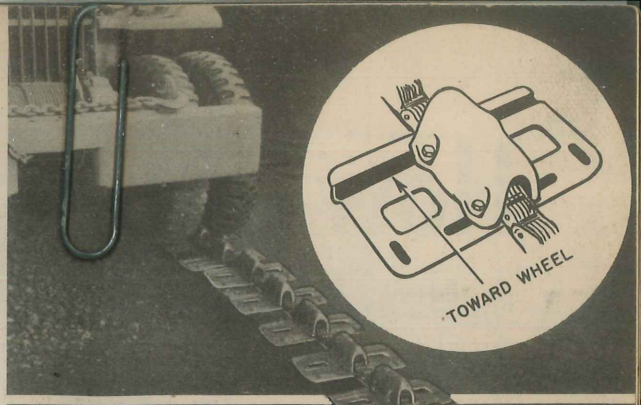


Figure 12 (upper photo) Nothing's special about slipping the track on the front tires. First put on the spare wheel. That's easy . . . just drive the front wheel up on a board. That's to get clearance enough to put on the spare wheel. Stretch the tracks out in front, and hop to it. (Lower photo) The same system used in Figure 5, but with the truck moving FORWARD, brought the track around to here. Now Joe's joining up the last shoe on the ground. Next he'll tighten each shoe (as in Figure 10), till the track's snug.

Now you've decked out all 6 wheels* with the tracks, try 'em out. First thing you'll probably notice is down in the low gears the truck shakes and jerks. Don't sweat. Just keep on shifting up. She should smooth out soon as you get over the 15-mile-an-hour hump.

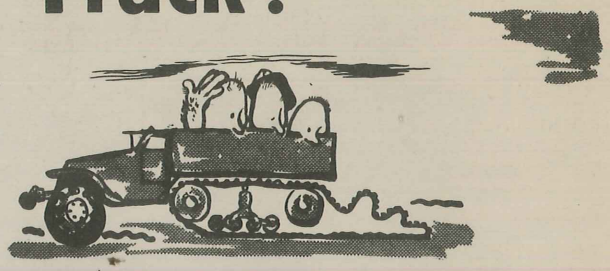
If you can't get your truck up to regular speeds no matter how you twirl the gearshift, it's the tracks. They're too tight. Loosen the adjusting screws on several shoes, each track, and then try

*The experts tell us to always use the tracks around all the wheels. Not just around the front duals, or the rear bogies. Changes No. 2 to TM 31-200 says: **"If vehicle has front axle drive and the tracks are installed on rear duals only, then the front drive must be completely disengaged while tracks are on the vehicle. Otherwise, front tires will become badly scuffed. . . . Tracks must not be installed on front wheels alone."**

(Continued on page 315)

How Tight the Track?

A New Figure for Setting Track Tension on Half-Tracks and the Official Way to Do It



There's a lot less work for you in a recent communique from the Maintenance Branch, OCO-Detroit, which gives a new figure for adjusting half-track tension. Used to be you adjusted the tension of tracks on a half-track to ¾ inch. According to the new communique, the tension should be set between ¾ inch minimum and 1 inch maximum.

Of course, it could be you don't give a damn about setting the tension just right but if you like rassling with tracks like we like rassling with tracks, you'll listen.

Track tension, next to the kind of terrain you run over, has most to do with how long tracks last. Tracks set too tight act like a brake, cutting down on power and speed; they set up a strain on the rear idler pulling it out of alinement and make the tracks run to the outside instead of straight-ahead; the guides rub against the innerside of the removable outer flange of the rear idler and against the bogie-roller hub flanges wearing them to the bone. The idler shaft bends and the frame may bend.

Six other things happen: the driving sprockets are pulled out of line—wearing the hell out of sprocket teeth, driving lugs, guides and guide nuts; the track is strained, cracked and the rubber is pulled away from the metal bones underneath.

A too-tight track wears out faster and cuts up easier, the heat generated deadens the rubber and weakens the metal; a bigger load is put on the bearings in the bogie rollers, sprocket wheel, top roller and rear idler—they wear faster and fail early. Last but not least, the idler springs are overloaded—when the half-track hits the bumps, the springs may be squeezed out of line.

It all totes up to work for you, hard annoying work that'll get you a Section 8 in no time. Of course, on the other hand, a too-loose track will walk all over the guts of the suspension system damaging the bogie rollers and guides; the extra whip and vibration will help wear out the track quickly and don't be surprised to see your loose tracks go galloping off in all directions just when you need them most.

Checking track tension is easy enough. Before you start, remember this: always check and adjust with the vehicle carrying stowage but without personnel. This will give you just about the right tension when the varying number of guys climb aboard.

With normal load on the vehicle, back up about half the length of the vehicle to bring all the slack up on top of the track.

Lay a piece of cord with two weights on each end over the top **inner** half of the track (see Fig. A). This will serve as a straight-edge. Get one of your medium-weight boys (150-170 lbs.) to stand on the outer edge of the track and you measure how much the track sags down from the straight-edge cord at the mid-point between his legs but on the **inner** half of the track. Sag should be between ¾ inch and 1 inch, no more or less.

Adjusting the track tension is not so bad either. Here's the way it's done in words and pictures:

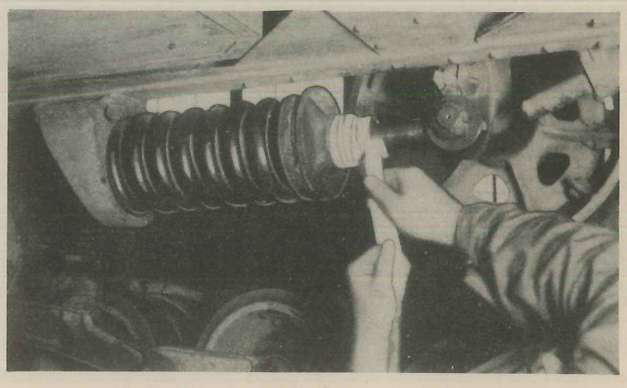
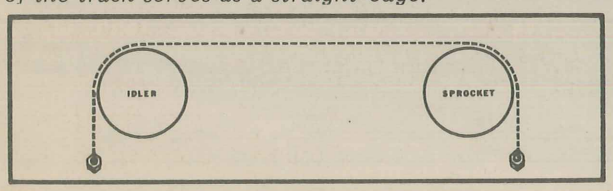
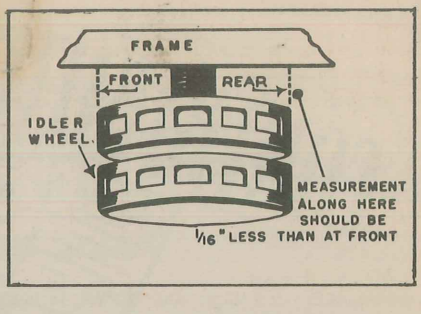


Fig. 1. Take the cover or protective wrapping off the spring-adjusting-screw and nut, clean and oil the threads to make the nut work easier. (See TB 700-88 on protecting the adjusting screw threads.)

Fig. A. A piece of cord with 2 weights on each end draped over the top inner half of the track serves as a straight-edge.



Here's something you probably haven't given much thought to—but which deserves your attention every once in a while. It's toe-out of the rear idler wheel. You may never have dreamed there was any such animal as toe-out of the idler wheel on a half-track, but there is. Toe-out is necessary because the strain of the track tends to cause toe-in of the idler wheel. To offset this, a slight amount of toe-out is given the wheel in production. The toe-out doesn't amount to a hell of a lot—it's only 1/16 inch. Check it on your half-track by measuring the distance from the rear of the idler wheel to the frame. Then measure from the front of the idler wheel to the frame. The rear of the wheel should be 1/16 inch closer to the frame than the front of the wheel. If your toe-out needs adjusting—adjust it with the turnbuckle on the idler post brace.



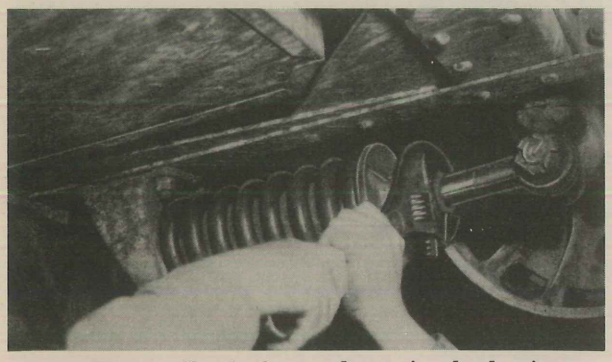


Fig. 2. Check the track tension by having your man stand on it; if the sag is less than ¾ inch the track is too tight. Loosen it by turning the adjusting nut backward on the spring-adjusting-screw shaft. This moves the rear idler forward.

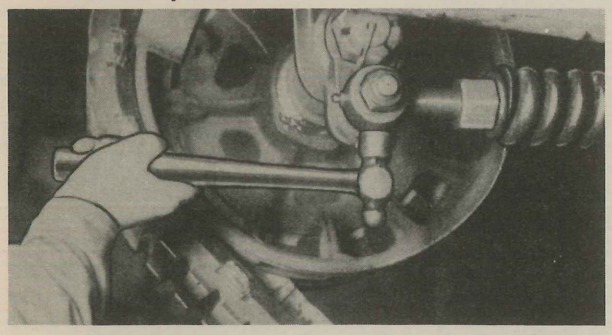


Fig. 4. And tap the anchor pin housing to loosen the taper-fitted anchor pin. (After completing the adjustment you will, of course, tighten the anchor pin up.)

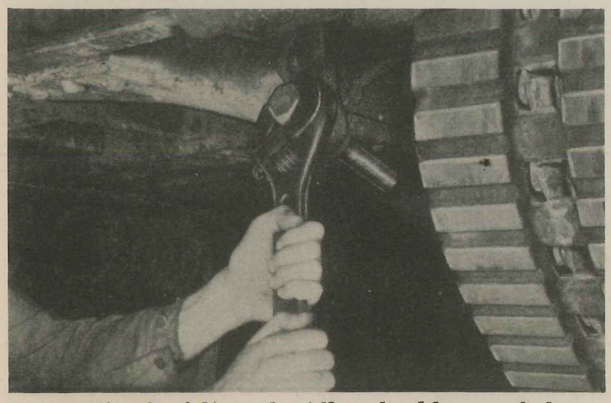


Fig. 6. Adjust the idler shackle stop bolt to a clearance of 1¾ inches to 2 inches between the end of the bolt and idler shackle.

