



ARMY MOTORS

VOLUME 4

JANUARY 1944

NUMBER 9

Three Men

Here are the stories of three men, out of the millions who wear our uniform. Their stories are simple, undramatic, and true.

One is a 27-year-old corporal with five years of commercial experience in driving Diesel van-type tractor-trailer combinations.



He's studied Diesel in night school, to increase his knowledge of his chosen specialty. Now he's at a camp in one of the southern states.

His request is simple, and in the Army's interest. He wants to be placed in an organization where he can use his Diesel experience or his van experience or both. It isn't a matter of personal ambition—he has a rating, and turned down a crack at OCS.

The second man is a private out on the midwestern prairies, who got a tough break somewhere along the line. When he came into the Army, he took the basic mechanic's course at the replacement training center; then he was picked for the Automotive School then operated at Holabird. Upon graduating, he received more special automotive training at the motor mechanics' school on the post to which he was assigned.

But what happens to him? After all this special training, he gets assigned to a regiment which operates hardly any motor vehicles, and already has more mechanics than it can use. So he's still a foot soldier, still doing KP and latrine duty, and beginning to wonder what's the use.



The third man, down in the Southwest Pacific, is a T/5 who cut his teeth on a Model A Ford, learned his ABC's at the Cleveland Automotive Trade School. He enlisted two years ago, because he hoped to be sent to an AAF technical school and become an airplane engine expert. "If that was not to be so," he writes, "my next bid was infantry. Either work to advantage for all concerned, or fight."

Now he's in a fourth-echelon supply and maintenance company, replacing neglected engines. No trouble-shooting, no diagnosing, none of that "Doctor of Motors" stuff which his training prepared him for. Just back-breaking labor. He'd like to get into a branch of the service where he could do the brainy job of preventive maintenance and trouble-shooting that a good second-echelon mechanic has to do.

Why should ARMY MOTORS be concerned with these three men? Well, we've always made it our business to report the news, good or bad, about the tools and spare parts and training required for automotive maintenance. AR 850-15 tells us that personnel is just as important a factor in maintenance as parts or tools. We can't keep peace with our own conscience unless we print the stories of these three men.



Says the private in the mid-west: "Now I am a graduate of the best school of mechanics in all the world, and am just a walking doughboy. Please tell me why."

Says the T/5 in the Southwest Pacific: "If I am wrong, please tell me so. I want to get set on my heels if I am wrong—possibly I am not wised up yet. But, really, waiting for a year and a half for things to straighten out, with no indication as yet, is a little too much. I do not want my name in ARMY MOTORS. I am writing for the sole purpose of solving my problem. All I wish to have is an answer from you."

And, frankly, we don't know what to tell them.

IN THIS ISSUE

JANUARY
1 9 4 4

ARTICLES

Cooling-System Maintenance	258
Extra Duty for PM Roster	261
Half-Track Band Chains	268
The New All-in-One SNL	274
Having Parts Trouble?	283

FEATURES

British-American Lube Chart	257
Cleaning Air Cleaners	265
Letter From Italy	272

DEPARTMENTS

Connie Rodd	262
Contributions	277
Sgt. Half-Mast McCanick	280

SERVICES

The Month's Directives	284
The Perpetual Index	287

NEWS FLASHES

Inside Back Cover



ARMY MOTORS is published monthly in the interest of organizational maintenance by the Preventive Maintenance Section, Maintenance Branch, Ordnance Tank-Automotive Center, Detroit, Michigan. ARMY MOTORS is glad to get your ideas for articles or illustrations, and is glad to answer your questions. When you write, use this address: ARMY MOTORS MAGAZINE, Tank-Automotive Center, Detroit 26, Michigan.

British Army Lubricants

A Priceless Guide to Their Grades, Uses, and Interchangeability with U. S. Oils and Greases

What most Yanks don't know about British lubes shouldn't be put in a grease fitting. But nobody's blaming anybody, y'understand. It's just that the needed information hasn't been correlated and circulated up to now. The great day, however, dawns right here on this page. So you lads in England, Italy, North Africa, India, and other Anglo-American theaters, can stop writing those poignant essays on bewilderment we keep finding in our mail.








Take heed, too, all you other drivers and mechanics—even if your vehicles happen to be parked right next to a Texas oil well. Nobody's handing out any written guarantees that you won't be pumping petrol somewhere in Iran before you can say "detergent additive." So the table below is A Good Thing To Know.

The news-behind-the-news: This list of lube

equivalents represents an important agreement between the U. S. and British armies. Its purpose, of course, is to standardize basic lubricants and containers to permit easy interchangeability of petroleum supplies, and to minimize the number of different oils and greases required in any one theater of operations.

The lube types and grades identified below are those most commonly used by both armies. All are substantially interchangeable as indicated—with this notable exception: **GM and Caterpillar diesel engines must use only oils which contain approved heavy duty additives** (the existing British grades of engine oil do not). All other U. S. Army vehicles will take to British lubes like a DUKW to water. In cases where extra-special lubes are called for, chances are that the Tommies can fill your bill, too—because British Area Petroleum Offices are kept wise to the exact lube specifications for U. S. Ordnance materiel.

Which doesn't, of course, excuse any blissful ignorance on your part. Paste this chart in your hat—or, better still, in your head—for present or future reference.

U. S. and BRITISH LUBE EQUIVALENTS				
  PRODUCT SYMBOL	  STANDARD NOMENCLATURE	 U. S. SPECIFICATION	 EXISTING BRITISH GRADE	 CONTAINER IDENTIFICATION
ENGINE OILS				
OE - 10	Oil, Engine, SAE 10	USA 2 - 104B	*M. 120X *M. 120 "Caterpillar" Oil SAE 20	Yellow
OE - 30	Oil, Engine, SAE 30	USA 2 - 104B	*M. 160	Gray
OE - 50	Oil, Engine, SAE 50	USA 2 - 104B	*M. 220 *M. 400	Red
GEAR OILS				
GO - 80	Lubricant, Gear, Universal, SAE 80	USA 2 - 105 or FED. VV - L - 761	Hypoid 80 (C. 155)	Black Stenciled Blue
GO - 90	Lubricant, Gear, Universal, SAE 90	USA 2 - 105 or FED. VV - L - 761	Hypoid 90	Black Stenciled White
C. 600	Oil, Gear, Compounded	(NONE)	C. 600	Blue
GREASES				
CG - 0	Grease, Gen. Purpose, No. 0	USA 2 - 106 (Amendment 2)	W. D. "A"	Grease Containers Stenciled With Grade Symbol
CG - 1	Grease, Gen. Purpose, No. 1	USA 2 - 107 (Amendment 2)	Grease, G. S.	
WB - 2	Grease, Gen. Purpose, No. 2	USA 2 - 108 (Amendment 2)	Grease, G. S.	
WB - 3	Grease, Wheel Bearing, H. D.	USA 2 - 110 (Amendment 4)	H. M. P.	
WP	Grease, Water Pump	USA 2 - 109 (Amendment 2)	(NONE)	

*Do Not Contain Additives. Do Not Use In GM and Caterpillar Diesels

Basic Draining

For Cooling Systems---or How to Avoid Sending Your Vehicles to the Cleaners

Remember those woeful days (just last week, maybe) when you had to bundle your pet vehicle off to some heartless higher echelon for a not-so-royal flush? Yeah, we know—it couldn't be helped. That cooling system was acting more like an overheating system. That engine was stewing in its own juice of rust, oil, and corruption. That heat indicator was pointing straight to trouble. So what in hell could you do about it?

The answer is—nothing much, at that late date. But there's a lot you. 2nd-echeloners could have done a lot sooner—which is why we're sounding off thisaway. Given the right kind of preventive cleaning, at the right times, no self-respecting cooling system should ever get fouled up enough to need corrective cleaning. That's a fact.

The new TM 9-2810 (in league with its companion Work Sheets, WD AGO Forms No. 461 and 462) is out to see that the old order changeth. To be exact, here's how:

In the case of wheeled and half-track vehicles, the **1000-mile** and **6000-mile** preventive maintenance services include taking a careful gander at the coolant for contamination—and cleaning out the cooling system if your eyes tell you to.

In the case of full-track and tank-like wheeled vehicles, the **50-hour** and **100-hour** PM services include the very same procedure (wherever liquid cooling systems are involved).

In both cases, this is the punch line: "Clean the cooling system according to current directives, using only specified cleaner." Thus TM 9-2810. In keeping with our policy of clearing up Life's Little Mysteries, we're about to describe the recommended cleaning tech-

nique—complete with a cocksure identification of the stuff specified for the job.

Let's take the last-named first. Here's all you need: Compound, Cleaning (Fed. Stock No. 51-C-1568-500) and some sort of cover for the front of your radiator core. Then, since you've got to pour something back into the cooling system after the washout, you also need Compound, Anti-freeze, ethylene-glycol type (Fed. Stock No. 51-C-1554-15) if it happens to be cold where you are; or Compound, Inhibitor, Corrosion (Fed. Stock No. 51-C-1600) if it happens to be warm. If it happens to be Spring or Fall where you are, you simply change your coolant to match the weather to come.

Now, it's time for that periodic PM servicing—or you've decided to drain your cooling system for some damn reason—or you're about to brace it up with antifreeze. You remove the radiator cap, insert a hydrometer, and hoist a sample of the coolant up where you can see what it looks like. Not after the stuff's cold, mind you. Do it while the engine's running at fast idle, and after it's

been warmed up to normal operating temperatures. Otherwise, your sample won't show you what's what.

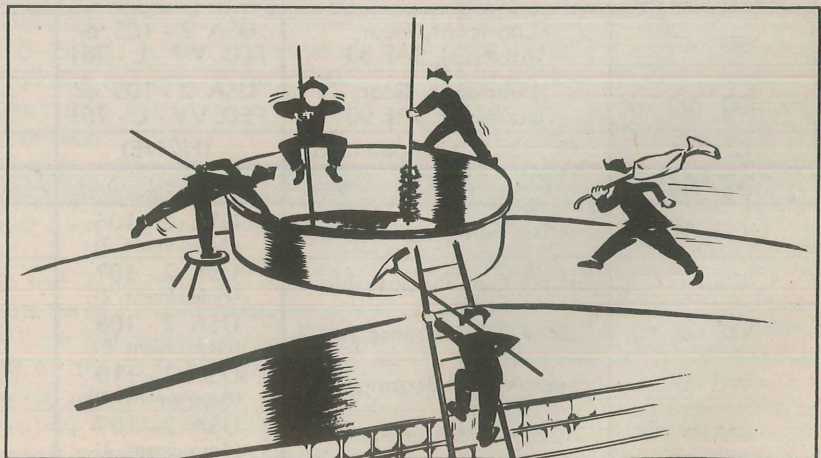
Well, how does she look? Pretty—or pretty horrible? If you notice rust particles, oil contamination, flotsam or jetsam in the coolant, that's your cue for performing preventive DRAINtenance—right then and there.

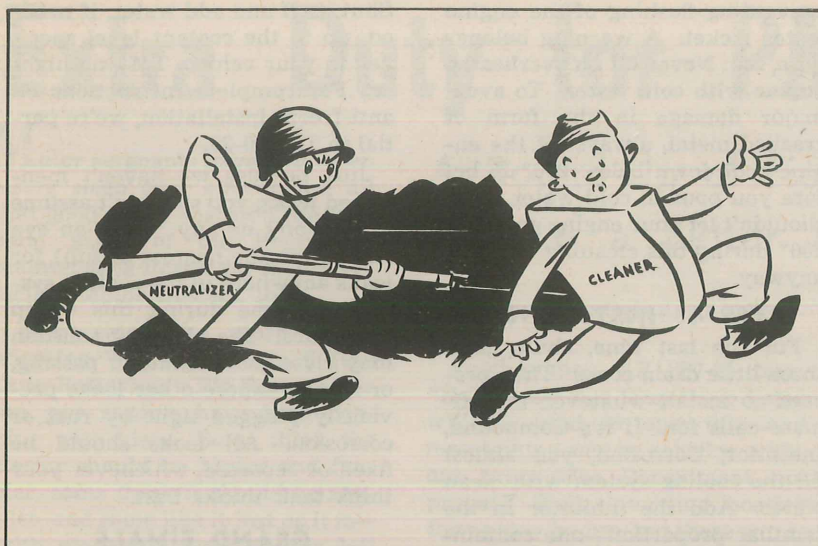
To make things as clear as your coolant should be, let's break down this PD into four mincing steps: Cleaning, Neutralizing, Flushing and Installing. Okay, let's get on with the dance.

STEP 1: CLEANING

The idea here is to get out as much foreign matter as possible by the simple process of draining, then following through with the cleaning compound. Open all valves leading to heaters and similar gadgets, to permit complete circulation of the coolant. Then cover the front of the radiator with cardboard, or anything else that will keep the fan from sucking fresh air over the cooling fins. Run the engine until the temperature climbs to the normal operating range—but stop it before the boiling point is reached. Now take off the radiator cap, open all drain cocks, and drain out the whole mess. If any drain holes are clogged with grime, use a hunk of wire to tickle them open.

To use the cleaning compound, close all the drain plugs again, disconnect the radiator overflow tank (if your vehicle has one), and see that your engine has cooled to





below 200° F. For each four gallons, or thereabouts, of cooling system capacity, pour one container of cleaning compound into the radiator. You may have to wash it down with water—which is perfectly all right, since you fill up the system with water anyway, after it's been dosed with the proper amount of cleaner.

Just a word about that cleaner, while we're on the subject. Under Fed. Stock No. 51-C-1568-500, the complete item is a package containing one (1) container of cleaning compound and one (1) container of neutralizing compound. If you mix 'em together, you get nothing usable—they cancel each other out. The scheme is to use the cleaner first to dissolve grease and grime, then to use the neutralizer to prevent harmful after-effects. Just like taking fizz after firewater. (It's no reflection on your firewater, but this cleaning compound contains strong acid—so be very careful to keep it from spilling on things like skin, clothing, or vehicle paint).

Where were we? Oh, yes—if your vehicle has an overflow tank, switch the pressure cap over to the radiator during the ensuing cleaning action. Also put a clean drain pan in position to catch the foaming overflow; then you can use the drippings, if needed, to maintain the right level of liquid in the radiator.

Next, run the engine at fast idle

for half an hour. Heat makes the cleaner work better—so get the engine temperature up to between 180° and 200°, and keep it there. Use the radiator cover again, on and off as required, to stay within this heat range. Don't let the mixture boil or the engine overheat. If it does, stop the engine until the gauge drops below 200°, remove the radiator (pressure) cap, and pour the overflow back into the system. Put the cap back on. Then start the engine once more and finish your 30-minute run.

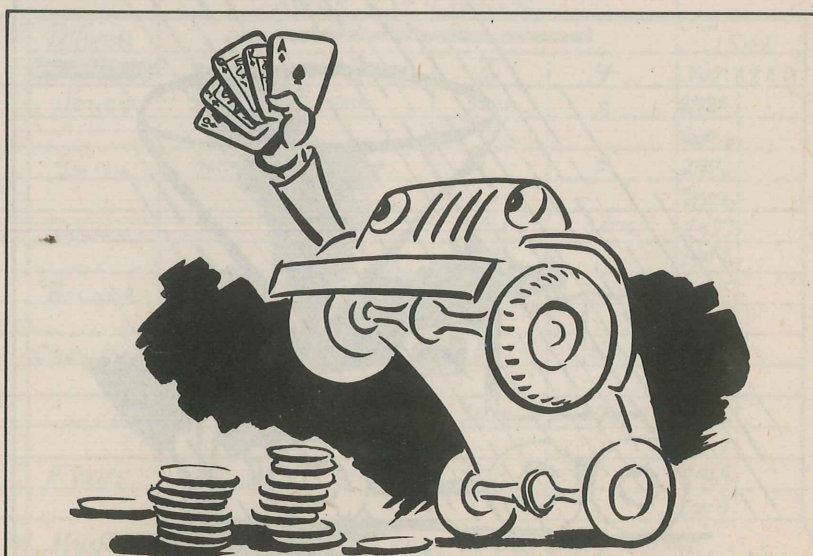
When time's up, shut off the engine and drain the system thoroughly, removing the radiator cap and all drain plugs. If everything has gone off according to plan, all

the muck that's gonna come out peaceable will run out with the cleaning solution. For the rest, if any, you'll have to crawl into the radiator yourself and drag it out by the hair. Personally, we don't think you've got the build for it.

STEP 2: NEUTRALIZING

Here's where you clean up after the cleaner. As we said before, this cleaner is a strong acid, a tough character. Let it linger in the cooling system and it'll probably creep out by making its own exits. So you've got to neutralize the cleaning compound—and, cleverly enough, you do that by using the neutralizing compound which came with it in the first place.

Shut go the drain plugs again. In goes the neutralizer (one container for each four gallons of cooling system capacity, as before). In goes the water again to fill up the system. On goes the radiator cap. On goes the engine, too, at fast idle. Use the radiator cover, if you need it, to bring engine temperature up to somewhere between 180° and 200°. A 5-minute run will probably do the trick this time—but if you have a few more minutes to spare, it won't do any harm to circulate the neutralizer a little longer. Once again, stop the engine—remove the radiator cap—open all drain cocks—and let the neutralizing stuff gush forth.



STEP 3: FLUSHING

Since no trace of the cleaning compound or the neutralizing compound must be left in the system, this step is an important part of the proceedings. Just repeat exactly what you did with the neutralizer in Step No. 2—only fill her up with plain water this time. A 5-minute run, between 180° and 200°, followed by the fourth and final draining. Of course, if the water doesn't come out reasonably clear, fill with fresh water and repeat the straight flush just mentioned.

To complete Step No. 3, it's a good idea to clean sediment from the valves in the radiator cap by spraying a stream of water (hot if possible) through the holes in the valve cage—while moving the pressure valve up and down with a blunt wooden pin or a pencil. Clean out the overflow pipe while you're at it. Rinse out the overflow tank and connecting tube with water. And use your compressed air gun, blowing from the rear of the radiator, to blast out dirt, trash, and insects imbedded in the air passages of the core. You can do this with a stream of water, if you're careful—but don't use steam.

One way **not** to flush, by the way, is to stick a hose in the radiator, with the engine running and the drain plugs open. That procedure closes the thermostat valve, stopping circulation and

preventing flushing of the engine water jacket. A warning belongs here, too: **Never fill an overheated engine with cold water.** To avoid major damage in the form of cracked metal, always let the engine cool down below 200° F. before you pour in cold water. You shouldn't let your engine go above 200° during this cleaning business anyway.

STEP 4: INSTALLING

For the last time, chum, shut those little drain cocks. Then proceed to install whatever the climate calls for. If it's Compound, Inhibitor, Corrosion, you almost fill the cooling system with clean water. Add the inhibitor in the familiar proportion—one container for each four gallons of system capacity. Then fill up the rest of the way with water, leaving just enough room for expansion. Run the engine at fast idle until the heat indicator shows normal operating temperature. Stop the engine and check your coolant level again. And that about does it.

If Compound, Anti-freeze, ethylene-glycol type, is in order, fill the cooling system about one-quarter full of clean water. Dump in enough anti-freeze for the lowest expected temperature, trying not to shiver too much while you're thinking about it. Add more water, again leaving room at the top for coolant expansion. Run the engine at fast idle until it reaches normal operating range.

Shut it off and add water, if needed, up to the coolant level specified in your vehicle TM—no higher. For complete instructions on anti-freeze installation, we're partial to TB 700-20.

Just because we haven't mentioned **leaks**, you shouldn't assume there won't be any. Keep an eye peeled (on the nearest potato) for leaks anywhere in the cooling system—anytime during this 4-step procedure. The cleaning solution may close some leaks, in passing, or it may expose other leaks previously plugged tight by rust or corrosion. All leaks should be fixed or reported, whichever your think-tank thinks best.

