1954

# PS Magazine 1954 Series Issue 027

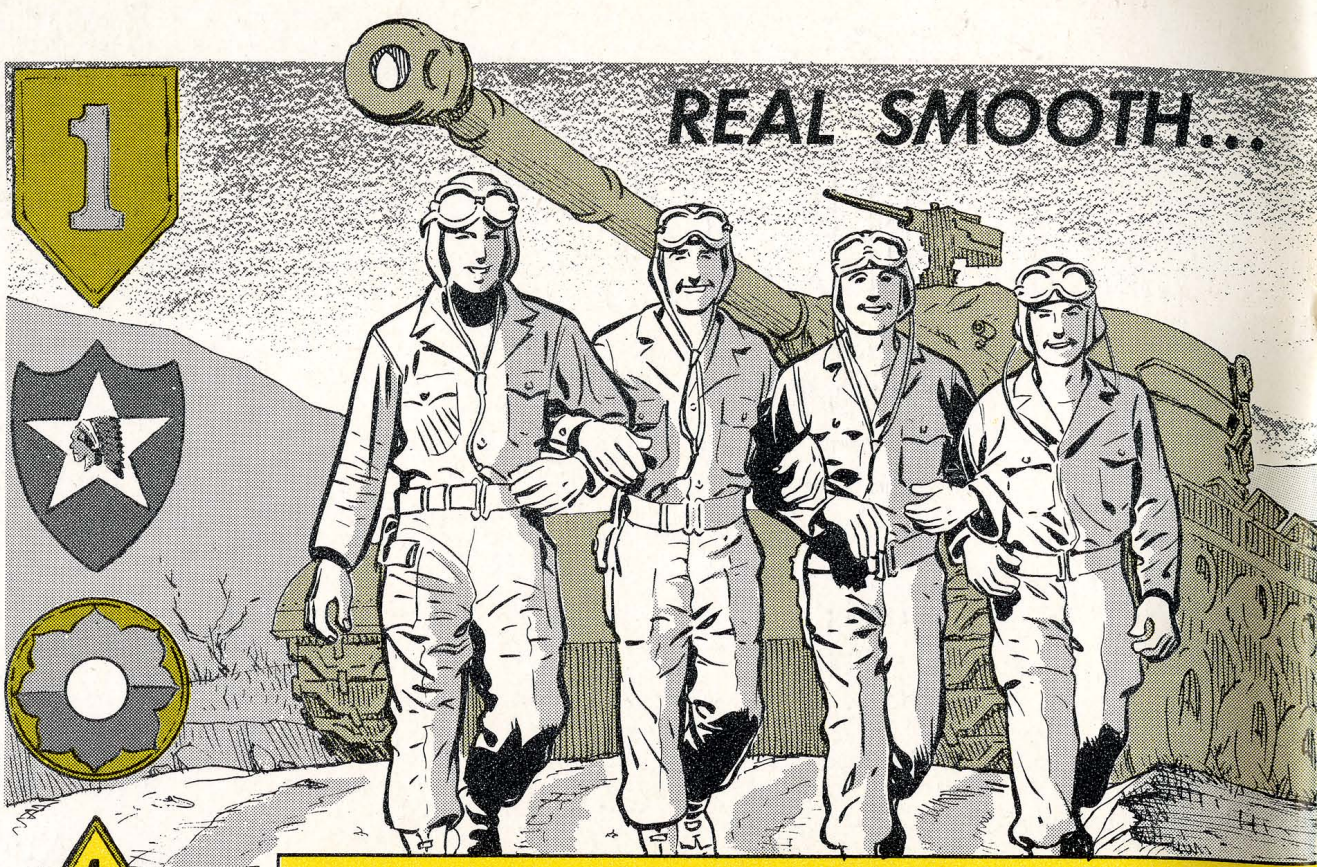
United States. Dept. of the Army

Will Eisner

# PS

# THE PREVENTIVE MAINTENANCE MONTHLY

Issue 27 1954 Series



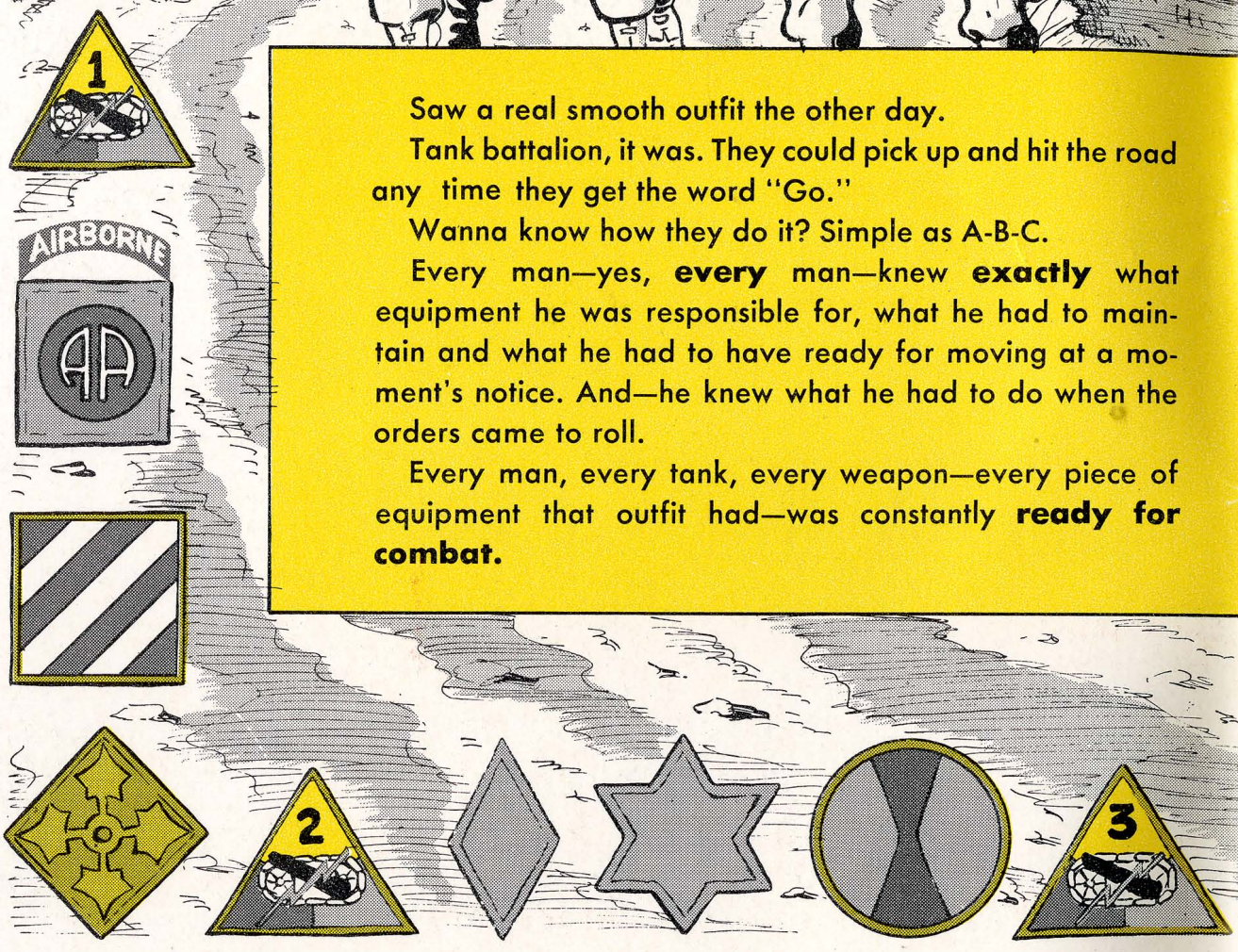

Saw a real smooth outfit the other day.

Tank battalion, it was. They could pick up and hit the road any time they get the word "Go."

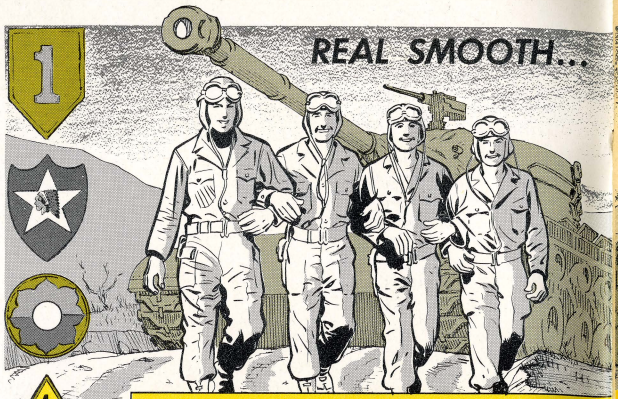
Wanna know how they do it? Simple as A-B-C.

Every man—yes, **every** man—knew **exactly** what equipment he was responsible for, what he had to maintain and what he had to have ready for moving at a moment's notice. And—he knew what he had to do when the orders came to roll.

Every man, every tank, every weapon—every piece of equipment that outfit had—was constantly **ready for combat.**



# REAL SMOOTH...



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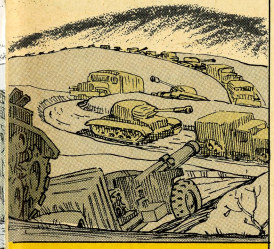
# BATTLE READY OUTFIT



Those men trained every day like the enemy was right over the next hill or down the road a few miles.

They won't be caught with their maintenance down or their equipment not ready.

That outfit can fight anywhere, any time—under any conditions.

Can yours?

## IN THIS ISSUE

**Issue No. 27** **1954 Series**

### FEATURE ARTICLES



### DEPARTMENTS



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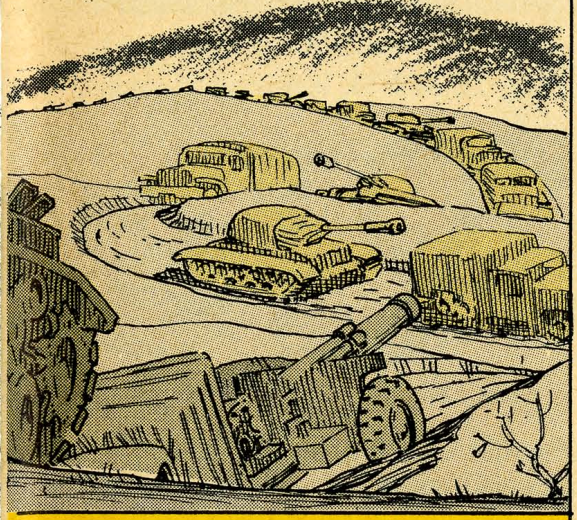

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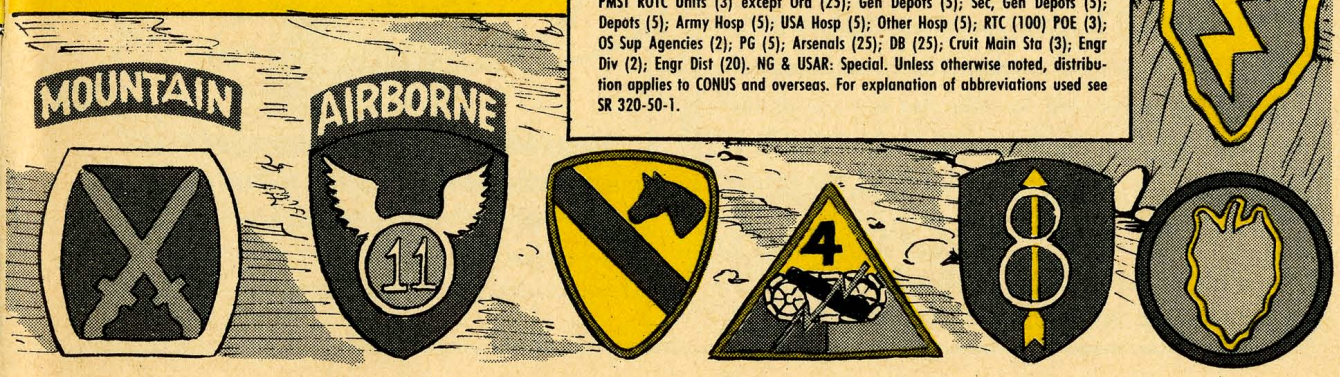


## Better breather balks blowing bottoms—

# TWO-WAY FIX HALTS FIVE-

Some on-the-ball 5-ton truck jockeys have been blowing their tops because the trucks were blowing their bottoms. They were starting 'em up and: Pow! Right in the crankcase.

As near as they could figure, it happened on the early model 5-tonners when gas vapors in the crankcase mixed with sparks in the distributor. If your babies are in that class, you'll sure want the low-down, so here's how it goes—

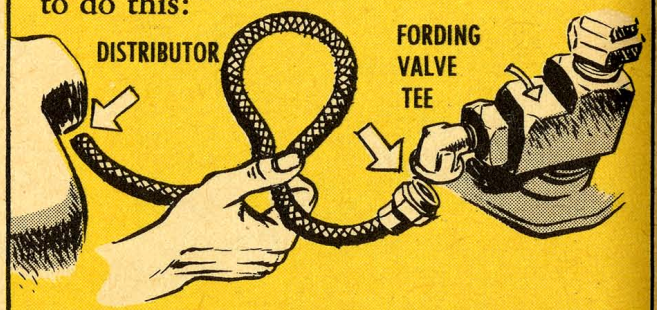
The gas-tank filler-cap has two positions, one for sealing, one for pressure relief, so if you back the gas-tank filler-cap off to the first notch when your truck is parked, pressure can't build up in the fuel system.

But—if the cap's tight and the pressure relief-valve on the fuel-tank sticks, pressure builds up in the tank with enough force to push the gas thru the pump, past the carburetor, and down the intake-manifold where it finally seeps past the piston rings to the crankcase.

Gas fumes coming from the crankcase work up the vent-line and over into the distributor, 'cause the distributor and crankcase are both vented on the same line. When you start the vehicle the action of the breaker points fire the fumes, and the vent lines act as a fuse to the crankcase. The explosion that takes place can really wreck the downstairs of your engine.

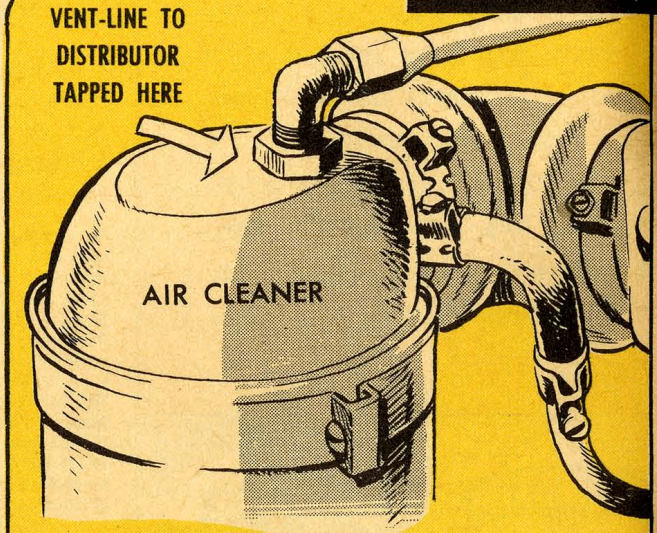
An urgent MWO, Ord G744-W11 (23 Apr 54), should have been applied by now on all trucks not already fixed in production. It'll eliminate a couple of possible sources for the trouble.

If for some reason your truck's still waiting for the MWO, it might be wise to do this:




Disconnect the flexible metal-hose vent-line from the distributor and from the elbow on the crankcase fording-valve tee. (Put that metal hose in a safe place; it'll be needed when the MWO's applied.)

### THE MWO




The MWO will run your distributor vent-line directly into the top of the air cleaner. This'll give the distributor its own vent-line direct to the air cleaner.

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# TWO-WAY FIX HALTS FIVE-TONNER CRANKCASE EXPLOSIONS

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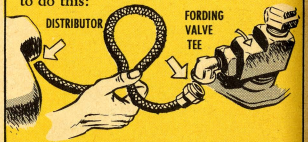


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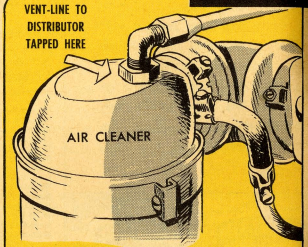


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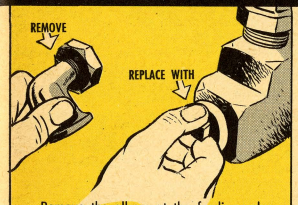
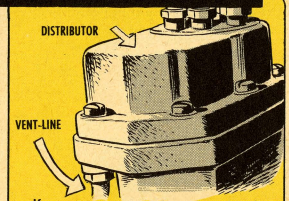
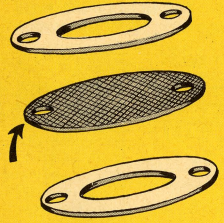



Remove the elbow at the fording-valve tee and stick a 1/8-in square-head pipe-plug (Ord Stock No. H006-0283200) in the tee opening. Be sure you don't stick anything in the opening at the distributor.



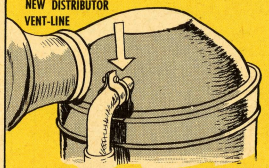

Keep the opening clean so's the distributor can breathe. Have the MWO applied as soon as possible in case you go fording 'cause you won't have a waterproof distributor. This is real important.

### DOES THIS:



The MWO also gets rid of another possible source of explosion by sticking two flame-arresters in where the crankcase vent-line goes into the valve-covers.

### LATE MODELS HAVE THIS




The fix on trucks coming off the production line will have the distributor on its own vent-line but it will be tapped into the air cleaner on the left side of the air outlet. If you find the line in this position, don't ask to have the MWO applied.

The production fix will also have the flame-arresters installed.