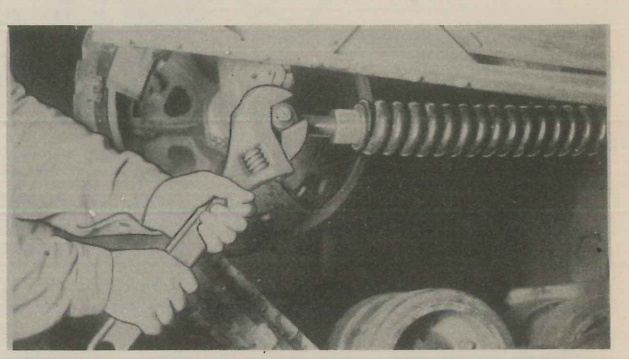


Fig. 3. If your idler has only the single coil spring, you'll have to loosen the anchor-pin nut a couple of turns . . .

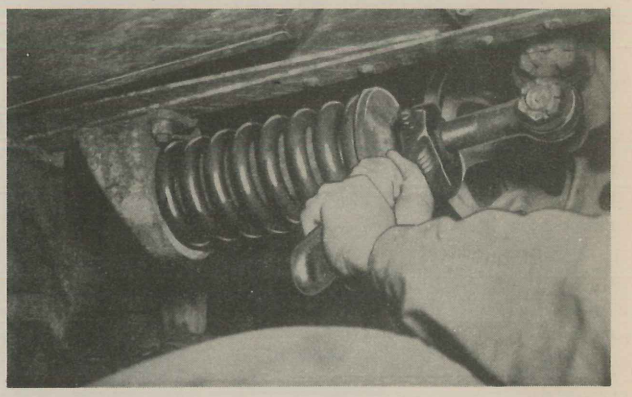


Fig. 5. If the track sags more than 1 inch, the track is too loose. Tighten it by turning the adjusting nut downward on the spring-adjusting-screw shaft. Ride it over rough ground, then check for correct tension.

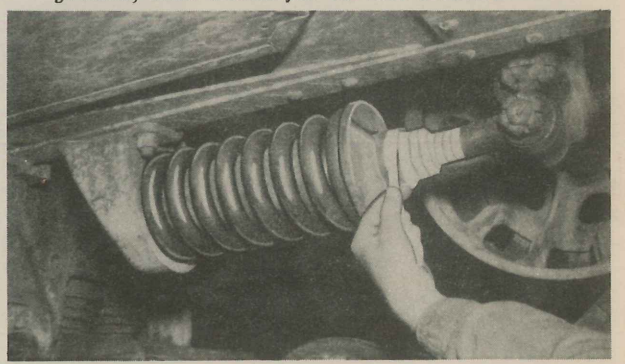
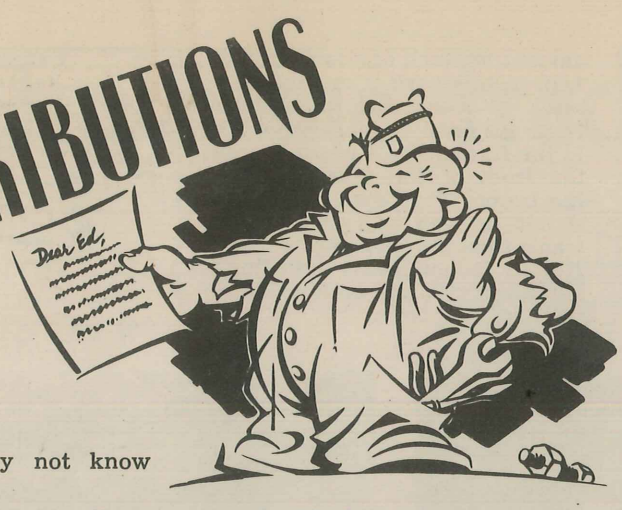


Fig. 7. Finish by smearing a light coat of Thin Film Rust Preventive Compound, AXS 673 on the screw threads and replace the cover or protective wrapping.

CONTRIBUTIONS



Dear Editor,

You may or may not know about this.

Some trouble arose in adjusting our ¾-ton Dodge brakes. The boys would make a perfect adjustment, according to feeler gage specifications (referring to minor adjustment). The truck would roll out, and bingo—dragging or locked brakes. After some investigation **T/4 Lester Bridgman** discovered that when making an adjustment, the pressure of the shoe-adjusting cam against the action of the shoe-return-spring would cock the shoe-adjusting cam spring — giving the mechanic a false reading. After one or two applications of the brake, the cam spring would reset and the brake would drag.

The cure is to tap the adjusting nut when making an adjustment. This will seat the spring—and it **never** fails.

Sgt. S. C. Maneri
101st Cavalry

Dear Sir,

One point apparently being overlooked in the rubber conservation program is the interchanging of tires between vehicles. We can best explain ourselves by making an example of our station.

We have several hundred vehicles, most of which get normal daily operation, but we also have quite a few that are actually driven very little. Bear in mind these vehicles are used daily, but driven little. These little-driven vehicles all came with nice, new mud-and-snow-tread tires. The tires would rot from age before 25% of their mileage had been obtained. Maybe we're just plain tight, but we didn't like this waste of an item as critical as rubber, so we watched our tires closely.

When tires on vehicles that are driven most have about 70% of their tread design worn off, we interchange them with the tires on the vehicles that are driven little. The tire still has enough tread to serve the purpose on the little-driven vehicle and will deteriorate to unserviceability from age before it is worn out.

To show by mathematical example what we mean, we've an organization which, in the performance of its duties, drives a fleet of ¼-ton 4x4's about 2000 miles per month. Their average tire mileage is about 26,000 miles before reaching recap stage. We had twenty 6.00x16 mud-and-snows on vehicles that are used daily, but are not driven in excess of 50 miles per month. We ran new tires on the ¼-tons 20,000 miles and interchanged twenty of them with the twenty on the vehicles driven so little. Result—a saving of some 400,000 miles. Through such interchanging, we estimate a saving of over a million tire miles at this station to date.

Maybe lead in the proverbial bottom had something to do with this plan. We found that when we wore our good tires to recap stage or sent a good tire needing just a minor repair to the tire repair shop, we got in exchange recaps and tires with more repairs than a GI can count. So, to stay as far away from tire trouble as possible, we're using up our good tires (that would rot if we didn't) before we do any wholesale exchanging.

If everyone follows this plan judiciously, how many tire miles can we save?

Robert L. Knight
Civilian Automotive Advisor

Dear Editor,

We've been having lots of trouble with the ¼-ton Ford's ('43) radiator inlet cracking between the radiator bottom tank and elbow. We found the cushions are too hard and won't stand the vibration.

To correct this defect, we have been installing softer rubber cushion pads and to date this has proven satisfactory.

Sgt. A. L. Lombardi
Sv. Co., 389th Inf.

(Ed. Note—Your trouble, as we see it, is that the rubber cushions are not too hard, they've just been pounded down. Putting softer cushions in there wouldn't help—in a little while they'd pound down worse than the original cushions. At any rate, flattened cushions tend to cock the radiator at an angle and force the steel outlet from the radiator bottom tank to enter deeper into the rubber outlet hose. What happens then is that the rubber hose is unable to absorb as much of the

ARE YOU A GENIUS?

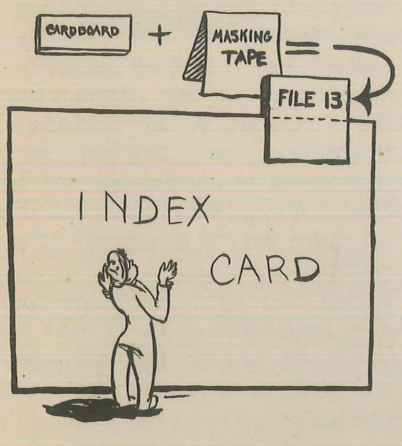
Or maybe just a plain common-sense guy who has worked out a way to do your job easier and better? You got any tricks of your trade? Many of the contributions and suggestions sent in by the boys in the field have won the admiration of the engineers and technicians at the top of the automotive show. Show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

natural vibration as it was originally intended to. The strain is thrown on the bottom tank outlet causing it to crack away from the tank. Thing to do in this case is come to the rescue of the pounded-down rubber cushions by building up a couple of layers of old inner tube on them. Also check how deep the steel outlet of the bottom tank goes into the bottom radiator hose. It shouldn't go in any deeper than ¾ inch.)

Dear Editor,

Here's a self-explanatory kink for Ordnance stock record clerks. It's a simple way to make index tabs when they're not available.

Pvt. Jerome Winkler
706th Ordnance Company



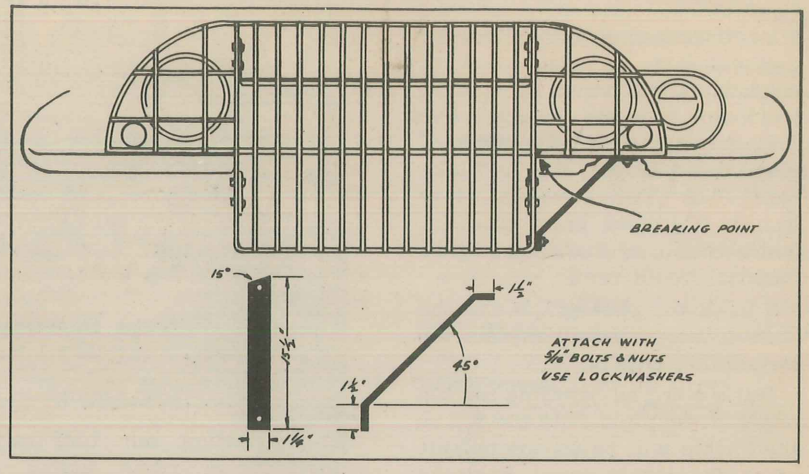
Dear Editor,

Have any of your multitude of correspondents ever complained of battery solution splashing out of the vent holes of Jeep batteries —particularly when driving over rough terrain?

We had that trouble in our outfit until our **Motor Officer, 1st Lt. N. H. Mapes,** hit on a simple yet ingenious answer. He merely cut two-inch lengths from waste windshield-wiper hose and fitted these cuts over the vent holes. They fit snugly and do not jar off. These prevent the splashing but do not plug up the vents.

S/Sgt. A. F. Lucht
125th Ordnance M. M. Co.

(Ed. Note—Have you checked to see that your batteries aren't being overfilled? Too high a charging rate will also cause excessive gassing and forces the electrolyte out the vent holes.)



Dear Editor,

Since our arrival in Africa, I have experienced considerable difficulty with the radiator grills on 2½-ton 6x6 GMC's. It seems that the poor road conditions set up considerable vibration in the front fenders, especially on the left hand side. I believe this is due to the added weight of the blackout driving light on this fender. As a result of this vibration, the radiator grill cracks on the left side at the point where the bottom of the outside loop protecting the headlight and BO light joins the grill proper.

In order to correct this, I have installed in my vehicles, a brace as shown in the figure above.