GRAND FINALE

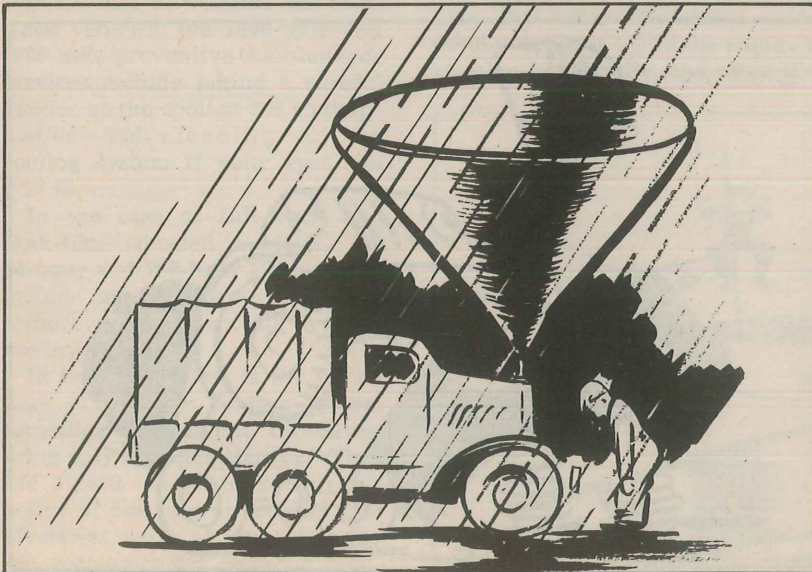
If the 2nd echelon really goes to town on this preventive DRAINtenance—and if the 1st echelon is particular about what goes into the radiator, and what (if anything) leaks out of the hose—there won't be anything left for the 3rd and 4th echelons to do.

Except plenty of work more vital than scrubbing out cooling systems loused up by neglect.

BASIC MAINTENANCE MANUAL

If you're interested in the Finer Things of Life, like the basic plan of maintenance for all ASF materiel—motor vehicles, weapons, and even such things as radar, railway locomotives, and shoes—we recommend TM 38-250, "Basic Maintenance Manual."

It doesn't go into a great deal of detail, but does present a neat little picture of the theory behind such things as the Echelon System of Maintenance, Modifications, Maintenance and Supply of Tires and Tracks, Inspections, Salvage and Reclamation, Publications and References, and Special Maintenance Procedures of each arm and service. There's also a glossary of maintenance terms.



Extra Duty for PM Rosters

Motor sergeants have long been losing sleep over how to use all that good white space on the left-hand pages of the Preventive Maintenance Roster for Motor Vehicles. Motor Officers, too.

Ever since the word about adapting WD AGO Form 6 (the Duty Roster) as a PM Roster came out, our readers have been popping with ideas. Some think the Roster should be bigger and fancier, some think it should be simpler, and some like it just as it is—with plenty of space on the left hand side for the mechanic and clerk to write their daily IOU's.

One point that practically everybody agrees on, is that some form like the PM Roster is necessary. Maybe you've wondered whether the PM Roster has to be used, instead of your own favorite local form. So we looked it up in the books for you.

The PM Roster on Form 6 is official now. What started a couple of years ago as "just an idea" in ARMY MOTORS* and caught the fancy of so many men in the field, is now prescribed by AR 850-15 and fully explained in TM 9-2810, "Motor Vehicle Inspections and

*ARMY MOTORS, October, 1942, p. 218; reprinted in May, 1943, p. 34.

A Round-Up of Field Ideas for Making Form 6 a Better Maintenance Record

Preventive Maintenance Services."

Furthermore, AR 850-15 says: "No forms other than those listed will be used in operating and maintaining motor vehicles without prior War Department approval." Well, inventing bootleg forms may be fun, but those words sound mighty forbidding.

Since the PM Roster seems to have a fairly permanent future, there's a lot to be said for making it do extra duty. You probably noticed, when you read the directions in TM 9-2810, that it only says what you must put on Form 6. It doesn't tell you not to add more. So many motor-conscious men are adding more.

For example:

One is using the symbol **D** on the roster whenever a vehicle is **dispatched** on a trip. That serves as an automatic explanation of gaps in the maintenance record, and also shows at a glance that the vehicle is getting extra use and may need special care.

Another adds the symbol **SC** whenever the vehicle is **spot-checked**. Helps on the follow-ups, he says.

Some don't like using just the symbols **P**, **A**, or **O** to indicate deadlining; they like to show **where** it's deadlined. So they add the number of the echelon where the vehicle is waiting repairs—like **P2** (waiting for parts in second-echelon shop), **A4** (accident, taken to fourth echelon) or **O3** (being repaired by third-echelon Ordnance).

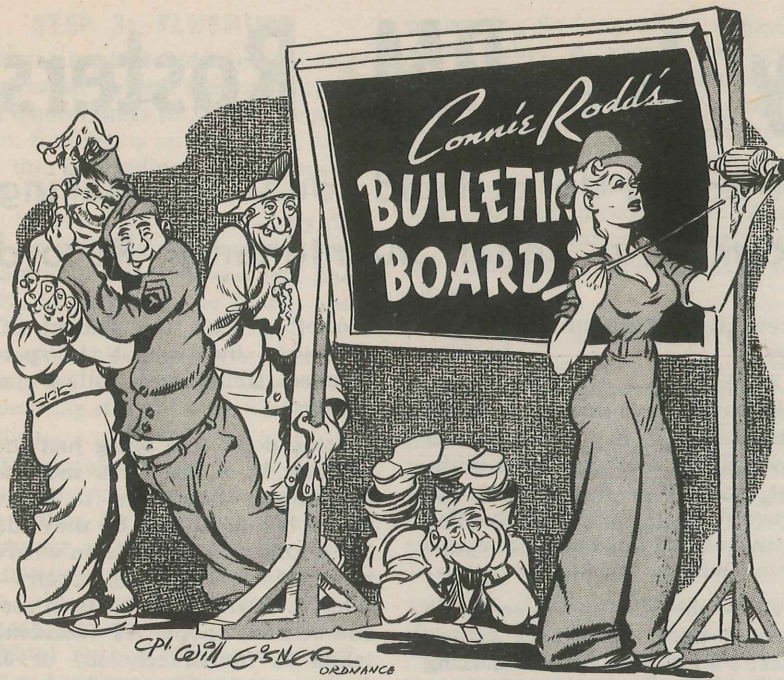
Most everybody favors keeping lube records on the line immediately below the PM record. They're worked out symbols of their own, like **OE** for change of oil, engine, or **CL** for chassis lubrication.

On the left-hand page, which is left almost blank under present directives, some are listing a vehicle's special equipment (for quicker identification). Others are adding manufacturer's serial num-

(Continued on page 288)

No.	RANK	VEHICLE G.M.C. 2½ 6X6	DRIVER	DRIVER EFFICIENCY				TIRES ROTATED
				1 Fatigue	2 Kitchen Police	3	4	
1		434561	JONES	SATIS	SATIS	SATIS	E	2483 SEPT 6
2		436521	SMITH	SATIS	E	E	E	2476 SEPT 6
3		434251	RAMSEY	SATIS	SATIS	SATIS	SATIS	2487 SEPT 6
4		438911	BECKER	SATIS	SATIS	SATIS	SATIS	2495 SEPT 7
5		437421	CRAWFORD	E	E	E	E	2459 SEPT 7
6		437651	COOKE	SATIS	U	SATIS	SATIS	2462 SEPT 7
7		438765	EVANS	U	SATIS	SATIS	E	2469 SEPT 6

This is how Capt. LeRoy W. Hughes uses the left-hand page of the Duty Roster



New Light-Tank Air-Cleaner Element

Just in case you didn't already know it, there's a new dust-filter element being used in the oil-bath air cleaners for the engine-crankcase breather on the M5A1 light tanks and the M8 gun motor carriages.

The new type element (Manufacturer's part number A-342318) differs from the old-type element in two ways: 1) the tube in the center doesn't extend above the top of the element, but is held against the top of the housing by a coil spring (see Fig.), and 2) it has three centering spacers welded around the outside diameter.

This new element is completely interchangeable with the old type and is now being given out with spare-parts sets.

On some of the cleaners with the old-type element, there's interference between the element tube and the mounting bracket which keeps the element from seating properly on the gasket. This can be corrected either by installing a new-type element or by cutting the old-type element tube down to $1\frac{1}{8}$ " length to allow the element to seat correctly against the gasket (see Fig.).

Identifying Fuel Pumps

You can tell the fuel pumps on the M4A4 Medium Tank without a score-card, if you know one simple trick. And your girl, Constance, is just the one to tell it to you.

The fuel pump used on the 5-water-pump type engine looks exactly like the fuel pump used on

single water-pump engines—but they are NOT interchangeable.

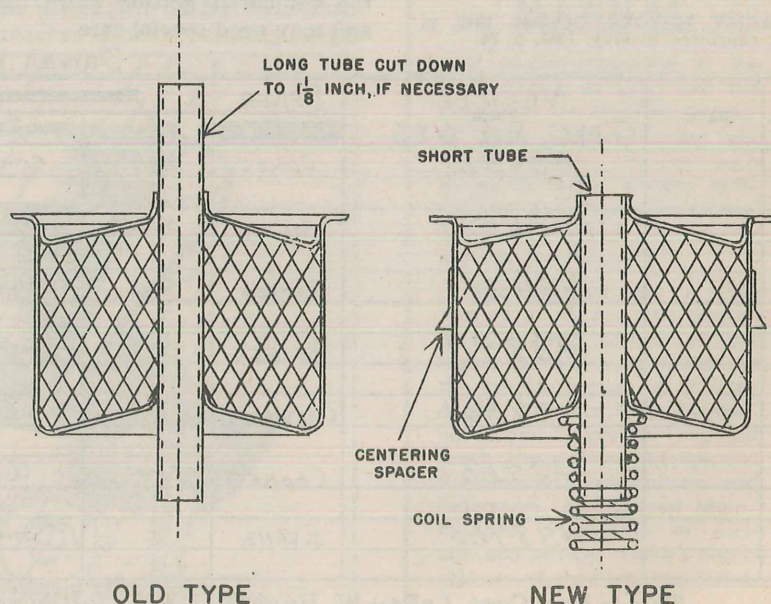
The fuel pump for the engine using five water-pumps (EAT 957071) turns **clockwise** as shown by the arrow on the pump body when you look at it from the distributor end of the engine. The fuel pump on the single water-pump engine (EAT 965463) turns in the opposite direction or **counter-clockwise**, as indicated by the arrow on the pump body when you look at it from the distributor end of the engine.

Interchanging these fuel pumps by reversing the fuel line connections might result in serious damage to the carburetors because of out-of-hand excessive pressure developed by the pump when it's working.

Just to make matters more confusing, a third fuel pump is now in production (EAT 1067287) which **will** be interchangeable with the fuel pump used on the **single water-pump engine ONLY**. You can recognize the new pump by the much larger pressure-control-spring boss on the fuel-pump body. The boss is not concentric with the pump body.

The IG on GI Vehicles

Thought you'd want me to tip you off that the IG is cracking



OLD TYPE

NEW TYPE

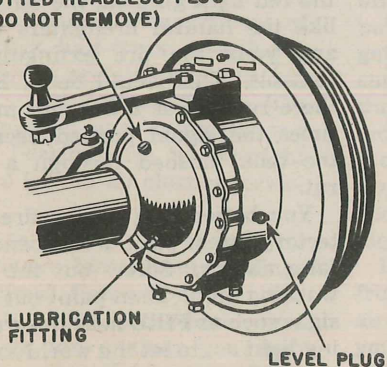
down on unauthorized use of Government vehicles. Among the things he's told his inspectors to watch out for, are 1) inadequate or incomplete trip tickets and dispatch records, 2) lack of control over the use of gasoline, 3) personal trips to the barracks, PX, etc., 4) loose assignment of vehicles for general use outside the motor pool's control, and 5) use of heavy vehicles for light hauling.

New Lube-Level Plug on GMC Front Universals

The next time you're checking the lube level in the universal joints on a GMC banjo axle, don't be surprised to find that the old square plug isn't on top of the axle anymore. You may have one of the new axles that has the lube-level plug located on the **front face of the steering-knuckle support** (see Fig.). Where the old level plug was located, you'll find a headless, slotted-plug staked safely in place. This means that you shouldn't try to remove it, to check the lube level. It's on there only to make the new axles interchangeable with the old ones.

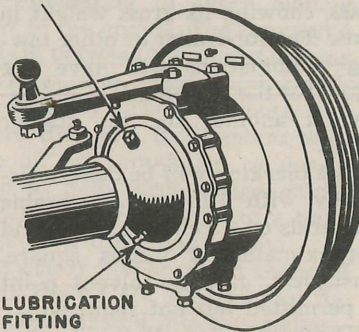
To lubricate this type axle, remove the square plug from its new location on the front of the steering-knuckle support, and pump the lubricant in through the grease fitting at the bottom of the axle. Stop pumping as soon as you see the lubricant at the level of the hole. Screw the plug in place and the job is done.

**SLOTTED HEADLESS PLUG
(DO NOT REMOVE)**



NEW LOCATION

LEVEL PLUG



ORIGINAL LOCATION

(U.S.A. 2-102b)



(Black)
(42-T-8520)

(U.S.A. 2-114)

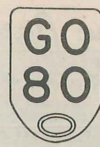


(Orange)
(42-T-8480)

(U.S.A. 2-103a)



(Red)
(42-T-8460)



(Light Blue)
(42-T-8565)



(Yellow)
(42-T-8540)

Blackout Identification of Fuels and Lubes

Don't be surprised if the sergeant calls you over for a lesson in Braille. He doesn't expect you to go suddenly blind, and he can't teach you how to read the PX blonde.

Fact is, you have to have some way of reading fuel and lubricant labels in a blackout. So they've developed a method of recognizing the different kinds of labels by the sense of touch.

It's done by a system of tagging—different shapes of tags for different kinds of fuel or lube, like OE (oil, engine) or GO (gear oil), and raised lettering to tell the grade, like 10, 30, or 50.

If the callouses on your stubby fingers are sensitive enough, you can feel the shape of the tag and trace out the shape of the letters and figures in the dark.

Fuels are marked with the octane rating or the symbol "K" (kerosene) or "D" (Diesel). Down in the corner of the fuel tag is a smaller letter indicating whether the product is Class A, B, C, or X. These classifications represent temperature ranges for which the fuel is designed. Class A is for

the warmest weather, C or X for the coldest.

Lube tags carry only the official symbol, such as OE 30 HD.

The tags will also have distinctive colors, for easier daylight identification, like this:

Red=80-octane gasoline.

Orange=72-octane gasoline.

Black=Diesel fuel.

Yellow=OE 10 HD.

Gray=OE 30 HD or kerosene (the shape of the tag is different).

Maroon=OE 50 HD.

Light blue=GO 80.

White=GO 90.

Gear-Tooth Trouble on the Wrecker

Nasty reports have been reaching these pink-and-shell-like ears that some of the boys have been grinding up the transfer-case gears in the Ward La France 10-ton Wreckers. Tsk, tsk, tsk.

It seems that in trying to slow the vehicle down, the drivers have been using the low-range gears. Because the wrecker would be moving at a speed too great for the gears to engage properly, the sliding gear would clash against the main-drive gear, breaking or cracking precious gear teeth.

Another way these transfer-case gears could have been ruined is low-range driving with the gears only partly meshed. One of the main-drive gears, I'm told, showed it by the brightness of one-half of the tooth surface—the sliding gear had been meshing with only one-half of the main-drive gear.

Now I'm not going to sit here and tell you how to shift gears on anything—maintenance manuals do that. Just one small pointer: with this type vehicle, it's sometimes necessary to come to a complete stop, engage low-range gears, and hold the lever down until the shift lever moves slightly, telling you that the gears have fully engaged.

Need More Parts? Tell Connie

You second-echelon mechanics know you can have anything I've got, and if I haven't got it, this piston-packin' Mama will try to get it for you—in her own way, of course.

Spare parts, for instance. I can't get engines and transmissions for you, because the Echelon Man says you haven't got time to install them. But, if your authorized allowances don't provide enough

spare distributors for the DUKW (for instance), let me know. It might take a little time, but I'll see what I can do about getting the allowances increased.

How To Fix CO₂ Fire-Extinguisher Brackets

If you've been having the same trouble lots of other men are having with the brackets on their CO₂ fire extinguishers breaking, Connie comes to the rescue.

You can easily reinforce or fix the bracket. Simply remove the bracket, rebend it and weld any breaks. Weld a piece of 16 gage (or heavier) scrap metal $\frac{3}{4}$ " wide x $5\frac{1}{4}$ " long to the bracket as shown in Figure 1. Cut or grind off all the rough edges and shape it around the extinguisher. Leave about $\frac{1}{8}$ " to $3/16$ " clearance.

Or you can do it another way. Handle it the same as above, but substitute a $3/16$ " x 6" welding rod in reinforcing the bracket as shown in Figure 2.

No official TB will be issued on this—just go ahead and do it, if needed.

More Markings for Vehicles

Here's a new marking to go on your vehicle, which maybe will save you from crashing through a bridge some day.

In continental United States (and overseas, wherever theater commanders direct it), each vehicle will be marked with a weight class, showing its gross weight in tons. Tractor-trailer or other towing combinations will have one figure for the combination, and below it another for the tractor alone.

The marking will be done artistically with 3-inch black arabic numerals on a yellow background approximately 8 inches square. Lusterless, gasoline-solvent paint is permitted but not required.

The reason for all this is that the Engineers are going to put similar labels on a lot of bridges to indicate their capacities, so you

can tell whether it's safe to cross or not.

You'll find the details in TC 117, (1943 series). AR 850-5 will be changed to authorize the vehicle marking.

New M4A3 Engine Bearings

I've been told, by no less than a Brigadier, that considerable improvements are being made on the connecting-rod bearing for the M4A3 medium tank engine. This should stop some of the griping we've heard about these engines throwing rods now and then.

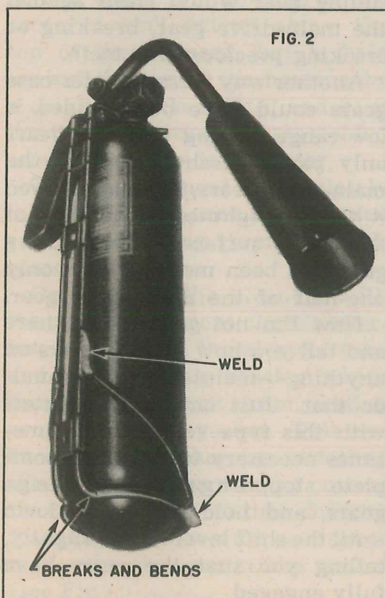
But no matter how good or improved these rods may be, they'll still beat themselves to death if some of you tankers insist on rushing down hill at breath-taking speeds. I've said it before and other people have said it, **engine governors aren't worth an old pair of nylons when you coast your vehicles down hill.** It's up to YOU to hold the engine speed down by braking the vehicle speed. Watch the tachometer—and use the brakes to keep the engine speed well under the rpm's given on the caution plate.

Flame Detectors

That pretty fire warning bulb on some of the T9E1 and M5A1 light tanks, M4, M4A1, and M4A3 medium tanks, and the M8 Howitzer motor carriage, has got to come out—according to a TB on its way. It's not that fires aren't expected anymore, but the fire-detector system has been guilty of too many false alarms. Each time the red light goes on, the tankers, like the natural firefighters they are, yank the fire extinguisher controls. This would be O. K. if there really was a fire, but many times the signal popped because the tank mashed through a big rut.

You better gum up the fire-detector system so it won't send in false alarms: Screw out the fire warning bulb. Then paint out any signs such as **FIRE** near the warning light . . . to let the world know the bulb is **supposed** to be out. Otherwise some guy might screw

(Continued on page 288)





Cleaning Air Cleaners ... is a sometime thing!

It's due somewhere between 100 and 1,000 miles — but where?

Don't put oil in your crankcase—and you know what happens. You don't have to strain your ears very much to hear the violent, angry sound of connecting rods battering their way through the block. Don't put grease in the differential and you know the result—it won't be long before you get a handful of minced metal inside the axle housing where whole gears used to be. But don't put oil in your oil-bath air cleaners—and **nothing** happens.

That's what you think!

Plenty happens. If the air cleaners aren't cleaning, you mutilate the engine as much as running without oil, only it takes longer. Mutilate the engine enough to call for an overhaul before the engine's old enough to grow a good load of carbon.