# TONNER CRANKCASE EXPLOSIONS

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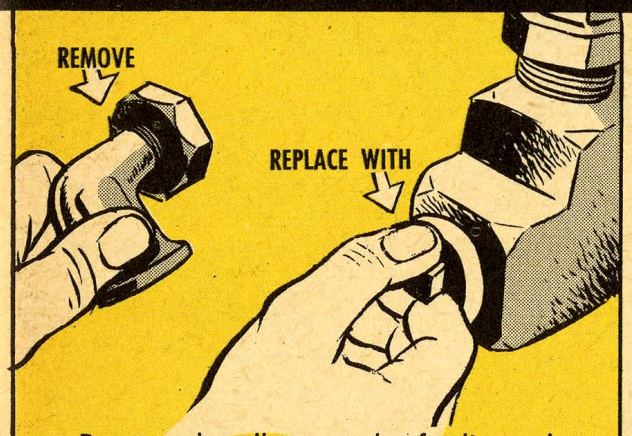


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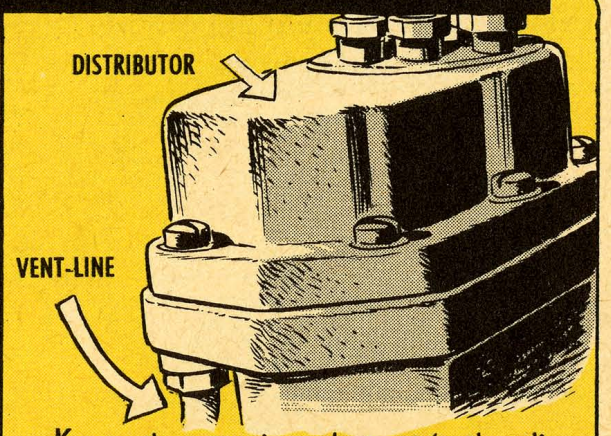


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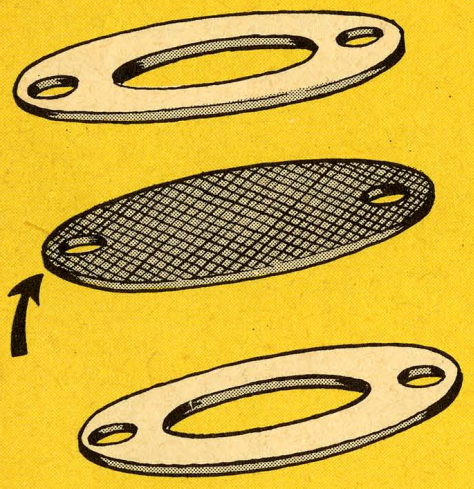

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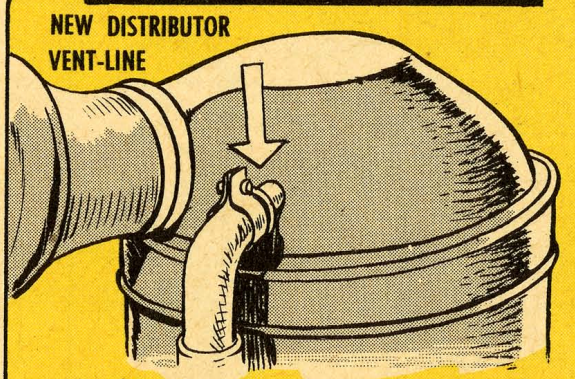


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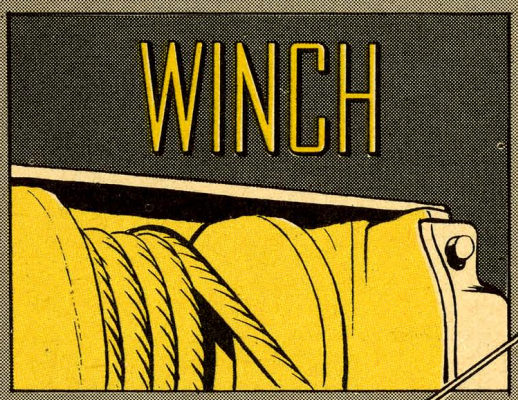
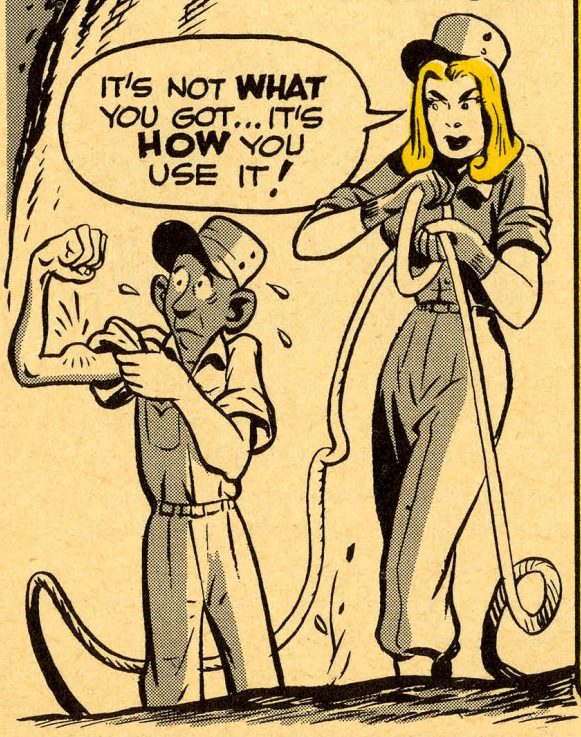
RIGHT USE AND CARE PAY OFF

# WHEN YOU NEED A WINCH

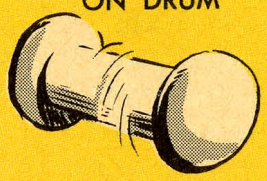


# IN A PINCH




INTRODUCING

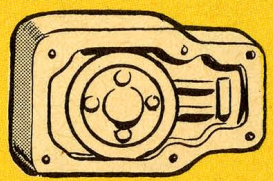

**DRAG BRAKE**
ON DRUM



. . . HOLDS DOWN SPIN
. . . HELPS KEEP ROPE FROM KINKING.

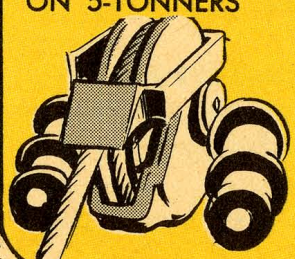
FOR WINDING OUT CABLE (FREE SPOOLING).....
NOT FOR ANY OTHER PURPOSE
NOT FOR LOWERING LOADS!

**SAFETY BRAKE**
ON WORM SHAFT



. . . HOLDS LOAD FIRM WHILE YOU SHIFT.
. . . HELPS CONTROL LOAD BEING LOWERED UNDER POWER.

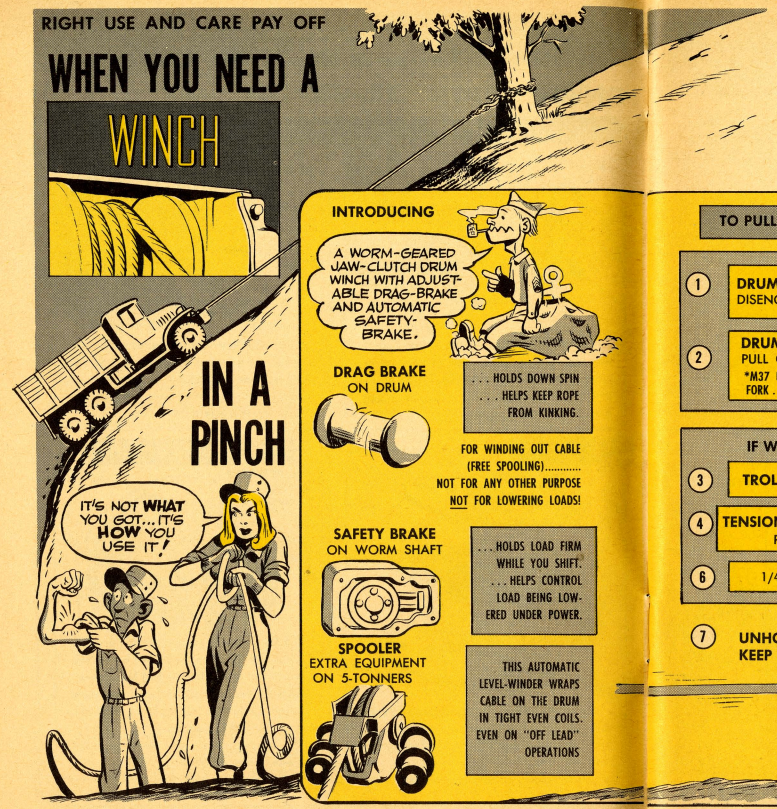
**SPOOLER**
EXTRA EQUIPMENT
ON 5-TONNERS



THIS AUTOMATIC LEVEL-WINDER WRAPS CABLE ON THE DRUM IN TIGHT EVEN COILS. EVEN ON "OFF LEAD" OPERATIONS

RIGHT USE AND CARE PAY OFF

# WHEN YOU NEED A WINCH IN A PINCH




That steel cable yo-yo on your front end is not excess baggage. Like a good woman, she's a pure joy to have around. A little care and attention's what keeps 'er dependable. So know all you can about 'er . . . how to use 'er right and how to keep 'er in shape to do the job.

**INTRODUCING**

A WORM-GEARED JAW-CLUTCH DRUM WINCH WITH ADJUSTABLE DRAG-BRAKE AND AUTOMATIC SAFETY-BRAKE.

**DRAG BRAKE**
ON DRUM



. . . HOLDS DOWN SPIN
. . . HELPS KEEP ROPE FROM KINKING.

FOR WINDING OUT CABLE (FREE SPOOLING).....
NOT FOR ANY OTHER PURSPOSE NOT FOR LOWERING LOADS!

**SAFETY BRAKE**
ON WORM SHAFT



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**SPOOLER**
EXTRA EQUIPMENT ON 5-TONNERS



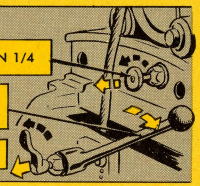
THIS AUTOMATIC LEVEL-WINDER WRAPS CABLE ON THE DRUM IN TIGHT EVEN COILS. EVEN ON "OFF LEAD" OPERATIONS

**TO PULL OUT CABLE FROM DRUM** (starting from SECURED-TRAVEL position)

1. **DRUM CLUTCH LEVER:** DISENGAGED TOWARD WINCH AS FAR AS IT'LL GO.
2. **DRUM LOCK KNOB:** PULL OUT, TURN 1/4.
   *M37 USES CLUTCH-SHIFTER FORK . . . NO LOCK-KNOB

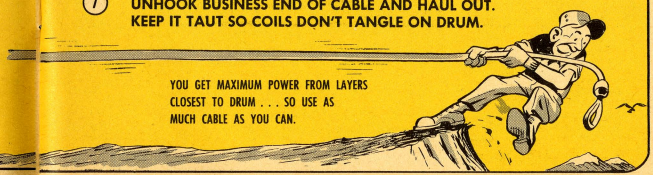

**IF WINCH IS EQUIPPED WITH SPOOLER**

3. **TROLLEY LOCK-KNOB:** PULL OUT, TURN 1/4
4. **TENSION LOCK-KNOB:** PULL OUT
5. **TENSION LEVER:** FULL OFF
6. 1/4 TURN TILL IT SNAPS AND LOCKS IN OFF POSITION



7. **UNHOOK BUSINESS END OF CABLE AND HAUL OUT. KEEP IT TAUT SO COILS DON'T TANGLE ON DRUM.**

YOU GET MAXIMUM POWER FROM LAYERS CLOSEST TO DRUM . . . SO USE AS MUCH CABLE AS YOU CAN.



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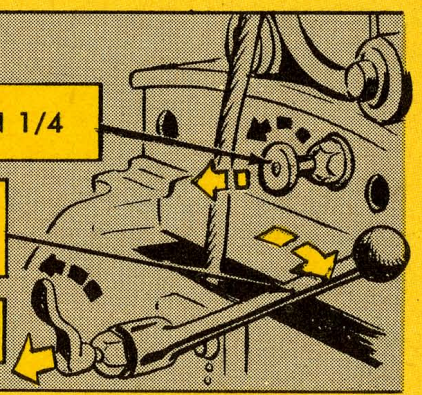

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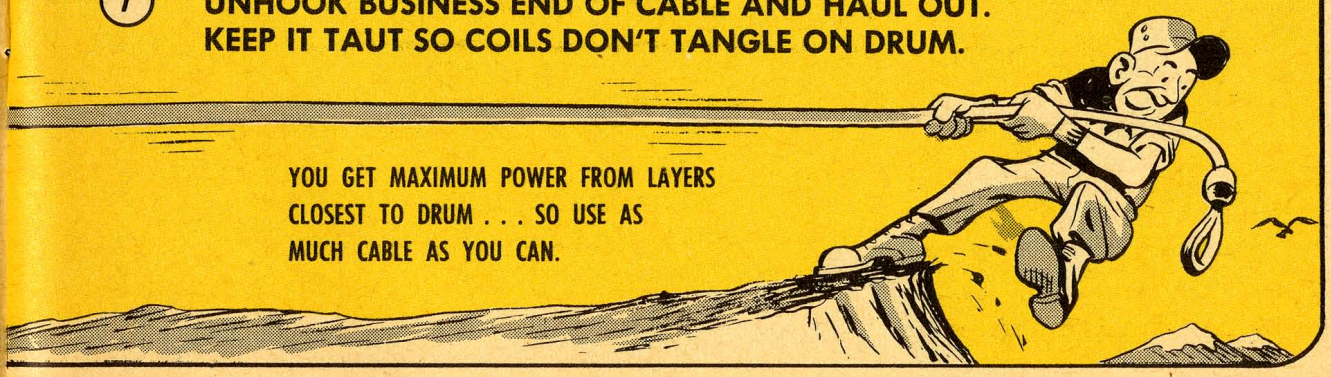

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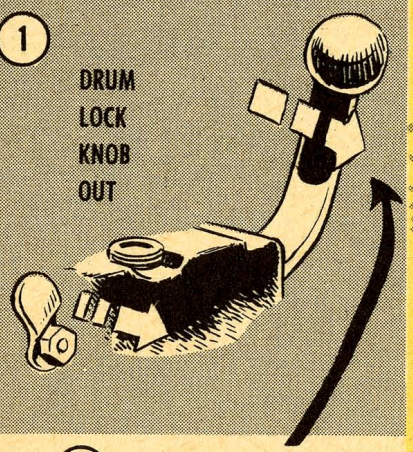



2 DRUM CLUTCH LEVER ENGAGED . . . SHOVED AS FAR AWAY FROM WINCH AS POSSIBLE

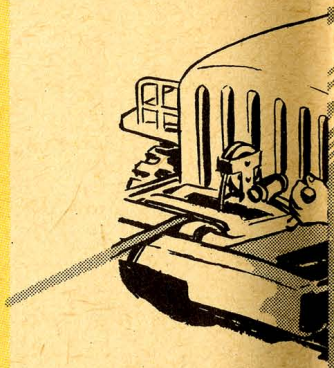
TOO TIGHT TO SHIFT?

LOOSEN IT BY REVERSING WINCH ACTION JUST A WEE BIT THIS WAY

STOP! DON'T JIMMY IT!

THE GRAB TYPE DRUM CLUTCH USUALLY HAS TO BE LOOSENED BEFORE YOU SHIFT IT.

IN CAB — ENGAGE PTO OPPOSITE TO DIRECTION LAST USED



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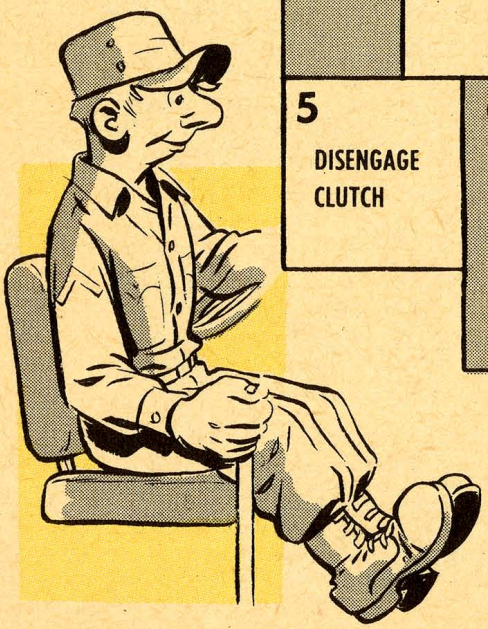


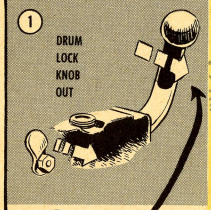
| 1 | 2 | 3 | 4 | |
|---|---|---|---|---|
| SET HAND BRAKE | TRANS-MISSION NEUTRAL | START ENGINE AND | LOCK HAND THROTTLE AT HIGH IDLE | NEVER EXCEED 1200-RPM DURING WINCHING |

**5** DISENGAGE CLUTCH

**6** SHIFT PTO LEVER TO
HIGH = LIGHT PULL
LOW = HEAVY PULL
LOW = WHEN IN DOUBT
} FORWARD SPEEDS
( WITH SINGLE RANGE— SHIFT DOWN FORWARD)

APPLY LOAD SLOWLY . . . EASY ON CLUTCH! SHOCK LOADS CAN BUST A SHEAR PIN . . . OR SNAPPING CABLE CAN SHEAR YOU.

## TO WIND IN CABLE UNDER LOAD

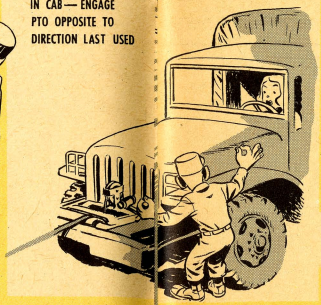



2 DRUM CLUTCH LEVER ENGAGED . . . SHOVED AS FAR AWAY FROM WINCH AS POSSIBLE

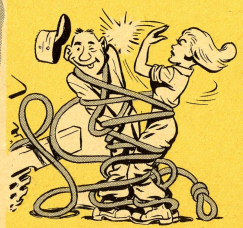

THE GRAB TYPE DRUM CLUTCH USUALLY HAS TO BE LOOSENED BEFORE YOU SHIFT IT.

LOOSEN IT BY REVERSING WINCH ACTION JUST A WEE BIT THIS WAY

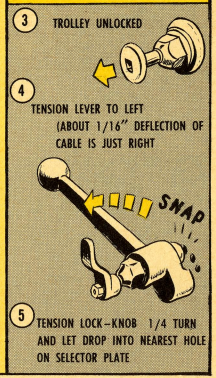
IN CAB — ENGAGE PTO OPPOSITE TO DIRECTION LAST USED



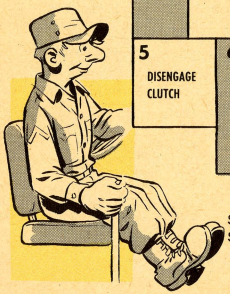
LET DRUM START TO TURN BACK A LITTLE . . . SHIFT LEVER WHEN LOOSE BUT REVERSE **ONLY A LITTLE.** DON'T GO TOO FAR OR Y'GET GRAB TROUBLE IN THE OPPOSITE DIRECTION



## AND IF WINCH HAS SPOOLER




## IN THE CAB



| 1 | 2 | 3 | 4 | |
|---|---|---|---|---|
| SET HAND BRAKE | TRANS-MISSION NEUTRAL | START ENGINE AND | LOCK HAND THROTTLE AT HIGH IDLE | NEVER EXCEED 1200-RPM DURING WINCHING |

| 5 | 6 |
|---|---|
| DISENGAGE CLUTCH | SHIFT PTO LEVER TO<br>HIGH = LIGHT PULL<br>LOW = HEAVY PULL<br>LOW = WHEN IN DOUBT<br>( WITH SINGLE RANGE— SHIFT DOWN FORWARD) — FORWARD SPEEDS |


APPLY LOAD SLOWLY . . . EASY ON CLUTCH! SHOCK LOADS CAN BUST A SHEAR PIN . . . OR SNAPPING CABLE CAN SHEAR YOU.