Sgt. Farrell Potts, Jr.,
Motor Sergeant

Dear Editor,

The boys working in the parts room became concerned about the number of sealed-beam headlight units presented for exchange, and began to wonder if by any chance there could be any which were still serviceable. They grabbed a few parts from the bins, a little wire and a battery and made a tester which was set near the Issue Window.

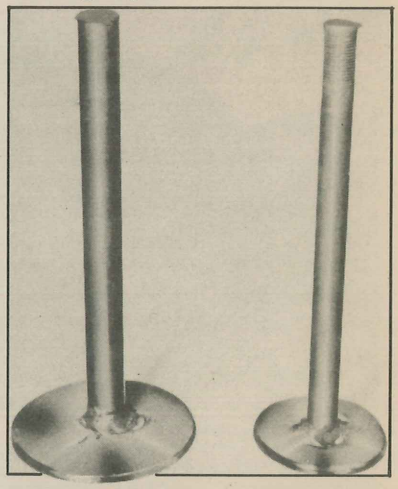
The results were astounding: On the average of all units turned in, 35% were still in serviceable condition. What a saving this would mean if every camp, post, or station would test their units and get the same results. The set consists of dimmer switch, headlight socket, switch, and a couple feet of ignition wiring. Any shop mechanic can wire it up on a board and install it near the Issue Window.

The boys are now planning to add test-sockets for bulbs, blackout lights and tail lights.

Lt. Alfred R. Schaal
Motor Maintenance Officer

Dear Editor,

If you'll glance at the attached picture, you will see two items that look for all the world like a pair of inverted metal mushrooms. What's it all about, you ask? Well, these gadgets are terrific for setting in oil seats and bearing cups.



No need for dimensions on these things, because all mechanics will probably want to have several around. Merely cut the round discs to the desired size and then weld them to rods. They are ideal for setting in oil seals evenly.

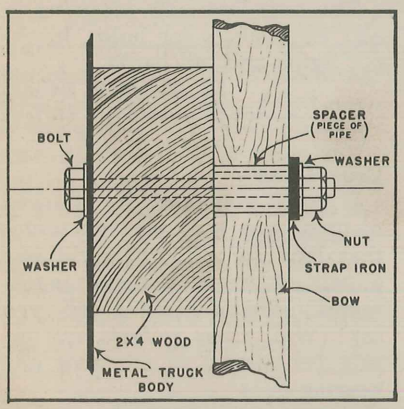
Lt. Clemens Berzowski
36th Med. Amb. Bn.

Dear Editor,

I believe we have a system for that old Bow and Top we don't need when we convert the cargo truck to a prime mover. I've seen bows put in all kinds of places but I believe this will take care of it. Two pieces of strap iron, a few nuts, bolts, washers, and a couple of 2x4's are all the material you'll need.

I think the photograph and the cross-section drawing explain the installation clearly.

But a word on handling the top might be helpful. Fold the top so the buckle will be on the outside when the job is done. Fold the curtain the longest way, keeping one rope out for binding. Place the curtains on the bows first, then place the top on and around the bows with a buckle over the center bow. Use the straps on the first and fifth bows in the center buckle to hold the top and keep it from shifting to one side. Then buckle the fourth bow straps to the top by going over and under the fifth bow. Make sure the top doesn't catch water. Bind up the whole works with a loose curtain rope.



Lt. H. Herron
879th FA Bn.

Dear Editor,

In conducting our half-track school, we've come across a chronic ailment that we believe every half-track mechanic should be on the look-out for. On twenty vehicles in our school, all comparatively new, some with less than one hundred miles, we have found the right and left radiator louver assembly stanchions were broken at the bottom support. By that we mean the lip on the lower part of the stanchion where it attaches to the armor plate at the bottom of the radiator.

Of course, we realize the vehicle will run with this little lip broken. However, it's on there for a purpose. If a check could be made immediately after receiving the vehicle, the fracture could be very easily gas or electric-welded on the vehicle. Whereas if it is put in operation for just a short while, the lip will break off entirely and then it means tearing down the complete louver assembly which is quite a job.

Inclosed sketch will give you an idea of what we mean.

James E. Jordan
Civilian Automotive Adviser

(Ed. Note—Breakage of the louver frame on half-tracks is not uncommon. However, fixing it by welding probably is no solution because of the extreme twisting motion that the frame is subject to and the heavy armor plate construction. International Harvester half-tracks have an X-brace criss-crossing in front of the radiator as a support and also extra-heavy braces from the frame siderails to the outside of the louver frame. This construction seems to do the job and is expected to go into production on all half-tracks this month. If it really does the job as well as expected, it may be recommended as a modification. You'll have to get along as best you can with this little trouble, and wait for the high sign.)

Dear Editor,

Instructors got a break when WD Cir. 119 authorized their wearing the Driver and Mechanic Award, but we have cooked up another idea.

Our instructors have trained a tremendous number of drivers, now operating in almost every theatre, and the same is true of other schools for drivers and mechanics. To qualify as an instructor more than average ability and technical knowledge are required, not to mention the hard work and patience.

Don't those men deserve a distinctive **bar** for **instructors** in recognition of the work they are doing?

Lt. Otto J. Wilson
1643rd Sv. Unit

Dear Half-Mast,

Recently the technical section of our division dreamt up a memo which dictated where, in our vehicles, we were to install the **decontaminating apparatus, continuous stream 1½ qt.** Having strictly complied with the instructions, we now find that in order to remove the container from the bracket for use, the person expecting to do the decontaminating, must be: 1) a contortionist (if he even expects to get his hands on the container) or 2) a mechanical genius (so he can partially disassemble the vehicle to gain access to the container).

Of all the impractical places to mount the brackets, Sarge, ours present a paragon of obscurity. Somewhere there must be a directive governing where these should be properly mounted. Could you detail an expedition to find it for me?

Cpl. H. A. M.

Dear Corporal,

It'll be a pleasure, and you're right about a directive on this subject. My detail returned with its name and number. TB 700-58, 800-6, 10-000-8, "Ordnance Vehicles: Mounting Decontaminating Apparatus, M2" (28 May 1943).

Half-Mast

Dear Half-Mast,

The inclosed buck-slip returned to me by the Regimental Transport Officer is self-explanatory.

It questions brazing the slots in the metal air-filter connection between the air filter and carburetor on the ¼-ton 4x4 (at the carburetor end of the connection). My authority for ordering this was a TB which ARMY MOTORS said (in May 1943) would be published shortly. But which I still haven't seen.

What is the present status of this TB?

Major T. C. B.

Dear Major,

You've got us this time.

We jumped the gun in our May issue with that business of brazing the slot in the jeep carburetor air-cleaner connection. The TB we predicted never broke into print, and now the engineers say, "Don't braze—use tape to close the exposed slot."

Forgive us?

Half-Mast

Dear Half-Mast,

Can you tell me why we need a variation of 20 to 25 lbs. tire pressure in the front and rear tires of a M3A1 scout car?

Our regiment has found through practical experiments that when the front tires are inflated to 40 lbs. and the rear tires to 65 lbs. there is greater wear both to the tires and gear cases than when a tire pressure of 60 lbs. is carried throughout. There is an increased tendency for the front wheels to shimmy, the vehicle steers harder, and because outside tire circumference when the vehicle is moving is less in front, there results a severe strain on the transfer case and scuffing of all four tires. We find that the transfer case operates much cooler with equal tire pressure on all tires.

Capt. F. D. S.

Dear Captain,

The rear tires need more pressure because they carry about 60% of the load. This added load tends to make their driving radiuses smaller than that of the front tires, and causes the rear tires to make more revolutions per mile. By lowering the pressure in the front tires, the front and rear tire cir-cum-fer-ence is more nearly equalized under load—which **should** prevent scuffing and save tires.

At least that's the **theory** behind the present regulations. Howsomever, this whole business is being re-investigated, and reports like yours might be responsible for some changes.

Half-Mast

Dear Half-Mast,

I've got transmission-noise trouble on the 2½-ton 6x6 or 6x4. Using GO 90 at the right level (with the weather at 80 to 100), transmission noise is normal after the engine has been started and brought to the correct operating temperature. And it continues to be normal for several miles of high-gear operation. But after a hard run or low-gear work, a noticeable noise comes from the transmission when the engine is idling. Sounds like a bad bearing or rough gear, and the noise stops when the clutch is disengaged.

The noise disappears and the transmission sounds normal after an hour of cooling-off. A year ago we replaced one transmission and had the same noise as the old one. We've continued to use these

vehicles and no bad results show up. The noise gets no worse and disappears when cooled down.

The question is: Does expansion have enough effect on this transmission to give this gear rattle when idling? Is the lubricant heavy enough? Should we leave them alone for this noise when it shows up?

Civilian Auto Advisor H. C. F.

Dear Mr. F.,

Will Tonto save the Lone Ranger?

I think it's nothing to get worried about. The noise is probably the natural result of the necessary gear clearances in a transmission of that size. Anyhow, drivers have been idling the engine much lower than the 400-450 rpm specified in TM 9-801 during tune-up. Offhand, I'd say if the engine idling speed is raised to this range, the noise will disappear.

Half-Mast

Dear Half-Mast,

What authority is there in Army Regulations or Red Cross Regulations which permits the use by the Red Cross of OD color on Red Cross cars?

Are Red Cross 5-passenger cars required to display State license tags on the car at all times (inasmuch as they're not official Government vehicles)? Can the Red Cross officials be compelled to display their State tags on the official Red Cross OD-colored sedans?

Is it your opinion that Red Cross cars painted OD be permitted to travel off a post when using a post number tag only, with no State license plates displayed?

Capt. A. C. M.

Dear Captain,

As long as Army Regulations don't specify or forbid the use of any particular paint on Red Cross cars, the Red Cross can use OD lusterless or any other color they wish when vehicles are based at military installations. The fact that the Red Cross obtained informal War Department clearance on the use of OD lusterless enamel just strengthens the right which they had all along.

State licensing laws would apply to Red Cross vehicles when driven outside the boundaries of a military reservation. Inside the reservation, no State tags would be needed.

The post license tag, when used on a non-Governmental vehicle, is valid only on the post. As Red Cross vehicles are not owned by the Government, their post license tag has no force outside the post.

Half-Mast

Dear Half-Mast,

We're experiencing a great deal of trouble with piston slap in Cletrac MG-1 engines (this unit uses a Hercules WXLC-3 Engine). These units have low mileage, but are used a lot as stationary power units, and in this work require quite high engine speeds. Incidentally, Detergent Oil, No. 30, is being used in these engines.

Would like to know if any other reports have been received by you on this subject?

W. L. H.

Dear Mr. H.,

Yes, I've had other reports of piston-slap trouble with the Cletrac MG-1 engine. The engineers blame this trouble on two things. The first is that this is a heavy-duty type engine, required to operate at 3250 rpm. So it's necessary that the pistons be fitted with more than normal clearance, which may cause piston slap—especially when the engine is cold.