All that from neglected air cleaners. Yet, nothing ever seems to look or sound wrong when you don't service them. Everytime you open the engine compartment of your truck, half-track, or tank, the air cleaners are still in there, big as life. But serious things like worn pistons and cylinders and engine bearings are traced right down to lack of air cleaner servicing.

Just as nobody has to tell you what causes burned out bearings and ruined tires when you see them—the boys in the base shops dissecting the engines you turn in, know what the grit and dust does to a healthy engine. They've seen the wear on the maimed

engines—the extra clearances because of worn metal—the lacerated surfaces—they've scraped mud out of the crankcase and out of blacked passages.

As they explain it, the grit and dust act like a bench grindstone on your engine. The rough particles on the surface of your grindstone moving against the work eventually wear the work down. In the engine, the rough particles of grit and grime get between cylinder walls and pistons. They chisel and scrape the metal away **better** than a grindstone, because the piston's moving about **1,000 times faster!** Bit by bit the cylinders get whittled away till they're bigger and bigger, and the pistons fit looser and looser. That same crippling wear is going on in many other parts of the engine as well. The grit gets in the oil. You know what the mixture of oil and grit make—a strong grinding compound. This grinding compound hops a ride with the oil circulating to every moving part in the engine. The compound gets in between the closest moving surfaces and grates and grinds them away. Then as more and more dirt gets in, it mixes with the oil and crankcase condensation to help form sludge—sticky goeey mud that acts like a tourniquet on the oiling system.

It's clear that once dirt and sand from the air are allowed past the air cleaners and into the engine—you're **licked**. All the oil filters and oil-pump screens won't take it back. The smartest thing, of course, is to keep the dirt out of

the engine in the first place. It's easy to do. Especially since the air cleaners on your vehicles are nearly perfect. They'll snatch up almost every single speck of dirt that passes into them. All they take to stay on the job is a little servicing from you.

The vehicle TM's call for taking the cleaner down, cleaning the element in solvent, scrubbing out the oil cup and refilling with oil—**somewhere** between 100 and 1,000 miles of operation. **WHERE** in between that mileage depends on when your cleaners get full enough to need a cleaning out. That varies from area to area all over the world. An experienced driver will tell you he "just knows" by looking at the cleaner, the moment it will need cleaning. He knows that certain point when it becomes too dirty to do a conscientious job of washing the air. Learning to recognize that certain point is not easy. You're required to look at the cleaners each day, After Operation (PM Service). But there are things to watch for—in the oil and in the element—that will help you know when your air cleaners needs cleaning.

It's possible you've been wasting your time cleaning the air cleaners too often. Cleaning them just because the metal in the element lost its shine and looked dirty. And, maybe some men have been causing slow death to their engines by never touching the air cleaners except for the 1,000-mile maintenance service. Both should take the guided tour through the next two pages to see what the cleaners show.



Fig. 1

LOOK AT THE OIL CUP

Two things about the cup: the **oil level** and the **thickness of oil**, tell you when to service your air cleaners. If the level's **LOW**, just add more oil. ★ If it's **HIGH**, that's all right when the oil's up to only $\frac{1}{2}$ " above the full mark. If higher than $\frac{1}{2}$ ", there's a chance the gritty oil will be sucked over into the cylinders. So service your complete cleaner. ★ If the oil's thick, like molasses, service the cleaner. Thick oil is extra-dirty oil. It's too heavy to circulate from the shell to the element, the way the oil should. Some of the oily mud sticks up in the element and doesn't drain down to deposit the dirt in the shell. Some of the tarry oil lays still in the bottom of the cup. Not much air cleaning is going on. ★ That's the story in the photograph at left (Fig. 1.). This cleaner's long overdue for servicing. A hammer and chisel will have to be used to clean it now.

LOW OIL LEVEL: put in more
HIGH LEVEL: OK up to $\frac{1}{2}$ " high
OVER $\frac{1}{2}$ " HIGH: service cleaner
OIL LIKE MOLASSES: service

LOOK AT THE ELEMENT

When your air cleaner's freshly serviced, it works like this. The air coming in keeps blowing drops of oil from the cup into the element. The drops collect all the dust they can and then drip back down into the cup. That's going on all the time. The element's getting a washing all the time. Soon as the oil gets thick with dirt and clings to the bottom of the element (facing the oil) instead of draining down . . . right! the cleaner needs servicing. Figure 2 (right) shows two cleaners that should have been serviced long before they got this dirty. Not much air can fight its way through this muck. Result: rich mixture, engine roll at idling; as well as a good chance for some blobs of this oily grinding compound to be sucked into the cylinders.

WHICH OIL for Air Cleaners?

Brand-new oil . . . or used crankcase oil. Many of the posts and camps around the States are strong on putting used crankcase drainings in the air cleaners. They strain the oil as they remove it from the crankcase and put all the used oil in a drum labelled "Air Cleaner Oil." Actually, the oil specialists tell us those drippings are plenty good enough. The oil in your air cleaner has an easy job. It doesn't have to go through the torture of keeping bare metal surfaces apart. All it has to do in the air cleaner is to be oily and sticky so the dirt will be attracted to it. So long as it's wet and reasonably clean—it's good enough.

Of course, for lazy Joes it's far too much bother to mess with draining the crankcase oil through a cloth and putting it in a container. It's far easier to spill out the crankcase oil on the ground. And it's easier too, to put the brand new engine oil in the air cleaners. But that's **wasting** the new oil. The stuff is precious and scarce overseas. If a time comes when you're all out of used crankcase oil and your air cleaners need a shot, then put in new engine oil. That's better than letting the cleaners go dry and inviting the grit and gravel from the air to get at whack at the engine. But don't let **either** one happen . . . keep your used crankcase oil on hand.

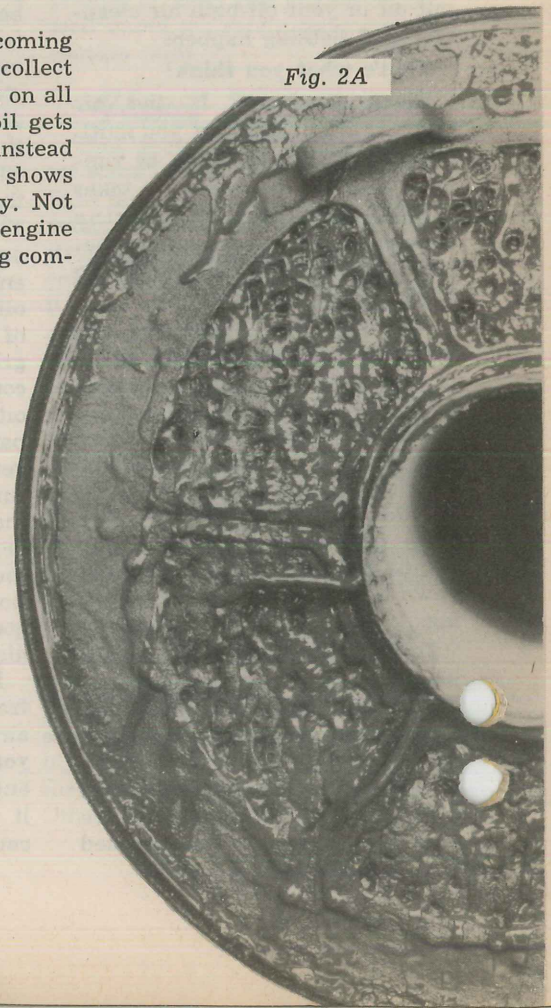


Fig. 2A

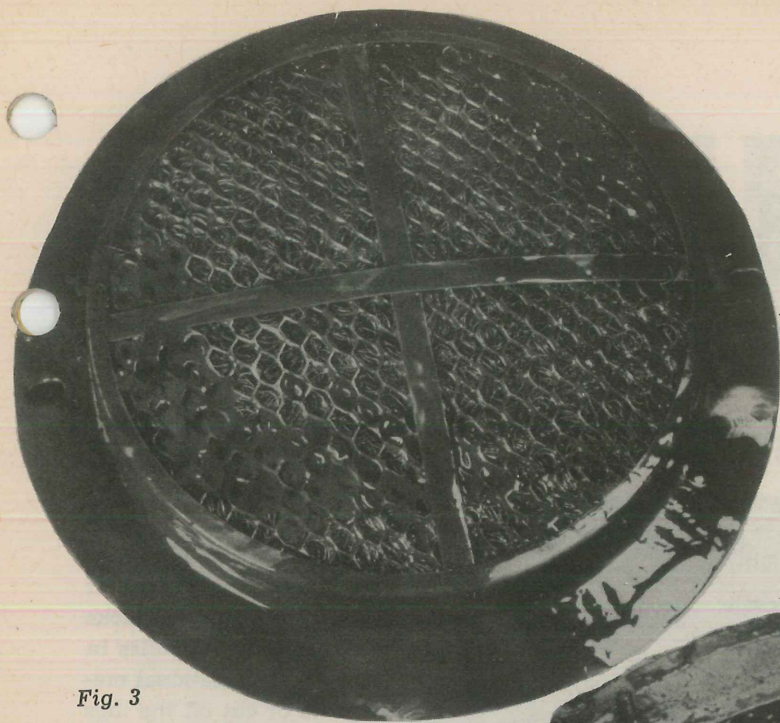


Fig. 3

Figure 3. This is about as dirty as you should let your air cleaners get. The screen is starting to fill up with dirt-thickened oil. It won't take long now before this element gets to look like Fig. 2. Get out the can of solvent and service the cleaner.

Figure 4. Just right for servicing. The heavy silt is choking up the bottom screen. From here on the element gets more heavier oil, more openings clogged, and does a less efficient job of cleaning. That thick dust around the edge, also shows the element needs servicing.

Figure 5. Another cleaner that shouldn't go without servicing a moment longer. It's good and dirty. Over half of the screen is filled with the black ooze, and more grit is sneaking by the cleaner into the engine.

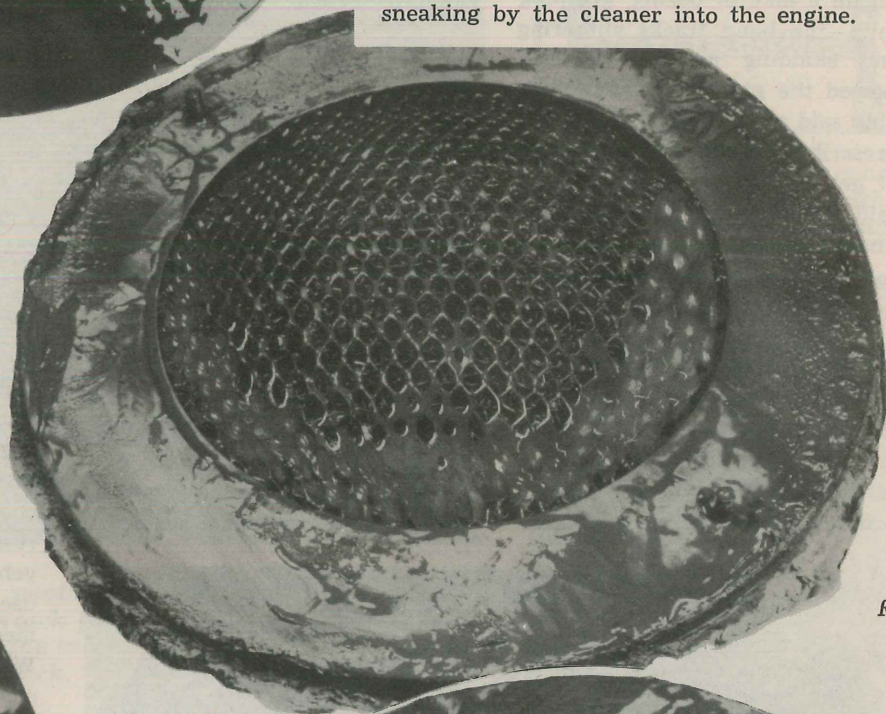


Fig. 4

Fig. 2B

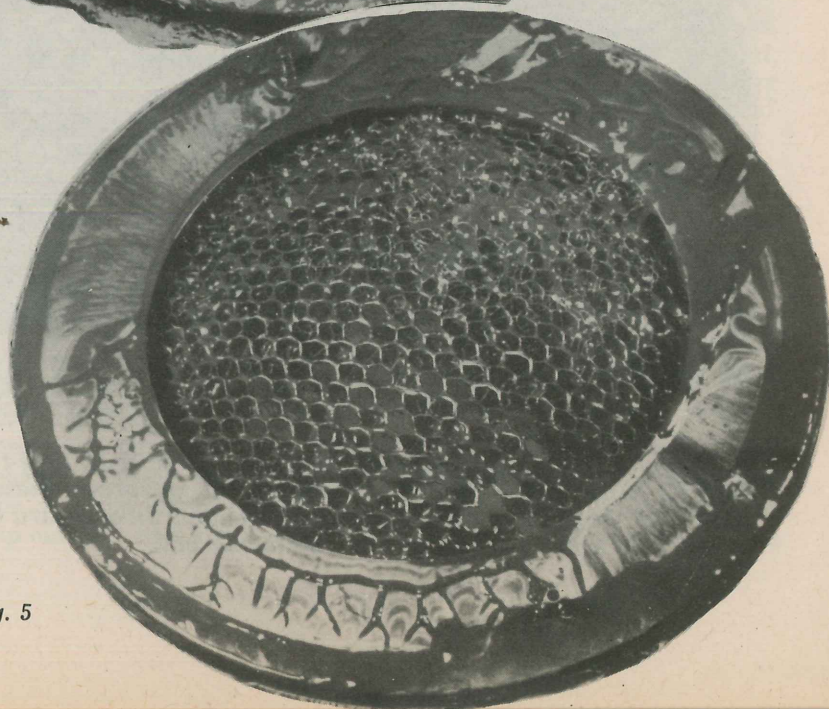


Fig. 5

BAND-TRACK CHAINS

Your Half-Track will need them when
the terra's not so firma

The last time you found yourself and your half-track wallowing in a lake of oozing, grasping mud—the band tracks slithering and skidding as you gingerly tapped the gas pedal—you probably said a few things that aren't prescribed in TM's as a method of getting out. If the things you said helped to get the half-track unstuck—OK. But if you want to **keep** from getting mired again, get somebody in your outfit to requisition a set of the new band-track chains for each half-track (Fig. 1), from the Rossford Ordnance Depot, Toledo, Ohio. Use the following numbers and nomenclature and you'll get them pronto:

	Ordnance Pc. MK	Per Vehicle
CHAINS, Band-Track	C100750	2
APPLIERS, Band-Track Chain	B209262	2

While you're waiting for the chains to arrive, take a look at Fig. 2. This is a handsome profile of a band track equipped with grouser lugs. If your band-track has these lugs, it's not good. The lugs work OK as a fastener for grousers, but they're poison to chains. When the chain tries to do its normal creeping around the track during operation, these steel lugs snag the cross links and you end up with a busted chain. Where you find band tracks with grouser lugs you can do one of two things. 1) If the track is worn

and looks like it will soon belong on a rubber scrap pile, then forget about the lugs. Wait till you get the replacement tracks. The new tracks will come with the lugs already cut off, or they will be the newer type track made without grouser lugs (Fig. 3). 2) If you happen to have band-tracks that still have plenty of miles in them, get your organizational mechanic to grind or cut off the lugs before you use the chains.

After the lugs are removed or you get a set of lugless tracks, then the **tracks** are all set for the chains.

The next thing to do is crawl under the rear end of the half-track and look over the rear idler post. If it looks like either Figs. 4 or 5, you're in good shape—these type idler posts take to chains. If neither of these pictures resembles the idler post on your vehicle, then the chains can't be used until your idler post is modified like FSMWO G102-W38 says. Without the modification, the chains will tangle with the idler post and bust things up. Your Ordnance Officer knows all about this, and will probably make arrangements to fix your vehicles.

After the chains arrive, go right ahead and tear them out of the package. You'll want to reassure yourself that chains still look like chains. But after you've done that, don't just toss them in the back of the half-track. Instead, try putting them on the band-tracks once or twice. Though they're not difficult to install, there are a few little tricks you'll want to learn now, so you'll have

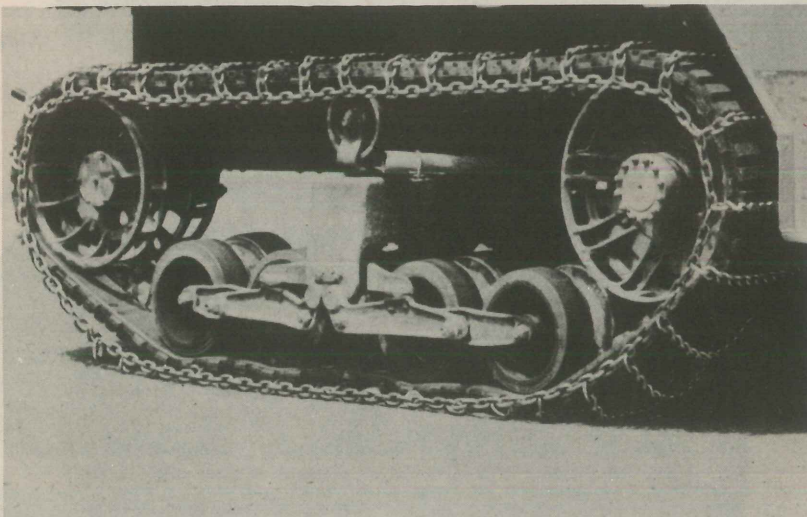


Figure 1. Our photographer caught this special half-track with its flaps down. But for all intents and purposes, these instructions for putting on the band-track chains on standard half-tracks hold true. Just follow the bouncing ball.

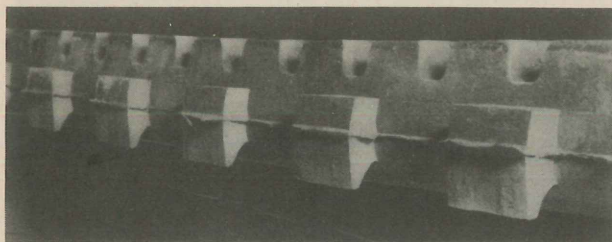


Figure 2. This little band-track has grouser lugs. They may look pretty, but they're poison to band-track chains.

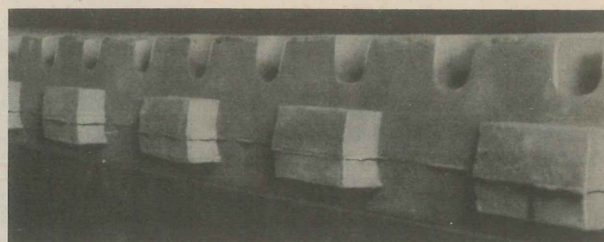
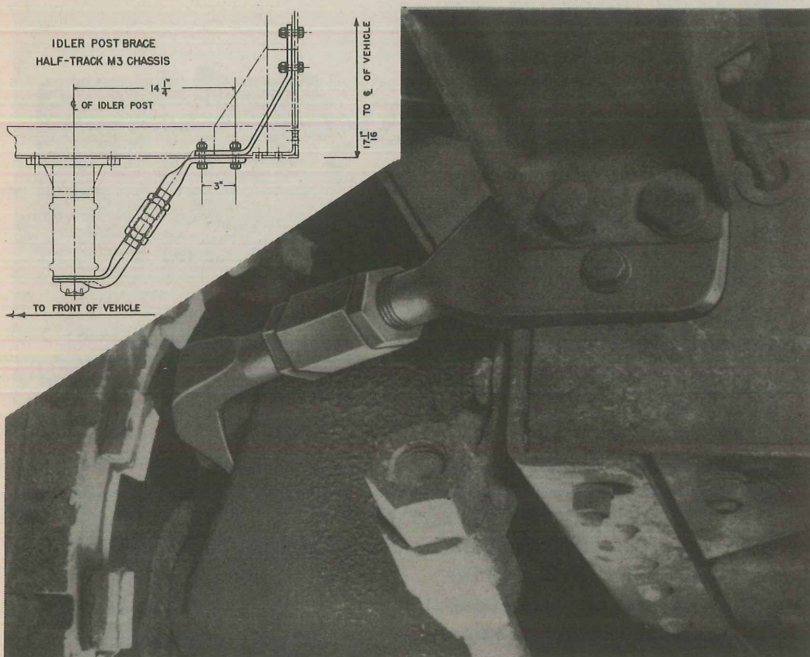


Figure 3. This little band-track has no grouser lugs. The newer type tracks come without them, and look like this.