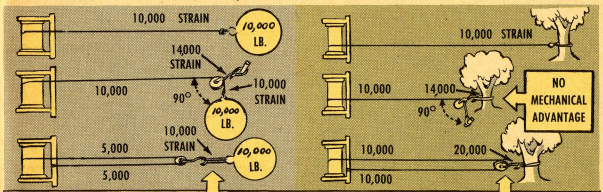


| TRUCK | MAXIMUM PULL |
|---|---|
| 5 TON | 20,000 LBS. |
| 2-1/2-TON | 10,000 LBS. |
| 3/4-TON | 7,500 LBS. |

ON FIRST LAYER OF CABLE ONLY—

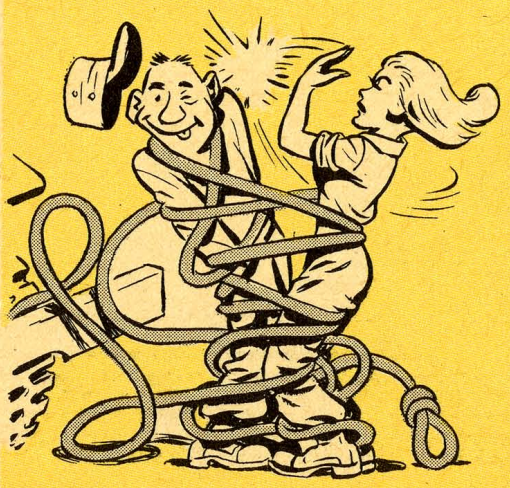
RATIO DROPS AS YOU WIND ON OUTER LAYER. SHEAR PINS LET GO LITTLE MORE THAN HALF TOP-RATED PULL.

With peak loads—anchor as far away as you can and get off as much line as possible. Save your shear pins. Under half the length of your line (150 ft) use snatch blocks. It cuts strain on winch in half or doubles its pull. Less strain on winch, but not on block rigging.



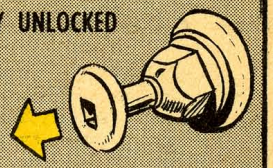

PLAY SAFE—HOOK **BLOCK** THROUGH **DOUBLE** LOOP OF CHAIN.

LET DRUM START TO TURN BACK A LITTLE . . . SHIFT LEVER WHEN LOOSE BUT REVERSE **ONLY A LITTLE.** DON'T GO TOO FAR OR Y'GET GRAB TROUBLE IN THE OPPOSITE DIRECTION

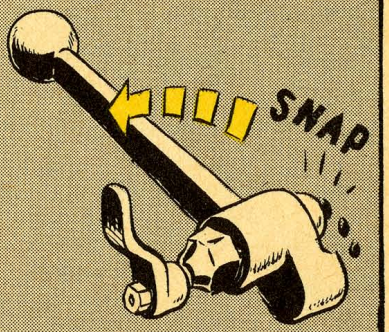


## AND IF WINCH HAS SPOOLER

3 TROLLEY UNLOCKED



4 TENSION LEVER TO LEFT (ABOUT 1/16" DEFLECTION OF CABLE IS JUST RIGHT



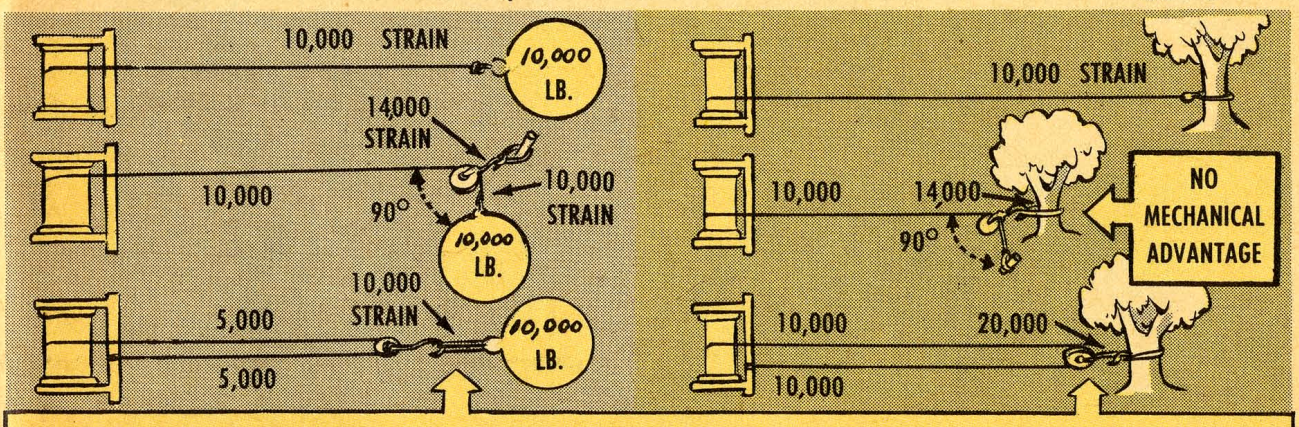

5 TENSION LOCK-KNOB 1/4 TURN AND LET DROP INTO NEAREST HOLE ON SELECTOR PLATE

| TRUCK | MAXIMUM PULL |
|---|---|
| 5 TON | 20,000 LBS. |
| 2-1/2-TON | 10,000 LBS. |
| 3/4-TON | 7,500 LBS. |

ON FIRST LAYER OF CABLE ONLY—

RATIO DROPS AS YOU WIND ON OUTER LAYER. SHEAR PINS LET GO LITTLE MORE THAN HALF TOP-RATED PULL.

With peak loads—anchor as far away as you can and get off as much line as possible. Save your shear pins. Under half the length of your line (150 ft) use snatch blocks. It cuts strain on winch in half or doubles its pull. Less strain on winch, but not on block rigging.




PLAY SAFE—HOOK **BLOCK** THROUGH **DOUBLE** LOOP OF CHAIN.

## TO STOP WINCH MOVEMENT.

1 DISENGAGE CLUTCH

2 SHIFT PTO TO NEUTRAL

AUTOMATIC SAFETY BRAKE SHOULD HOLD LOAD FIRMLY IN PLACE

## TO PAY OUT LOAD

(UNWIND CABLE UNDER POWER)

1 UNLOCK DRUM

2 ENGAGE DRUM CLUTCH

IF SPOOLER EQUIPPED

3 UNLOCK TROLLEY

4 TENSION LOCK-KNOB OUT

5 LEVER FULL OFF

6 TURN LOCK-KNOB 1/4 TILL IT SNAPS IN PLACE, LOCKS LEVER

IN CAB

7 SHIFT PTO TO REVERSE

8 APPLY CLUTCH SLOWLY

NOW PAY OUT LOAD TO DESIRED DISTANCE

UNWINDING UNDER POWER WITHOUT LOAD—KEEP CONSTANT MANUAL TENSION SO COILS WON'T LOOSEN, SNARL OR KINK

AS YOU WERE..

AGAIN AN' AGAIN, WE REPEAT: THE DRAG BRAKE'S ONLY FOR FREE SPOOLING . . . NEVER LOWER LOAD WITH DRAG BRAKE! USE REVERSE AND SAVE YOUR ASPIRINS

## TO SECURE FOR TRAVEL AFTER USING WINCH

1 WIND IN CABLE UNDER TENSION

2 LOOSEN DRUM CLUTCH AND DISENGAGE

3 LOCK THE DRUM
ROTATE LOCK KNOB 1/4 TURN

NOTE: Some sad characters have been known to hit the road without bothering to disengage the winch-drum clutch. This is a poor bet. First time the PTO lever in the cab gets accidentally engaged, y'hear ripping noises and find the winch mechanism scattered all over the terrain.

IF SPOOLER EQUIPPED—
LOCK TROLLEY FOR TRAVEL

4 TROLLEY LOCK-KNOB 1/4 TURN AND RELEASE

5 CHECK TROLLEY TO SEE IF IT'S LOCKED.

6 SECURE END OF CHAIN TO BUMPER ASSEMBLY OR ROLLER

7 IN CAB

PTO LEVER IN NEUTRAL AND LOCKED IN PLACE

BUT I DON'T GOT AUTOMATIC TENSION!

SO YOU NEED AT LEAST TWO GUYS ON THE END OF THE LINE TO HOLD IT WHILE WINDING IT IN.

THEN, FIRST CHANCE, UNWIND AND REWIND UNDER REAL TENSION

YOU

SLIGHTLY BRAKED

KEEP IN LINE WITH PULL

YOU

YOU ALWAYS PAY PARTICULAR ATTENTION TO THE FIRST LAYER OF CABLE AS IT GOES ON THE DRUM. MAKE SURE THE COILS ARE TIGHT AGAINST EACH OTHER, SO THE NEXT LAYER CAN'T JAM DOWN BETWEEN THEM CRUSHING AND CUTTING THE ROPE. GOOD WAY TO DO THIS IS TO TAP THE COILS TOGETHER WITH A BLOCK OF WOOD AS THE FIRST LAYER GOES ON THE DRUM. NEXT LAYERS SHOULD TRACK ON EVENLY IF YOU KEEP YOUR TRUCK PROPERLY LINED WITH THE DIRECTION OF PULL.

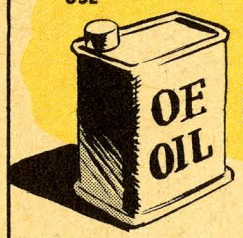
LET'S GO! NO CROWS' NESTS HERE FOR US.

TM'S and LO'S are the best on winch assembly and cable care. Use 'em—with these extra pointers for adapting to local conditions.

## CABLE

CLEAN & OIL AFTER EVERY OPERATION

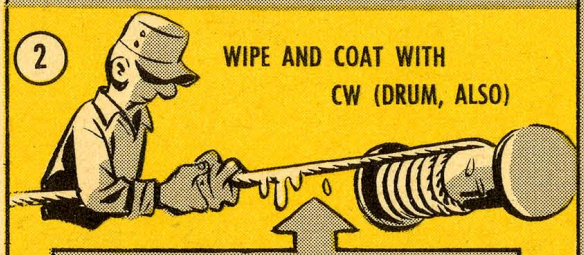
USE




IF NOT AVAILABLE ... USED CRANK CASE OIL'S BETTER THAN NOTHIN'

IN ANY AREA, PARTICULARLY IN VERY DRY SANDY AREAS WHERE A WINCH'S SELDOM NEEDED—AT SEMI-ANNUAL INSPECTIONS Y'CAN:

1. CLEAN THOROUGHLY AND LUBE WITH PRESERVATIVE OIL PL SPECIAL ORD STK NO. 14-0-2834-10



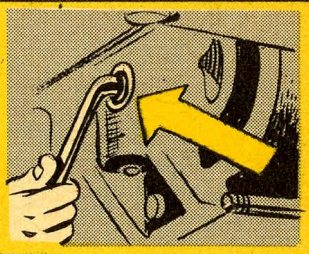
2. WIPE AND COAT WITH CW (DRUM, ALSO)

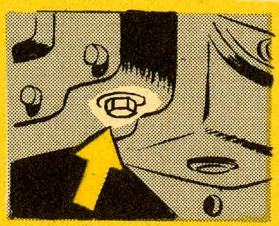
| GRADES OF CW | CLIMATE |
|---|---|
| A, Ord Stock No. 14-L-180-5 | : COLD |
| B, Ord Stock No. 14-L-181-5 | : WARM |
| C, Ord Stock No. 14-L-181-450 | : HOT |

3. IF IT'S LOCAL PRACTICE REWIND AND WRAP CABLES WITH OIL-SOAKED RAGS ... SECURE WITH MASKING TAPE

## BRAKES

DRAG BRAKE ADJUSTMENT: SLOTTED SCREW RIGHT OF WINCH





SAFETY-BRAKE ADJUSTMENT: HEX-HEAD BOLT UNDER LEFT SIDE O' WORM HOUSING

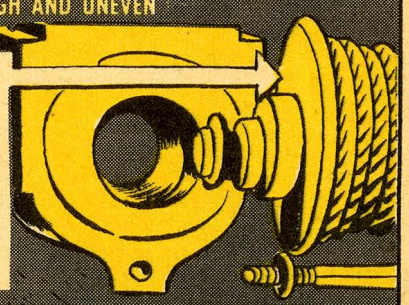
DON'T GO 'ROUND TIGHTENING 'EM JUST TO KEEP DOWN RATTLES ... FOLLOW TM DATA.

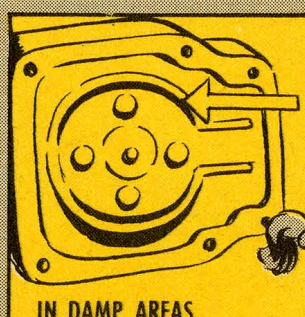
M37 WINCH HAS NO DRAG-BRAKE ADJUSTMENT.

WORN DOWN? TRADE IT IN.

## DRAG-BRAKE RUNNING ROUGH AND UNEVEN

LOOK FOR PAINT HERE ... KEEP CLEAN.

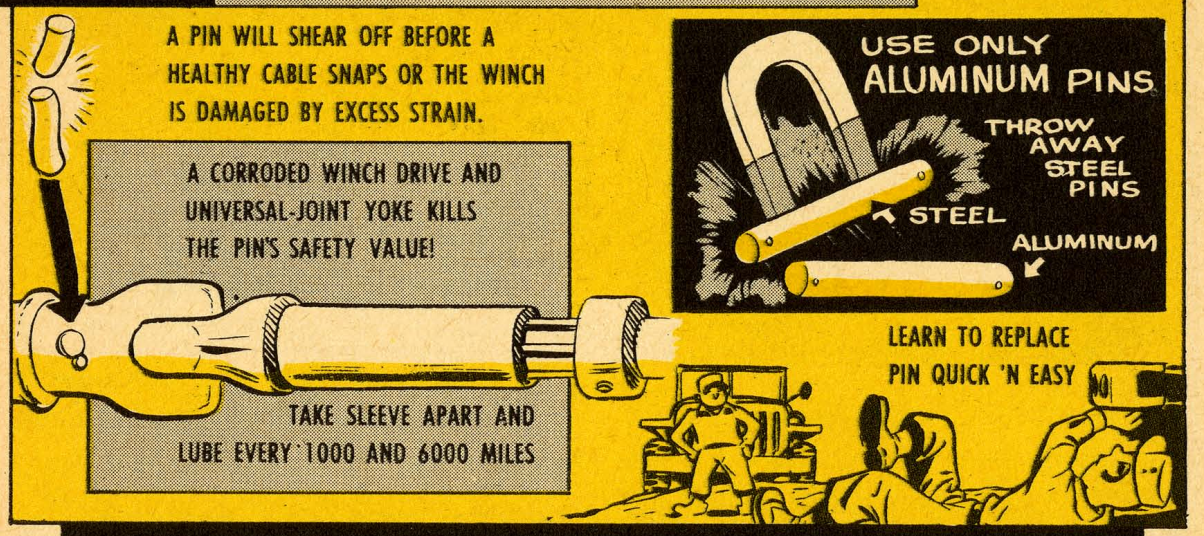




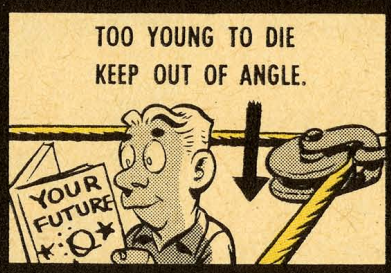
WINCH ACTION SNAFU? COULD BE RUST UNDER LINING O' SAFETY-BRAKE DISK

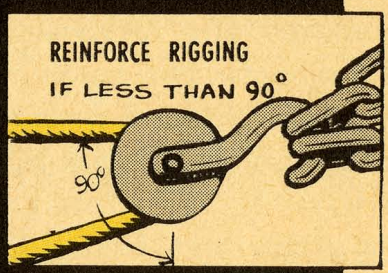
IN DAMP AREAS PULL COVER—CLEAN OFF RUST RUN WINCH NOW AN' THEN

## WINCH TIPS. A SHEAR PIN IS THE WINCH'S SAFETY VALVE

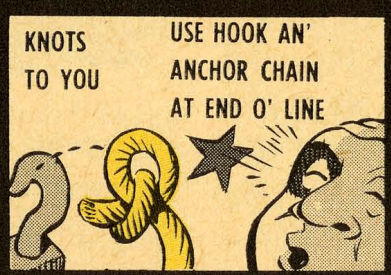




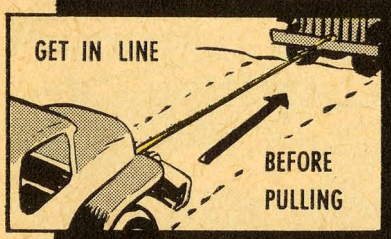


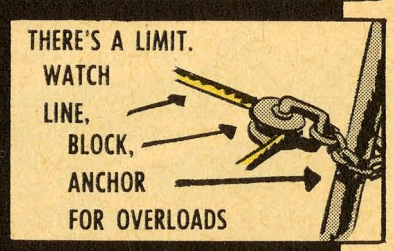


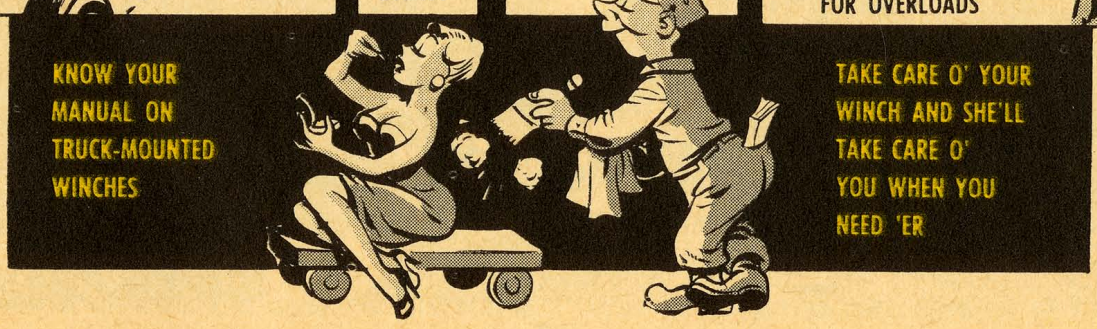


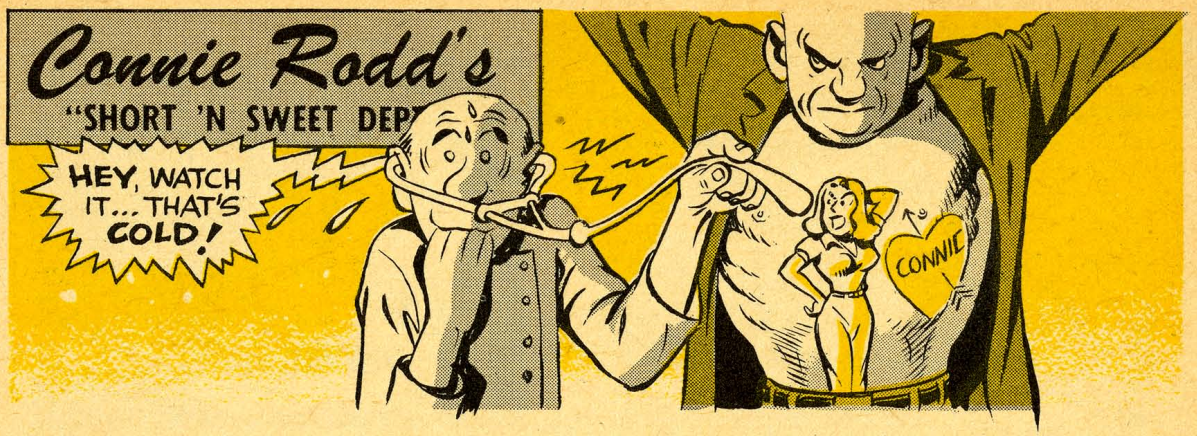






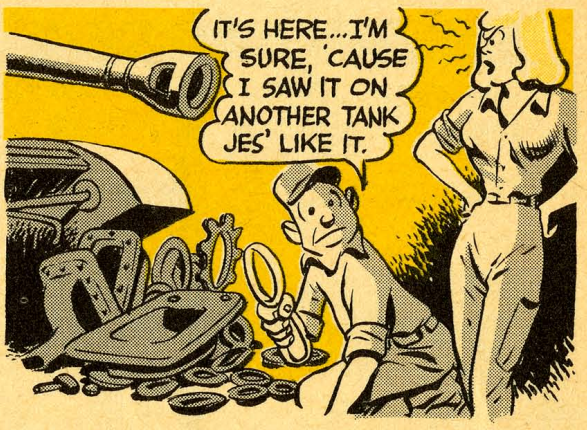



## Transmission screws

If your medium tank has one of these transmissions—Allison Serial No. 9394 thru 13633 or Buick Serial No. 34290 thru 36502, better make sure there's an *S* stamped after the serial number on the transmission rear housing.