The second factor is that in many cases, drivers don't warm up the engine properly before putting it to work. Consequently, the oil won't flow freely soon enough, and the resulting cylinder and piston wear increases the clearance and aggravates piston slap.

In any event, the slap isn't too noticeable when the engine has been rightly warmed up and is under load. What's more, the slap in itself doesn't do any harm.

Half-Mast

Dear Half-Mast,

In the November issue of ARMY MOTORS, you agreed with Automotive Adviser D. H. H. on the futility of winch covers. In our fair Alaskan climate, they are as essential as steering wheels. Our roads are most generally wet and muddy and we also have quite a little precipitation. Being not too far from the ocean, we are also blessed with good old corroding salt air. On a recent inspection, by our Bn. Commander, we took the burlap winch cover off and found the cable in perfect condition, despite the fact that it had been covered for four (4) months. In climates similar to ours, the old burlap and used oil is still the best solution.

Incidentally why aren't personnel carriers and other vehicles provided with winch covers, such as came with half-tracks?

Lt. P. H. B.

Dear Lieutenant,

I'll admit that I can understand why a burlap cover might be helpful in conditions like those in your neck of the woods—especially on a winch that's very seldom used.

Two different sets of engineers work on combat and transport vehicles. In this case, the combat vehicle men consider winch covers necessary on half-tracks—while the transport vehicle men consider them unnecessary on

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

trucks. Sometimes it's just a difference of opinion, but it's generally based on the expectation that winches will be used more often on transport vehicles than on combat vehicles. In other words, covers can probably be justified on winches that remain idle for long periods of time.

As I said back in November, winch lines should be checked every 60 days in location near salt water—cover or no cover.

Half-Mast

Dear Half-Mast,

Will you please give me the correct dope on metallic sodium valves? We've had quite a discussion about them. My instructor says that water and moisture will cause them to explode, but I insist that contact with air alone will do it.

Which is which?

Pfc. W. L. H.

Dear Private,

Why take chances? Assume that contact with air will cause them to explode (which it often will) and don't let anybody monkey around with them.

Exposure of sodium to air alone is dangerous, whether the air is moist or dry. Moist air is worse, of course, and water has the most violent effect of all. When exposed to moisture, sodium forms hydrogen and caustic soda (the hydroxide of sodium), which in turn are likely as not to hurt somebody by fire or explosion.

That's why broken valve stems containing sodium should **always** be instantly buried. The moisture of the ground decomposes the sodium and the earth absorbs the heat and caustic soda resulting from this dangerous chemical reaction. In laboratories, sodium is preserved in kerosene or naphtha —to protect it from both air and water.

The important thing is: Don't fool with sodium—bury it.

Half-Mast

Dear Half-Mast,

We have two machine-shop trucks and would like to know if the engines in these vehicles should be run periodically. At present we have a field shop setup but don't know how long we will be set up this way.

Would these trucks be considered limited storage as defined in AR 850-18?

Lt. M. C. M.

Dear Lieutenant,

No, don't run those engines periodically. You probably won't run them long enough or hot enough to drive the condensation out of the engines. I'd consider them in limited storage and would service them accordingly as per 850-18. If your engines are being used for any kind of power take-off, thing won't need the limited storage servicing—but the rest of the vehicle will.

Half-Mast

Dear Half-Mast,

How do you measure the wheelbase on a half-track?

Do they mean it when they say to cut crankcase oil with gasoline in TM 9-707? Isn't kerosene preferred?

What causes the white deposit in carburetors — particularly on air-cooled engines like motorcycles—especially in some localities? I've always understood it was salts and minerals from condensation—why doesn't it collect in the fuel filter?

Cpl. H. F. H.

Dear Corporal,

The wheelbase on a half-track is the distance from the center of the center support-roller to the center of the front axle. On most of our half-tracks the figure is 135½ inches.

Yep, they mean it about cutting crankcase oil with gasoline. For one thing, the gasoline supply problem is much simpler; another reason is that gasoline will be dissipated by engine heat, leaving the oil with almost the same viscosity it had before dilution.

The white deposit sometimes found in carburetors is usually due to moisture in the gasoline reacting with the so-called "white metal" of the carburetor bowl (which explains why you don't find this deposit in fuel filters). While carburetors are usually treated to prevent this reaction, it's possible that the treatment may have worn off in some cases. Or these carbureters you mention may have slipped through without the treatment.

Half-Mast

Dear Half-Mast,

We have recently developed many acute cases of gear-lube leakage at the "Pitman shaft oil-seal," on both the GMC and ½-ton Dodge.

Being a firm believer of, and a 90 gear-lube convert, I hesitate to state definitely that 90 gear lube is too light for use in steering-gear cases, but due to the fact that leakage has developed in the past few months, my faith begins to waiver. When seals are installed they're effective for only a short time.

Since the new ventilating system has been installed on the GMC, drivers are turning gray and working overtime cussing at the mechanics because the carburetor air-cleaner won't stay put. The collar of the air cleaner fits nicely over the carburetor when first installed, but after being removed several times for servicing, the asbestos liner, now used in the air cleaner, loses its resilience, resulting in a very insecure fit.

Several fires have been caused by the air cleaner falling on the hot exhaust manifold and starter switch. Tightening is impossible. The only remedy we can think of is a tie-down brace from the air cleaner to the cylinder head.

WOJG J. K.

Dear Mr. K,

I wouldn't blame the 90 lube for the steering gear leakage.

Usually steering-gear leakage and shot oil seals are the result of worn bushings or a bent sector shaft, which allows a radial movement of the shaft at the splined end. This movement causes the cork seal to compress, take a permanent set, and lose its sealing effectiveness. I'd say that before you replace seals to overcome leakage, check your bushings for wear and the shaft for run-out. High-impact shocks from acci-

dents or severe operations can give you bent shafts.

Now about your air-cleaner trouble:

You ask for a tie-down brace from the air cleaner to the cylinder head. Way back in our March 1943 issue, Connie Rodd tipped the field off about a new fizmo calling for that exact little thing (FSMWO G 508-W3, dated 1 April 1943); she gave the parts numbers and showed how it worked. Go ahead and requisition the kits. Meanwhile, maybe this'll be of some help:

Carburetor air-cleaner clamps are dipped in rust-proof oil for shipping purposes and if this oil ain't removed before installing, it'll squeeze out onto the carburetor air-horn and cause the cleaner to become loose. Oil spilled on the clamp when cleaning and filling air cleaners would cause the same condition. So clean the clamps by swishing them around a few times in a can of naphtha or solvent and wiping with a dry rag.

I don't think that tightening the clamp bolt is impossible—maybe because I've done it myself. Now I know that you can't see the bolt when you're tightening it, and that if your screwdriver isn't perfect, it slips from the slot, leaving you with the impression that the screw is tight, when actually it's good for one or two more turns.

Try my way:

1. Install the clamp with the side from which the seal sticks out farthest, up or toward the air cleaner.
2. Locate the clamp with the bolt toward the front of the engine in position so that the screwdriver will clear the choke-control return-spring bracket.
3. Make sure the air cleaner is seated properly on the carburetor with the clamp seal fully covering the slots in the cleaner and that the ends of the seal are between two of the slots.
4. Tighten the screw.
5. Shake the air cleaner slightly to see that it's tight.
6. Re-tighten the clamp screw.

Half-Mast

Dear Half-Mast,

The instructions in the maintenance manual for Ford truck ¼-ton, 4x4, says to set distributor points contact gap at .020. After doing this, the cam angle meter reads approximately 41°. The electrical system specifications say the cam angle should be 47°. I have found that after setting the cam angle 47° that the contact points are only about .010.

Please inform me as to which is the proper way to set distributor contact points, by cam angle meter or by feeler gage.

Automotive Adviser R. J. B.

Dear Mr. B.,

As far as I'm concerned, the cam-angle meter is best, and the 47° specification should be followed.

A feeler gage will give you a fair degree of accuracy when the points are new, but worn points often have pits and deposits which make feeler-gage checks unreliable. Naturally, if you don't have an angle meter, use a feeler gage—and set the contact point gaps between .018 and .022.

Half-Mast

Dear Half-Mast,

In your September-October issue you bragged and raved about the new Dodge 1½-ton 6x6. Well, I will grant you that it has the appearance of an all-around good jallopy, but where I see it from is at a great distance.

What I mean is, how can it be placed in the Field Artillery? I have five batteries in this outfit and under our present T/O and T/E, we are authorized for battery maintenance vehicle, Dodge ¾-ton 4x4. Did you ever see a three-quarter-ton with a complete set of second-echelon set No. 2 mounted with the usual extras which any outfit has to carry, such as: individual equipment, camouflage material and miscellaneous articles used elsewhere in the battery in the field? In addition to this equipment, there is the Motor Sergeant, the motor mechanic, the battery supply Sergeant, a machine gunner Corporal and a machine gunner Private with a fifty cal. machine gun plus ammunition and the necessary equipment to operate the gun, and last but not least the battery Motor Officer. Now add all this together and you will be able to see plainly why I have had four torn-out main universals within the past two months. I cannot hold the drivers as I witnessed one incident and actually know that it was not the driver's fault.

If the ¾-ton were replaced with the 1½-ton 6x6 Dodge, our troubles would cease and everyone would benefit.

I wish I could quote the weight of the ¾-ton loaded but there is not a platform scale at this post.

Lt. J. R. R.

Dear Lieutenant,

Even I can understand why you're having trouble, trying to stow a 2nd-echelon tool set No. 2 (and all those other things you mentioned) on a little ¾-ton Dodge.

But I can't understand how it happened. I always thought the company or battery tool set (2nd-echelon set No. 1) is carried on a ¾-ton weapons carrier—and the battalion or regiment tool set (2nd-echelon set No. 2) is carried on a 2½-ton cargo truck. Why you don't have that 2½-ton GMC for the purpose is a mystery to me. Of course, I don't know what kind of a FA Bn. you're in and I don't have your T/O & E, but regardless of what your T/O & E is, you're entitled to a 2½-ton 6x6 truck (see SNL N-19, Oct., '43).

In last April's ARMY MOTORS we showed a recommended lay-out plan for each tool set, in its proper vehicle. The same information was published in June as TB 801-3.

But the 1½-ton Dodge still ain't the immediate answer to your problem, Lieutenant, because I haven't seen any plans for converting this vehicle to a shop truck or tool-set carrier. There are such plans for the 2½-ton long wheelbase GMC, which is what you're entitled to.

I hope you get it.

Half-Mast

TRACTION DEVICES

(Continued from page 305)

again. When a track is too loose —you can tell it two ways. You'll hear the looseness as the shoes clack and clang against the ground. And you'll notice the wheels spin in the tracks. The right tension lets the tracks creep on the tires a little the way chains do. When you see the creep marks across the tire tread, you've adjusted them right.