Figures 4 and 5. Our photographer, again. He was able to crawl under the M2 half-track for this shot, but couldn't quite make it on the M3—hence the inset. If your idler posts look like either of these—you're in luck.

an easier time when you actually get stuck in a snow bank or a mud hole.

The first thing to do is drag the chains behind the vehicle. Then lay each chain on the ground stretched out directly behind each track, with **the end that has 4 free links pointing toward the tracks** (Fig. 6). Straighten out any curls, kinks, or knots that may have gotten into the chains while you were wrestling them out of the package.

Pick up the end of the chain closest to the tracks (the end with

the 4 free links) and drape it over the track, laying the first cross link about middle way between the idler wheel and the track-support-roller (Fig. 7). This leaves the rest of the chain trailing behind the track like a cow's tail. Now move the vehicle forward enough to drag the chain all the way around the band-track which will allow the ends to meet. To make the chain follow the track, it'll have to be fastened on. Otherwise when the vehicle is moved forward, the chain will slip off the track. So whip out that double-ended meat

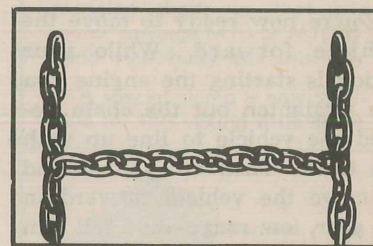


Figure 6. Full-color photo proving that the end with 4 free links should point straight toward the tracks.

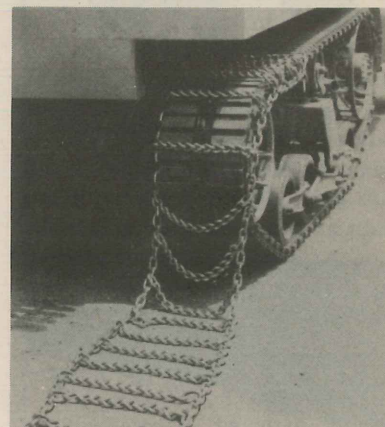


Figure 7. Notice the casual, but correct way, the chains are draped over the band-tracks? Do it this way.

hook—the chain applicator. Pull apart on the two hooked ends and the applicator becomes two pieces instead of one (Fig. 8). The long side with the hollow tube is the female clip, and naturally the other piece, the short solid rod, is the male clip.

Slip the hooked end of the **male clip** through the **third link** of the **inner side chain**. That's the side of the chain facing the vehicle

frame, the one hard to get to. Then slide the **male clip** as far as you can toward the center of the track, as shown in Fig. 9. Next, slip the hooked end of the **female clip** through the **third link** of the **outer side-chain** (Fig. 10). All you've got to do now is push the two clips together until the hooked ends are tight against edges of the track. This fastens the chain securely to the track.

You're now ready to move the vehicle forward. While your buddy is starting the engine you can straighten out the chain behind the vehicle to line up with the track. Then tell your friend to move the vehicle forward in **1st gear, low range**—and tell him to go plenty slow. As the vehicle moves ahead, you feed the chain onto the track. Your job now is to keep the chain from snagging as the track picks it up. If you're knee-deep in mud, be careful that the links don't catch on the bumper. If you're interested in keeping your legs, **don't step or walk on the chain while it's being dragged around the track**. Stand with both legs to one side of the chain as you feed it (Fig. 11).



Also while you're feeding the chain, keep an eye on the chain applier as it moves around with the track. When the applier gets to a point half-way between the idler wheel and the rear bogie (Fig. 12), holler to the driver to

stop the vehicle. Then remove the chain applier. (If you're installing the chains in mud, it's OK to let the applier come all the way around to the starting point.) The only thing left to do now is connect the two ends of the outer and inner side-chains.

At this point you may have a strong temptation to sit down and figure out a new tool for pulling the side-chains together as tight as the sweater on a pin-up girl. If you do, just lie down and wait till the temptation goes away. The band-track chains need only be as tight as the average guy can pull them with his naked arms—not a bit tighter. If you use a pry bar or a Rube Goldberg gadget to tighten the chain, the chain won't be able to creep during operation and will wear both itself and the track to a frazzle. When you've got the inner- and outer-side chains hand tight, connect them by the shackles that came in the kit (Fig. 13).

If you're in a big hurry to get the job done, you can put the chains on both band-tracks at the same time, **if you get somebody else to feed the other chains**. Try to feed both chains at the same time—yourself—and you're likely to end up with a modified leg bone.

Before you follow the impulse to go scooting off through mud to see what the old war horse will do with chains on, have someone drive it forward slowly while you make sure the links won't hit any part of the vehicle. If everything's clear, go ahead.

With a set of these chains on your half-track, you get enough traction to drive over the slipperiest surface. They'll pull you through ice, snow, or even gluey mud. But don't expect the vehicle to swim. The chains give extra traction—they **don't give any flotation**. So when you bog down in muck that swirls around your

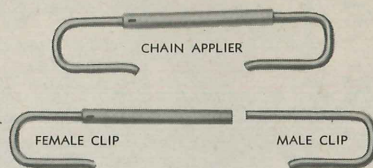


Figure 8. The chain applier itself. Pull it apart on the hooked ends and it becomes 2 pieces instead of 1.

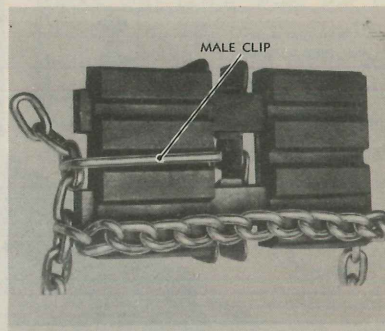


Figure 9. Slide the male clip of the chain applier as far as you can toward the center of the track.

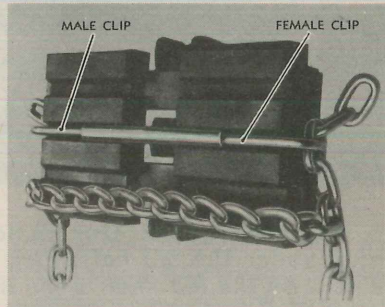


Figure 10. Slip the hooked end of the female clip through the third link of the outer side-chain.

bucket-seat, don't expect the chains to float you out. When you have to drive over concrete road with the chains on, better keep the speed down below 25 miles an hour. At higher speeds, the chains cause the half-track to get skittish. The tail end may start sliding and weaving, and you'll wind up in a ditch. When you have to go a long distance on hard-surface roads, take the chains off. They give your vehicle

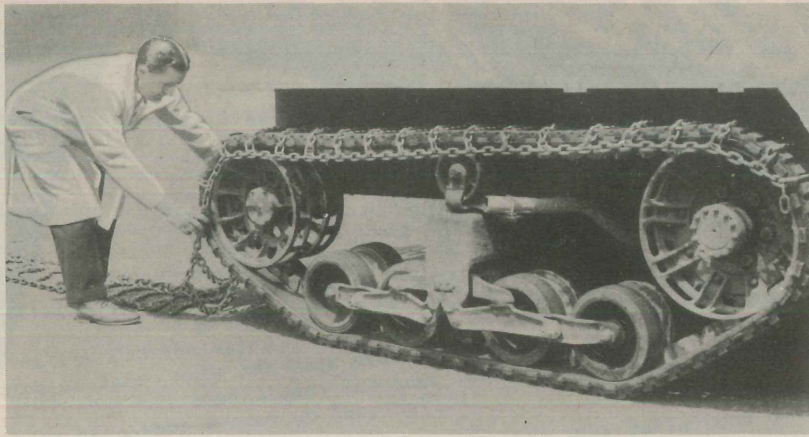


Figure 11. The gent in the butcher's Prince Albert has sense enough to keep both feet on the ground—and to one side of the chain. It's a good place to follow the action.

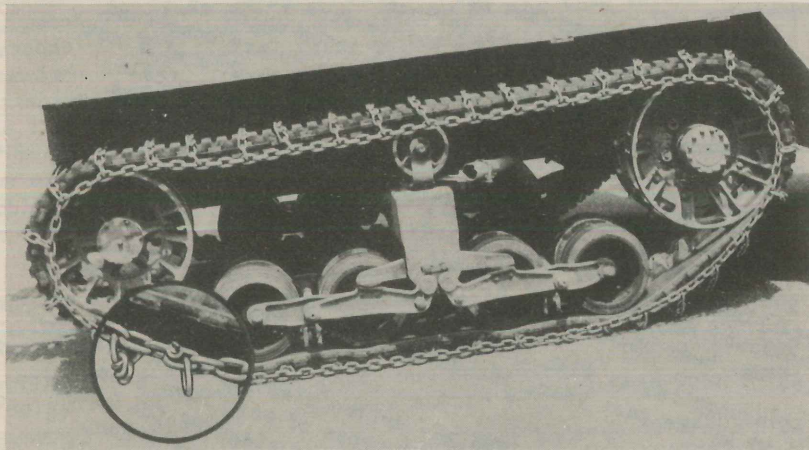


Figure 12. When the applicer gets around to a point half-way between the idler wheel and the rear bogie, holler "Stop!" to the driver. Then remove the chain applicer.

a lot of rolling resistance and will grind themselves away.

When you get around to taking these chains off, they'll probably be loaded with mud and corruption. If you heave them in the half-track in this condition, the next time you need them they'll be solid rust. Instead of heaving them, hose the chains down (if there's a hose available) and look them over for broken links or links worn paper-thin. If you find any bad ones, fix 'em up, then dip the whole set of chains in oil before putting them away. Check them over each time they're used, and you aren't likely to get hung up some place with broken chains.

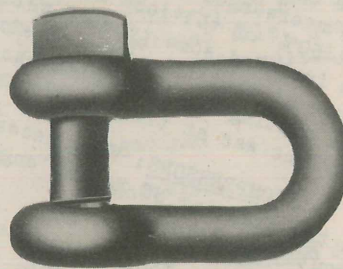


Figure 13. This weird-looking gadget is useful in connecting the inner and outer side chains. They're called shackles.

keep the plunger from slipping out of place. That's all, brother.

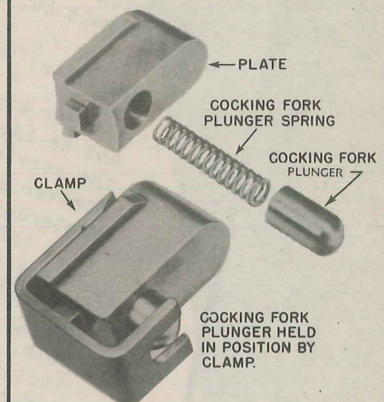
Requisition the clamp direct on Watervliet Arsenal, Watervliet, N. Y.—on the basis of one (1) per 3" gun M7. Specify Clamp, Assembling, A207448, and point to TB 323-1 as your authority.

NEW TOOL

for M10ers & M10A1ers

We've got a pleasant surprise for you guys who thought nothing would ever replace the old-fashioned thumb and forefinger—for inserting the cocking fork plunger assembly in the breechblock of the 3" gun M7. So if you're scooting around with mangled digits in that gun motor carriage M10 or M10A1, bend your hairy ear this way.

A special clamp is now available for this vexing little chore.



Here's how the new clamp holds everything together. That spring and plunger have been taking quite a beating up to now.

After you squeeze together the plate (B163556), cocking fork plunger spring (A25988), and cocking fork plunger (A25985), the new clamp (A207448) holds the whole shebang intact (see fig.) while you shove it into the breechblock. Pull out the clamp and there you are—the assembly's in place and so, for once, are your thumb and fingers. 5—count 'em—5.

While you're inserting the assembly in the breechblock, hold the hand cocking lever forward until the clamp is removed, to

Letter from Ita

HEADQUARTERS [REDACTED] ARMORED REGIMENT
[REDACTED] A. D. — A.P.O. No. [REDACTED] NY, NY

Italy, in the Field
7 November 1943

Editor, Army Motors
Tank-Automotive Center
Union Guardian Building
Detroit 26, Mich.

Dear Sir:

For a number of years this Regiment has been receiving Army Motors and we have had intentions of writing at various times to thank you for the service your magazine performs for the maintenance personnel. However your attached announcement in the August issue which we received yesterday, did the trick—for purely selfish reasons we are concerned with this statement of the change in distribution. Trust this will not affect mail delivery to overseas outfits like ourselves. Technical information is slow in getting over—at least it was in Ireland and Africa and your magazine has kept us well posted on wheeled vehicle data. We are pleased to note that you have expanded your field to include tanks and halftracks, as a motor publication with this type of information has been badly needed.

You have supplied us with information—perhaps we now can pass on some learned in the past year, including lessons picked up in the Tunisian Campaign.

a. Maintenance Equipment: The gas-driven electric welder (HOBART in this case) has been invaluable. All types of work have been performed by the overworked welding personnel and at one stage of the campaign almost 50% of the jobs done in the maintenance company's shop in one month included some type of welding. Many parts, most difficult to procure at that time were repaired by welding and re-installed. Much rough cutting was done with the welding rod also, as oxygen and acetylene was at times very scarce in the field.

b. COMPRESSORS: Very necessary for all companies and most necessary in the cleaning of radial engines and blowing clutches on tanks. (More about this below).

c. Tools: Tool allowances for this type of outfit provided by the T/BA have been sufficient, although, as with all organizations, we possess additions here and there. Some special tools have not been available and improvisations had to be made. Your reference on page 145 of the August issue is no doubt heartily endorsed by all, providing you have the tool prescribed. One of our chief gripes has been the shortage of M-5 tank mechanics' tools, though the picture is a trifle better now.

d. Maintenance Checks: You have published information recently referring to TB 700-66 (which we don't have at present) that states, apparently the radial engine will not be pulled at the 100-hour check



aly

periods. Information from the British 8th Army and our own experience in the dusty Tunisian country definitely made it necessary to pull engines to clean clutches, if for no other reason. In many cases the engines had to be taken out before the 100 hours had elapsed to clean the sticking clutches. Daily blowing-out by the compressors was done, plus the use at intervals of the heavy duty compressors from the Engineer Battalion. Perhaps the new clutches with larger slots may affect this and of course the type of terrain in which the outfit is operating plays an important part. Speaking of clutches, in the August issue you refer to grease, ball and roller bearing, as a proper lubrication for the spindle, ball and roller bearings of the master clutch. To date, none has been available to this Division, and GP #2 and #3 (under hot conditions) has been found satisfactory. No clutch troubles have been traced to lubrication.

e. Maintenance Procedure and Recovery: The tank battalions have operated at various times separated from the Regiment and hence the importance of the battalion maintenance crews has been doubled. The equipment and crews were built up to the limit of the supply and personnel on hand and were not changed at any time throughout the entire campaign. In addition to their maintenance vehicles, the maintenance battalion crews had in most phases two 10-ton wreckers assigned, while the light battalion had one. The battalions, therefore, carried out most of their own recovery to the limit of the wrecker's ability. The T-2's now assigned to all tank companies supply a badly needed track recovery vehicle, increases recovery equipment threefold and unquestionably will improve recovery.

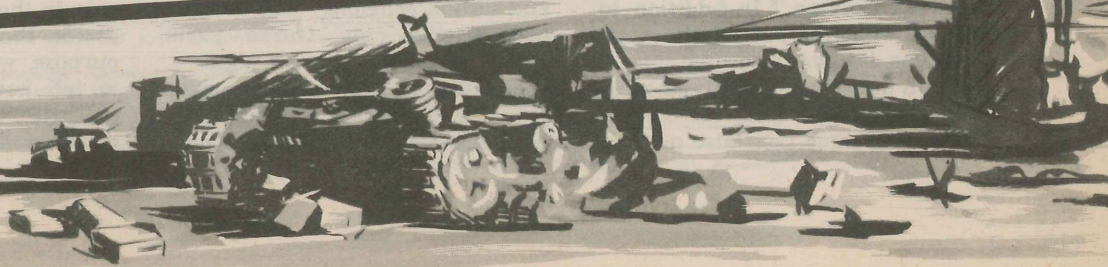
f. The maintenance battalion of the Division provided excellent support throughout the campaign. Their shop equipment was invaluable in the maintenance of the tank regiment. In the final stages of the Tunisian Campaign, we had an opportunity to view much enemy maintenance equipment left behind by the defeated Germans. A great deal of the individual equipment was good, but none equaled the shop vehicles and equipment possessed by our Maintenance and Ordnance Companies.

Conclusions: First Echelon—Not last because of unimportance, but because of its importance. It can not be over-emphasized in the field. No matter how tough campaign conditions are, the driver's maintenance goes on. We are proud of our greaseballs whose experience and abilities pulled the regiment out of many a hole, but if that first echelon doesn't hold up, you can list the outfit as route-order and all finished in more ways than one. If any individual questions this, just write to the mechanics here and ask them. Their regiment only rolled some 6,000 miles in Africa from November 1942 to May 1943.

With continued good success to your magazine,

Sincerely,

R. J. G.
Major, 1st A.R.
Motor Officer



The New All-In-One SNL

What it is—how it works—how first and second echelons will use it

All the current parts information on a vehicle—IN ONE BOOK.

No separate Service Parts Catalogs, Lists of All Parts, Organizational Spare Parts and Equipment booklets, or Addendums. No collection of TM-style Parts Lists, each covering a slight variation of the same vehicle. All the stuff now goes into one fat volume.

That, in a bombshell, describes the new "all-in-one" SNL's (covering both transport and combat vehicles) which are now beginning to appear.

SNL G-508, first of these new-fangled Standard Nomenclature Lists, is now rolling off the presses. It covers your old friend, the 2½-ton GMC 6x6. Close behind it are coming SNL G-502 (¾-ton Dodge 4x4); G-503 (¼-ton Ford and Willys 4x4); G-104, Vols. 6 and 11 combined (Medium Tank M4 and M4A1); G-103, Vols. 2 and 8 combined (Light Tank M5 and M5A1); G-104, Vol. 8 (Medium Tank M4A3); G-67 (Scout Car M3A1); G-501 (2½-ton GMC amphibian); and many others.

Page-size of the new books will be the same as an ARMY MOTORS page (like the old TM Parts Lists and the Service Parts Catalogs). The practice of printing some of the SNL's to fit a 6x9 strap binder will be dropped.

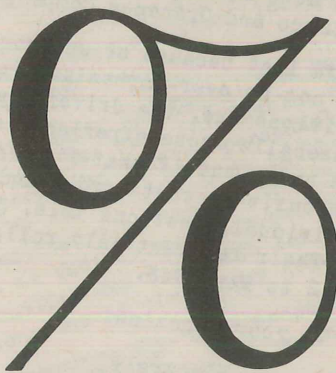
Here's the master plan for the new SNL's:

THE EIGHT SECTIONS

1. **General Information.** First of the eight sections of the new SNL's, as you expected, is "General Information." In addition to telling what the rest of the book contains, it hands out some special lists on interchangeability of various assemblies and sub-assemblies. The same Lists also provide

a quick reference on parts needed to install some of the main GMC modifications such as crankcase ventilating, radio suppression, deep-sump oil pan, and air-compressor drive.

2. **Addendum.** You might as well get used to this jawbreaking title, because it looks like you're going to see a lot of it. To first and second echelons, it means exactly the same as the old Service Parts Catalog—Official Nomenclature, Parts numbers (two or three different kinds), and illustrations—plus a PERCENT SIGN (%) which has nothing to do with percentage, but means: "This part may be issued to the first and second echelons." There-



Parts marked with this symbol in the new SNL's are available to 1st and 2nd echelons. Without this symbol, they're not.

fore, although the Addendum identifies all parts used in maintenance, the using troops (first and second echelons) will be concerned with only those parts which carry the percent sign.

Except for the percent sign, only the Ordnance echelons will be interested in the last four col-

umns on the page. These columns tell how many of each part the Government is providing for a year's maintenance of 100 vehicles—divided according to the amount used for major overhaul (5th-echelon base shops) and field maintenance (4th-echelon and lower). Like the old separate-booklet Addendums, these columns do not say how many of the "field maintenance" parts are allotted for fourth echelon, and how many for third. Of course, the maintenance allocations charts in the vehicle TM's give some idea of which parts each echelon may use, but so far the SNL doesn't actually ration the parts in third and fourth echelons as it does in first and second. (This condition will be corrected when Ordnance Maintenance Unit Stockage Lists are published (sec. 5 of the SNL).)