Seems the torque-converter stator-screws on some of these babies have had a way of backing off and getting chewed up in the works. The *S* will indicate that your transmission has been reworked and is okay. It should follow the serial number on the rear housing about two inches below the transmission split line on the steering gear hump—opposite the front housing nameplate (see Fig 1).

If you can't find your *S* where it oughtta be, best check with Ordnance about a work-over. And keep a sharp




eye peeled for these trouble signals: high transmission oil temperatures and metal particles in the oil filter.

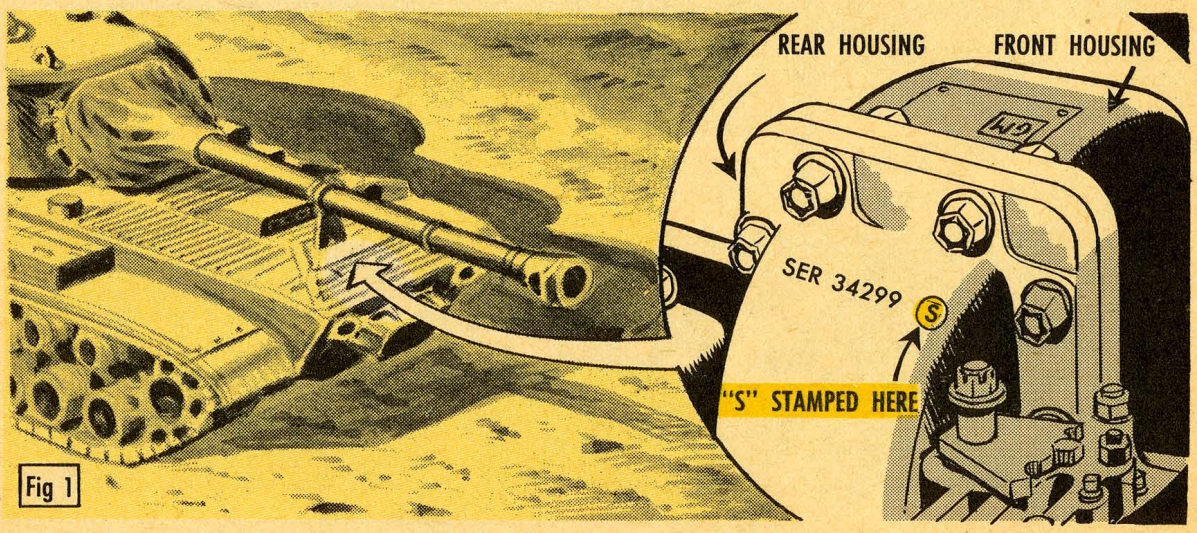



Fig 1

## Gasket? Ask it—

Here's how to find your axle gasket.

On the 1/4-ton M38 and M38A1, it's not listed in your Ord 7. Get it under this: Gasket, flange, drive, axle shaft, Ord Stock No. G740-7372872.

If you run into authority trouble, quote your TM as saying you have to have it.

And if it's the drive-flange gaskets for other trucks that you need, maybe this'll help:

| | MODEL | PART NOMENCLATURE | ORD STOCK NO. |
|---|---|---|---|
|  | 3/4-TON M37 | GASKET (DRIVE-FLANGE) | G741-7351041 |
|  | 2-1/2-TON 6x6, M 34, M35 | GASKET (DRIVE-FLANGE) | G742-7521787 |
|  | 2-1/2-TON 6x6, M135 | SHAFT-TO-HUB GASKET | G749-7411265 |
|  | 5-TON 6x6, M41, M52, M62 | GASKET (DRIVE-FLANGE) | G744-7346993 |

You'll see the gaskets listed in the next revisions of Ord 7 SNL's G740, G741, G742, G744, G749 and G758.

## In the engine's hat

Should your M38A1's hood hinge-pin come loose from its hinge, weld it tight up again. Whether you use an electric arc-welder or oxy-acetylene is even-steven. The electric kind will spot the heat better. But unless you're careful, it can put a hole through the hood because its heat is so high. (Fig 2)

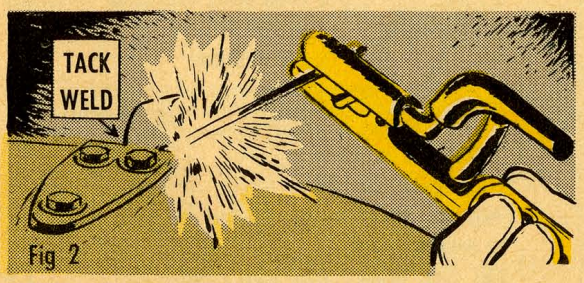


Fig 2

With the gas welder, you'll probably have to repaint the area. While it's a little more work, you're less likely to put yourself in a hole.

And speaking of the 'A1's hood, getting rid of its rattles is easy, too. Just loosen one or both hinges and push them tightly against their stationary members. Then while you're holding it this way, have another guy tighten em up.

## Disk jockeying

It may be called a clutch disk—but it must also un-clutch.

After replacing an M38 truck's disk, a buddy couldn't adjust the clutch pedal. He examined it closer and found supply had handed him one from an old World War II (WB) model, instead of Disk,

Ord Stock No. G740-7372661. While they may look alike, the old model's too thick to let the clutch release. He returned it to supply, got the right one and everything turned out OK.

Getting an old model disk won't happen often, but it's something to look for when you're in a tight pedal's clutches.

## Short circuit?

Before you work yourself into a lather over a no-good, fouled-up instrument, or light, or gadget in your 24-volt systems . . . here's a tip: Maybe it isn't the instrument at all. Check ye olde waterproof connector in the guilty circuit.

Sometimes if you break the Douglas connector, clean up the ends and the inner connector real good, and then put 'er back together—it'll do the trick. Sure worth a try.

## Read-dee...huxercise!

Tankmen, hear this. Your TM may not be too specific on the subject, but you gotta exercise those turret-traverse mechanisms at least once a week to keep 'em in shape.

They need five to ten minutes workout to spread the oil around, keep the clutches free and healthy, all the tooled surfaces working smoothly, and cut down the danger of rust.

Before twirling your turret, be sure to start Li'l Joe—unless the main engine is running. This'll prevent any unhealthy drain on the batteries.

## Adjusted adjuster

Wanta' save raw knuckles? The hand brake flex-cable on your 5-ton trucks needs watching. It stretches a little each time the brake's pulled on and after awhile the hand brake loses adjustment.

To keep things in shape you've got to do this:

**CABLE ADJUSTMENT**

1. TURN KNOB ON BRAKE-LEVER HANDLE COUNTER-CLOCKWISE TO RELAX CABLE.

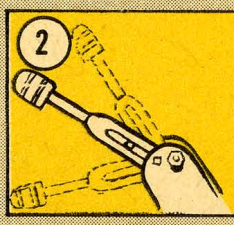
2. ON THE BRAKE SHOE FORK, LOOSEN CABLE LOCK-NUT AND TURN CABLE ADJUSTING-NUT 'TIL THERE IS NO SLACK IN THE CABLE. CAREFUL, OR YOU'LL OVERDO IT.

3. IF INNER AND OUTER SHOES ARE TOO TIGHT AGAINST DRUM—YOU HAVE A DRAGGING BRAKE. SLACK UP CABLE.

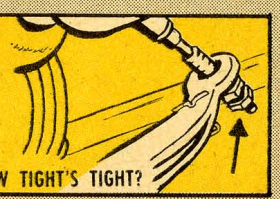

**KNOB ADJUSTMENT**

1. AFTER 5 OR 6 PARKINGS: TURN KNOB ON BRAKE-LEVER HANDLE TO TAKE OUT SLACK THAT COMES FROM STRETCHING.

2. TURN KNOB UNTIL CABLE IS TIGHT ENOUGH TO CAUSE SLIGHT DRAG, AND A GOOD BRAKE WITH LEVER HALF WAY UP FROM RELEASED POSITION.



3. WHEN CABLE'S STRETCHED TO POINT WHERE SLACK CAN'T BE TAKEN OUT BY KNOB—GO BACK TO BRAKE SHOE FORK. THINK . . HOW TIGHT'S TIGHT?

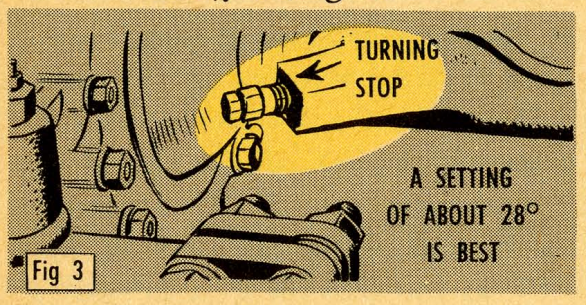


'COURSE, DON'T FORGET TO READ WHAT PARAGRAPH 155 OF TM 9-837 SAYS ABOUT THIS.

## Joint trouble

Before you have, or if you've had constant-velocity joint trouble on your 2-1/2-ton, 6x6, Reos, have Ordnance maintenance check the front-wheel turning-angle.

If the stops are set to give more turn than they should, there's a chance that the two sections of the constant-velocity joint might become damaged. A setting of from 28° to 29° is allowed on that turning angle but staying closer to the 28° is best, just like TB 9-819-6 (10 Mar 52) tells you (Fig 3).




What happens is that the joints get chipped and the chips get in with the balls in the joint. This sets up a wedging action which could cause the joint to bust open.

## Blinker pointer

Time will tell—but not with timing marks you can't see. And when your timing's off, loss of power, carbonization, overheating —the works— are your reward.

To make sure you can see what you're doing, the latest M38A1's have metal indicators on their timing-gear covers. There are two arrows that leave no and's, if's, or but's about correct timing. One arrow's set for top center and the other for 5° before top center.

Maybe you've seen one around. If you'd like to get one for your M38A1, keep your eye out for an MWO. It'll tell what to ask for and how to install the indicator on your Jeep. With it, you'll no longer have to live with a vehicle that won't give you the right time.

## Side splitter

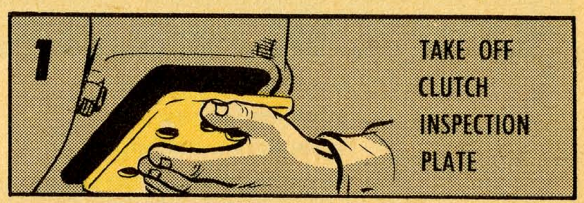
If your M38 truck's front fender and body are cracking apart, give it the rod —a 3/8-inch rod. But first weld the splits and grind them smooth.

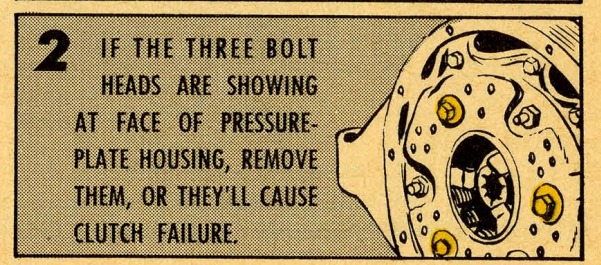
Then weld the rod across the fender's underside where it touches the Jeep's body. And reinforce the body at that point with 1/2-inch angle iron. Now weld the reinforced fender to the reinforced body and paint it all nice and pretty-like.

The extra ligaments may not hold it forever. But meantime it'll keep you from splitting your sides.

## Clutch cap-screws

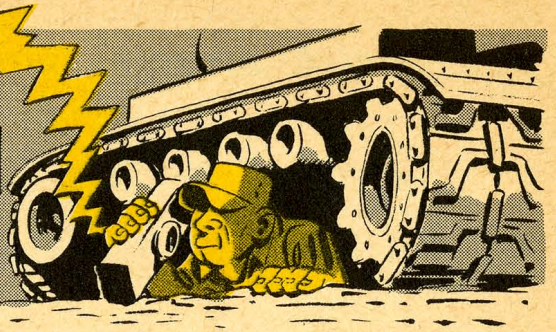
On some of the 5-tonners, guys forget to remove the three cap-screws which hold the clutch-plate in a partially released position for ease of assembly.



Here's the late word on –

# TRACK SUSPENSION LUBES



If you've been cracking your cranium to keep up with lube specifications on your full-track stuff, relax. The latest word is standardization.

For all the suspension systems listed in the chart, there are now only two oil weights to keep straight: OE 10, for temperatures above −10° F; and OES, for temp ranges below the zero mark.

Y'check the suspension at *C* services (250 miles or monthly). If the oil's low in compensating idlers, roadwheels, or track support rollers, add enough to raise the level to the top filler plug hole. If wheel arm supports take oil, fill 'em to plug level. Always allow enough time for lube to seep through tight-fitting oil passages. Then recheck the level.

Some of the medium tanks have their suspensions equipped with nylon bearings—which require no greasing. They're cleaned with a rag dipped in light oil when out. If they have ball or needle bearings—with grease fittings—shoot the GAA to 'em at each *C* service.

Except for the M47 tank (see footnotes with chart), all the final drives specs are now uniform: OE 50 for temps above +32° F, OE 10 for +40° F to −10° F, and OES for 0° F to −65° F. Check 'em weekly and before operation. Drain and refill at alternate *D* services.


**LUBES FOR SUSPENSION OF TRACKED VEHICLES**

| VEHICLE | GAA | OE 10 (above −10°) OES (0° to −65°) | OE 50 (above 32°) OE 10 (+40° to −10°) OES (0° to −65°) |
|---|---|---|---|
| Howitzer, M44 (T194) | **Rear** Track Support Rollers<br>Trailing Idler Gear Case<br>Trailing Idler Eccentric Shaft<br>Trailing Idler Support Linkage<br>Trailing Idler Link Arm<br>Trailing Idler Support Arm Bearings | Track Support Rollers (except Rear)<br>Roadwheel Bearings<br>Roadwheel Arm Bearings<br>Trailing Idler Wheel Bearings | Final Drives |
| Howitzer, T98E1 | Track Adjusting Gear Case<br>Trailing Idler Eccentric Shaft<br>Trailing Idler Support Linkage<br>Trailing Idler Link Arm<br>Trailing Idler Support Arm Bearings | Track Support Rollers<br>Roadwheel Bearings<br>Roadwheel Arm Bearings<br>Trailing Idler Arm Bearings | Final Drives |

| VEHICLE | GAA | OE 10 (above −10°) OES (0° to −65°) | OE 50 (above 32°) OE 10 (+40° to −10°) OES (0° to −65°) |
|---|---|---|---|
| Tractor, M8E2 | Track Idler Adjusting Nut and Eye Bolt<br>Track Idler Wheel Support Arm | Track Support Rollers<br>Roadwheel Bearings<br>Roadwheel Arm Support Bearings<br>Track Idler Wheels | Final Drives |
| Vehicle, Armored Infantry, M59 | | Track Support Rollers<br>Roadwheel Bearings<br>Roadwheel Arm Bearings<br>Compensating Idler Wheel Bearings<br>Compensating Idler Wheel Arm Bearings | Final Drives |
| Vehicle, Armored Infantry, M75 | Compensating Wheel Adjusting Nut and Eye Bolt | Track Support Rollers<br>Roadwheel Bearings<br>Roadwheel Arm Support Bearings<br>Compensating Wheel Bearings<br>Compensating Wheel Support Arm Bearings | Final Drives |
| Gun, Self-propelled, M42 (T141) | Compensating Wheel Adjusting Nut and Eye Bolt | Track Support Rollers<br>Roadwheel Bearings<br>Roadwheel Arm Support Bearings<br>Compensating Wheel Bearings<br>Compensating Wheel Support Arm Bearings | Final Drives |
| Tank, 76-mm Gun, M41 & M41A1 | Compensating Wheel Adjusting Nut and Eye Bolt | *Track Support Rollers<br>*Roadwheel Hub Bearings<br>*Roadwheel Arm Support Housings<br>*Compensating Wheel Hub Bearings<br>*Compensating Wheel Support Arm | Final Drives |
| *Before Vehicle Serial No. 104, these had lip-type seals and grease fittings—use GAA. | | | |
| Tank, 90-mm Gun, M47 | Shock Absorber Bearings<br>Track Support Rollers<br>Roadwheel Bearings<br>**Roadwheel Arm Bearings<br>Front Roadwheel Arm Shackle<br>Front Roadwheel Arm Pivot and Outer Bearings<br>Compensating Idler Wheel<br>**Compensating Idler Wheel Arm Bearings<br>**Track Adjusting Idler Bearings<br>**Torsion Bar Anchor Plugs | | ***Final Drives |
| **If equipped with nylon bearings, do not lubricate.<br>***Specs call for OE 30, **not OE 10,** for temp range of +40 to −10° F. | | | |
| Tank, 90-mm Gun, M48 | #Shock Absorber Bearings<br>Track Support Rollers<br>Roadwheel Arm Bearings<br>Compensating Idler Wheel Linkage | Roadwheel Bearings<br>Compensating Idler Wheel Bearings<br>Compensating Idler Arm | Final Drives |
| #Later vehicles have friction snubbers. which are equipped with nylon bearings and require no lubing. | | | |

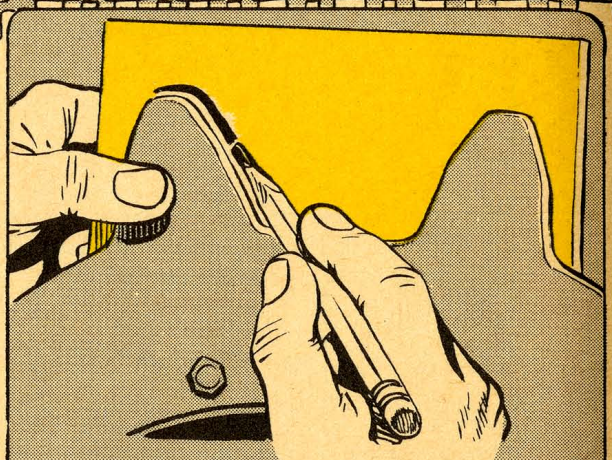
Have an en-gaging way with your...