New tracks need to have the tension checked after you've driven them a few miles. They whirl themselves a little slack. Just give them a second tightening. Later when you've broken the tracks in, you can forget this annoying little job.

Driving along with the tracks on is no different. For example, steering's the same—except at low speeds. Then the duals on the front plus the tracks make it a little more work. Throwing the tracks isn't liable to happen unless you do this: take the truck diagonally across a ditch, letting each of the rear wheels dip down, one at a time. The bogie action stretches and twists the two belts . . . and zang, you've got trouble. Take all the ditches straight head-on—**even the small ones,** so both wheels hit at the same time. That'll keep your tracks on all the livelong day.

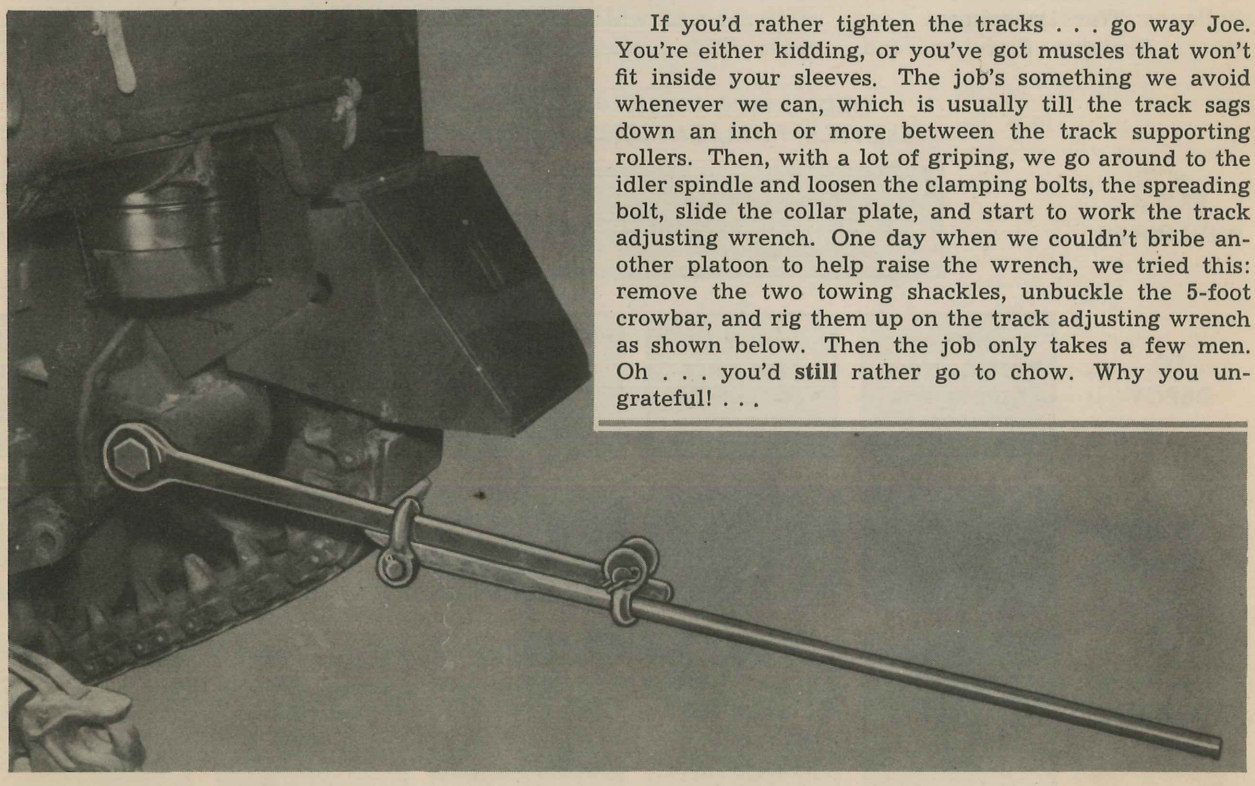
When you do want them off, here's how: pick out a shoe halfway up the tire, loosen the connection bolt, and loosen several adjusting screws on the adjoining shoes (turn screw to **left** to loosen). Wiggling the chain up and down should work the clasp loose. As you drive off the tracks, have an assistant on the lookout to see that you don't ride over any tangled up sections.

Next, you'll probably want to divide each track into links of 5 or 6 shoes so you won't bust a gut loading them on the truck. When you're loading cargo, remember to take into account the weight of the pile of traction devices stowed in the body. Each shoe weighs 17 pounds. A complete set for a truck (3 pairs of 22 shoes each) weighs 1,122 pounds.

So far you've got the rosy side of the traction devices . . . the high flotation and super traction they give your transformed truck. The dark side is the extra maintenance the truck demands. Like track vehicles, your truck now has an extra half-ton of iron around the tires. This means extra loads and extra strains in the spring suspension system, in the axles, the bearings, the power train. That's nothing to cause gooseflesh. It means that neglecting items like greasing the wheel bearings, and keeping up the lube level in differential and transfer will cause a failure **quicker,** when you're using traction devices. It's a fair exchange . . . the traction devices give you extra traction, you've got to stay awake on the maintenance job.

Whatdajuh Rather Do . . . Go to Chow, or

Tighten the Tracks on Your Tank?



If you'd rather tighten the tracks . . . go way Joe. You're either kidding, or you've got muscles that won't fit inside your sleeves. The job's something we avoid whenever we can, which is usually till the track sags down an inch or more between the track supporting rollers. Then, with a lot of griping, we go around to the idler spindle and loosen the clamping bolts, the spreading bolt, slide the collar plate, and start to work the track adjusting wrench. One day when we couldn't bribe another platoon to help raise the wrench, we tried this: remove the two towing shackles, unbuckle the 5-foot crowbar, and rig them up on the track adjusting wrench as shown below. Then the job only takes a few men. Oh . . . you'd **still** rather go to chow. Why you ungrateful! . . .

How To Get Publications

. . . including new sources of supply for AAF Units

Though we don't expect you to believe it, there are ways of obtaining official publications and blank forms, besides stealing them from the Post Adjutant's official files. In fact there's a brand **new** set of ways for all units located at installations of the Army Air Forces (including attached organizations of other arms and services).

There are two kinds of publications on automotive maintenance (seems as though we've mentioned this before).

There are War Department AGO publications, issued by the Chief of Staff, which include Army Regulations, Field Manuals, Technical Manuals, the new Technical Bulletins, War Department Circulars, Training Circulars, and Tables of Organization and Equipment.

Then, there are Ordnance Field Service Publications, issued by the Chief of Ordnance for information and reference, which include the ASF Catalog of Ordnance Standard Nomenclature Lists, the Field Service Modification Work Orders, Ordnance Field Service Bulletins, and others.

Units located at AAF installations can now get all these publications, through their local channels as prescribed in AAF Regulation 5-9, from a single distributing point—the Publications Distribution Branch of their Area Air Service Command.

Outfits which have no tie-in with the AAF will continue to receive AGO publications through their Post Adjutant from their Service Command AGO Depots, and Ordnance publications from their Regional Ordnance Publications Depots.

If you're overseas, requisition on your POE for AGO publications, and on the Ordnance Publications Depots designated for overseas distribution, for Ordnance Field Service publications.

Here's a picture of the situation:

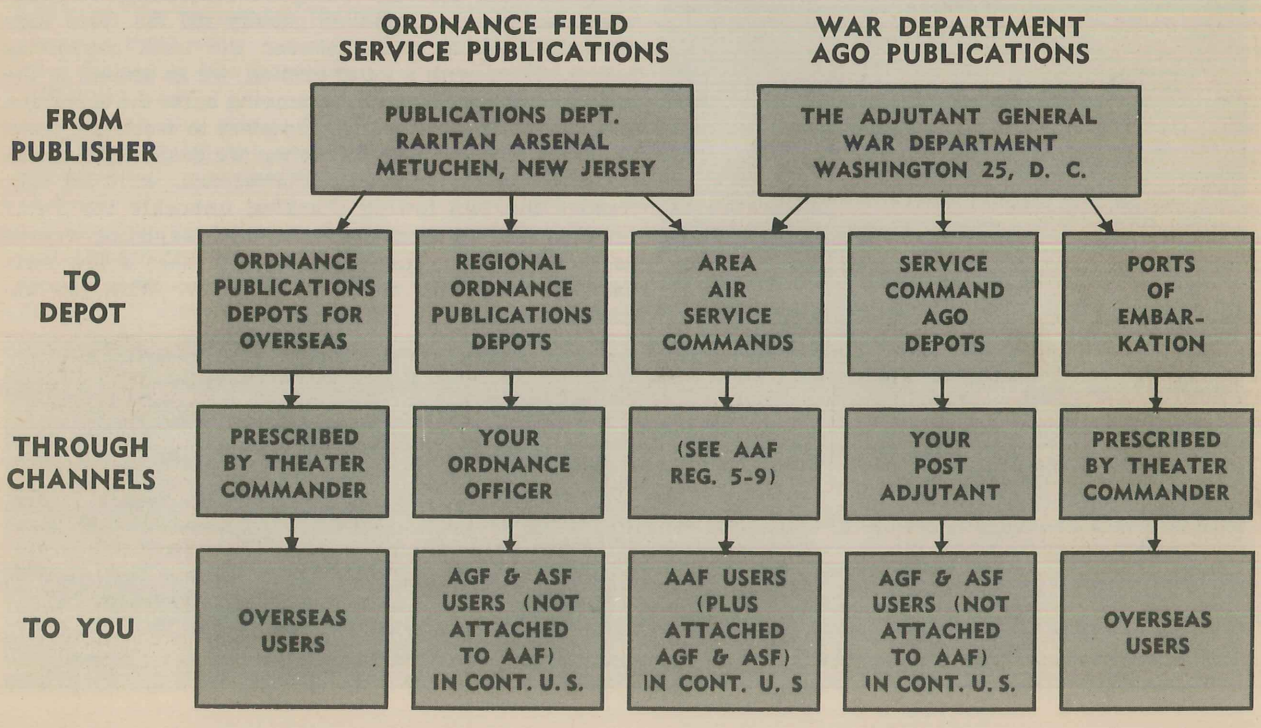
Ordnance Publications Depots for Overseas:

San Francisco APO's: Publications Supply Officer, Overseas Supply Division. Warehouse B, Oakland Branch, San Francisco Port of Embarkation, Oakland, Calif. (until notified to draw from Ordnance Publications Depots now being established in the South Pacific, Southwest Pacific, and Central Pacific theaters of operations).

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

New Orleans APO's: The Adjutant General Publications Supply Officer, New Orleans Port of Embarkation, Poland and Dauphine Streets, New Orleans 12, La.

Miami APO's: Southeastern Ordnance Publications Depot, Glenn St. and Mur-



phy Ave., S. W., Atlanta, Ga.