3. **Vehicular Spart Parts and Equipment.** This is your list of what spare parts, tools, accessories, equipment, ammunition, etc., are regularly carried with the vehicle and how many of each. It ought to answer a lot of questions on "what a vehicle includes—how many tools and spare parts are supposed to go with it." The Note Symbols in the last column provide a cross-reference to any other SNL's that more completely describe the item listed on that line. When the letter "W" appears in this column, it means the item is not expendable.

4. **Organizational Spart Parts and Equipment.** You'll recognize this section. It's the same as the old OSPE booklets, with allowances somewhat revised according to the latest information on your requirements. This list tells how many parts should be carried in stock by company 2nd-echelon units, and how many by battalion- and-regimental 2nd-echelons, according to the number of vehicles each takes care of.

5. **Ordnance Maintenance Unit Stockage List.** Don't worry about this one. For the present, it exists only in the minds of the men who decide the parts allowances. Its purpose, when published, will be to tell how many of each part, tool, etc., will be carried in stock by Ordnance companies (in other

words, a publication for 3rd and 4th echelons, similar to the purpose now served for 1st and 2nd by the OSPE).

6. Depot Stockage List. Skip this one too, unless you're in the Depot business. It isn't really a list—just a three-paragraph explanation of how the depots should go about figuring their own lists.

7. Geographical or Seasonal Maintenance Parts List. Like the Ordnance Maintenance Unit Stockage List, this one won't be published until later editions, and then will be for Ordnance eche-

lons only. Its purpose will be to tell how much extra stuff has to be provided for maintenance under special conditions like tropical, desert, mountain, or cold-weather operation.

8. Indexes. These will be about the same as you've become accustomed to, in the old Service Parts Catalogs.

USING THE SNL'S

To using troops, the main difference between the old SNL's and the new, is that now the information you need is in one book instead of two (formerly the

OSPE and the Service Parts Catalog). There's other information, formerly not available to you, which you'll have to learn to ignore.

The important things to remember are:

1. If it isn't marked with the % sign in the Addendum, you can't have it. (Parts not provided in authorized allowances may bear this symbol, when their use under special conditions is permitted).

2. The quantities you'll normally be permitted to carry in stock for first and second-echelon use are listed in Organizational Spare Parts and Equipment.

3. The quantities of spare parts, tools, and equipment to be carried

(Continued on page 288)

The second echelon uses this charming page to identify parts when submitting requisitions. Note the crawling arrows.

ADDENDUM

SNL G-508

0100-0101B

Figure Number	Official Stockage Number	Mfr.'s Number	ITEM	Quantity Req'd. per Unit Assy.	Per 100 Major Items			Estimated Reqm'ts. per 100 Rebuilds
					12 Mos. Field Maintenance	Major Overhaul (5th Ech.)	Total First Year Procurement	
Col. 1	Col. 2	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9	Col. 10
ENGINE GASKET SETS (Cont.)								
		GM-2200134	GASKET SET, engine valve grind (AFKWV)..... (Consists of: 1 GM-2136676 GASKET, cylinder head to cylinder block 1 GM-2017499 GASKET, exhaust pipe flange 1 GM-596268 GASKET, fuel vaporizer to exhaust manifold 1 GM-2104216 GASKET, inlet manifold to fuel vaporizer 1 GM-6107381 GASKET, manifold, center 2 GM-6107380 GASKET, manifold, front and rear 6 GM-1556700 GASKET, spark plug 1 GM-2135926 GASKET, valve push rod cover 1 GM-6107400 GASKET, valve rocker arm cover 1 GM-6107446 GASKET, valve rocker shaft overflow pipe 1 GM-105451 GASKET, valve rocker shaft front support bracket 1 GM-838341 GASKET, water outlet to thermostat housing)	1	48	52	100	
0101A—CYLINDER BLOCK								
01-8		GM-2135792	BLOCK, cylinder, assembly (includes crankshaft, camshaft, timing gears, pistons, rings, pins, connecting rods and front end plate).....	1				
01-8	G501-01-22524	GM-2135411	BLOCK, cylinder, assembly (includes camshaft bearings, mainshaft bearing caps and oil pump bracket. Does not include main bearings)..... NOTE: Above block used prior to engine 270-260279 and includes front center and rear center bearing caps GM-2070636 and GM-2103917.	1		2	2	
01-8	G501-01-22526	GM-2137801	BLOCK, cylinder, assembly (includes camshaft bearings, mainshaft bearing caps and oil pump bracket. Does not include main bearings)..... NOTE: Above block used on engine 270-260279 and after. Includes front center and rear center bearing caps GM-2137938 and GM-2137939.	1				
01-8	G501-01-22535	GM-SN-3192	BLOCK, cylinder, assembly (complete with pistons, rings, pins and retainers).....	1		12	12	
	G133-03-40425	GM-663032	PLUG, cylinder block and head (1.226 outside diam. core hole).....	6	%40	8	48	33
		GM-103898	PLUG, expansion, type A, 2 in. diam. (.083 thick).....	2	8	8	16	
01-8		GM-144013	PLUG, pipe, ctsk., headless, S., cd-pltd., 3/8-18 thd.....	2				
0101B—CYLINDER HEAD								
01-6	G57-01-40086	GM-2070959	COVER, cylinder head rocker arm (used on GM-SN-3148 and GM-SN-3158 engines)	1	1		1	
01-6	G501-01-40090	GM-2137662	COVER, cylinder head rocker arm (used on GM-SN-3168, GM-SN-3191, GM-SN-3230, GM-SN-3220 and GM-SN-3381 engines).....	1	%4		4	
		GM-6107401	STUD (cylinder head cover; rocker arm shaft bracket) (issue until stock is exhausted then furnish GM-2137700).....	2	%4	2	6	
01-6	G501-01-92265	GM-2137700	STUD (cylinder head cover; rocker arm shaft bracket).....	2	%4	2	6	6

SECTION 2

- Official nomenclature of the part (use for requisitioning).
- Manufacturer's number (add to nomenclature, for positive identification, when requisitioning).
- Official stockage number—the old Item Stock or Federal Stock No., or the new Official Ordnance Number (use in "Stock No." column of QMC Form 400 when requisitioning). Where to find a picture of this part (for information only).
- How many of this part the cylinder head includes (for information only).
- % Sign, indicating part is available to Second Echelon.
- Additional information used by Ordnance only (same data as formerly published in Addendum).

VEHICULAR SPARE PARTS AND EQUIPMENT

Figure Number	Official Stockage Number	Ordinance Drawing Number	Mfr.'s Number	ITEM	Quantity per Vehicle	Note Symbol
Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7
VEHICULAR SPARE PARTS						
G122-01-93970	A281773 DLAX1D A312622 DLAX1F C84934J C91706B C84908K C84934K C91706C C84908J BFAXICG		GM-2198588	BAG, small parts, assembly (for Model CCKW only)	1	
			GM-2090464	BELT, fan (33-B-174) (DAY-953)	1	
			GM-2186737	CAP, valve, tire (screwdriver type) (five in box) (8-C-650)	5	
			GM-2186738	CORE, valve, tire, inside (five in box) (8-C-6750)	5	
			GM-1556700	GASKET, spark plug	1	
			GM-115273	LAMP, elec., incand., min., 6-8 v., sgle-tung-fil., No. 51, 1 cp. (SC min. bay. base, G-3 1/2 bulb, C-2R fil.) (17-L-5195) (MZ-51)	3	
			GM-142303	LAMP, elec., incand., min., 6-8 v., sgle-tung-fil., No. 63, 3 cp. (SC cand. bay. base, G-6 bulb, C-2R fil.) (17-L-5215) (MZ-63)	2	
			GM-5933121	LAMP-UNIT, blackout stop, sealed, one-opening, 6-8 v., 3 cp., assembly (no parts available) (8-L-421)	1	
			GM-5933078	LAMP-UNIT, blackout tail, sealed, four-opening, 6-8 v., 3 cp., assembly (no parts available) (8-L-415)	2	
			GM-5933104	LAMP-UNIT, service tail and stop, sealed, 6-8 v., 21-3 cp., assembly (no parts available) (8-L-419) (CB-9218)	1	
			GM-103374	PIN, cotter, split, S, 3/8 x 1 (type B) (42-P-5540)	4	
			GM-2186739	PIN, cotter, split, S, (type B) (boxed assortment) (42-P-5347)	1	
			GM-3660838	PIN, shear (Note 1)	4	
GM-1557101	PLUG, spark, 14-mm., w Gasket, GM-1556700 (17-P-5355) (AC-44)	1				
VEHICULAR ACCESSORIES						
41-B-15			GM-111301	ADAPTER, hydraulic coupling to push type fitting (AD-6517) (Note 1)	1	M-3 W
32-B-385			GM-2146735	BAG, tool, canvas	1	M-8 W
8-C-2380			GM-2182025	BRACKET, fire extinguisher, universal	1	K-2 W
8-C-1575			GM-2189985	CHAIN, tire, single pneumatic (type TS) 7.50 x 20	2	M-3 W
			GM-2196372	CHAIN, tire, dual pneumatic (type TD) 7.50 x 20	4	M-3 W
			GM-2147196	CRANK, starting, engine (Note 1)	1	W
			GM-2147197	CRANK, starting, engine (Note 2)	1	W
58-E-202	B128186		GM-2176169	EXTINGUISHER, fire, chemical, hand, 1 qt. filled (PYR-9649)	1	K-2 W
8-G-615			GM-3675037	GAGE, tire, pressure, general service type	1	J-9 W
	C144803		GM-2199752	GUN, lubr., pres., lever type, 15 oz. or		M-3 W
41-G-1344-40			GM-2199772	GUN, lubr., pres., push-type, hydr., nozzle 16 oz. (optional)	1	M-3 W
41-H-523			GM-2066277	HAMMER, machs., ballpeen, 16 oz., handled	1	J-6 W
	B245134		GM-3661168	HANDLE, jack (WAK-10643)	1	M-3 W
G085-34-00280	B246381		GM-2146130	HANDLE, wrench, hub and stud nut	1	J-4 W

First and second-echelons use it to tell what spare parts and equipment should accompany the vehicle.

Section 3

SNL G-508

NOTE 1—Vehicles with Winch only.
NOTE 2—Vehicles without Winch only.

ORGANIZATIONAL SPARE PARTS AND EQUIPMENT

Figure Number	Official Stockage Number	Mfr.'s Number	ITEM	Parts Allowances For:								
				Company			Regiment or Separate Battalion					
				1-9 Vehicles	10-25 Vehicles	26 Up Vehicles	1-9 Vehicles	10-35 Vehicles	36-75 Vehicles	76-150 Vehicles	151 Up Vehicles	
Col. 1	Col. 2	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9	Col. 10	Col. 11	Col. 12	Col. 13	
01—ENGINE GROUP												
		2162117	CAP, engine oil filter, assembly	—	—	—	—	1	1	1	2	
		1595502	ELEMENT, oil filter, assembly	4	5	6	8	10	13	17	23	
		6107400	GASKET, engine cylinder head rocker arm cover	1	2	3	4	5	6	8	11	
		1543016	GASKET, crankcase breather shell	—	1	1	2	2	3	4	5	
		838290	GASKET, intake to exhaust manifold	—	—	—	—	1	1	1	2	
		853269	GASKET, oil filter cover nut	3	4	5	7	9	12	16	21	
		2137876	GASKET, oil pan drain plug	2	3	4	5	7	9	12	16	
		2200135	GASKET SET, engine oil pan	—	—	—	—	1	1	2	3	
		2200133	GASKET SET, engine valve grind	—	1	1	2	2	3	4	5	
		2137875	PLUG, drain, oil pan	—	—	—	—	1	1	1	2	
		2137793	TUBE, oil filter inlet	—	1	1	1	2	2	3	4	
		2136146	TUBE, oil filter, outlet, assembly	—	1	1	1	2	2	3	4	
		2127840	TUBE, oil, oil gauge flexible assembly	—	1	1	1	2	2	3	4	
02—CLUTCH GROUP												
		368244	SPRING, pull back, clutch pedal	—	—	—	1	1	2	2	3	
03—FUEL GROUP												
		850164	CAP, fuel tank filler, assembly	—	—	—	—	1	1	1	2	
		2137474	CARBURETOR, assembly	—	—	—	—	1	1	1	2	
		1990612	CONTROL, choke, carburetor hand, assembly	—	—	—	—	1	1	1	2	
		1990564	CONTROL, carburetor throttle assembly	—	—	—	—	1	1	1	2	
		1526517	GASKET, carburetor air cleaner cover	—	—	—	—	1	1	1	2	
		2136304	GASKET, carburetor to governor	—	—	—	—	1	1	1	2	
		2135995	GASKET, engine governor to manifold, insulator	—	1	1	2	2	3	4	5	
		1523096	GASKET, fuel pump gas strainer bowl	—	—	—	—	1	1	1	2	
		838263	GASKET, fuel pump to cylinder block	3	4	5	7	9	12	16	21	
		2185916	GASKET SET, fuel filter	1	2	3	4	5	6	8	11	
		1516061	GASKET, fuel gauge tank unit	3	4	5	6	8	11	14	19	
		1515435	GAUGE, fuel tank unit, assembly	—	—	—	—	1	1	1	2	
		2123238	HOSE, fuel filter to fuel pump, assembly	—	—	—	—	1	1	1	2	
		1537714	PUMP, fuel, engine, assembly	1	2	3	4	5	6	8	11	
		1523099	SCREEN, fuel pump gas strainer	—	—	—	—	1	1	1	2	
		527797	SPRING, return, accelerator pedal	—	—	—	—	1	1	1	2	

Second echelon uses this to determine its parts allowances when requisitioning. Cute little number, isn't it?

SNL G-508

Section 4

CONTRIBUTIONS



Got any pet gripes with vehicle design? supply? tools? Got an idea that'll make maintenance easier? Have you invented something lately? Shoot it to us and if it's OK, we'll pass it on to the rest of the boys. Maybe your gripe or idea will fix things up for a lot of other guys in the field. If you're on the ball, you'll get a personal subscription to ARMY MOTORS.

Dear Editor,
I don't know whether this idea is original or not but it seems to work, so I'll pass it on.
A little battery-sealing compound dissolved in synthetic thinner and painted on battery carriers provides an acid-proof, corrosion-proof, and weatherproof coating. Dries to a fairly hard surface and can be cleaned easily. If it's necessary to remove the coating, a little thinner and a brush will quickly do the job.
Of course, the battery carrier should be thoroughly cleaned before you apply the compound.
Pfc. Robert D. Leach
Hq. Btry, 102nd Inf. Div. Arty.

Dear Editor,
I've run into something unusual, but relatively simple.
My driver was performing first-echelon maintenance on his 1/4-ton 4x4, and believe it or not, he actually tried the lights. To his amazement, he discovered the lights were going off and on, and he called me.
My first diagnosis was that he had a short circuit in his lighting system. The ammeter was discharging 50 amps and the thermal fuse on the light switch would open its points and the short would cease. I started troubleshooting the headlights, but soon eliminated this as the source. Then I proceeded to work on the light switch, consulting the wiring scheme in the maintenance manual. After disconnecting the live

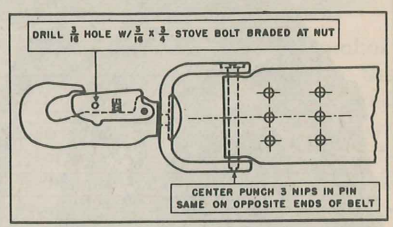
wire going to the thermal fuse I touched this wire to the other terminals on the light switch. To my amazement, I discovered a direct short in the terminal wire. I held this wire to the hot wire causing a complete short circuit and felt the wire get hot.
Now I had something to work on, I went to the trailer electrical connection on the rear of the jeep and discovered the tire chains which are located in the tool compartment in the left rear were shorting these wires to ground. I removed the chains and placed them in the right rear compartment and placed the tools in the left rear compartment.
I was surprised to find three other jeeps in a similar condition.
Lt. Benjamin T. Rodini
736th Tank Bn.

P. S.: When I mentioned tools, I was referring to a jack, a jack handle (lug wrench), hammer and gas nozzle. I mention this because a complete tool set wouldn't fit in this compartment. Even if it did fit, it wouldn't be the place for it.
(Ed. Note — Tank-Automotive Center engineers cheered this contribution, agreed with Lt. Rodini 100%. Results: planned field modification, and perhaps a production change in the near future.)
Dear Editor,
I've had no end of trouble keeping track of tools assigned to

drivers, so I've made up a form of my own based on WD AGO Form No. 32 (Individual Clothing Record). This gives me a record of when I released the tools and when they were returned.
Hope someone gets some good out of my brainstorm.
S/Sgt. Kenneth L. Neil
341st FA Bn.

Dear Editor,
I am submitting the inclosed drawing of a safety belt for Government vehicles which shows a recommended improvement to the safety catch.
Being Supply and Maintenance Officer for a fleet of 447 vehicles, I've found that keeping track of these belts is very difficult due to the fact that vehicles are dispatched each day to more than one driver. Quite frequently they are misplaced or lost (the belt, not the driver) while on bivouac or other problems run by the training sections. I feel sure this condition could be remedied by making the change shown.
Lt. W. S. Horne
The Ordnance
Replacement Center

(Ed. Note—Another case of two Lieutenants with but a single thought: **Lt. William G. Jackson, Hq., O.R.T.C., Transportation Section**, sent us a similar contribution complete w/drawing.)



Dear Editor,
Our greatest kick on the 1/4-ton jeeps is that the oil-pan skid-plate is cut away leaving the oil-pan drain plug exposed to rocks. They put a steel plate on the bottom of the oil pan, then they put the drain plug below this skid plate. And as you know, the drain plug is soldered to the pan and the least little knock will break it loose allowing the oil to drain out. During the more than two months we've been in the field, we've had

a total of 16 broken and cracked drain plugs.

When the skid plate is stamped out at the factory, why don't they allow a dip at the drain plug opening, to cover the drain plug?

We're welding a shield over the drain plugs on all our ¼-tons and we find our troubles are over.

Sgt. Tom Harmon
385th FA Bn.

(Ed. Note—You'll be glad to learn, Sergeant, that a change in the design of the oil pans to protect the drain plugs is now being made in production and is covered by Willys Part No. A-7238 Oil Pan Assembly. We hope it'll make you even happier to know that we think yours is a good expedient on vehicles already in the field.)

Dear Editor,

As you can see by the inclosed photograph, the rear-wheel outer-bearing grease seal on the 2½-ton 6x6 and 6x4 (with banjo-type rear-axle housing) sometimes wears too much to make an effective seal against the inner surface of the rear-axle shaft. After the wheel-bearing adjustment has

been made, of course. A straight-edge held against the hub face will show the amount of contact, if any.

If a new adjusting-nut-and-seal assembly (Part No. 3660091 and No. 1 in the photo) isn't available, and the leather is reasonably smooth and not worn through to the backing spring, the seal can again be made effective as a field expedient by inserting an extra inner-adjusting-nut tongued washer (Part No. 473628 and No. 2 in the photo). This shims the seal out a distance equal to the thickness of the added washer.

John Keenan
Civilian Automotive Advisor

Dear Editor,

We've had lots of hollering from the brakes on the ¾-ton Dodge command cars and weapon carriers.

In addition to following the recommended TM practices, we beveled the lining with a file, back so the bevel ended at the center of the first set of rivets. Doing this to both ends of the lining and both shoes **helps plenty**.

I believe the answer is in the

vibration set up because of the lining not being held down at the end; so when the lining doesn't contact until the center of the rivets, this particular vibration can't occur.

WOJG Frank W. Weaver
Asst. Motor Officer

(Ed. Note—We don't recommend this as a cure-all; try to find and remedy the real trouble.)

Dear Editor,

On Page 181, issue Number 6, Volume 4, appears a suggestion from Mr. William B. Schell, Head Automotive Advisor, about abnormal tie-rod-end wear on the ¼-ton 4x4.

Of course the part should be lubricated and the 90° angle fitting will help.