# TANK DRIVE

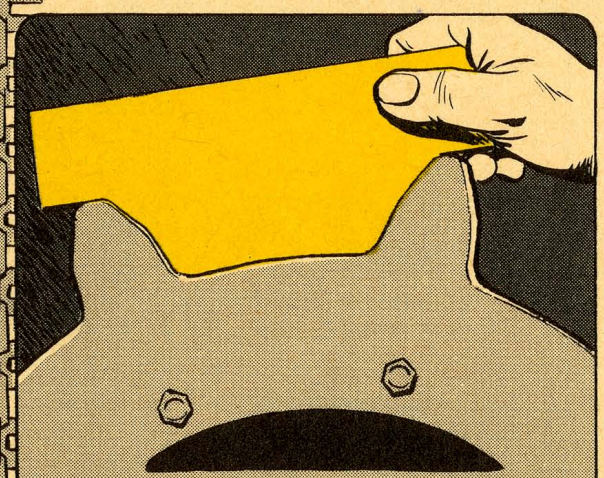
**There's a way to get the most use with the least trouble from your tank final-drive sprockets. Here's how:**

FIRST, YOU'LL NEED A GAGE FOR CHECKING SPROCKET WEAR. IT'S EASY TO MAKE.

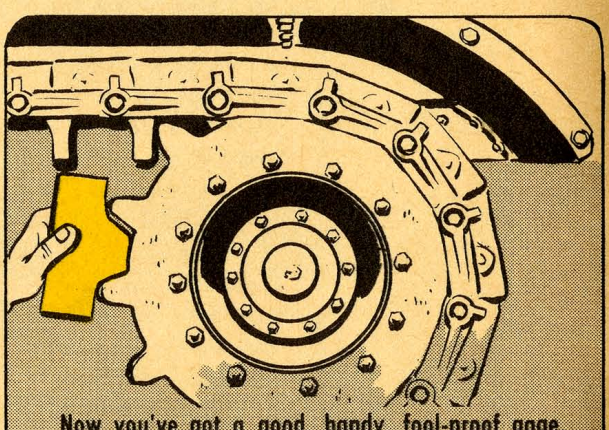
Just grab a piece of board about the size of a cigar box lid (Ord Stock No. **not available**).



Hold it against a new sprocket (one that fits your particular tank, o'course) and trace the outline of the sprocket between two of the teeth.



Main thing is to make sure it fits smooth and snug with the shape of the sprocket—and that the sprocket you're shaping it to is new, not worn.



Now you've got a good, handy, fool-proof gage. Use it. Check your sprocket wear at the regular C (250-mile) inspections.

Naturally, the fastest wear will occur on the driving side of the sprocket tooth.

Have an en-gaging way with your...

# TANK DRIVE SPROCKETS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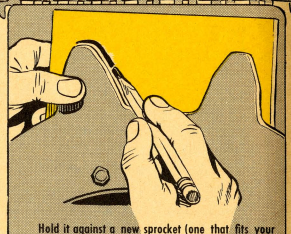

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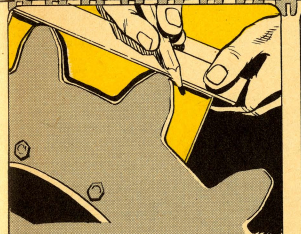
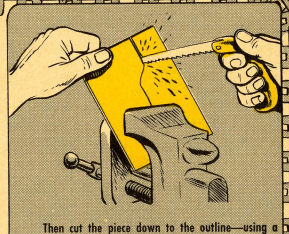
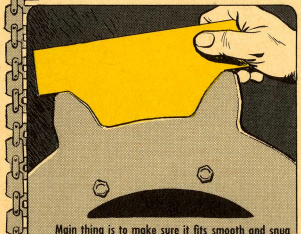


Complete the form of the gage by extending it past the outline tips of the teeth



Then cut the piece down to the outline—using a jigsaw, coping saw, pocket knife, or whatever you have around to whittle with.



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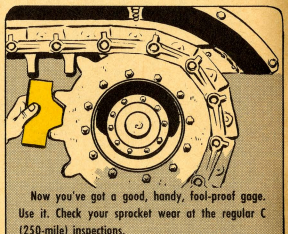

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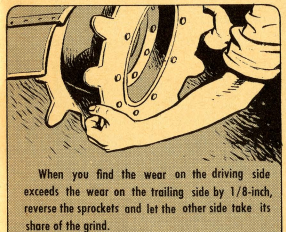


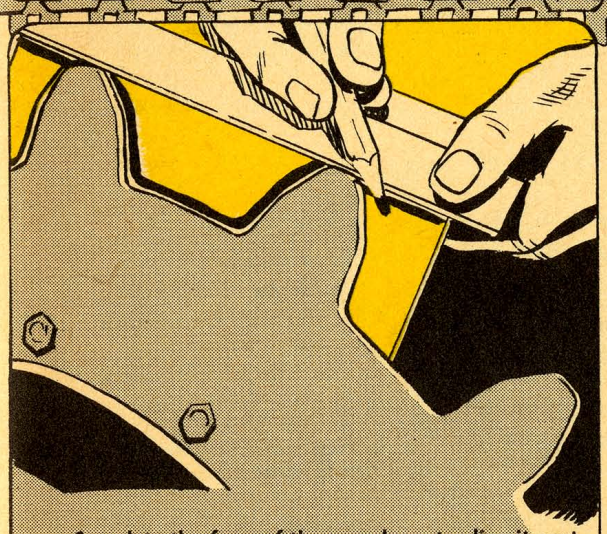
When you find the wear on the driving side exceeds the wear on the trailing side by 1/8-inch, reverse the sprockets and let the other side take its share of the grind.

Good way to do this is to interchange (left—right) the drive sprocket and hub assembly as units.

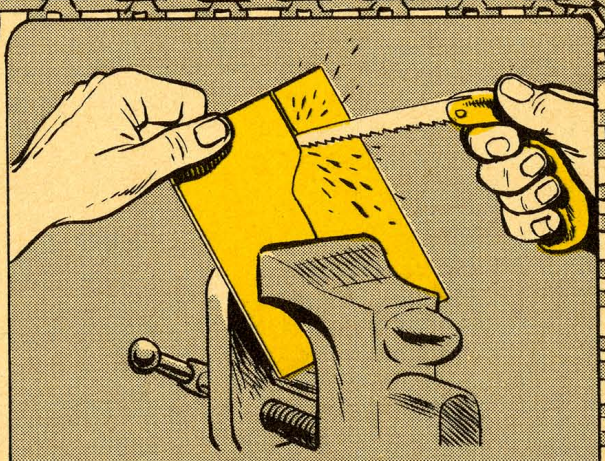
When you find the wear at any point exceeds 3/8 inch, it's time to replace the sprockets. Replacement, o'course, is made only in pairs or sets.

(If y'happen to be in a spot where boards and cigar boxes are scarce, or if you prefer a tool that'll stand up under a lot of banging around—you may want to use metal instead of wood. If so, 1/8-inch flat-steel stock should do the trick.)

# SPROCKETS

Complete the form of the gage by extending it past the outer tips of the teeth



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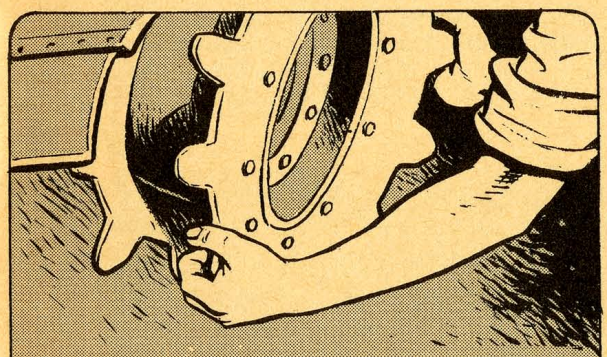

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HERE'S A LIST OF ADDITIONAL OFFICIAL PUBLICATIONS ON ORDNANCE EQUIPMENT WHICH ARE OF INTEREST TO A LOT OF YOU.

## TM's

**9-8848,** '51 Buick shp manual, Mar 53

**9-9032-2 TO 17-15A-8,** Self-cntnd hyd 200-hp cap eng run-in dynamometer (Clayton model 125A) (18-D-1474), Jul 54

## ORD MWO's

**D28-W36,** 90-mm AAA gun mnts M1A1, M1A2: Modify arm, rod, provide lube rod, **F,** Aug 54

**D48-W4,** 75-mm gun T83 series on AA gun mnt T69: Modify muz thrd prtctr, **F,** Aug 54

**D48-W5,** 75-mm AAA gun mnt T69: Provid batt to insure opr brk-away sys, all temps, **F,** Aug 54

**F344-W1,** 'Scope mnt M87 (T173): Cnvrt M87 to M87A1, **F,** Aug 54

**G1-W49,** M47, M46, M46A1 tanks: Install new aux eng mnt base, alter rear bilge pmp strnr, **F,** Aug 54

**G1-W50,** 1/4-ton 4x4 trks M38, M38A1: Anchor frnt pass seat, **F,** Aug 54

**G744-W14,** 5-ton 6x6 trk chassis M39, M40, M61, M63, M139; trks M41, M54, M55, M64, M51, M62, M246, M52: Install lube fittings in PTO, trnsfr hand cntrl levers, **F,** Aug 54

**G749-W17,** 2-1/2-ton 6x6 trks M135, M211, M215, M220, M217, M222, M221: Hydra trnsmsn redu pmp discharge line clip install, **D,** Aug 54

**G754-W2,** 1-1/2-ton 2-whl trlr M104, M106: Reinforc floor, frame, **F,** Aug 54

**G754-W3,** 1-1/2-ton 2-whl trlr Chassis M102, M102A1 (M102E1 and M102E2), M102A2 (M102E3), M103A1 (M103E3 and M103E4), M103A2 (M103E5); Trlrs M104, M104A1 (M104E1), M105A1 (M105E3), M106, M106A1 (M106E1 and M106E2), M107, and M107A1 (M107E1 and M107E2): Install handbrake cable support spring, **F,** Aug 54

## MISCELLANEOUS

**LO 9-8216,** Semi-trlr, gas tnk, 12-ton, 4-whl, M131, Jun 54

## SNL's

**Ord 8 SNL A-55 Sec 56,** Mount, ring, M68, M68E1, M68E1 w/sppts, Aug 54

**Ord 9 SNL F-342 Vol 8,** FCS, AAA, M33C, M33D, T33C, T33D—Vol 8, List-svc parts-plate data junct (7603815), Aug 54

**Ord 9 SNL F-342 Vol 9,** FCS, AAA, M33C, M33D, T33C, T33D—Vol 9, List-svc parts—switchbrd cabnt, (7621669), Aug 54

**Ord 9 SNL F-356 Sec 3,** Range finder, T46E1, Jun 54

**Ord 8 SNL F-375,** Mount, 'scope, M31, M32, Aug 54

**Ord 7 SNL G-251,** M41 tank, M41A1, Jun 54

**Ord 9 SNL G-256,** T43E1 tank, Jun 54

**Ord 8 SNL G-744,** Chassis, trk, 5-ton, 6x6, M40, M61, M63, M139, M41, M54, M55, M51, M52, M246, M62, Jun 54

## TB's

**TB 9-802-16,** 2-1/2-ton trk 6x6 amphb (GMC, Mod DUKW 353): Ident, install wheel 5600407, **O,** Aug 54

**TB Ord 405,** Electrolytic capacitors: Reform in depot stocks, maintain svcbilty, **D,** Aug 54

**TB Ord 568,** 40-mm guns M1, M1A1, M2, M2A1: Check breech casing top cover prior firing, **O,** Aug 54

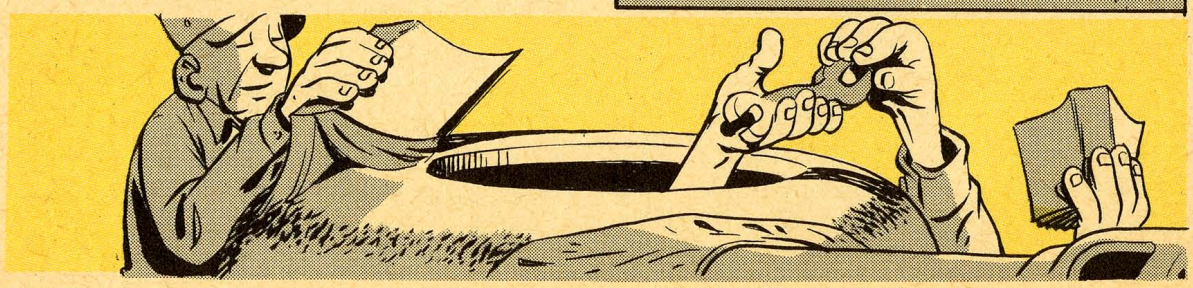
**TB Ord 569,** Light tank M24, 75-mm med tank M4A1, M4A3, 76-mm M4A1, M4A3; 105-mm how M4, M4A3; med tank M26, M26A1, M45, M46, M46A1: Interchng cmndr vision cupolas, **F,** Aug 54