New York APO 600: The Ordnance Officer, Ordnance Section, Hq. MBS. Depot 150-0, APO 600, % Postmaster, New York, N. Y. Other New York APO's: Eastern Ordnance Publications Depot, 985 Broad St., Newark 2, N. J. (until notified to draw from Ordnance Publications Depots in the European and India-Burma-China theaters of operations).

Regional Ordnance Publications Depots:

Eastern Ordnance Publications Depot, 985 Broad Street, Newark 2, N. J.

Southeastern Ordnance Publications Depot, Glenn Street and Murphy Avenue, S. W., Atlanta, Ga.

Central Ordnance Publications Depot, 111 North Canal Street, Chicago 6, Ill.

Southern Ordnance Publications Depot, % San Antonio QM Depot, Fort Sam Houston, Texas.

Western Ordnance Publications Depot, P. O. Box 1031, 2325 Wall Avenue, Ogden, Utah.

Area Air Service Commands:

Rome Air Service Command, Rome Army Air Field, Rome, N. Y.

Middletown Air Service Command, Olmsted Field, Middletown, Pa.

Warner Robins Air Service Command, Robins Field, Warner Robins, Ga.

Fairfield Air Service Command, Patterson Field, Fairfield, Ohio.

Mobile Air Service Command, Brookley Field, Mobile, Ala.

Oklahoma City Air Service Command, Tinker Army Air Field, Oklahoma City, Okla.

San Antonio Air Service Command, Kelly Field, San Antonio, Texas.

Spokane Air Service Command, Spokane Army Air Field, Spokane, Wash.

Sacramento Air Service Command, McClellan Field, Calif.

Ogden Air Service Command, Hill Field, Ogden, Utah.

San Bernardino Air Service Command, San Bernardino Army Air Field, San Bernardino, Calif.

Service Command AGO Depots:

594-596 Commonwealth Avenue, Boston 15, Mass.

111 Eighth Avenue, New York 11, N. Y.

601 South Haven Street, Baltimore 24, Md.

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

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

111 North Canal Street, Chicago 6, Ill.

16th and Cuming Streets, Omaha 2, Neb.

% San Antonio QM Depot, Fort Sam Houston, Texas.

2325 Wall Avenue, Ogden, Utah.

The Month's Directives

War Dept. AGO and Ordnance publications affecting 1st and 2nd-echelon motor maintenance

ARMORED CARS

CAR, ARMORED LIGHT, M8

FSMWO G136-W1, Eliminate spring interference with shock absorbers, etc.
SNL G-136. Pt II, SPC (1 June 43).

CAR, ARMORED, UTILITY, M20

SNL G-176, OSPE (21 Oct. 43).
SNL G-176, OSPE, C1 (6 Nov. 43).

SCOUT CARS

CAR, SCOUT, M3A1

TB 700-100, Cold weather operation of surge tank.

GUN MOTOR CARRIAGES

CARRIAGE, MOTOR, 105-MM HOWITZER, M7

FSMWO G1-W5, Parking brake.
FSMWO G128-W16, Stowage brackets.
FSMWO G128-W17, Sand shields.
TB 700-106, Replacement of steel tracks.
SNL G-128, OSPE, C3 (8 Nov. 43).

CARRIAGE, MOTOR, 75-MM HOWITZER, M8

SNL G-127, OSPE (3 Nov. 43).

CARRIAGE, MOTOR, 3-IN GUN, M10

FSMWO G1-W5, Parking brake.
TB 700-106, Replacement of steel tracks.
SNL G-130, OSPE, C2 (20 Oct. 43).

CARRIAGE, MOTOR, 3-IN. GUN, M10A1

FSMWO G1-W5, Parking brake.
FSMWO, G170-W6, Hold ammunition in racks.
FSMWO G170-W12, Intake manifold and head gaskets.
TB 700-106, Replacement of steel tracks.
SNL G-170, Pt. II, SPC (1 July 43).

CARRIAGE, MOTOR, 155-MM GUN, M12

TB 700-106, Replacement of steel tracks.
SNL G-158, OSPE, C1 (23 Oct. 43).

CARRIAGE, MOTOR, MULTIPLE GUN, M14

FSMWO G147-W6, Cooling system.
SNL G-147, Pt. II, SPC (1 Sept. 43).

CARRIAGE, MOTOR, MULTIPLE GUN, M15

SNL G-102, Vol. 13, OSPE (14 Oct. 43).

CARRIAGE, MOTOR, MULTIPLE GUN, M15A1

SNL G-102, Vol. 16, OSPE, C1 (6 Nov. 43).

CARRIAGE, MOTOR, MULTIPLE GUN, M17

SNL G-147, Vol. 6, OSPE, C1 (27 Oct. 43).

CARRIERS

CAR, HALF-TRACK, M2

SNL G-102, Vol. 1, OSPE (10 Nov. 43).

CAR, HALF-TRACK, M2A1

SNL G-102, Vol. 2, OSPE, C1 (10 Nov. 43).

CARRIER, PERSONNEL, HALF-TRACK, M3

FSMWO G102-W31, Install ring gun mount.
SNL G-102, Vol. 3, OSPE, C2 (12 Nov. 43).

CARRIER, PERSONNEL, HALF-TRACK, M3A1

SNL G-102, Vol. 4, OSPE, C1 (10 Nov. 43).

CARRIER, 81-MM MORTAR, HALF-TRACK, M4A1

SNL G-102, Vol. 6, OSPE (28 Sept. 43).

CARRIER, PERSONNEL, HALF-TRACK, M5

FSMWO G147-W4, Litter carrier brackets.
FSMWO G147-W6, Cooling system.
SNL G-147, Vol. 3, OSPE, C1 (27 Oct. 43).
SNL G-147, Vol. 3, OSPE, C2 (12 Nov. 43).
SNL G-147, Pt. II, SPC (1 Sept. 43).

CARRIER, PERSONNEL, HALF-TRACK, M5A1

FSMWO G147-W4, Litter carrier brackets.
SNL G-147, Vol. 4, OSPE, C1 (11 Nov. 43).
SNL G-147, Pt. II, SPC (1 Sept. 43).

CAR, HALF-TRACK, M9A1

FSMWO G147-W6, Cooling system.
SNL G-147, Vol. 2, OSPE, C1 (11 Nov. 43).
SNL G-147, Pt. II, SPC (1 Sept. 43).

CARRIER, MORTAR, 81-MM, HALF-TRACK, M21

SNL G-102, Vol. 15, OSPE (15 Oct. 43).

CARRIER, CARGO, M29 (T24)

TM 9-772, Operation and maintenance. (19 June 43).
SNL G-179, OSPE (8 Nov. 43).
SNL G-179, SPC (1 Aug. 43).

CARRIER, CARGO, M30 (T14)

TB 700-106, Replacement of steel tracks.
SNL G-158, OSPE, C1 (23 Oct. 43).

HALF-TRACK VEHICLES

(See also Individual Vehicle Listings)

TB 700-99, Band track chains.
TB 700-100, Cold weather operation of surge tank.

LIGHT TANKS

TANK, LIGHT, M3A1
SNL G-103, Vol. 5, OSPE, C1 (17 Nov. 43).

TANK, LIGHT, M3A3
SNL G-103, Vol. 7, OSPE, C1 (2 Nov. 43).

TANK, LIGHT, M5
SNL G-103, Vol. 3, OSPE, C1 (3 Nov. 43).

TANK, LIGHT, M5A1
SNL G-103, Vol. 5, OSPE, C2 (18 Oct. 43).
SNL G-103, Vol. 8, OSPE, C3 (3 Nov. 43).

MEDIUM TANKS

TANK, MEDIUM, M3
SNL G-104, Vol. 1, OSPE, C3 (22 Oct. 43).

TANK, MEDIUM, M3A1 & M3A2
SNL G-104, Vol. 12, OSPE, C2 (22 Oct. 43).

TANK, MEDIUM, M3A3
SNL G-104, Vol. 5, OSPE, C2 (20 Oct. 43).

TANK, MEDIUM, M3A5
SNL G-104, Vol. 10, OSPE, C2 (20 Oct. 43).

TANK, MEDIUM, M4
FSMWO G1-W5, Parking brake.
FSMWO G104-W96, Foot rest.
TB 700-106, Replacement of steel tracks.
SNL G-104, Vol. 6, OSPE, C1 (22 Oct. 43).

TANK, MEDIUM, M4A1
FSMWO G1-W5, Parking brake.
FSMWO G104-W96, Foot rest.
TB 700-106, Replacement of steel tracks.
SNL G-104, Vol. 11, OSPE, C1 (22 Oct. 43).

TANK, MEDIUM, M4A2
FSMWO G1-W5, Parking brake.
FSMWO G104-W96, Foot rest.
TB 700-106, Replacement of steel tracks.
SNL G-104, Vol. 7, OSPE, C1 (20 Oct. 43).

TANK, MEDIUM, M4A3
FSMWO G1-W5, Parking brake.
FSMWO G104-W96, Foot rest.
FSMWO G104-W101, Intake manifold and head gaskets.
TB 700-106, Replacement of steel tracks.

TANK, MEDIUM, M4A4
FSMWO G1-W5, Parking brake.
FSMWO G104-W96, Install foot rest for foot firing switch.
TB 700-106, Replacement of steel tracks.
SNL G-104, Pt. II, Vol. IX, SPC (29 July 43).

TANK, MEDIUM, M4A6
TB 700-106, Replacement of steel tracks.

VEHICLE, TANK RECOVERY, T2
TM 9-739, Operation and maintenance (11 Aug. 43).
TB 700-106, Replacement of steel tracks.
SNL G-169, OSPE, C1 (2 Nov. 43).

TRUCKS

TRUCK, BOMB LIFT, M1
SNL G-85, SPC (15 Aug. 43).

TRUCK, LIGHT MACHINE SHOP, M3 & M4
SNL G-57, Vol. 3, C2 (25 Oct. 43).

TRUCK, LIFT, M22
FSMWO G161-W1, Prevent oil leakage.
SNL G-161, Pt. II, SPC (1 May 43).

TRUCK, AMPHIBIAN, 2½-TON, 6x6 (GMC DUKW-353)
TM 9-802, Operation and maintenance. (1 Sept. 43).

TRUCK, DUMP, 2½-TON, 4x2 (INTERNATIONAL K-7)
TM 10-1684, Parts list. (14 May 43).

TRUCK, 2½-TON, 6x6, SMALL ARMS REPAIR, M7 & M7A1
SNL G-138, Vol. 1, OSPE, C3 (1 Nov. 43).

TRUCK, 2½-TON, 6x4 & 6x6 (GMC)
FSMWO G508-W8, Steering arm ball on banjo type axle.