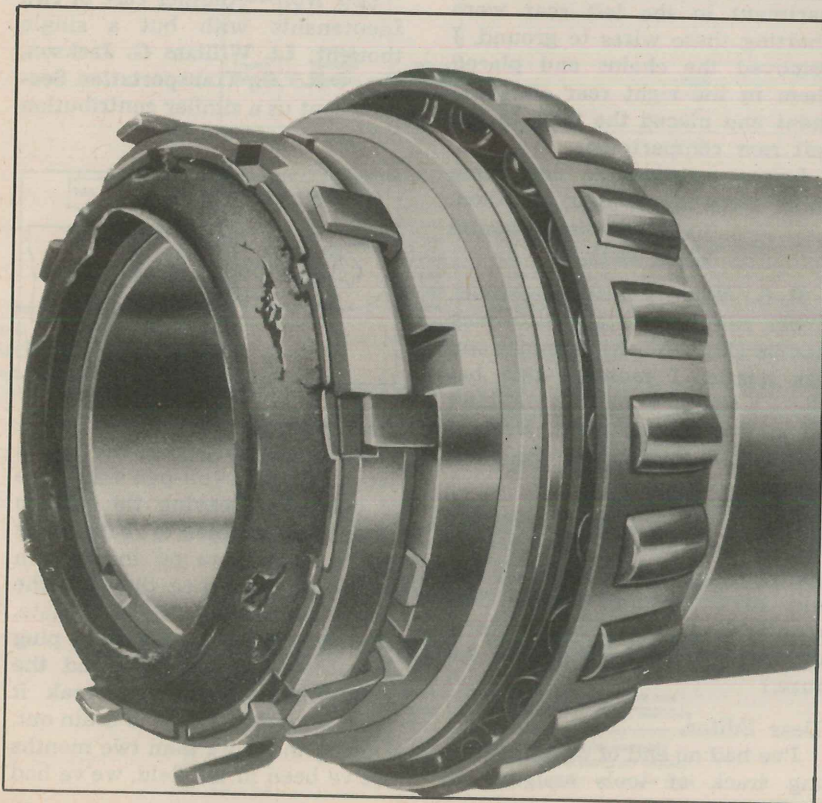
In checking this vehicle and others where excessive tie-rod-end wear was present, I have also found an abnormal amount of DYNAMIC OUT-OF-BALANCE, which produces a terrific HORIZONTAL motion of the front wheels. This motion is forced up on the weakest part of the connecting links between the two front wheels—the tie-rod-end joints—causing rapid wear. This condition can be easily checked with a wheel spinner without removal of the wheels.

V. A. Nielson
Field Engineer

Good ideas seem to come in pairs this month. From our old friend, **Sergeant Robert H. Fortin of the 5th Infantry**, and from **Mr. Charles F. Grimes, Head Automotive Advisor of the 92nd Infantry**, comes the same suggestion.

They both point out that road dirt and grit stick to the exposed ends of the shifter-shaft on the winch power-take-off of the 2½-ton GMC, and that when the shaft is operated to put the winch in use, the dirt and grit cut their way into the oil seal, causing the seal to leak.

Both our contributors recommend putting a canvas boot on each end of the power-take-off housing; Sgt. Fortin would wire it on, while Mr. Grimes prefers the boot be held in place by an universal hose-clamp.



Incidentally, this same problem has recently been eliminated on vehicles in production by a housing over the ends of the shaft rail.

(*Ed. Note*—Add the name of **M/Sgt. Herman B. Terrell of the 589th FA Bn.** to the list—he just sent the same contribution.)

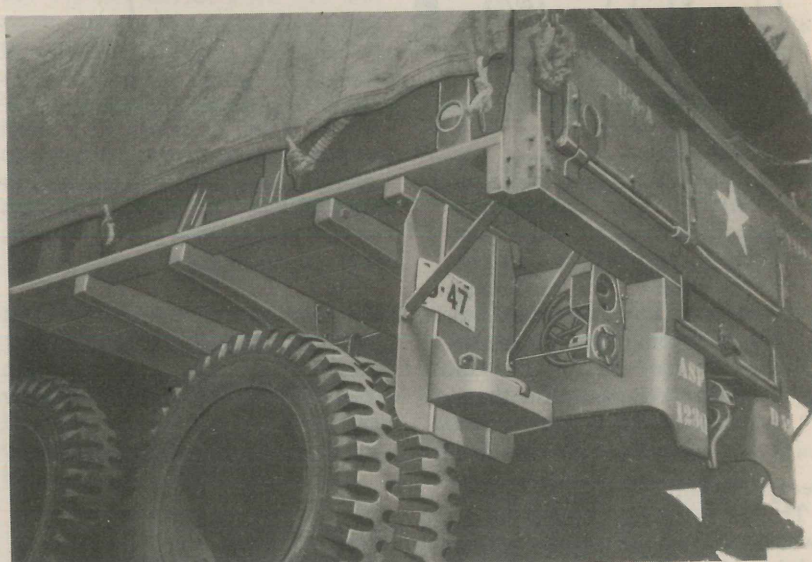
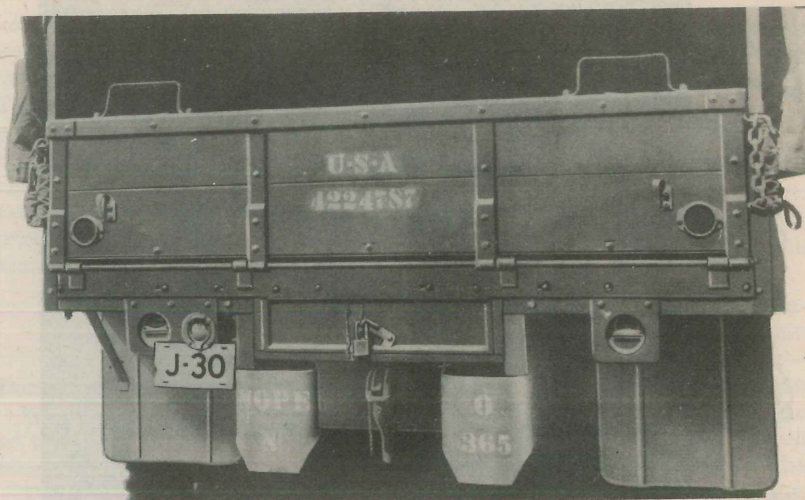
Page 183 (Sept.-Oct.) described a gas-gage tester, saying: "Let it drop and the gas gage should read Empty, showing the gas gage defective." Change the last phrase to: "... showing the gas-gage is not defective." Sorry.

Dear Editor,

Our big problem is in connection with the GMC's, the ones with the wooden bodies.

The major problem in our outfit (as far as the above-mentioned vehicles are concerned), is that the rear tail and BO lights and trailer attachments are mounted with absolutely no other protection than the mount itself. In our particular case we do a lot of warehouse hauling which necessitates backing up to loading platforms of different levels. As a result, we're constantly bending and smashing these assemblies, which eventually leads to the replacement of lenses and bulbs. After hours of training our drivers on the methods of backing up to loading platforms, we finally hit upon what to our minds is the easiest and simplest way to remedy this situation.

We dropped the tail-light and trailer assembly to the rear of the cross-member support, instead of the front where it is at present. We then swung the assembly into a vertical position and bolted it flush against the bumper bracket and the cross-member. This brought the trailer assembly into a lower position and put the tail-light and BO light on the same level as they were previous to the change. We did the same to the assembly on the right rear side of the vehicle. Mounting the assemblies in this manner gives the added necessary protection and reduces the replacement of lenses and bulbs to an absolute minimum. Another advantage to



this change is that it enables us to mount the gas can buckets on the mud guards, without reversing the mud-guard braces.

We've checked and tested this vehicle at night for both normal and blackout driving and there is no visual hindrance whatsoever.

On the same vehicles the cross-members carrying the bed of the body are made of three $\frac{3}{4}$ " wood strips. These individual strips are laced together similar to plywood, forming one cross-piece support. The individual strips are spreading which is, we think, due to the heat and the weather or perhaps to the lack of proper curing. To take care of this situation we are fitting the end of every cross-piece with a "U"-type brace made of scrap metal, and slip this over

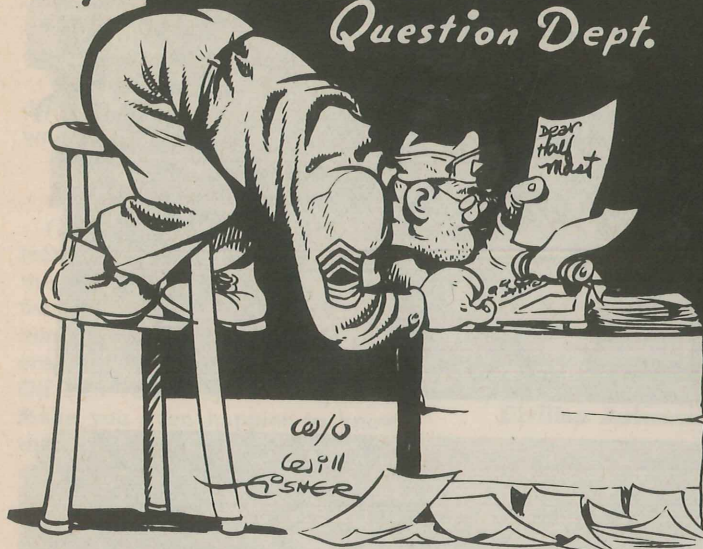
the corner of each cross-member. It acts as a clamp to keep the strips from being separated and also protects the cross-members from any damage; such as shattering or splintering if the cross-member is struck. Then we install another brace 18" lower on the same piece which will act as an additional clamp.

Lt. Jack T. Jirele

123rd Quartermaster Bn. (Trk)

(*Ed. Note*—Tail lamps are where they are because the specifications put them there; almost any location would be as likely to cause damage under certain conditions. If the original location is too exposed and you've got to move your lamps—we think Lt. Jirele has solved the problem for you neatly.)

Sgt. "HALF-MAST" M'CANICK'S Question Dept.



Dear Half-Mast,

About two months ago our company issued drivers' and mechanics' award badges to those men deserving them. Well, the awards weren't complete. The mechanics received only the bar, while the drivers received only the award without the bar. If you can tell us where to buy or send for them, we will appreciate it very much.

T/4 A. S.

Dear Sergeant,

The only place where these awards are issued is the Philadelphia QM Depot, 2800 South 20th St., Philadelphia, Pa., and they supply them through post, camp, or station quartermaster.

If the Depot happens to have a temporary shortage of the item you need, they say they'll back-order it and ship it as soon as it's available.

As for buying them, that may be possible through your local PX. War Dept. Circular No. 263 (1943 series) authorizes exchanges to sell qualification badges and bars, but the Army Exchange Service tells us each local Exchange Officer will decide whether to stock them, and at what price.

They can't bust you for asking!

Half-Mast

Dear Half-Mast,

Would you tell us the most efficient way to remove finger marks from the doors of our truck cabs?

Capt. O. C. D.

Dear Captain,

Benzol (Benzene, Grade C, Federal Spec. USA 4-1016B, Item Stock No. K001-10-06108 for 1-gal. can).

Half-Mast

Dear Half-Mast,

The tonnage ratings of the GMC 6x6 and 6x4 have always puzzled me. Why is the GMC 6x6 rated a 2½-ton cargo, while the GMC 6x4 is rated a 5-ton cargo? Both trucks appear identical in size, the only difference being the front wheel drive.

In order for a man to have a heavy equipment M.O.S. (Military Occupational Specialty) of 245,

he must be able to drive a vehicle with a capacity of over 2½ tons; therefore a driver assigned to a GMC 6x6, even though it is actually a heavier vehicle can only have the light equipment MOS (345). His buddy driving a lighter vehicle GMC 6x4, however, can qualify for the 245 MOS. The assignment of MOS numbers is extremely important in the case of men desiring transfer or overseas duty, so please straighten me out, so I can in turn straighten them out.

Lt. C. R. N.

Dear Lieutenant,

The 5-ton rating has been dropped altogether. The best authority (SNL G-1) lists both the 6x6 and 6x4 as strictly 2½-ton trucks.

The reason for the original 5-ton rating was that the 6x4 was designed for "on the highway" operation—and on the highway it could carry 5 tons. But for general all-around military use, the 2½-ton limit is now specified. So, with the dropping of the 5-ton rating, drivers of GMC 6x6's or 6x4's qualify only for a 345 MOS—and not for a 245.

Half-Mast

Dear Half-Mast,

Some of our jeeps have spring clamps (Part No. GPW 5724-A), which are not bolted, but clamped on. The question is, how can we keep the clamp tight? Would some sort of a wedge between the clamp and spring decrease the spring's operating efficiency?

S/Sgt. H. M.

Dear Sergeant,

I have a sneaking suspicion that you know the answer as well as I do. Because your point about the wedge restricting the spring

What Half-Mast doesn't know you could put in a gnat's ear, and by the same token, what a gnat doesn't know you could put in Half-Mast's ear. Half-Mast is the answer man; he'll answer all those questions—technical, procurement, procedure—that have you up a tree. Write "Dear Half-Mast," Army Motors Magazine, Tank-Automotive Center, Detroit 26, Michigan. We promise he'll answer you.

action too much hits it right on the head. Rebound clips don't need to be tight to function all right.

Don't worry about it.

Half-Mast

Dear Half-Mast,

We've observed the operation of the new 1½-ton 6x6 and believe it would be very well adapted to the needs of a signal company running wire.

The present 2½-ton trucks being used for the purpose have a bed which is so high from the ground that it's very difficult for the crew to mount and dismount, which they have to do more than 30 times an hour when running wire. The carrying capacity of the 2½-ton truck is not fully utilized during these operations.

We would like to know what our chances are of obtaining these new vehicles either here or across.

Capt. E. W. D.

Dear Captain,

I'd say your chances of swapping your 2½-ton trucks for 1½-ton trucks are pretty good.

The 2½-ton trucks are a critical item, and your Service Command will undoubtedly be glad to make the swap. Their authority for this substitution is: Letter dated 25 September, 1943, to all Service Commands, from Tank-Automotive Center, SPOMS-T; subject "Substitute Vehicles." If you write to the Vehicle Section of the Ordnance Office in your Service Command, explaining your story and quoting the authority mentioned above, they'll probably greet your request with open arms.

Half-Mast

Dear Half-Mast,

I've had one heck of a time trying to find out just what authority or SNL I would use for the requisition of 2nd-echelon shop equipment. Can you help me out?

Sgt. R. W. J.

Dear Sergeant,

I ain't quite sure from your letter what kind of outfit you're connected with—but in any case,

your authority for requisitioning 2nd-echelon tool and unit equipment sets is your organizational T/O&E. My guess is that you're with the Hq. and Hq. Squadron of an AAF Service Group, in which case you're covered by T/O&E 1-412. If this isn't your type of organization, write me again with more definite information.

Half-Mast

Dear Half-Mast,

We've had some hot discussion on the order in which to bleed the bleeder valves on a Hydrovac.

The hydrovac on the GMC and the 1½-ton G.T.B. Ford are the same—having the brake line from the master cylinder entering the slave cylinder. Both Ford and GMC manuals agree that the bleeder on the relay valve should be bled last. Well and good, but the manufacturer's manual (Bendix) states that it should be bled second.

How about helping us out?

Cpl. J. G. F.

Dear Corporal,

When the relay valve is a separate unit at the rear of the vacuum cylinder, it is bled last. But in the new type, with the relay on the slave cylinder, it is bled second.

It's as simple as that, Corporal.

Half-Mast

Dear Half-Mast,

In our outfit we have 83 half-tracks, all containing the two standard 30-gallon gas tanks.

Our problem is this: during a cool night and a warm day, quite a bit of sweating takes place in these tanks. Then the next time we move the tracks, the fuel filter fills up with water and the engine starts to miss. Eventually we have to pull the track out of convoy and clean the water out of the filter. But after a few hours of driving, the same condition exists again. We've even drained tanks of all gas and water but after awhile, they fill up again and the same trouble develops.

Would it be possible to have some sort of sediment bowl put

on the bottom of these gas tanks so the water could be drained out in short order? Or is there a simpler solution?

Lt. D. W. H.

Dear Lieutenant,

You aren't the only one with half-track trouble; everybody's been writing me about this same thing.

The complaint has been so common that the entire fuel system is being redesigned right now—and Field Service Modification Work Orders to correct the trouble will probably be issued "in the near future." One of the improvements is a much larger fuel filter.

In the meantime, the only thing I can say is to use the fuel tank drain plugs as often as you have to. Open them just a crack—just enough to let the water escape.

As soon as the FSMWO is official, we'll give you the dope.

Half-Mast

Dear Half-Mast,

Back in February of 1943, ARMY MOTORS said "The Advisors... are assigned their own quarters in the officer's barracks." What is your authority for this statement?

Automotive Advisor P. L. F.

Dear Advisor,

I'm afraid we stuck our neck out just a wee bit too far. The authority for assignment of quarters to Civilian Automotive Advisors is contained in a letter of The Adjutant General, AG 230.14 (5-29-42) MO-SPGA-TS-M, dated 27 June 1942, Subject "Quarters and mess facilities for civilian automotive technicians." But all this letter does is refer to AR 35-3840 (covering quarters) and paragraph 3, AR 210-60 (covering mess) for advisors. Just for the hell of it, I'll tell you that paragraph 3 of AR 210-50 covers mess collections for advisors.

Nowhere that I can find is it specifically stated that the accommodations will be provided in Officer's Quarters—but the field contact officers of The Civilian Automotive Advisors' Unit tell

me that Officer's Quarters are used at most establishments.

Half-Mast

Dear Half-Mast,

I've been asked many times lately what regulation requires that ignition keys be kept in army vehicles.

I know the importance of this action, but am unable to cite any specific regulation. Could you furnish this information?

Lt. E. L. S.

Dear Lieutenant,

Way back in August 1942, we told the whole story on how to file ignition keys. Our authority was Motor Transport Technical Service Bulletin D-4, dated 15 September 1942. This MTTSB was rescinded, but never superseded. I guess the front office felt everybody had done the job. So as far as I'm concerned, that's still the authority.

It may interest you to know that TB 700-103, just issued, authorizes destruction of lock mechanisms on the spare tire carriers of combat and tactical vehicles. So that's another key you won't have to worry about any more. But, you better hang on to the tool-box keys—they're still being used as always.

OK?

Half-Mast

Dear Half-Mast,

Why do the fuel pumps for both the 6-cylinder and 8-cylinder Fords have the same stock number (9350)?

On the 6-cylinder job, the rocker arm works directly from the camshaft, while on the 8-cylinder model, the rocker arm is connected to the push-rod.

When ordering parts for one type vehicle, we invariably get the fuel pump for the other type vehicle.

Lt. V. J. M.

Dear Lieutenant,

It's just a case of not giving (or knowing) the complete number. In the Ford numbering system, every part has a basic number; such as 9350 for fuel pumps, 6110 for pistons, 6505 for valves, etc.

In other words, every type of fuel pump Ford uses for various engines will have the basic part number 9350.

However, various prefixes are added to this to indicate the various models. Therefore the complete Ford Parts No. for the fuel pump on the 8-cylinder car or truck is 11A 9350 while the 6-cylinder job uses 1GA 9350.

Half-Mast

Dear Half-Mast,

Slip me some more information on those universal grease fittings that you showed on page 175 of the September-October ARMY MOTORS. According to the article the two fittings answer to the piece mark CLDX-6-A, which is okay as far as it goes.

Those fittings have to be set at different angles, though, and they have to be screwed on different types of threads, for different vehicles. Doesn't that mean different piece mark numbers? And, incidentally, what about the stock numbers for requisitioning?

Capt. A. C. M.

Dear Captain,

Yep, the standard fittings do come in eight varieties, not counting the slight differences in the heads of the Alemite and Lincoln models. The same lube gun fits on all eight, whether manufactured by Alemite or by Lincoln, but the fittings differ in threading or in angle.