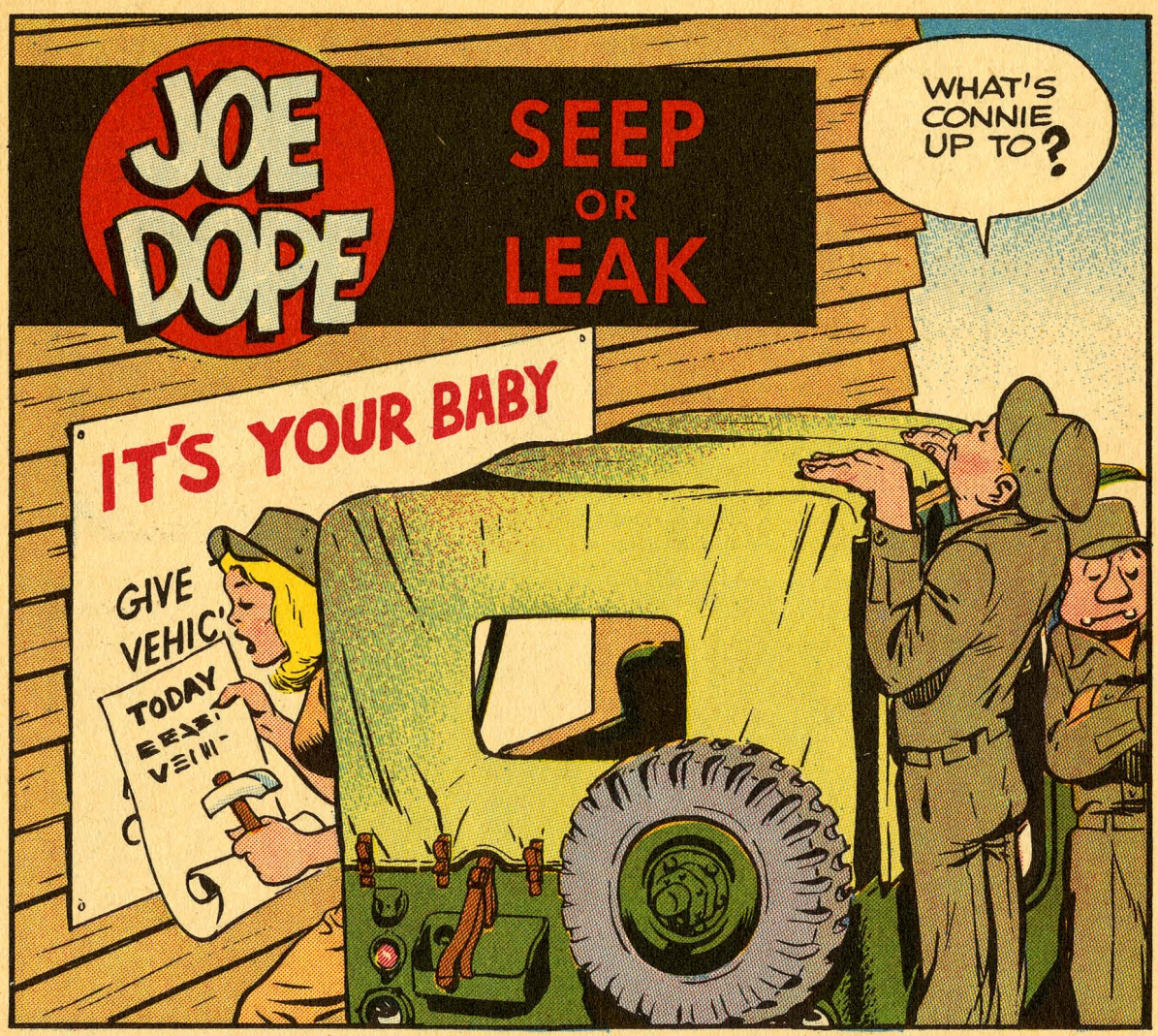
**NOTE—On TB's and MWO's:**

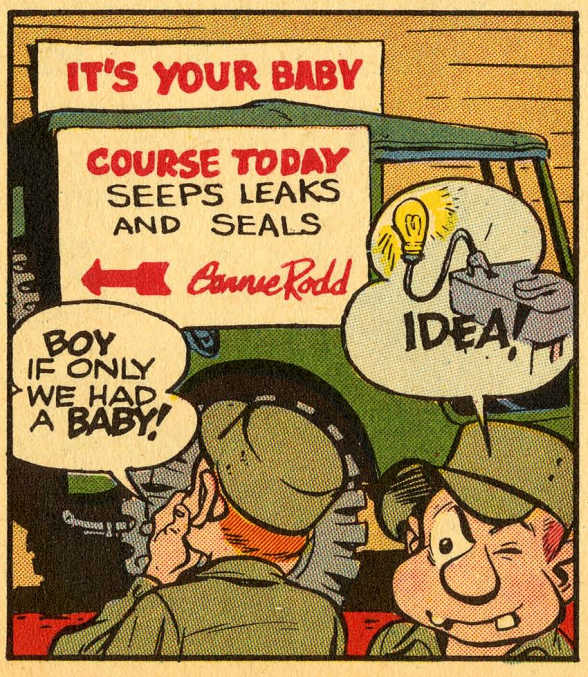
**O**—Organizational Maintenance

**F**—Field Maintenance

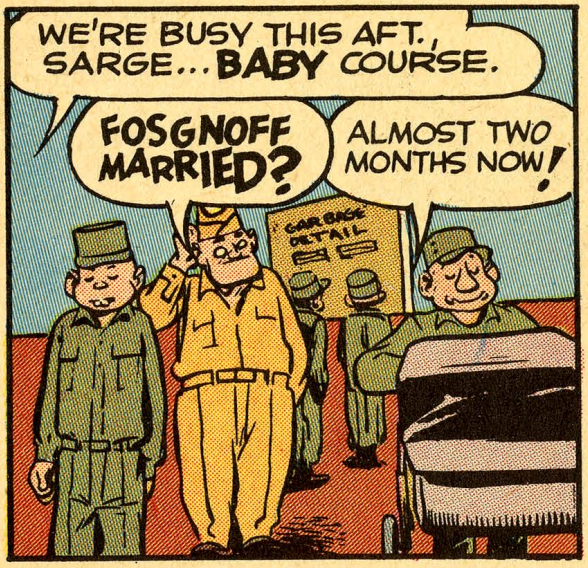
**D**—Depot Maintenance

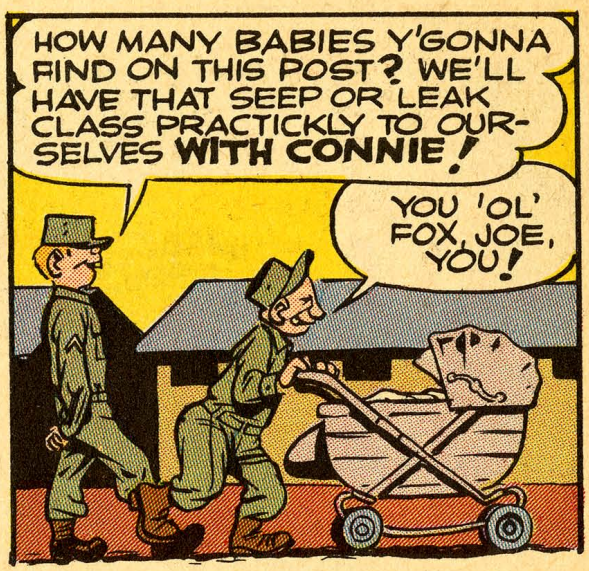


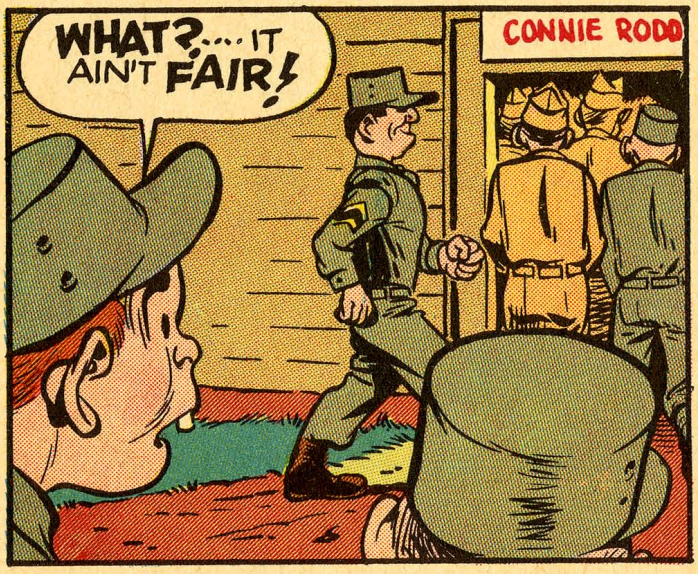

JOE DOPE
SEEP OR LEAK
WHAT'S CONNIE UP TO?
IT'S YOUR BABY
GIVE VEHIC'
TODAY


IT'S YOUR BABY
COURSE TODAY SEEPS LEAKS AND SEALS
Connie Rodd
BOY IF ONLY WE HAD A BABY!
IDEA!


WE'LL TAKE GOOD CARE OF 'IM, MA'AM.
THE LI'L TYKE NEEDS A LI'L STROLL!


WE'RE BUSY THIS AFT., SARGE... BABY COURSE.
FOSGNOFF MARRIED?
ALMOST TWO MONTHS NOW!
CAR WASH DETAIL


HOW MANY BABIES Y'GONNA FIND ON THIS POST? WE'LL HAVE THAT SEEP OR LEAK CLASS PRACTICKLY TO OURSELVES WITH CONNIE!
YOU 'OL' FOX, JOE, YOU!


WHAT?.... IT AIN'T FAIR!
CONNIE RODD


HEY, FRIEND, WHERE'S YOUR BABY?
WHERE ELSE? AT THE MOTOR POOL!


I CAN'T SEE A THING!
SO JUS' SIT AN' LISSEN... THIS SHOULD BE GOOD!


NORMAL SEEPAGE NEEDS JUST A THIN FILM OF OIL BETWEEN THE PARTS ...BUT WHEN IT FLOWS TOO FAST, YOU'VE GOT A LEAK!
?
I CAN'T WAIT TILL SHE DEMONSTRATES.

NOT ALL LEAKS MEAN YOU SHOULD CHANGE SEALS. NOTE THAT IT **MAY NOT BE** THE SEAL THAT'S AT FAULT....

Unclogging a plugged vent may release the internal pressure and stop the leak . . . if the seal is still in good shape.

CHECK VENTS BEFORE YOU DIG FURTHER

OR PERHAPS THE LEAK COULD REALLY BE SOME PLACE ELSE...

For example, the Transfer Case: A leak from the upper support-retainer's loose nuts may look like a leak in the lower oil seal

WIPE EVERYTHING CLEAN AND FIND THE LEAK FIRST

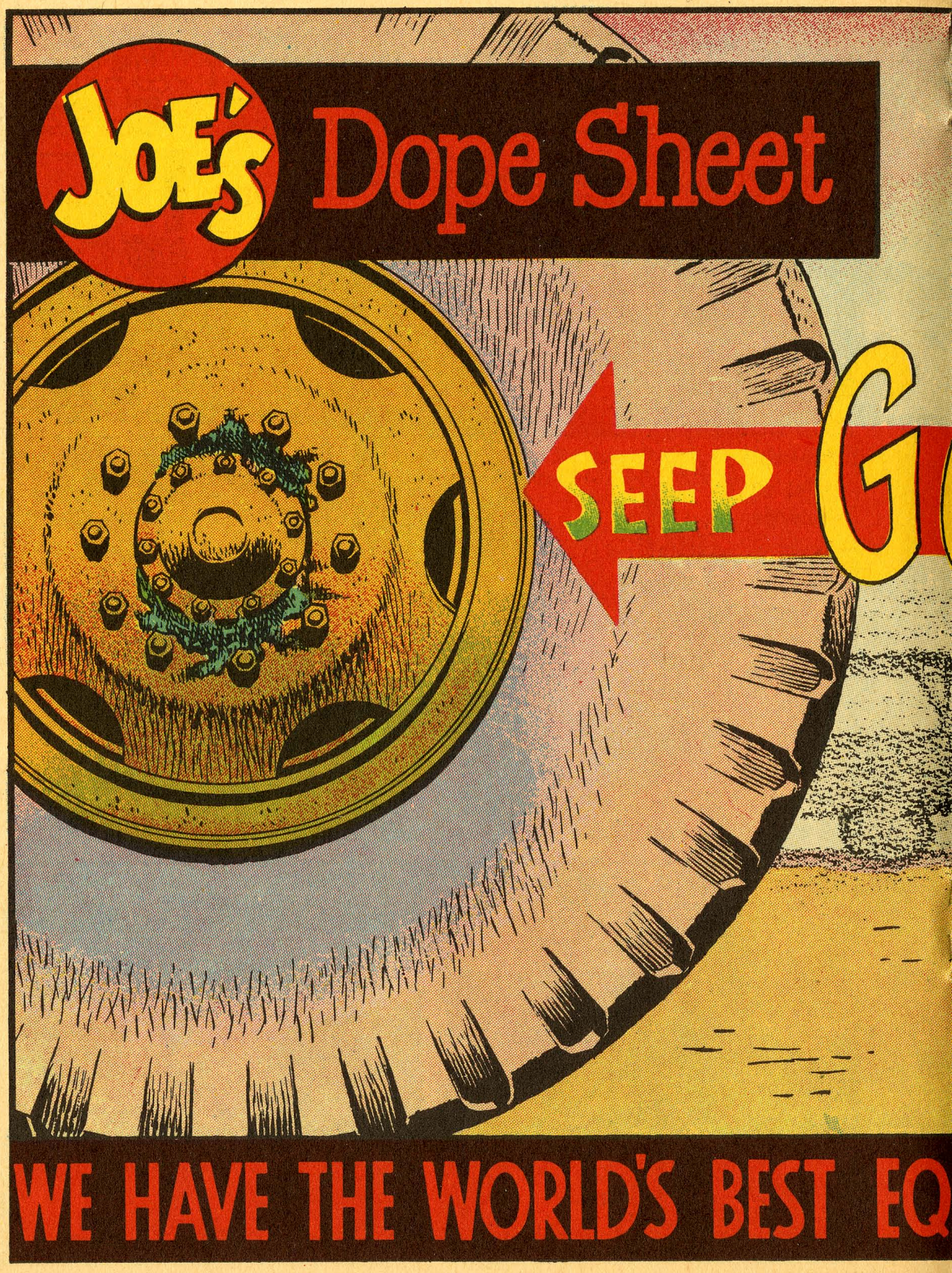
IF THE OIL SEAL HAS A **SLIGHT LEAK**, A FRACTION OF A PINT'S LOSS PER MONTH ISN'T ENOUGH TO GO ON THE DEADLINE!

AN EXPENSIVE OVERHAUL JOB JUST TO SAVE TWO CENTS WORTH OF OIL JUST DOESN'T MAKE SENSE.

DIDN'T KNOW THIS COULD GET SO TECHNICAL!

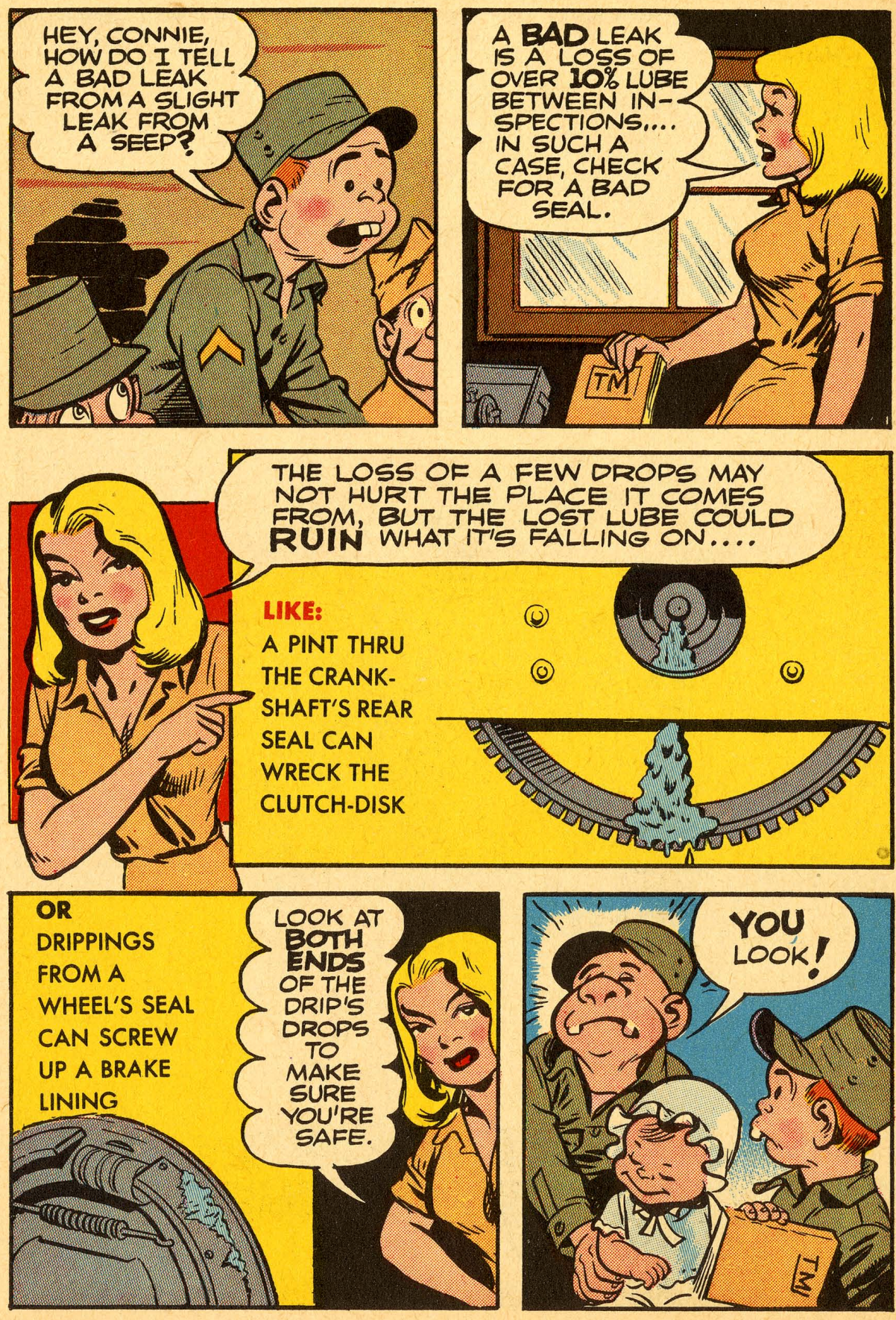
BUT WHEN YOU'VE **MORE** THAN A **SLIGHT** LEAK, **REPLACE THE SEAL**... SO'S NOT TO GRIND UP THE ASSEMBLY. NOW HERE'S A POSTER..

WHERE'S HIS ASSEMBLY ???



Don't deadline your truck or your jeep
'Cause your oil-seal shows signs of some seep.
But a streaky wet leak
Needs attention this week
Or the heap'll bog down to a creep.

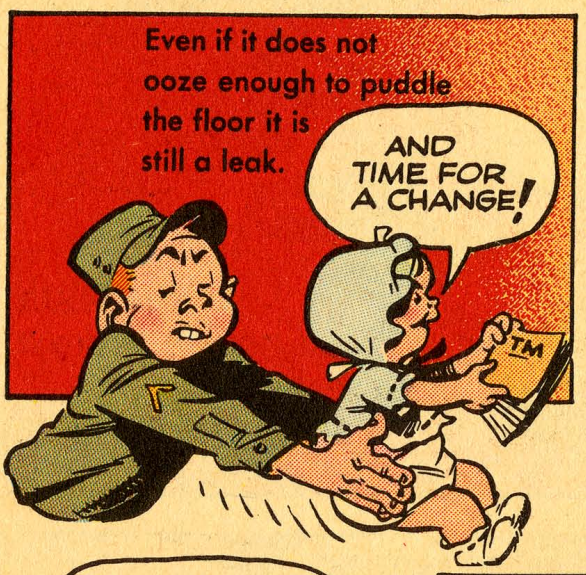

UIPMENT... Take care of it

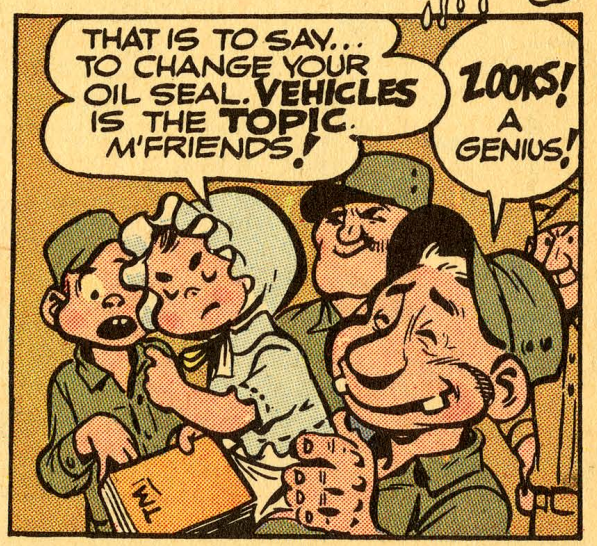

HEY, CONNIE, HOW DO I TELL A BAD LEAK FROM A SLIGHT LEAK FROM A SEEP?
A BAD LEAK IS A LOSS OF OVER 10% LUBE BETWEEN IN-SPECTIONS.... IN SUCH A CASE, CHECK FOR A BAD SEAL.
TM
THE LOSS OF A FEW DROPS MAY NOT HURT THE PLACE IT COMES FROM, BUT THE LOST LUBE COULD RUIN WHAT IT'S FALLING ON....
LIKE:
A PINT THRU THE CRANK-SHAFT'S REAR SEAL CAN WRECK THE CLUTCH-DISK
OR
DRIPPINGS FROM A WHEEL'S SEAL CAN SCREW UP A BRAKE LINING
LOOK AT BOTH ENDS OF THE DRIP'S DROPS TO MAKE SURE YOU'RE SAFE.
YOU LOOK!
TM

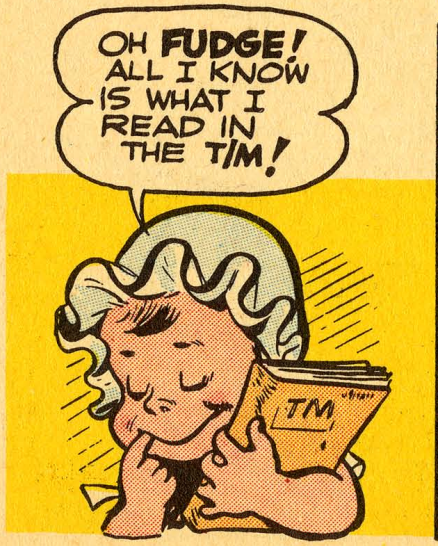

TAKE IT EASY CHANGING A SEAL....
BANGING IT INTO PLACE CAN SCAR IT AND SHORTEN ITS LIFE...THAT'S HOW MANY SEAL LEAKS BEGIN... POOR INSTALLATION!
BE SURE ALL MATING SURFACES ARE CLEAN AND READY....
A THIN SMEAR OF GREASE AROUND THE SEAL'S OUTER EDGE . . . SO IT GOES IN EASIER.
SINCE WE'RE BEING SO GOSH-FIRED TECHNICAL ABOUT IT, CONNIE, ...HOW MANY DROPS MAKE THE DIFFERENCE BETWEEN A SEEP AN' A LEAK?
LET'S NOT GO OFF THE DEEP END, BROTHER ... BUT I CAN GIVE YOU A A GOOD GENERAL IDEA....

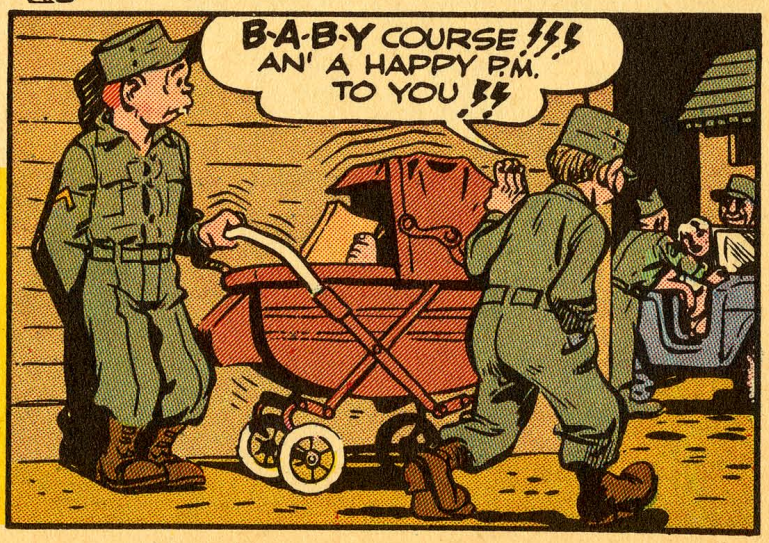
You got to keep in mind that all seals are supposed to let a little goo go by. That's how it lubes itself.