TRUCK, 4-5 TON, 4x4, C. O. E., TRACTOR (FEDERAL)
SNL G-513, OSPE (13 Oct. 43).

TRUCK, DUMP, 5-TON, 4x2 (INTERNATIONAL KR-11)
TM 10-1682, Parts list. (28 May 43).

TRUCK, PRIME MOVER, 7½-TON, 6x6 (MACK)
TM 10-1679, Maintenance manual (10 April 43).
FSMWO G532-W2, Front brake hose.
FSMWO G532-W3, Bearing adjusting block.
FSMWO G532-W4, Hoist hand chain.

TRUCK, CARGO, 10-TON, 6x4 (MACK)
SNL G-528, OSPE (13 Oct. 43).

TRUCK-TRAILER, 40-TON, TANK RECOVERY, M25
SNL G-160, OSPE (29 Oct. 43).

TRACTORS

TRACTOR, MEDIUM, M-1 (ALLIS-CHALMERS)
SNL G-125, LAP, Suppl. 1 (5 Oct. 43).

TRACTOR, HEAVY, M1 (ALLIS-CHALMERS)
SNL G-98, OSPE (18 Oct. 43).

TRACTOR, CRANE, 2-TON, M3 (INTERNATIONAL)
SNL G-132, Pt. II, SPC (30 April 43).

TRACTOR, CRANE, 6-TON, M4 (CATERPILLAR)
SNL G-126, OSPE, C2 (25 Oct. 43).

TRACTOR, HIGH SPEED, 13-TON, M5 (INTERNATIONAL)
SNL G-162, OSPE, C1 (21 Oct. 43).
SNL G-162, OSPE, C2 (6 Nov. 43).

TRACTOR, HIGH SPEED, 38-TON, M6 (ALLIS-CHALMERS)
SNL G-184, OSPE (14 Oct. 43).

TRAILERS & SEMITRAILERS

TRAILER, BOMB, M5
SNL G-74, Pt. II, SPC (10 Sept. 43).

TRAILER, CARGO, 1-TON
SNL G-518, LAP.

SEMITRAILER, REFRIGERATING UNIT
TM 10-1614, Combined operation and maintenance manual and parts list (9 July 43).

SEMITRAILER, REFRIGERATOR, 5-TON (THERMO KING)
TM 10-1417, Maintenance manual, (1 Aug. 43).

SEMITRAILER, REFRIGERATOR, 10-TON GROSS (GRAMM)
TM 10-1609, Maintenance manual, (22 Sept. 43).

GENERAL

FM 5-21, C1, Obscuring of national symbol (8 Oct. 43).
FM 21-6, List of publications for training (1 July 43).
FM 55-150, Amphibian truck company (11 Oct. 43).
TC 122, Mine-field marking (10 Nov. 43).
TC 128, List of films (1 Dec. 43).
TC 129, List of publications (1 Dec. 43).
TC 131, Recognition training aids (14 Dec. 43).
TM 5-267, C1, Suppl. 2, Obscuring of national symbol (8 Oct. 43).
TM 9-2800, Standard military motor vehicles (1 Sept. 43).
TM 31-200, C2, Chains and traction devices (18 Aug. 43).
TM 38-205, Army supply procedure, parts 1 & 2 (21 Oct. 43).
WDC 307, Army supply procedure (23 Nov. 43).
WDC 312, Standardization of motor vehicles (30 Nov. 43).
WDC 321, Abuse of air-cooled engines in compressors (11 Dec. 43).
WDC 325, Use of property issue slip (WD AGO Form 446) for issuance of motor vehicle parts (14 Dec. 43).
FSMWO G27-W2, Maintenance tools.
OFSB 1-1, Sec. 1-8, Index to Ordnance publications (1 Nov. 43).
OFSB 1-1, Sec. 9-14, Index to Ordnance publications (1 Nov. 43).
OFSB 1-8, C1, Publications for Ordnanceman (27 Oct. 43).
OFSB 4-24, Protection of Ordnance materiel in open storage (16 Oct. 43).
OFSB 6-11, Cold weather lubrication and service of combat vehicles and automotive materiel (1 Nov. 43).
TB 700-101, Senior military standard base mounted oil filter leakage.
TB 700-103, Elimination of spare tire locks.
TB 850-12, Waterproofing canvas and duck used for tarpaulins, tops, curtains, etc.
SNL G-1, Suppl., Vehicular armanent and mounts (28 Oct. 43).
SNL H-6, C1, Pipe and hose fittings (4 Oct. 43).
SNL K-2, C3, Soldering, brazing and welding material, gases and related items (1 Nov. 43).
SNL N-19, Tool sets, motor transport (29 Oct. 43).

PERPETUAL INDEX

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

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

NO MORE FSMWO'S

(Continued from page 296)

defective ammunition will continue to be reported as directed in AR 750-10 (Changes No. 3). The Form is to be used to report "manufacturing, design or defects due to operating conditions with a view to improving and correcting such defects and for use in recommending modification of material."

Captured enemy materiel is modified under the same procedure followed for American equipment.

In all cases, in reporting defects or suggesting modification, make yourself clear—don't hesitate to use sketches or photographs.

Simple enough now that we have the Form available to us—but we sure were in a dither about it before this.

HOW TO WASH A TRUCK

(Continued from page 300)

ing compound. Plain cold vapor isn't so bad. But our slogan is—Swear off steam and stay off the deadline.

BABBLING BROOKS

Our quote from TM 9-2810 casually covered this procedure with that business about "care must be taken," etc. But no amount of care is likely to keep a brook, river, or lake from getting into things—along with generous amounts of mud, sand, and shad roe. So when you drive your truck up onto dry ground after its wading party, you'll do well to perform a thorough lubrication job on at least those parts of the chassis which have been submerged.

Which reminds us—don't run your truck into too deep water. Washing is a driver's job—not a diver's.

DO YOU SEE ARMY MOTORS *REGULARLY?*

Enough copies are sent to your highest local headquarters to provide 3 for each company or similar unit. We'd like to see the three copies handed out like this:

Company Officers . . . . . 1 copy
Motor and Supply Sgts. . . . . 1 copy
Enlisted Men's day room . . . . . 1 copy

HALF-MAST'S FIVE-FOOT SHELF

(Continued from page 302)

the Chief of Ordnance has authorized for each vehicle. A list of current FSMWO's is published in each revision of OFSB 1-1. (Flash! No more FSMWO's—you'll get MWO's from now on. See page 296.)

Ordnance Field Service Bulletins contain general information from the Ordnance Office which Half-Mast finds useful. His greasy thumbprints are most heavily smeared on the following:

OFSB 1-1, Index to Ordnance Publications, in two volumes, published in a complete revision every two months.
OFSB 1-8, Publications for the Ordnanceman. A summary of their content, purpose, and distribution—not just for Ordnancemen, however.
OFSB 2-16, Storage and shipment of rubber tires, tubes, and camelback.
OFSB 2-17, Receiving and Preissue inspections of vehicles.
OFSB 2-18, Requisition and issue of spare parts, equipment, and supplies.
OFSB 2-20, Deletion of "Y" symbol in SNL's.
OFSB 2-25, Winterization equipment for automotive materiel.
OFSB 4-1, Maintenance, General.
OFSB 4-5, Modification of Ordnance materiel.
OFSB 4-16, Recoverable automotive items.
OFSB 4-17, Serviceability standards.
OFSB 4-21, Gun mounts on general-purpose vehicles.
OFSB 5-4, Serial numbers of Ordnance motor vehicles.
OFSB 5-8, Removal of vehicles from service.
OFSB 5-9, Requisitions.
OFSB 6-2, Product guide.
OFSB 6-10, Lubrication.
OFSB 6-11, Cold weather lubrication and service.

No BO Lights for Administrative Vehicles

The war is moving along fast. For this reason you boys still back in the States, are not going to do some of the things with blackout lighting equipment that it was originally planned for you to do. Specifically:

1) You will not requisition blackout-marker and driving light kits for your administrative vehicles as originally announced.

2) You will not change over from the old blue-louver type of lights to the new style BO lights on either administrative or tactical vehicles.

3) You will not order BO driving lights for any of your vehicles—administrative or tactical.

Don't worry, you're not being gypped. Your vehicles will be taken care of in another way before you go overseas. Save you a lot of time too.

ADVISOR SUPERVISORS

The Civilian Automotive Advisor Unit has, for the past few months, been set up to deliver faster and even more efficient service to the field.

Five Advisor Supervisors are now attached to the various Service Command areas and in the chain of command, are directly under the CAA Unit, Office, Chief of Ordnance-Detroit. The Supervisors are the eyes, ears and mouthpiece of the home office.

Well-acquainted with the problems of their own Service Command areas, the Supervisors are johnny-on-the-spot to render any service the using arms and services may require. A newly activated division needs an advisor team in a hurry, it gets an advisor team in a hurry by working through the Supervisor in the Service Command area. In the same way, advisors released from field units are immediately reassigned to other units. Assignment and reassignment of advisors thus avoids delays and waiting lists.

CAA activity throughout the Service Command area is coordinated by the Supervisors. All business between the field and the home office is conducted through the Supervisors.

Working through the Ordnance officers of the using Arms and Services, the Supervisors contact Chief and Head Advisors with regard to the training methods and doctrine used by advisors. Instruction is thus strictly in line with the standards set by existing regulations. Field information gathered by the Supervisors is used to improve preventive-maintenance doctrine.