The official nomenclature is "Fitting, lubricating, hydraulic, Ordnance Standard." These are the variations:

Half-Mast

Thread	Angle	Piece Mark No.	Federal Stock No.
1/8" pipe	Straight	CLDX-6-A	45-F-448-200
1/8" pipe	45-degree	CLDX-6-A plus CLDX-8-A	45-F-448-200 plus 45-F-403
1/8" pipe	90-degree	CLDX-6-A plus CLDX-8-B	45-F-448-200 plus 45-F-420-75
1/4"—28	Straight	CLDX-9-A	45-F-451
1/4"—28	45-degree	CLDX-9-C	45-F-406-150
1/4"—28	90-degree	CLDX-9-D	45-F-430
5/16"—32	Straight	CLDX-9-B	45-F-466-50
5/16"—32	67 1/2-degree	CLDX-9-E	45-F-412

Dear Half-Mast,

SNL G-508 lists a 3-ton Jack under Federal Stock No. 41-J-73-5.

SNL N-19 lists a 7-ton Jack under the same Federal Stock Number.

Possibly you can straighten this out.

Capt. D. S.

Dear Captain,

You're right—the SNL is wrong.

The Federal Stock Number of the 7-ton jack, as listed in SNL N-19, is correct for that jack. The Federal Stock Number of the 3-ton jack, listed in SNL G-508, should be 41-J-72. A correction will be made in the next printing of that SNL.

Half-Mast

Dear Half-Mast,

Vehicle Inspectors from our Service Command Headquarters tell us that all sets of dual tires must be mounted so the valve caps are opposite each other. They say it's necessary to maintain balance.

Having the caps opposite is fine; when you're checking tire pressures in a hurry, or with poor lighting, it pays to know where the inner one is without feeling all over for it. But, isn't each wheel corrected for balance in production—and wouldn't they be in balance no matter how they were mounted in regard to valves?

Cpl. P. C.

Dear Corporal,

Your Inspectors are right—and wrong.

On dual wheels, the valves are mounted opposite each other for

(Continued on page 288)



ARE YOU HAVING PARTS TROUBLE?

MAYBE AUNT MINNIE IS TO BLAME FOR YOUR SHORTAGES

Watch out, guys. Aunt Minnie's in the Army.

You remember her. She's the old gal who used to tote her little black satchel around the neighborhood five-and-dimes every Bargain Friday, looking for (and buying!) everything from anti-macassars to zweibach. "Never can tell when you might need 'em," she always said. So her hoard of useless loot grew and grew.

We've got a lot of her kind in the Army.

These GI Aunt Minnies do strange things. They pounce on a copy of SNL H-1, for instance. "Zounds!" they shriek. "Standard Hardware! Gimme ten of these and twelve of them and fifty of everything else. Never can tell when you might need 'em."

So what—what of it?

Well, in the first place, SNL H-1, like many of the other SNL's that don't deal with a specific vehicle or weapon, lists a lot of miscellaneous items of all shapes and sizes that may or may not be used on any given vehicle. Parts common, they're called. Maybe they're used on a weapon, or maybe they just happen to be on the list because they're "standard."

Take brass cotter keys. Nowadays, no mechanic in his right mind is going to need very many brass cotter keys of any size to maintain his trucks or tanks. Yet, the other day, one of the boys

casually ordered 1500 of each and every size of brass cotter key from 1/32"x½" up to and including ¾"x6". (We've got the requisition to prove it.) Now, ain't that ridiculous? Brass cotter keys six inches long and three-quarters of an inch thick. What would he do with 1500 of them?

Another guy, who happened to like the number 150 better than 1500, requisitioned 150 of every size thumbscrew in the book. Didn't matter that some of the sizes aren't now used on any motor vehicle the Army owns. He wanted them anyhow.

If the already worn-to-a-frazzle supply organizations took such requisitions seriously, they'd go nuts, trying to get the parts specially manufactured out of critical materials.

Another Army Aunt Minnie: Somebody asked for 500 batteries of a certain size and type, which can be used in only one kind of Army vehicle. The total number of those vehicles bought by the Army is 387; those are pretty well scattered, and probably a few are wrecked or shot up. Yet one guy thought he needed 500 batteries. The same requisition asked for 150 batteries of another type, when the largest number of vehicles he could possibly have that used them was 39.

This sort of business isn't peculiar to Parts Common. Take modification kits, for instance.

You can read FSMWO G501-W17 for yourself, and see that it applies only to vehicles with certain manufacturer's serial numbers. Group I covers 708 vehicles, and Group II and III each cover 505 vehicles.

But what does our hero do? He ups and asks for 912 kits of each group—2736 in all. And there just ain't that many kits.

A motor sergeant at a Southern camp learned what somebody else's parts-grabbing can do to a guy. He had 23 Medium M4A1 and M4A3 tanks which needed the new-type crash padding authorized in FSMWO G104-W71. So he requisitioned 23 kits. When his requisition came back, you could hear him screaming in Attu. A letter told him the Army owned only 400 tanks that needed this modification, and all 400 kits had been issued. Maybe his tanks already had the new-type padding, the letter helpfully suggested.

The sergeant bit off a front tooth and spat it out. He knew which tanks needed the new padding—he'd looked. But somebody else, who hadn't looked, had ordered more than he needed—so there weren't enough to go around.

That's often the trouble when there's not enough to go around. Some greedy or careless Aunt Minnie, has ordered supplies he didn't need.

Let's bust Aunt Minnie out of the Army.

The Month's Directives

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

WAR DEPARTMENT AGO PUBLICATIONS

AR—Army Regulations
 FM—Field Manual
 TC—Training Circular
 TM—Technical Manual

T/O & E—Table of Organization and Equipment
 WDC—War Department Circular

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

594-596 Commonwealth Avenue, Boston, Mass.
 641 Washington Street, New York, N. Y.
 601 South Haven Street, Baltimore 24, Md.
 Glenn Street and Murphy Avenue, S. W., Atlanta, Ga.
 42-52 So. Starling Street, Columbus, Ohio.
 111 North Canal Street, Chicago 6, Ill.
 16th and Cuming Streets, Omaha 2, Neb.
 c/o San Antonio QM Depot, Fort Sam Houston, Texas.
 2325 Wall Avenue, Ogden, Utah.

Distributed to AAF Activities by Area Air Service Commands.

Distributed outside Continental United States by Ports of Embarkation.

ORDNANCE FIELD SERVICE PUBLICATIONS

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

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

Distributed through Ordnance Officers by regional Ordnance Distribution 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, c/o San Antonio QM Depot, Fort Sam Houston, Texas.
 Western Ordnance Publications Depot, P. O. Box 1031, 2325 Wall Avenue, Ogden, Utah.

AAF Training Command activities request on Headquarters of their regional Flying or Technical Training Command.

Overseas units with San Francisco APO's request on Publications Supply Officer, Overseas Supply Division, Warehouse B—Oakland Branch, San Francisco Port of Embarkation, Oakland, Calif.

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

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

Overseas units with Miami APO's request on Southeastern Ordnance Publications Depot.

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

TANK-AUTOMOTIVE CENTER DOES NOT DISTRIBUTE PUBLICATIONS TO THE FIELD

ARMORED CARS

CAR, ARMORED, LIGHT, M8
 (6x6)

SNL G-136, OSPE (including C1).

CAR, ARMORED, UTILITY, M20

SNL G-176, OSPE, C1.

SCOUT CARS

CAR, SCOUT, M3A1 (4x4)

SNL, G-67, OSPE, C1.

GUN MOTOR CARRIAGES

CARRIAGE, MOTOR, 75-MM
 GUN, M3

FSMWO G102-W35, Provide better spring suspension.

CARRIAGE, MOTOR, 105-MM
 HOWITZER, M7

FSMWO G128-W21, Install improved muffler bracket.

FSMWO G128-W26, Provide seal between armor plate and fuel tank filler neck.

FSMWO G128-W27, Install new type fuel cut-off solenoid connecting rod.

TB 700-94, Dust accumulation in clutch.
 SNL G-128, OSPE (including C1).

CARRIAGE, MOTOR, 75-MM
 HOWITZER, M8

FSMWO G127-W7, Improve operation of hydraulic transmission.

FSMWO G127-W9, Remove fire detector system.

TB 700-98, Fire detector.

SNL G-127, OSPE, C1 and 2.

CARRIAGE, MOTOR, 3-IN. GUN,
 M10

TB 700-92, Types of injectors.

SNL G-130, OSPE, C1.

CARRIAGE, MOTOR, 3-IN. GUN,
 M10A1

TM 9-731G, Operation and maintenance.
 TB 731G-6, Gaskets, cylinder head, Ford GAA engine.

TB 731G-7, Spark plug inserts.

TB 731G-8, Camshafts, Ford GAA engine.

SNL G-170, OSPE, C1.

CARRIAGE, MOTOR, 155-MM
 GUN, M12

FSMWO G158-W7, Install clutch booster.

FSMWO G158-W9, Install new type fuel cut-off solenoid connecting rod.

TB 700-94, Dust accumulation in clutch.

SNL G-158, OSPE.

CARRIAGE, MOTOR, MULTIPLE
 GUN, M13

FSMWO G102-W42, Gun mount.

CARRIAGE, MOTOR, MULTIPLE
 GUN, M14

FSMWO G147-W7, Reinforce radiator louver control lever.

FSMWO G147-W9, Gun mount.

TB 707-4, Cylinder head and valve adjustment.

CARRIAGE, MOTOR, MULTIPLE GUN, M15

FSMWO G102-W35, Provide better spring suspension.

CARRIAGE, MOTOR, MULTIPLE GUN, M15A1

SNL G-102, Vol. 16, OSPE.

CARRIAGE, MOTOR, MULTIPLE GUN, M16

FSMWO G102-W42, Gun mount.
SNL G-102, Vol. 14, OSPE.

CARRIAGE, MOTOR, MULTIPLE GUN, M17

SNL G-147, Vol. 6, OSPE.

CARRIERS**CAR, HALF-TRACK, M2**

FSMWO G102-W35, Provide better spring suspension.

CAR, HALF-TRACK, M2A1

SNL G-102, OSPE, Vol. 2.

CARRIER, PERSONNEL, HALF-TRACK, M3

FSMWO G102-W35, Provide better spring suspension.

SNL G-102, OSPE, C1, Vol. 3.

CARRIER, PERSONNEL, HALF-TRACK, M3A1

SNL G-102, Vol. 4, OSPE.

CARRIER, PERSONNEL, HALF-TRACK, M5

FSMWO G147-W7, Reinforce radiator louver control lever.

TB 707-4, Cylinder head and valve adjustment.

CARRIER, PERSONNEL, HALF-TRACK, M5A1

SNL G-147, Vol. 4, OSPE.

CAR, HALF-TRACK, M9

FSMWO G147-W7, Reinforce radiator louver control lever.

CAR, HALF-TRACK, M9A1

FSMWO G147-W7, Reinforce radiator louver control lever.

TB 707-4, Cylinder head and valve adjustment.

SNL G-147, Vol. 2, OSPE.

CARRIER, CARGO, M30 (T14)

FSMWO G158-W9, Install new type fuel cut-off solenoid connecting rod.

TB 700-94, Dust accumulation in clutch.
SNL G-158, OSPE.

HALF-TRACK VEHICLES

(See also Individual Vehicle Listings)

FSMWO G102-W41, Remove interlock mechanism and insert spacer.

TB 700-95, Steering knuckle boot guard.

LIGHT TANKS**TANK, LIGHT, M3**

TB 700-96, Steel tracks.

SNL G-103, Vol. 1, LAP, C1.

SNL G-103, Vol. 1, OSPE, C2.

TANK, LIGHT, M3A1

TB 700-96, Steel tracks.

TANK, LIGHT, M3A3

FSMWO G103-W33, Install spacer.
TB 700-96, Steel tracks.

TANK, LIGHT, M5

FSMWO G103-W38, Improve hydraulic transmission.

TB 700-96, Steel tracks.

SNL G-103, Vol. 2, OSPE.

TANK, LIGHT, M5A1

FSMWO G103-W38, Improve hydraulic transmission.

FSMWO G103-W41, Remove fire detector system.

TB 700-96, Steel tracks.

TB 700-98, Fire detector.

SNL G-103, Vol. 8, OSPE (including C1).

MEDIUM TANKS**TANK, MEDIUM, M3A1**

SNL G-104, Vol. 12, Temp. C1.

TANK, MEDIUM, M3A3

TB 700-92, Types of injectors.

TANK, MEDIUM, M3A5

TB 700-92, Types of injectors.

Gotta Go?

ARMY MOTORS WANTS TO FOLLOW YOU WHEREVER YOU GO. BUT WE'RE NOT PSYCHIC. WHENEVER YOU MOVE, WON'T YOU PLEASE

NOTIFY US PROMPTLY OF CHANGE OF ADDRESS

... AND INCLUDE BOTH YOUR OLD AND NEW ADDRESS WHEN YOU WRITE.

TANK, MEDIUM, M4

FSMWO G104-W74, Install azimuth indicator.

FSMWO G104-W88, Install ventilating blower Assy.

FSMWO G104-W91, Check tolerances of bearings on gunner's periscope sight.

FSMWO G104-W97, Firing solenoid.

FSMWO G104-W103, Remove fire detector system.

FSMWO G104-W104, Install new type fuel cut-off solenoid connecting rod.

TB 700-94, Dust accumulation in clutch.

TB 700-98, Fire detector.

TB 731A-9, Auto pulse auxiliary fuel pump.

SNL G-104, Vol. 6, OSPE.

TANK, MEDIUM, M4A1

FSMWO G104-W74, Install azimuth indicator.

FSMWO G104-W88, Install ventilating blower Assy.

FSMWO G104-W91, Check tolerances of bearings on gunner's periscope sight.

FSMWO G104-W97, Firing solenoid.

FSMWO G104-W103, Remove fire detector system.

FSMWO G104-W104, Install new type fuel cut-off solenoid connecting rod.

TB 700-94, Dust accumulation in clutch.

TB 700-98, Fire detector.

TB 731A-9, Auto pulse auxiliary fuel pump.

SNL G-104, Vol. 11, OSPE.

TANK, MEDIUM, M4A2

FSMWO G104-W74, Install azimuth indicator.

FSMWO G104-W91, Check tolerances of bearings on gunner's periscope sight.

FSMWO G104-W97, Firing solenoid.

TB 700-92, Types of injectors.

SNL G-104, Part II, Vol. VII, SPC.

SNL G-104, Vol. 7, OSPE.

TANK, MEDIUM, M4A3

FSMWO G104-W74, Install azimuth indicator.

FSMWO G104-W88, Install ventilating blower Assy.

FSMWO G104-W91, Check tolerances of bearings on gunner's periscope sight.

FSMWO G104-W97, Firing solenoid.

FSMWO G104-W103, Remove fire detector system.

TB 700-98, Fire detector.

TB 731G-6, Gasket, cylinder head, Ford GAA engine.

TB 731G-7, Spark plug inserts.

TB 731G-8, Camshafts, Ford GAA engine.

SNL G-104, Vol. 8, OSPE, C1.

TANK, MEDIUM, M4A4

FSMWO G104-W74, Install azimuth indicator.

FSMWO G104-W91, Check tolerances of bearings on gunner's periscope sight.

FSMWO G104-W97, Firing solenoid.

OFSB 6-G104B, Lubrication instructions.

TB 700-94, Dust accumulation in clutch.

SNL G-104, Vol. 9, OSPE.

TANK, MEDIUM, M4A6

FSMWO G104-W74, Install azimuth indicator.

FSMWO G104-W91, Check tolerances of bearings on gunner's periscope sight.

FSMWO G104-W97, Firing solenoid.

SNL G-104, Vol. 13, OSPE.

SNL G-104, Vol. XIII, SPC.

VEHICLE, TANK RECOVERY, T2

TB 700-92, Types of injectors.

SNL G-169, OSPE.

HEAVY TANKS**TANK, HEAVY, M6**

OFSB 6-G118, Lubrication instructions.

SNL G-118, Vol. 1, OSPE.

TANK, HEAVY, M6A1

OFSB 6-G118, Lubrication instructions.

SNL G-118, Vol. 2, OSPE.

TRUCKS**TRUCK, BOMB LIFT, M1**

SNL G-189, LAP.

TRUCK, BOMB SERVICE, M6,

1½-TON, 4x4

FSMWO G85-W13, Provide clearance of seat riser cover panel over fuel gage unit.

SNL G-85, SPC.

TRUCK, ½-TON, (DODGE)
SNL G-505, OSPE.

TRUCK, ¾-TON, 4x4 (DODGE)
FSMWO G502-W10, Enlarge cross on ambulance.

TRUCK, 1½-TON, 4x4 (CHEV.)
TB 10-1557-2, Engine rear frame bracket.

TRUCK, AUTOMOTIVE REPAIR,
2½-TON, M8 & M8A1
SNL G-139, Vol. 1, OSPE, Load "A".

TRUCK, MACHINE SHOP, 2½-TON, M16 & M16A1
SNL G-146, Vol. 5, OSPE, Load "F".

TRUCK, ELECTRICAL REPAIR,
2½-TON, M18 & M18A1
SNL G-149, OSPE.

TRUCK, INSTRUMENT BENCH,
2½-TON, M23 & M23A1
SNL G-178, OSPE.

TRUCK, 2½-TON, 6x4 & 6x6
(STUDEBAKER)
TB 10-1565-1, Clutch adjustment.

TRUCK, AMPHIBIAN, 2½-TON,
6x6 (GMC)

FSMWO G501-W18, Provide hull drain-plug wrench adapter, etc.

FSMWO G501-W19, Provide metal board to replace plywood board, etc.

FSMWO G501-W22, Provide loading, unloading and transportation facilities, etc.

TB 802-4, Corrosion and waterproofing.
SNL G-501, SPC.

TRUCK, 5-TON, 6x4 (GMC)
TB 10-1423-1, Oversize king pins.

TRUCK, 6-TON, 4x2, DIESEL,
DUMP, 1941 (MACK FPD)
SNL G-640, OSPE.

TRUCK, PRIME MOVER, 7½-TON,
6x6, W/WINCH (MACK)
TM 10-1478, Parts list.
TB 814-2, Operating instructions.
SNL G-532, OSPE, C1.

TRUCK, CARGO, 10-TON, 6x4
(WHITE 1064)
SNL G-642, OSPE.

TRUCK, HEAVY WRECKER,
10-TON, 6x6, M1
SNL G-63, OSPE, C1.
SNL G-116, Vol. 1, OSPE, C1.
SNL G-116, Vol. 2, OSPE, C1.
SNL G-116, Part II.

VAN & SHOE REPAIR, 10-TON
(GERSTENLAGER)
TM 10-1315, Parts list and maintenance manual.

TRUCK, TRAILER, 40-TON,
TANK RECOVERY, M25
SNL G-160, OSPE, C1.

TRUCK TRACTORS

TB 10-1000-27, Lower fifth wheel (applies to 1½-ton, 4x4, Ford; 1½-ton, 4x2, Chev.; 1½-ton, 4x4, Chev.; 2½-ton, 4x4, Autocar; 2½-ton, 4x4, GMC;

4-5-ton, 4x4, Autocar; 4-5-ton, 4x4, Federal; 5-6-ton, 4x4, Autocar; 5-6-ton, 4x4, Mack).

TRACTORS

TRACTOR, MEDIUM, M1
SNL G-99, Part II, SPC.
SNL G-125, OSPE, C1.

TRACTOR, MEDIUM, M4 (T9E1)
TM 785-3, Gear shifting.

TRACTOR, 6x6, GTX (MINNEAPOLIS-MOLINE)
TM 10-1408, Parts list.

TRACTOR CRANE, 2-TON, M3
SNL G-132, OSPE.

TRACTOR, HIGH SPEED,
13-TON, M5
SNL G-162, SPC.

TRACTOR, HIGH SPEED, 18-TON, M4

TB 785-4, Crankcase oil filler.
SNL G-150, OSPE.

*Sorry, We're
Fresh Out!*

As far as you're concerned, ARMY MOTORS is *always* "fresh out" of other publications. So please don't ask us for any—whether they be Ordnance, AGO, or Super-Duper Comics. If you've got questions about publications, we'll dig up the answers. To get actual copies, follow the SOP on page 284.

TRAILERS & SEMITRAILERS

TRAILER, BOMB, M5
SNL G-74, OSPE, C1.

TRAILER, ¼-TON PAYLOAD,
2-WHEEL, CARGO
SNL G-529, OSPE.