# SUPPLY & DIRECTIVES

ALL ABOUT DA FORM 460—

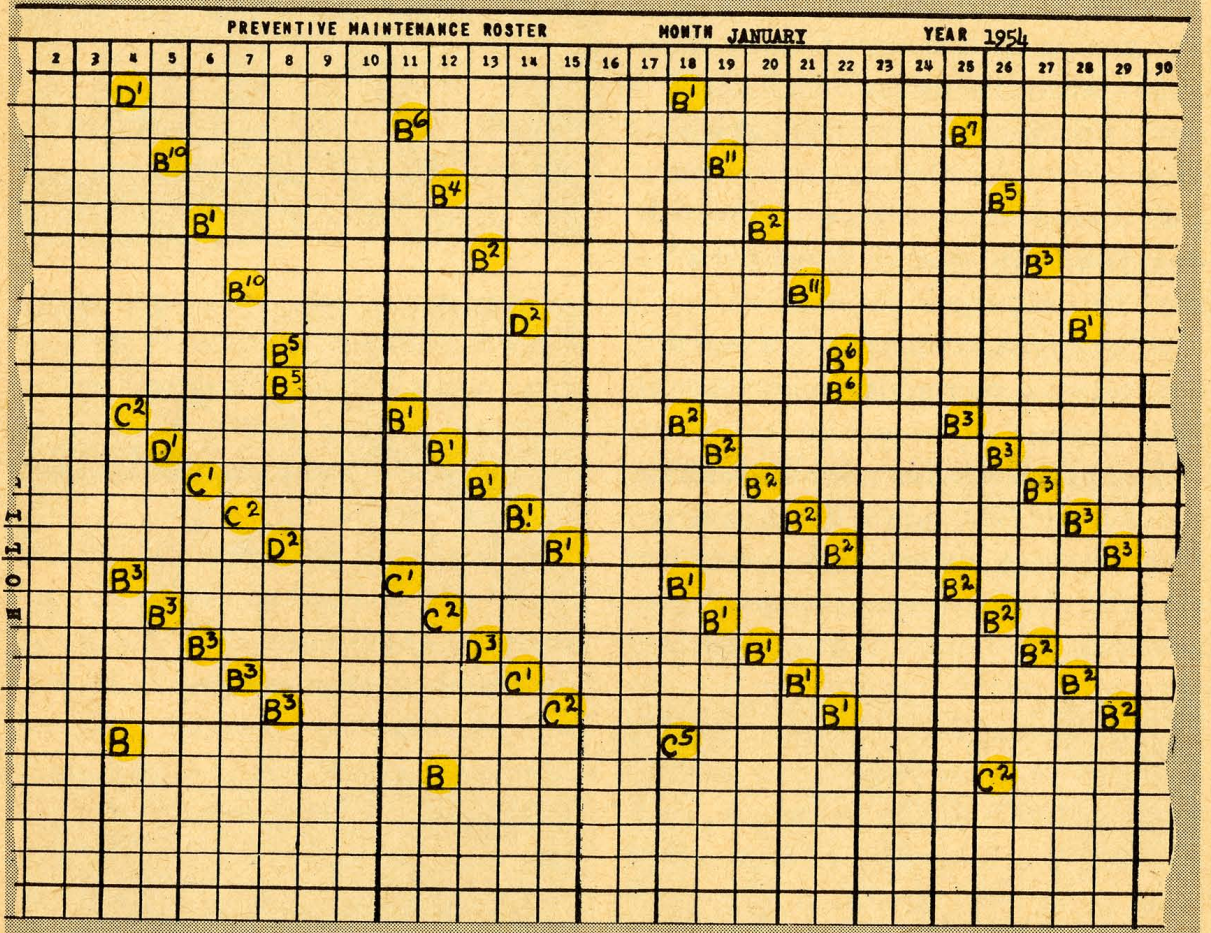
## The B A C S of your BCD's

Here's one for you guys in an organizational service section whose job is to schedule and tally the *B*, *C*, and *D* services for motor vehicles.

The idea is to clear up the muddy water some people have let their maintenance roster (DA Form 460) stir up. To keep yours clear, use this method along with your TM 9-2810. The TM isn't concerned where or how you put down a pencil mark—it just wants to keep your trucks and tanks in top shape.

This outline tells how to plan your *B*, *C* and *D* services without biting off your fingernails up to your elbows, and where to shove those old rosters that have served their purpose.

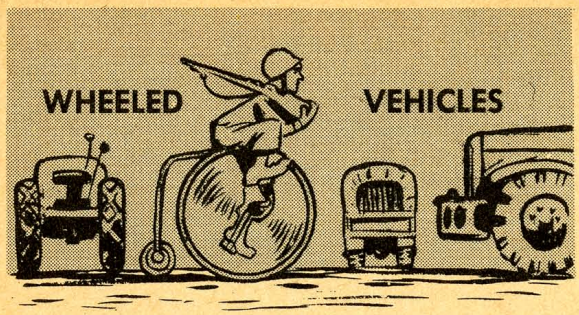
Revise your form the way it's done on pages 32–33 and then—here goes—




Plan your workload for at least one month in advance. This way the servicing of your vehicles will be spread out and they all will get the maintenance they need—not just a hit-or-miss job.

First mark it in with **pencil** like above. After the work is done, mark the service symbol on the roster with **ink**.

When one of your vehicles is away from home and has been serviced while away, make sure you copy the info on to your roster.




Here's how this schedule works for wheeled vehicles. The *B* service is to be done once every two weeks. Based on a five-day work week this means that you schedule 10% of your vehicles for *B* service each working day.

Number the *B* services from 1 thru 11, starting with the last *D* service. On a time basis, this means when your $B^{12}$ comes due, your *D* service will be scheduled instead, 'cause six months have passed since the last *D* service. This will save you from writing down dates on the lefthand page of the roster.

After you've decided the date for each one, pencil it on the righthand page of your roster.

Your *C* service for wheeled vehicles is due every 1000 miles. But if your vehicles average about the same number of miles during a certain period (for example, 1000 miles in three months), then you could schedule on a time (three-month) basis.

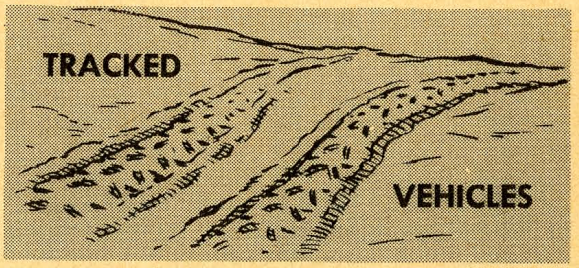
If you've got a vehicle that usually racks up 1000 miles in one month, then schedule the *C* services on a monthly basis, or on even numbered *B* services. This will work unless more mileage is put on the vehicle and upsets the applecart. In that case, you'll have to go by mileage. But the tolerance allowance could put you back on schedule. You're allowed 10% on *C* which means any time between 900 to 1100 miles, and 5% on *D* which is between 5700 to 6300 miles.

When you do a *C* service (1000 miles) instead of a $B^5$ service, make sure you schedule $B^6$ next, 'cause when you get to $B^{11}$ you'll know your next service will be a *D*.

And here's how you number your *C* services, starting with the last *D* service ($C^1$, $C^2$, $C^3$, etc). Since you do your *C* service every 1000 miles, then the next *D* service should follow every $C^5$ service.


If you've a vehicle that has gone more than 6000 miles in less than six months, then you'll schedule a *D* service after the $C^5$ instead of after the $B^{11}$. You start a new series of *B* and *C* numbering after you do *D* service.

Number your *D* services $D^1$ and $D^2$. The $D^2$ tells you that you should do the yearly or 12,000-mile service. This saves you thumbing thru as many as 12 rosters to find out.




Here's how you schedule your tracked vehicles.

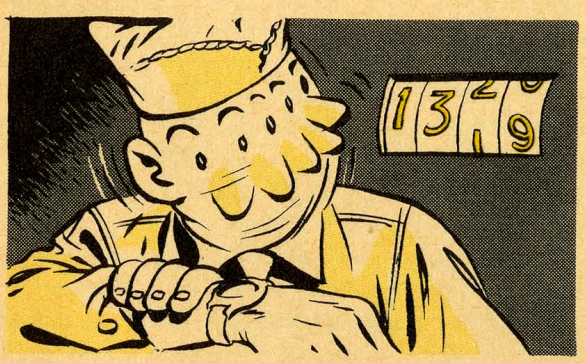
Schedule your tracked vehicles so the workload will be evenly divided. Since the *B* service is due every five working days, schedule 1/5 of the total number of tracked vehicles each work day.

You also number these services. When you're scheduling remember that every $B^3$ is followed by a *C* service because one month has passed since the last *C*. So *B* services are numbered from 1 thru 3.

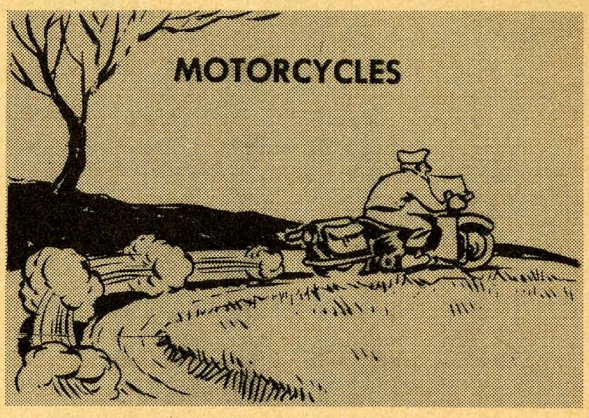
Every third *C* service (the third monthly service) will be a *D* or quarterly service. Number your *C* services 1 and 2.

Since you do more things at your quarterly ($D^1$), semi-annual ($D^2$), third quarter ($D^3$), and annual ($D^4$) services, number your *D* services 1 thru 4.

So far so good for scheduling. Now let's use it.



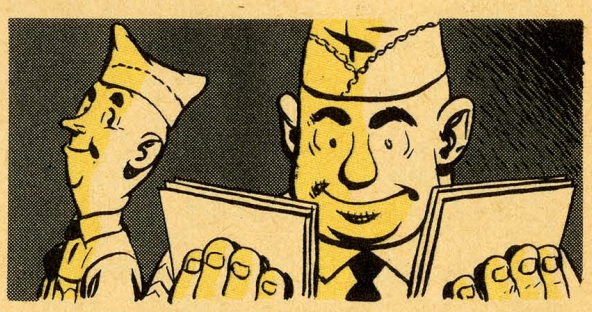
Your *C* and *D* services on track vehicles are based on mileage as well as time. You'd better look at your mileage record to see if that track vehicle is ready for the *C* or *D* service on a mileage basis. If your service fell due on a mileage basis rather than a time basis, try to do it as close as possible to the scheduled date and do the highest type of service. Remember, you've got tolerance zones on tracked vehicles, too. For *C* service it can be done between 225 to 275, and for *D* service between 712-788.



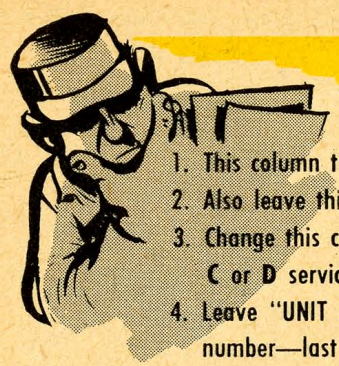

You don't have to number *B* services on motorcycles—since they are done every two weeks only one will be scheduled between your monthly *C* service.

Your *C* service is governed by both time and mileage so putt-putts can always be scheduled for a *C* service on a monthly basis if they do less than 1000 miles a month. These are numbered from 1 thru 5.

And you people in a battalion or regimental service section that only do *C* or *D* services—fill out that part of the roster that covers these services. And you'd better make sure your roster jibes with the master roster that's kept by the company, troop or battery unit to which the vehicles belong.



You keep your completed DA 460's for six months, after that shove them in file 13.



# Here's how it works on your DA

1. This column title stays as is—in it you list the operator who's assigned to the vehicle.
2. Also leave this column as is—and in it you list the type and model of your vehicle.
3. Change this column from "REMARKS" to "MILEAGE OF LAST **C** OR **D** SERVICE." In it list the vehicle's last **C** or **D** service.
4. Leave "UNIT SERIAL NO." as is—in it put the vehicle's bumper number. (Or you use the vehicle serial number—last four digits—if you like.)
5. Change the title of this column from "ACCESSORY" to "MILEAGE OF NEXT **C** SERVICE"—in it list the mileage your next **C** service is due.
6. Change the title of the column from "EQUIPMENT REG. NO." to "MILEAGE OF NEXT **D** SERVICE"—in it list the mileage your next **D** service is due.

If there's no question—on to the next section. If there is, write to Half-Mast.

7. Black out the dates of all non-working days (this includes non-working holidays, too). This roster has been scheduled on the basis of a normal five-day work week. No, you're not gonna' have wasted blank spaces. Put down your weekly vehicle mileage in those spaces. This way there's no need for a special mileage chart.

| NO. | RANK AND NAME | EQUIPMENT NOMENCLATURE | MILEAGE LAST ~~REMARKS~~ C or D SERVICE | UNIT SERIAL NO. | MILEAGE OF NEXT ~~ACCESSORY~~ C SERVICE | MILEAGE OF NEXT ~~EQUIPMENT REG. NO.~~ D SERVICE |
|---|---|---|---|---|---|---|
| 1 | PFC Gray | Truck, ¼ Ton, M38A1 | C5 - 8500 | 1 | ——— | D1 - 9500 |
| 2 | Pvt Solon | " " " | C2 - 4100 | 2 | 5100 | D2 - 6100 |
| 3 | Pvt North | " " " | C4 - 8600 | 3 | 9600 | D1 - 10600 |
| 4 | Pvt Jones | " " " | C2 - 2600 | 4 | 3600 | D1 - 6600 |
| 5 | Pvt Ommoraki | " " " | C3 - 4200 | 5 | 5200 | D2 - 7200 |
| 6 | Pvt Dendy | Truck, 2½ Ton, M135 | D1 - 9842 | 7 | 10842 | D2 - 13842 |
| 7 | Pvt Winter | " " " " | C5 - 15642 | 12 | ——— | D2 - 16642 |
| 8 | Pvt Moore | " " " " | C5 - 6798 | 14 | ——— | D2 - 7798 |
| 9 | Pvt Hallonquist | " " " " | C2 - 4168 | 17 | 5168 | D1 - 8168 |
| 10 | " " | Trailer, Cargo, M104 | " | T-17 | " | " |
| 11 | Sgt Berger | Veh. Armd Tracked T59 | D2 - 6842 | 19 | 7092 | D3 - 7592 |
| 12 | Sgt Collier | Tank, 90mm Gun, M48 | C2 - 350 | 20 | ——— | D1 - 600 |
| 13 | Sgt Keith | " " " " | D1 - 275 | 21 | 525 | D2 - 1025 |
| 14 | Sgt Poe | " " " " | C1 - 425 | 22 | 675 | D3 - 975 |
| 15 | Sgt Klahre | " " " " | C2 - 575 | 23 | ——— | D2 - 825 |
| 16 | Sgt Heath | " " " " | D2 - 375 | 24 | 625 | D3 - 1125 |
| 17 | Sgt Andrews | " " " " | C1 - 250 | 25 | 500 | D2 - 750 |
| 18 | Sgt Phipps | " " " " | C2 - 500 | 26 | ——— | D3 - 750 |
| 19 | Sgt Fleeson | " " " " | D3 - 375 | 27 | 625 | D1 - 1125 |
| 20 | Sgt Lewis | " " " " | C1 - 400 | 28 | 650 | D2 - 900 |
| 21 | Pvt Hyman | Mtrd, Solo HD-WLA | C4 - 21774 | 6 | 22774 | 23774 |
| 22 | Pvt Crabtree | " " " " | C1 - 3063 | 8 | 4063 | 9063 |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |

# Here's how it works on your DA Form 460.

1. This column title stays as is—in it you list the operator who's assigned to the vehicle.
2. Also leave this column as is—and in it you list the type and model of your vehicle.
3. Change this column from "REMARKS" to "MILEAGE OF LAST C OR D SERVICE." In it list the vehicle's last C or D service.
4. Leave "UNIT SERIAL NO." as is—in it put the vehicle's bumper number. (Or you use the vehicle serial number—last four digits—if you like.)
5. Change the title of this column from "ACCESSORY" to "MILEAGE OF NEXT C SERVICE"—in it list the mileage your next C service is due.
6. Change the title of the column from "EQUIPMENT REG. NO." to "MILEAGE OF NEXT D SERVICE"—in it list the mileage your next D service is due.

If there's no question—on to the next section. If there is, write to Half-Mast.