Following are the five Advisor Supervisors and the Service Command areas under their jurisdiction. Use 'em as you need 'em:

Service Commands	Advisor Supervisor
1, 2, 3	John M. Craig
4	Thomas P. Garden
5, 6, 7	Floyd Emrick
8	Russel Lundberg
9	George M. Miller

NEWS FLASHES

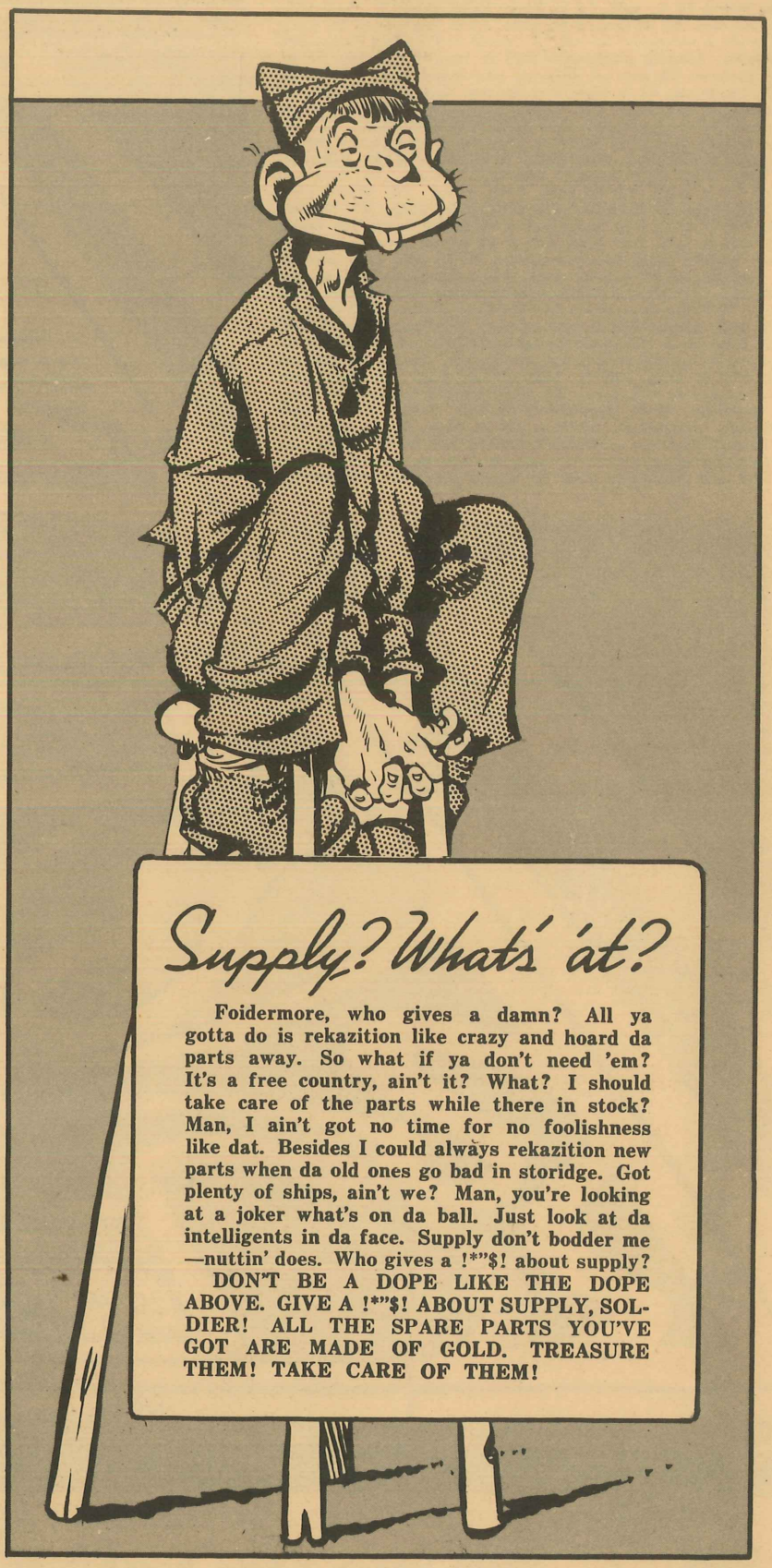
Vehicles operating in temperature from 0 degrees and below are supposed to have oil in the air cleaners, according to information received a few days ago from OCO, Washington. In temperatures from 0 degrees down to –40 degrees, use either **Hydraulic Oil** (Item Stock No. K001-10-74748) or **Light Shock-Absorber Oil** (Item Stock No. K001-10-28395, or Federal Stock No. 51-S-720), whichever you have on hand. **From –40 degrees and lower,** you can run the air cleaners **dry.** This supersedes the previous instruction in OFS Bulletin 6-11, "Cold Weather Lubrication and Service of Combat Vehicles and Automotive Material," which said: run the air cleaners dry, without any oil, soon as the temperature got to zero and below. The story was oil in the cleaners would thicken up and block air coming in. Hydraulic oil won't . . . use it in air cleaners in operation at 0 degrees and under.

* * *

Some of the half-trackers have been complaining because their vehicles are too slow on the warm-up. Here are a few ways to speed up the job . . . after the engine's started, adjust the hand throttle and choke so the engine doesn't race. Reach over and check the radiator shutter lever, to be sure the **shutters are fully closed.** Run the engine at **800 to 1,000 RPM's**—twice as fast as the idle speed. You can tell the engine's warm when it runs smoothly, or when it gets up to 140 degrees.

* * *

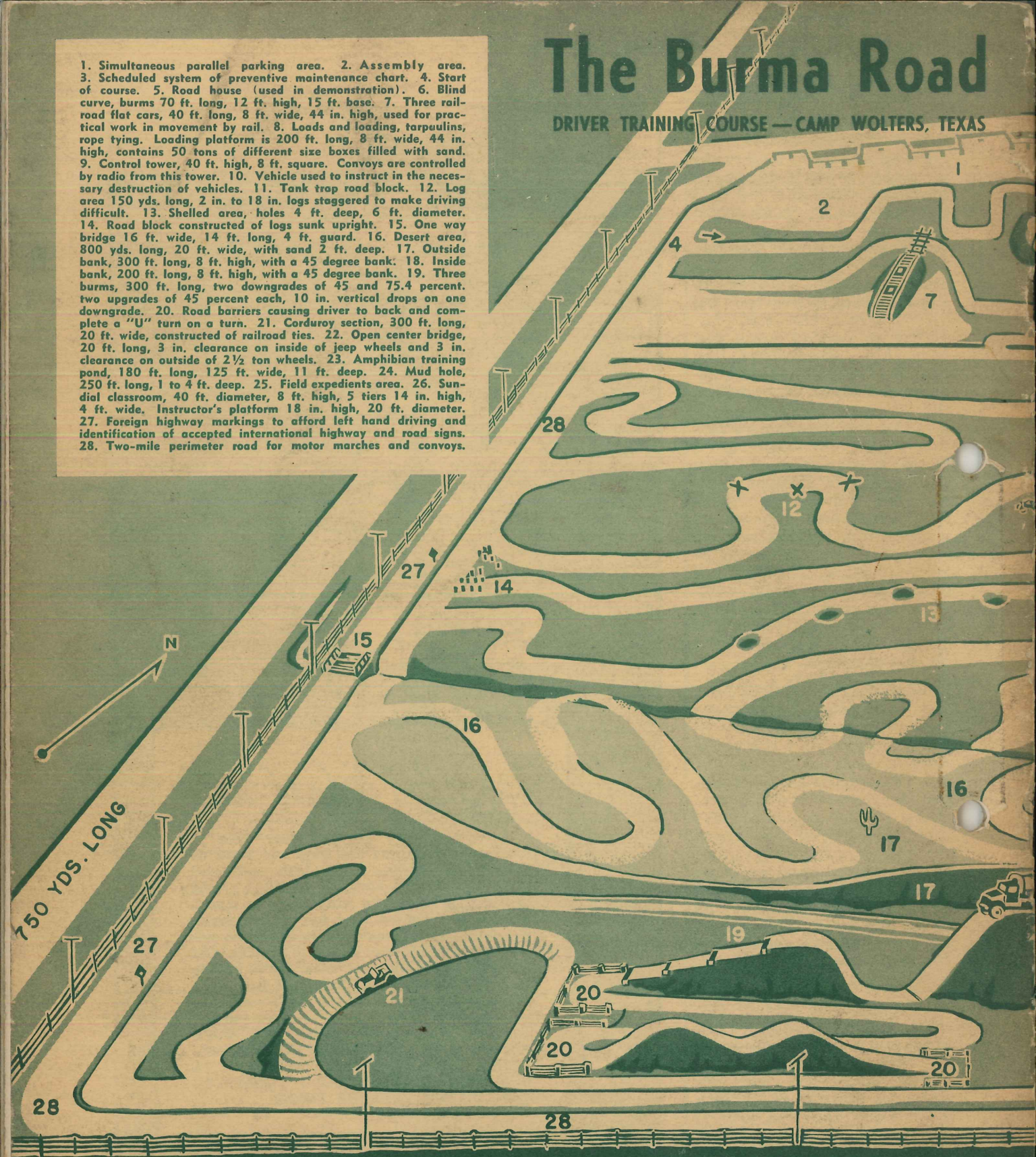
We've seen the rear of 6x6 trucks jacked up a lot of right ways, and only **one** wrong way . . . with the jack under the **torque rods.** That's bad because the pressure of the jack pinches and ruins the bushing around the torque rod pin. Better than this, move the jack out a few inches and put it under the torque rod **bracket** that's part of the axle. Or, put the jack under the axles, or under the spring cross-shaft torque rod brackets.



The Burma Road

DRIVER TRAINING COURSE — CAMP WOLTERS, TEXAS

1. Simultaneous parallel parking area. 2. Assembly area. 3. Scheduled system of preventive maintenance chart. 4. Start of course. 5. Road house (used in demonstration). 6. Blind curve, burms 70 ft. long, 12 ft. high, 15 ft. base. 7. Three railroad flat cars, 40 ft. long, 8 ft. wide, 44 in. high, used for practical work in movement by rail. 8. Loads and loading, tarpaulins, rope tying. Loading platform is 200 ft. long, 8 ft. wide, 44 in. high, contains 50 tons of different size boxes filled with sand. 9. Control tower, 40 ft. high, 8 ft. square. Convoys are controlled by radio from this tower. 10. Vehicle used to instruct in the necessary destruction of vehicles. 11. Tank trap road block. 12. Log area 150 yds. long, 2 in. to 18 in. logs staggered to make driving difficult. 13. Shelled area, holes 4 ft. deep, 6 ft. diameter. 14. Road block constructed of logs sunk upright. 15. One way bridge 16 ft. wide, 14 ft. long, 4 ft. guard. 16. Desert area, 800 yds. long, 20 ft. wide, with sand 2 ft. deep. 17. Outside bank, 300 ft. long, 8 ft. high, with a 45 degree bank. 18. Inside bank, 200 ft. long, 8 ft. high, with a 45 degree bank. 19. Three burms, 300 ft. long, two downgrades of 45 and 75.4 percent. two upgrades of 45 percent each, 10 in. vertical drops on one downgrade. 20. Road barriers causing driver to back and complete a "U" turn on a turn. 21. Corduroy section, 300 ft. long, 20 ft. wide, constructed of railroad ties. 22. Open center bridge, 20 ft. long, 3 in. clearance on inside of jeep wheels and 3 in. clearance on outside of 2½ ton wheels. 23. Amphibian training pond, 180 ft. long, 125 ft. wide, 11 ft. deep. 24. Mud hole, 250 ft. long, 1 to 4 ft. deep. 25. Field expedients area. 26. Sundial classroom, 40 ft. diameter, 8 ft. high, 5 tiers 14 in. high, 4 ft. wide. Instructor's platform 18 in. high, 20 ft. diameter. 27. Foreign highway markings to afford left hand driving and identification of accepted international highway and road signs. 28. Two-mile perimeter road for motor marches and convoys.



"SPARE PARTS" CAN'T ALWAYS BE SPARED. REQUISITION ONLY THOSE YOU NEED—AND ONLY WHEN YOU NEED 'EM!