TRAILERS, 1-TON, 2-WHEEL,
CARGO & WATER
TM 9-883.

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

TRAILER, WATER TANK, 250-GAL., 1-TON
SNL G-527, OSPE.

TRAILER, 2½-TON, PAYLOAD,
6½-TON GROSS, 4-WHEEL
SNL G-661, OSPE.

SEMITRAILER, STERILIZATION & BATH, 6-TON (10-TON GROSS)

TM 10-1397, Combined operation and maintenance manual and parts lists.

SEMITRAILER, M15
SNL G-160, Part II, SPC.

MOTORCYCLES

MOTORCYCLE, CHAIN DRIVE
SNL G-523, OSPE (Harley-Davidson).

PASSENGER CARS

CAR, 5-PASSENGER, SEDAN, 6 & 8 CYLINDERS (FORD)
TB 10-1375-a, Nomenclature plate change.

GENERAL

AR 25-25, Claims for damage.
AR 35-6560, C3, Receipts, shipment, and issue of property.
AR 35-6620, C4, Expendable property.
AR 35-6640, C6, Lost, destroyed, damaged, or unserviceable property.
AR 700-10, C2, Storage and issue.
AR 705-5, Stock control.
TC 115, List of publications.
TC 116, List of films.
TC 117, Marking of bridges and vehicles.
TC 125, Employment of tanks and tank destroyers as artillery.
TM 5-267, Suppl. 5, Camouflage.
WDC 260, Controlled items of equipment.
WDC 264, Use of government-owned vehicles.
WDC 267, Complaints on fuels and lubricants.
WDC 268, Tires and tubes: Issue, use, and reclamation of "seconds".
WDC 274, Motor vehicles ordnance major unit assemblies.
WDC 281, Camouflage: Distribution of engineer nets.
WDC 283, Enlisted men: Requisition for replacements trained by Army Ground Forces.
WDC 285, Supply of administrative vehicles.
WDC 295, Revised procedure for accounting for discrepancies in shipment.
WDC 296, Automotive disability report.
WDC 297, Change in terminology from "maintenance factor" to "replacement factor".
WDC 300, Emergency diesel fuel.
FSMWO G1-W9, Change to new style "combat zone safety lights".
OFSB 2-17, Receiving and preissue inspection of vehicles.
OFSB 2-25, General supply: Winterization equipment for automotive materiel.
OFSB 4-1, Maintenance, general.
OFSB 6, C1, Distribution of Ordnance Field Service Publications Series of 1943.
OFSB 7, C2, Policy for supply of organization spare parts and equipment.
SNL G-1, C1, Major items.
SNL G-27, Vol. 2, Tools.
SNL G-27, C2, Tools.
SNL H-2, C2, Miscellaneous hardware.

PERPETUAL INDEX

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

SUBJECT	DEC. 43	NOV. 43	Sep.-Oct.	AUG. 43	JUL. 43	JUN. 43	MAY 43	APR. 43	MAR. 43	FEB. 43	JAN. 43	DEC. 42
ACCESSORIES	228, 245	218, 224	165, 180, 183	152, 153	103, 121	71, 76, 89, 96	39	6, 7, 20, 22, 24, 3C	354, 372	322, 327	291, 303, 307	266, 277, 284, 3C
AMPHIBIANS		213, 214, 221	190		103		60	19				
AWARDS			185			3C	38			346		
AXLES	246	207	180	133, 134	123	89	37, 29, 59	4	372, 3C	318, 320, 339, 343	286, 290, 307	260, 278
BATTERIES		211	164, 182, 186		103	3C		6, 31	374, 375		310	
BODY	244, 249, 3C			132	102, 128	88, 96	39, 57, 61, 3C	3, 20, 22	349, 377	323, 339	311	272
BRAKES	228, 237, 3C	203, 213, 216	166, 180, 181, 184	134, 152, 154	114, 120, 122, 123, 4C	65, 89	39, 59, 61	18, 20	373, 377	320		274, 276
CAMOUFLAGE		3C	186	153								
CHASSIS	247	203	180, 183, 185	132, 133, 155, 156	117	68		7	354, 355	324, 331, 342		258
CLUTCH	231	197, 213, 214		2C	122	65, 69		22, 23	361	336	289	257, 274, 283
CONSERVATION	3C, 4C				116, 117, 121						288	3C
COOLING SYSTEM	229, 256	195	164, 180, 4C		99	85			372, 376	323, 328, 344, 347	291, 293	258, 260, 3C
DOCTRINE	2C, 232, 237, 249, 3C	2C	2C, 185,	4C	112, 120	2C, 71, 80, 89, 92, 3C	34, 3C, 4C	1, 21, 32, 3C	374, 3C	323, 332, 348, 3C	3C	260, 261, 279, 283
ELECTRICAL	228, 244, 247, 249	196, 213	180, 182	135, 160	100, 110, 119	70, 71, 87	56	19, 21, 24, 3C	373, 375	334	290	259, 261, 279
ENGINE	225, 229, 244, 248, 3C	193, 198, 213, 217, 224	180, 181, 182, 184, 185, 3C	129, 130, 131, 132, 133, 135	101, 119, 122, 3C, 4C	66, 70, 87, 91	36, 37, 39, 56, 58	6, 7, 18	361, 364, 371	334	292, 295, 308, 309	258
EQUIPMENT	246	224	184, 3C	2C, 134, 137, 151	3C	78, 91				337, 340	301	270, 275
EXTINGUISHERS					107				377			
FINAL DRIVE	247, 248	207	180, 184	156	105, 123, 124		37, 60,	4, 7, 23	352, 372	341	310, 311	278, 284
FORMS	232, 233, 3C	3C	182, 183			2C, 71, 92	34	1	371		290	
FUEL SYSTEM	247, 248, 250	197	183	135, 139, 155, 3C	100, 102, 123, 3C, 4C	71	38, 60, 62	4, 19, 31	352, 361, 366, 379, 3C	320, 336	288, 289, 292, 293	257, 262, 275, 3C
IDENTIFICATION	2C, 244	216, 3C	168, 178, 186				55, 59, 60	5			288	
INSPECTIONS	233, 249			142, 3C	100		2C, 56, 58	3C				
INSTRUMENTS	236		181	135, 138	100	70, 90		7, 23	368, 371	344, 4C		260
LUBRICATION	227, 231, 3C	193, 196, 197, 217, 224	161, 175, 182, 186, 192, 3C	133, 135, 151, 155, 156, 3C	97, 103, 104, 106, 120, 123	68, 69, 86, 90, 3C	33, 38, 58, 60	5, 6, 23	366, 371, 375, 376, 377, 3C	318, 324, 340, 341, 342	286, 288, 308	268, 278
MOTORCYCLES		222	190	140		68	39		367, 377	340		261, 283
OPERATIONS	228, 234, 246	216	170, 175, 179, 183	130, 131, 135, 3C	117, 119, 120, 3C	65, 66, 4C	39	7, 20	2C, 365, 378	2C, 330, 334	2C, 291, 305, 307, 309, 4C	253, 254, 276
ORGANIZATION	237	215				81						
PAINT		3C		152	128		59			338	291	275
PERISCOPE					103	67					285	273, 284
PRESERVATIVES					107, 3C	92		22, 32, 3C		323, 331		
PROCUREMENT	240	3C	164									
PUBLICATIONS	228, 230, 233, 252	2C, 198, 199, 219, 220, 224	2C, 165, 187, 188, 192, 3C	133, 135, 138, 157, 160, 3C	103, 125, 127, 3C	68, 93, 95, 3C	40, 45, 53, 3C	13, 15, 16, 3C	356, 362, 378, 3C	345, 3C	291, 312, 315	255, 261, 289, 4C
RADIO					101, 124		39	3C	3C	3C		
RECLAMATION		206										3C
SALVAGE					123, 3C		39					
SOLVENTS							37	23	361, 371	339	311	274
STEERING	237	196, 198	180, 181, 184	151	122							
STORAGE	251	217							364	323, 339, 344	285, 290	260
SUPPLY	232, 240, 244, 246, 249	204, 3C			107	92	3C		361	330	287	260, 3C
TIRES	245, 247, 4C	214, 217	177	133, 155	102, 128, 3C	77, 88, 95	39, 48	32	354, 372	341, 344	290, 299, 312	274, 275
TOOLS	230, 248	213, 215, 219	169, 176	144, 146, 153		84, 3C	58, 60, 3C	7, 8, 20	354, 368, 374	317, 323, 340, 341, 343	291, 306, 308, 309, 310	273, 275, 276, 277, 3C
TRACK	228	196, 217, 3C	169, 3C	3C	101, 102, 3C	69, 72, 96	36, 3C	3C				
TRAILERS	254	222	190		120		57	21, 30	367, 3C	329, 3C	300	253, 279
TRAINING	254	222		133, 138	111				378	323, 326, 345, 3C	305	2C, 274, 283
TRANSFER CASE	227, 236		180	133, 154	104, 105, 106	67, 82			360	318	286	258, 278
TRANSMISSION	227, 230, 235, 236		3C	133, 135, 149, 156, 3C	102	90	57	18	359	318	286, 312, 316	277
TURRET	229			133, 135			3C					
VESICANTS		224					46					
WHEELS	256	197, 215	161				57		353, 358, 361, 372	336, 343	299	261, 276
WINCH	245	200, 218	170	134, 135, 136, 137, 152, 154			60	22	353, 367			275

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

CONNIE RODD

(Continued from page 264)

in a new bulb when you're not looking. Finally, paint over the red jeweled light on the instrument panel or warning box, using the same color as on the panel or box.

ALL-IN-ONE SNL

(Continued from page 275)

on the vehicle are listed in Vehicular Spare Parts and Equipment.

4. When it comes to getting the actual nomenclature and stock numbers for requisitioning, use the Addendum and stay away from the others.

5. Always give both the Official Stockage Number and the Manufacturer's Number (plus any others given in the Addendum) when requisitioning. Because of the variety of systems used for stockage in different depots, it's your only sure way of getting parts and supplies promptly.

HOW TO MISS A NAZI

Want to kayo the aim of that hard-hitting 3" gun on your M10 or M10A1 gun motor carriage? Then just do what a lot of other GI's (who should know better) are doing. Use the gun elevating mechanism as a device for tightening the track.

What these Joe Dopes do is hook up the idler-adjusting wrench to the gun barrel, then elevate the gun. What **that** does is snap in two the vital bronze elevating nut B259890), putting the whole elevating mechanism out of commission at one fell swoop.

This lazy man's stunt is so common, we hear, that there's a serious and growing shortage of those precious elevating nuts—which hardly ever break when they're doing the job they're **supposed** to do. That job is aiming shells at Nazis, not hoisting a wrench to take a load off your biceps.

SGT. HALF-MAST

(Continued from page 282)

convenience in checking and inflating—not just to maintain balance (see page 15 in TM 31-200).

Truck wheels are **not** individually checked for balance in production. Even if they were, you'd still have to balance them again after the tires were mounted. When two wheels are mounted together, the location of the valves becomes a factor in the final balance. So placing them 180 degrees apart is best for several reasons.

*Half-Mast***PM ROSTERS**

(Continued from page 261)

ber or engine number (so they won't have to look at the vehicle if they need it in a hurry). Still others are writing in the TM and SNL numbers, for quick reference, or even keeping a list of modifications made on the vehicle, by FSMWO number. No rule says they can't—and you can see the value.

Many men are using one page of the Roster for each vehicle—thus keeping a year's record for one vehicle on a single sheet—instead of listing a month's record for several vehicles on one page. This isn't strictly according to the TM, and therefore we can't tell you to do it, but you'll have to admit the idea of having a year's history of a vehicle on a single page, which can be transferred with the vehicle, sounds as though somebody is using his head.

The star-spangled service ribbon for the best contribution of the month, on this PM Roster question, is from Capt. LeRoy W. Hughes, Camp Barkley, Texas. He uses the extra space on the left-hand page for a record of driver assignments, driver efficiency ratings, and tire rotation dates and mileages (see page 261). The efficiency ratings for drivers are pretty important, he points out, if you're going to make those Driver Award Medals really mean something.

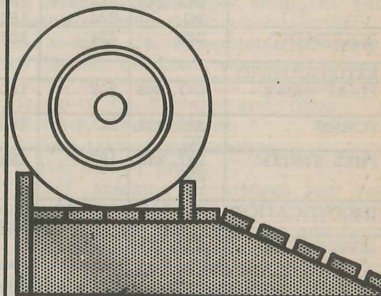
Got any more ideas?

HOW TO IMPROVE A PORTABLE RAMP

Lt. D. A. Wolgin, among other old-hands at safety engineering, finds ARMY MOTORS guilty of negligence.

In publishing an idea for portable ramps submitted by Pvts. Mulcahy and Galcia, we failed to add some safety precautions of our own. So here goes:

Instead of depending on the brakes and engaged gears to keep the truck from rolling off the ramps, add length to the platforms with a gap between planks, to insert a block after



the truck's been run up. All four ramps should be made to look like this one instead of like the pictures on page 246 of December's issue.

A stake driven in front of each one (where the ground permits) will keep the ramps from pushing forward when the truck's on the incline.

Specifications are purposely left out because any kind of available scrap will do, but it's a good idea to make them rugged enough to take the heaviest job you'll have to work on.

HOW ARE TIRES PERFORMING OVERSEAS

Are your tires holding up under overseas conditions? What about combat tires? We're anxious to hear from the men with the answers.

• • NEWS FLASHES • •

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

Some M6 and M8 Light Armored Cars, and M20 Utility Armored Cars have been caught riding along with the front springs backwards. These springs are non-symmetrical—the axle doesn't sit in the exact center of the spring. Unless they're on right, the spring won't give support the way the engineers figure it should. And since it moves the axle back the drive-shaft's likely to bugger up the transfer case. A broken spring, wheels out of alignment, or a ruined transfer case will be your reward. When putting on a spring, measure it and put the shorter end toward the front. Also measure your M6's and M8's, now, to see if the springs have the short end forward.

* * *

We've said it before: Anti-friction bearings are Critical. Brother, that ain't the half of it. We'll just mention that Hope diamonds are more plentiful right now. There are two ways to beat the bearing shortage. 1) Requisition like crazy for new bearings, and 2) Take care of the ones you've got on your present vehicles, so you **won't need** new ones. The first way won't work. Ordnance Depots have become miserly about giving out even one ball or roller bearing or a bearing part (cups, cones, races, and other parts), UNLESS they're for the repair of a dead-lined vehicle or an unserviceable assembly. NOT just to keep on hand to build up a pile for a rainy day. Supply units, too, have become stingy about giving out bearings unless they're for repair. No wonder. These units have been slashed down to **half** of their previous stock levels of bearings. A better way to beat the shortage is obvious: **take care of your present ones**. All it takes is greasing the bearings as often as the Lube Guide tells you, and adjusting them properly. A little care and your bearings will last long . . . and you won't have to get down and plead with the sarge for new ones.

* * *

If blackout kits are still on your waiting list scratch them off and start over from the beginning. During the time factories waited for the materials to complete the kits for tactical and administrative vehicles, a lot of changes were made that call for completely new requisitions. If you haven't already re-ordered since 1 November, 1943, order your kits according to FSMWO's G1-W6, G1-W9, or G1-W10 depend-

ing on which vehicles need them. But above all specify the kit numbers, the fizmo number, (**not the paragraph it appears in**), and **give the Federal Stock Number of each kit**. And get this straight: kits 1 to 7 should be requisitioned from Tank-Automotive Center, Maintenance Branch, Modification Section, and kits 8 to 16 should be ordered from Fort Wayne Ordnance Depot.

* * *

No more fuss with carrying around a different grade of oil just for the final drive of the M5 and M5A1 Light Tanks. One grade now does for the engine, transmission, differential **and** the final drive. SAE 30 for +32° and above, SAE 10 for +32° to 0°. If you've been using anything else in the final drive, drain it out next time it needs filling. Then refill with regular crankcase grade oil.

* * *

We still hear of guys who get cold feet when they have to mix antifreeze. Here's all there is to it, according to that popular W. D. Circular 137 (1943): ethylene glycol is the **only** antifreeze authorized. Next, all commercial brands of ethylene glycol may be mixed. Even if one's colorless and another is blue, it doesn't matter. The only thing to stop you is if the antifreeze is **rusty**, or gives a reading **above** 20°. Then it belongs down the drain. (While on the subject—the Army approved two antifreeze inhibitors. Federal Stock No. 51-1-136-85 and Federal Stock No. **51-B-669-75**. But order the second one, in boldface type, because it's the only one stocked for issue).

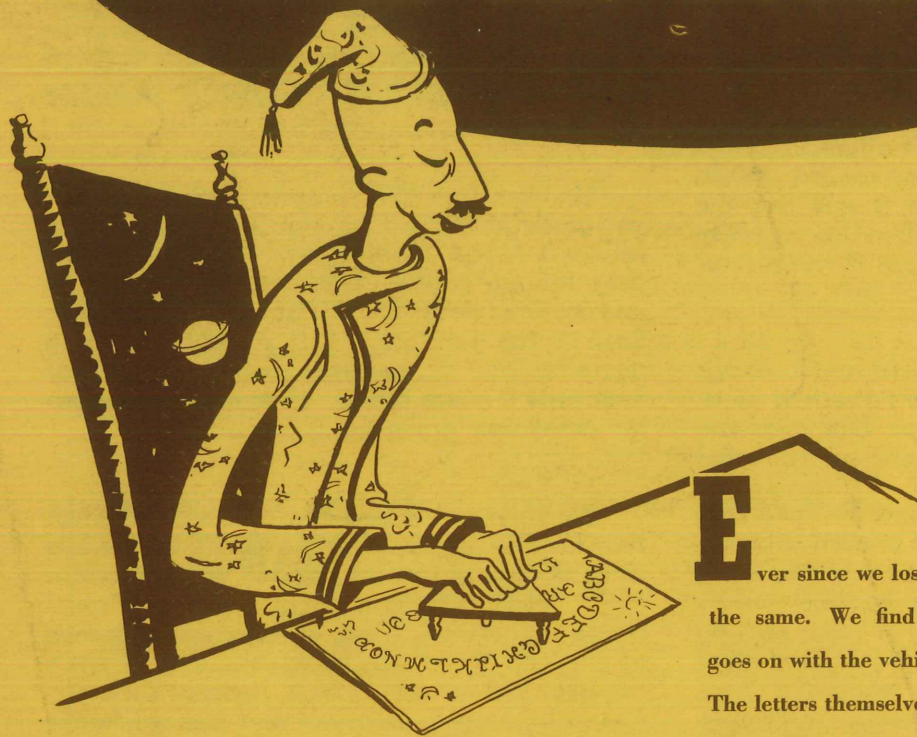
* * *

Spare tire locks are being eliminated from all tactical and combat vehicles now in production. It's OK to remove spare tire padlocks from your vehicles as long as you turn them back to stock. If the lock is part of the handle then solder or weld them in the open position. For details see TB 700-103.

* * *

A new TB is being prepared which provides for a bigger and better fuel filter on half-track vehicles. This new filter will help cure some of the frozen gas line headaches that half-trackers have been swamping Sgt. Half-Mast with.

IS THERE A MIND-READER IN THE HOUSE?



Ever since we lost our ouija board, things just aren't the same. We find it harder than ever to guess what goes on with the vehicles in your outfit—from your letters. The letters themselves are swell. They give us a lively first-hand picture of field automotive maintenance, what's good and what's bad about it. But when it comes to solving your individual maintenance problems, helping to get a modification or a production change made, we're often up a tall tree. That's because you sometimes don't give us enough information. Facts are what we want. Facts like: Manufacturer's name and serial number. Vehicle registration number. Mileage. The specific part or parts. Tell us **EXACTLY** what happened. When? Under what conditions? How often? What do **YOU** recommend? Sum up the evidence. If you've got a picture of the trouble—or can draw one—shoot it along. Only if we get **ALL** the facts, can we give you intelligent and helpful answers to your questions. Only if we get **ALL** the facts, can needed modifications, changes in doctrine, or improvements in production result from your letters to us. Don't worry about form—just worry about completeness. Let's have the **WHOLE** story next time.

WE CAN DECIPHER YOUR WRITING — BUT WE CAN'T READ YOUR MIND!