7. Black out the dates of all non-working days (this includes non-working holidays, too). This roster has been scheduled on the basis of a normal five-day work week. No, you're not gonna' have wasted blank spaces. Put down your weekly vehicle mileage in those spaces. This way there's no need for a special mileage chart.

| NO. | RANK AND NAME | EQUIPMENT NOMENCLATURE | MILEAGE LAST ~~REMARKS~~ C or D SERVICE | UNIT SERIAL NO. | MILEAGE OF NEXT ~~ACCESSORY~~ C SERVICE | MILEAGE OF NEXT ~~EQUIPMENT REG. NO.~~ D SERVICE |
|---|---|---|---|---|---|---|
| 1 | Pfc Gray | Truck, ¼ Ton, M38A1 | C5 - 8520 | 1 | ------- | D1 - 9520 |
| 2 | Pvt Solon | " " " | C2 - 4100 | 2 | 5100 | D2 - 6100 |
| 3 | Pvt North | " " " | C4 - 8600 | 3 | 9600 | D1 - 10600 |
| 4 | Pvt Jones | " " " | C2 - 2600 | 4 | 3600 | D1 - 6600 |
| 5 | Pvt Omoeski | " " " | C3 - 4300 | 5 | 5300 | D3 - 7300 |
| 6 | Pvt Dandy | Truck, 2½ Ton, M135 | D1 - 9842 | 7 | 10842 | D2 - 15842 |
| 7 | Pvt Winter | " " " " | C5 - 13642 | 12 | ------ | D2 - 16642 |
| 8 | Pvt Moore | " " " " | C5 - 6798 | 14 | ------ | D2 - 7798 |
| 9 | Pvt Hallonquist | " " " " | C2 - 4168 | 17 | 5168 | D1 - 6168 |
| 10 | " " | Trailer, Cargo, M116 | " | T-17 | " | " |
| 11 | Sgt Berger | Veh. Armd Tracked T59 | D2 - 6842 | 19 | 7092 | D3 - 7592 |
| 12 | Sgt Collier | Tank, 90mm Gun, M48 | D2 - 350 | 20 | ------ | D1 - 600 |
| 13 | Sgt Keith | " " " " | D1 - 275 | 21 | 525 | D2 - 1025 |
| 14 | Sgt Poe | " " " " | C1 - 425 | 22 | 675 | D3 - 975 |
| 15 | Sgt Klahre | " " " " | C2 - 575 | 23 | ------ | D2 - 825 |
| 16 | Sgt Heath | " " " " | D2 - 375 | 24 | 625 | D3 - 1125 |
| 17 | Sgt Andrews | " " " " | C1 - 250 | 25 | 500 | D2 - 750 |
| 18 | Sgt Phipps | " " " " | C2 - 500 | 26 | ------ | D3 - 750 |
| 19 | Sgt Fleeson | " " " " | D3 - 375 | 27 | 625 | D1 - 1125 |
| 20 | Sgt Lewis | " " " " | C1 - 400 | 28 | 650 | D2 - 900 |
| 21 | Pvt Hyman | Mtrd. Solo HD-WLA | C4 - 21774 | 6 | 22774 | 23774 |
| 22 | Pvt Crabtree | " " " " | C1 - 3063 | 8 | 4063 | 9063 |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |



## TOLERANCE ZONES

**WHEELED VEHICLES**
C—900 MILES TO 1,100 MILES
D—5,700 TO 6,300 MILES

**TRACKED VEHICLES**
C—225 TO 275 MILES
D—712 TO 788 MILES

## LEGEND

P—DEADLINED FOR LACK OF PARTS

O—DEADLINED IN FIELD MAINTENANCE

A—DEADLINED DUE TO ACCIDENT

| TRACK | WHEEL |
|---|---|
| B—WEEKLY | BI-WEEKLY |
| C—250 MILES OR MONTHLY | 1,000 MILES |
| D—750 MILES OR QUARTERLY | 6,000 MILES OR SEMI-ANNUALLY |

Note: Entries still in pencil are shown with a yellow circle around them. Entries that have been inked are shown here as typing.

PREVENTIVE MAINTENANCE ROSTER — MONTH JANUARY — YEAR 1954

| NO. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 94 | 32 | D1 | | | | | 9540 | | | | | | | 96 | 85 | B1 | | | | | | 9731 | | | | | | | | 1 |
| 2 | | 59 | 40 | | | | | | 5941 | | B6 | | | | | 64 | 82 | | | | | | | 6640 | B7 | | | | | | | 2 |
| 3 | | 97 | 00 | | B10 | | O5 | | 10284 | | | | | | | 105 | 33 | | B11 | D1 | | D1 | D1 | 10642 | | | | | | | | 3 |
| 4 | | 30 | 64 | | | | | | 3342 | | | B4 | | | | 33 | 62 | | | | | | | 3383 | | B5 | | C1 | | | | 4 |
| 5 | | 46 | 03 | | | B1 | | | 4721 | | | | | | | 51 | 46 | | | B3 | | D4 | | 5243 | | | | | | | | 5 |
| 6 | | 99 | 84 | | | | | O | O | | | O | O | B2 | O | D2 | 100 | 31 | | | | | | 10334 | | | | B3 | | B1 | | 6 |
| 7 | | 167 | 04 | | | | B10 | D2 | 17403 | | D2 | D2 | | | | | 17403 | | | | | B11 | D1 | 17641 | | | | | | | | 7 |
| 8 | | 78 | 69 | | | | | | 7900 | | | | | | D2 | D2 | 80 | 00 | D2 | | | | | 8321 | | | | | B1 | | | 8 |
| 9 | | 50 | 08 | | | | B5 | C | 5164 | | C3 | | | | | | 57 | 89 | | | | B4 | | 6018 | B6 | | A | | A | | A | 9 |
| 10 | | | | | | | B5 | | | | C3 | | | | | | | | | | | B6 | | | | | | | | | | 10 |
| 11 | | 71 | 32 | C2 | | | | | 7248 | | B1 | | | | | | 74 | 89 | B2 | | | | | 7568 | B3 | D3 | D3 | D3 | | | | 11 |
| 12 | | 4 | 02 | | D1 | B1 | | | 410 | | | B1 | | | | | 450 | | | B2 | | | | 510 | | B3 | | | | | | 12 |
| 13 | | 4 | 10 | | | C1 | | | 450 | | | | B1 | | | | 540 | | | | B2 | | | 620 | | | B3 | | | | | 13 |
| 14 | | 5 | 04 | | | | | C2 | 570 | | | | | B1 | | | 620 | | | | | B2 | | 670 | | | | | B3 | | | 14 |
| 15 | | 5 | 90 | | | | B2 | | 620 | | D2 | D2 | | | B1 | | 680 | | | | | | B2 | 720 | | | | | | B3 | | 15 |
| 16 | | 5 | 02 | B3 | | | | | 522 | | O1 | | | | | | 591 | B1 | | | | | | 591 | | B2 | | | | | | 16 |
| 17 | | 3 | 04 | | B3 | | | | 409 | | | C2 | | | | | 470 | | B1 | | | | | 504 | | | B2 | | | | | 17 |
| 18 | | 6 | 03 | | | B3 | | | 650 | | | | D3 | D3 | P | | 680 | P | | B1 | | | | 750 | | | | B2 | | | | 18 |
| 19 | | 6 | 40 | | | | B3 | C1 | 663 | | | | C1 | B1 | | | 690 | | | | | B1 | B2 | 725 | | | | | B2 | B3 | | 19 |
| 20 | | 4 | 80 | | P | P | P | B3 | 510 | | | | | | C2 | | 570 | | | | | | B1 | 620 | | | | | | B2 | | 20 |
| 21 | | 218 | 67 | B | | | | | 22284 | | | | | | | | 22280 | O5 | | | | | | 23340 | | | | | | | | 21 |
| 22 | | 30 | 63 | | | | | | 3063 | | | B | | | | | 3064 | D | Storage | | | | | | | | | | | | | | 22 |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 23 |
| 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 24 |
| 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 25 |
| 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 26 |
| 27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 27 |

TURN THE PAGE AND KEY UP THE LINES TO SEE HOW THIS SIDE OF THE FORM WORKS.

# Form 460.

## TOLERANCE ZONES

**WHEELED VEHICLES**

C—900 MILES TO 1,100 MILES

D—5,700 TO 6,300 MILES

**TRACKED VEHICLES**

C—225 TO 275 MILES

D—712 TO 788 MILES

## LEGEND

P—DEADLINED FOR LACK OF PARTS

O—DEADLINED IN FIELD MAINTENANCE

A—DEADLINED DUE TO ACCIDENT

| TRACK | WHEEL |
|---|---|
| B—WEEKLY | BI-WEEKLY |
| C—250 MILES OR MONTHLY | 1,000 MILES |
| D—750 MILES OR QUARTERLY | 6,000 MILES OR SEMI-ANNUALLY |

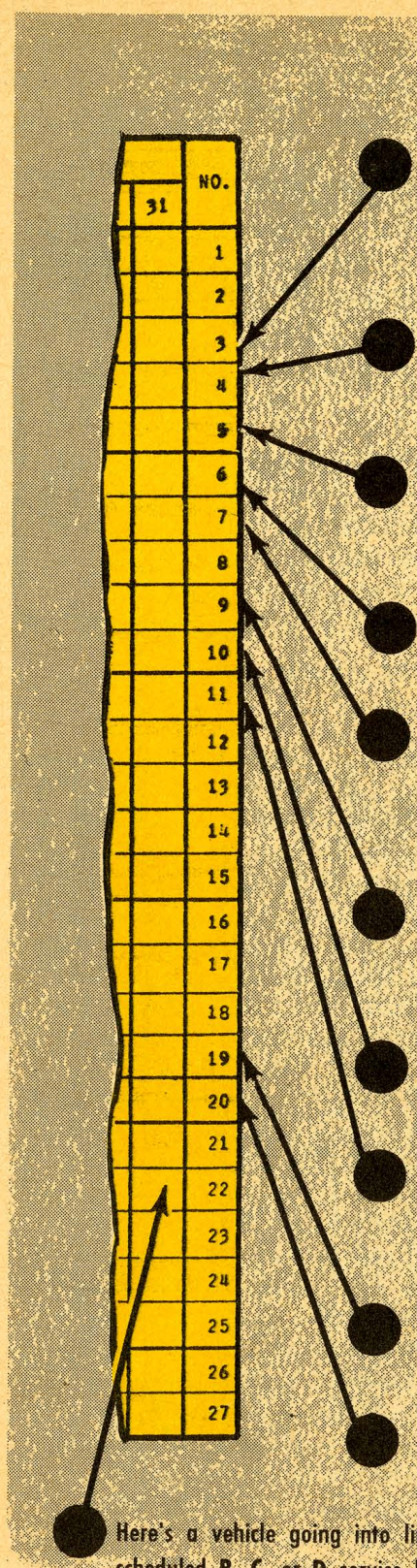
Note: Entries still in pencil are shown with a yellow circle around them. Entries that have been inked are shown here as typing.

7

PREVENTIVE MAINTENANCE ROSTER — MONTH JANUARY — YEAR 1954

| NO. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 94 | 32 | D1 | | | | | 95 | 40 | | | | | | 96 | 85 | B1 | | | | | 97 | 41 | | | | | | | | 1 |
| 2 | | 59 | 40 | | | | | | 59 | 41 | B6 | | | | | 64 | 82 | | | | | | 66 | 40 | B7 | | | | | | | 2 |
| 3 | | 97 | 00 | | B10 | C5 | | | 102 | 64 | | | | | | 105 | 33 | | B11 | D1 | D1 | D1 | 106 | 42 | | | | | | | | 3 |
| 4 | | 30 | 64 | | | | | | 31 | 42 | | B4 | | | | 33 | 62 | | | | | | 35 | 83 | | B5 | C1 | | | | | 4 |
| 5 | | 46 | 03 | | | B1 | | | 47 | 21 | | | | | | 51 | 46 | | | B2 | C4 | | 52 | 43 | | | | | | | | 5 |
| 6 | | 99 | 84 | | | | 0 | 0 | ---- | | 0 | 0 | B2 | 0 | D2 | 100 | 31 | | | | | | 103 | 34 | | | B3 | | B1 | | | 6 |
| 7 | | 167 | 04 | | | | B10 | D2 | 174 | 03 | D2 | D2 | | | | 174 | 03 | | | | B11 | B1 | 176 | 41 | | | | | | | | 7 |
| 8 | | 78 | 69 | | | | | | 79 | 00 | | | | D2 | D2 | 80 | 00 | D2 | | | | | 83 | 21 | | | | B1 | | | | 8 |
| 9 | | 50 | 08 | | | | | B5 | 51 | 64 | C3 | | | | | 57 | 89 | | | | | B6 | 60 | 18 | B6 | | A | A | A | | | 9 |
| 10 | | | | | | | | B5 | | | C3 | | | | | | | | | | | B6 | | | | | | | | | | 10 |
| 11 | | 71 | 32 | C2 | | | | | 72 | 18 | B1 | | | | | 74 | 89 | B2 | | | | | 75 | 68 | B3 | D3 | D3 | D3 | | | | 11 |
| 12 | | 4 | 02 | | D1 | D1 | | | 4 | 10 | | B1 | | | | 4 | 50 | | B2 | | | | 5 | 10 | | B3 | | | | | | 12 |
| 13 | | 4 | 10 | | | C1 | | | 4 | 50 | | | B1 | | | 5 | 10 | | | B2 | | | 6 | 20 | | | B3 | | | | | 13 |
| 14 | | 5 | 04 | | | | C2 | | 5 | 70 | | | | B1 | | 6 | 20 | | | | B2 | | 6 | 70 | | | | B3 | | | | 14 |
| 15 | | 5 | 90 | | | | | D2 | 6 | 20 | D2 | D2 | | | B1 | 6 | 80 | | | | | B2 | 7 | 20 | | | | | B3 | | | 15 |
| 16 | HOLIDAY | 5 | 02 | B3 | | | | | 5 | 91 | C1 | | | | | 5 | 91 | B1 | | | | | 5 | 91 | B2 | | | | | | | | 16 |
| 17 | | 3 | 04 | | B3 | | | | 4 | 09 | | C2 | | | | 4 | 70 | | B1 | | | | 5 | 04 | | B2 | | | | | | 17 |
| 18 | | 6 | 03 | | | B3 | | | 6 | 50 | | | D3 | D3 | P | 6 | 80 | P | | B1 | | | 7 | 50 | | | B2 | | | | | 18 |
| 19 | | 6 | 40 | | | | B3 | C1 | 6 | 63 | | | | C1 | B1 | 6 | 90 | | | | B1 | B2 | 7 | 25 | | | | B2 | B3 | | | 19 |
| 20 | | 4 | 80 | | P | P | P | B3 | 5 | 10 | | | | | C2 | 5 | 70 | | | | | B1 | 6 | 20 | | | | | B2 | | | 20 |
| 21 | | 218 | 67 | B | | | | | 221 | 64 | | | | | | 221 | 80 | C5 | | | | | 231 | 40 | | | | | | | | 21 |
| 22 | | 30 | 63 | | | | | | 30 | 63 | | B | | | | 30 | 64 | D | | Storage---------- | | | | | | | | | | | | 22 |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 23 |
| 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 24 |
| 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 25 |
| 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 26 |
| 27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 27 |

TURN THE PAGE AND KEY UP THE LINES TO SEE HOW THIS SIDE OF THE FORM WORKS.




A $C^5$ service was done instead of the $B^{10}$ because the vehicle had been driven 1100 miles since the last **C** service. Also you'll note that a **D** service was done instead of a **B** since the **D** was due at 10,600 miles (as per your "MILEAGE OF NEXT D SERVICE" column. Allow at least three days for a **D** service (Line 3).

Here a **C** service took the place of the scheduled **B** since the vehicle had traveled 983 miles since it had its last **C** service and it entered the tolerance zone (Line 4).

A **C** service took the place of the **B** that was scheduled. The vehicle had gone 946 miles since it had its last **C** service (Line 5).

The **O** indicates the days the vehicle was deadlined at field maintenance and the $O^2$ was done by them. If you get your vehicle back from field maintenance shop and they did the **D** service, make sure you put it on your roster. (Line 6).

Here you'll note that a **D** service took the place of a **B** service since the vehicle had covered 1062 miles since its last **C** service. The number of the next scheduled bi-weekly service was changed from $B^{11}$ to $B^1$. After you've done a **D** service you always begin numbering the **B** service again. (Line 7).

Here a **C** service was done instead of a **B** since 940 miles were put on the vehicle since the last **C**. And A's are put in to show the vehicle is now on deadline due to an accident (Line 9).

The trailer was given the same service since it was used with the vehicle (Line 10).

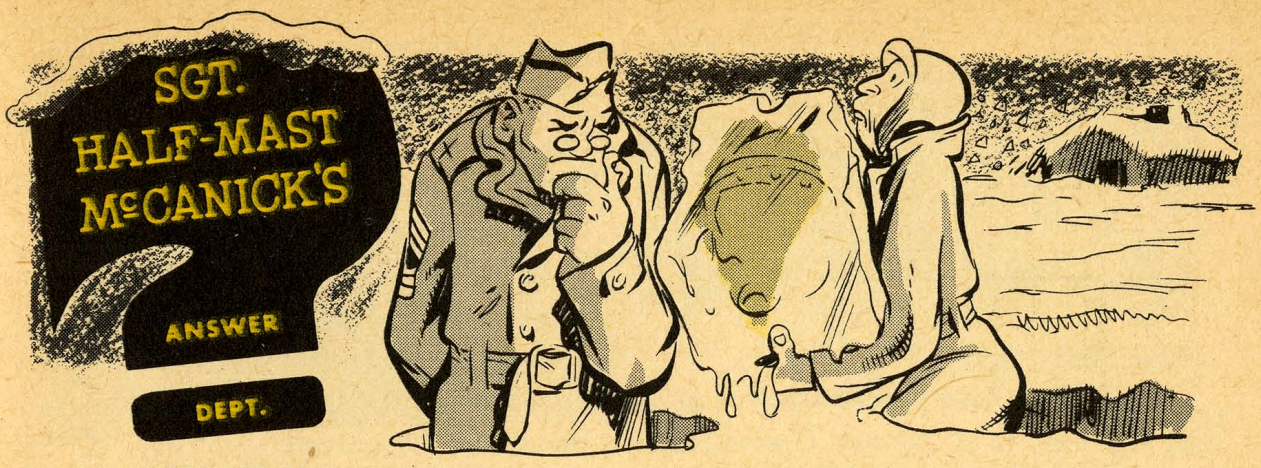
This line shows a **D** service is substituted for a $B^3$ service on 26 January since your tracked vehicle had gone 726 miles (and that's within your 5% tolerance zone of 750 miles) since the last **D** service (Line 11).

Here the M48 tank with 640 miles on 7 January was scheduled for a $B^3$ service. A **C** service was given instead since it was within the 10% tolerance zone of 250 miles for this service (Line 19).

Note the **P**'s which mean the tank's repair parts were not available until the third day (Line 20).

Here's a vehicle going into limited storage (for periods up to 90 days) make sure it gets its next scheduled **B**, **C**, or **D** service before storing it (Line 22).

**Any questions—write to Half-Mast.**




## COLD TRANSMISSIONS

*Dear Half-Mast,*

*We have trouble with our GMC Hydra-Matic transmission oil not warming up fast enough in cold weather. So, here's what we do:*

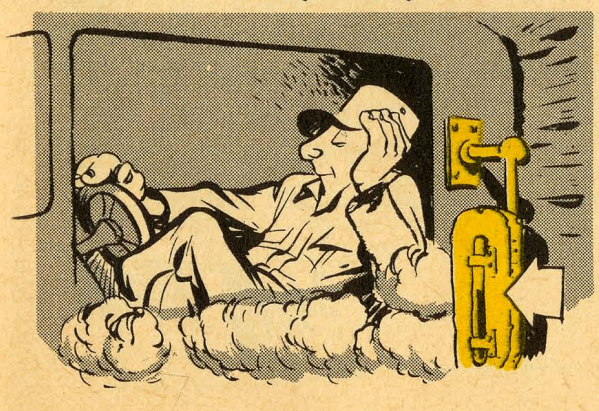
*Start the engine and run it three minutes. Keep the transfer shift-lever in NEUTRAL and the transmission in F-2 LOW RANGE. We run this way until the engine reaches operating temperature. By doing this, the rear oil-pump is put to work and the oil is circulated around the radiator in the transmission, causing it to warm up faster.*

*Do you see anything wrong in this method?*

*T. S.*

Dear Mr. T. S.,

Not a thing wrong with your method, but . . . if you've drained your air tanks at the end of the day's run you wouldn't have to do this. While running your engine the usual way and building up air pressure the next morning, you'll sit there long enough to build the oil temperature to about 60° F. That's warm enough for your 10-weight winter oil.



Half-Mast

## IN THE AIR

*Dear Half-Mast,*

*How about settling a little argument for us? When we put our antiaircraft equipment on blocks should the tire pressure be reduced or left as it is? Some say one way, some say t'other.*

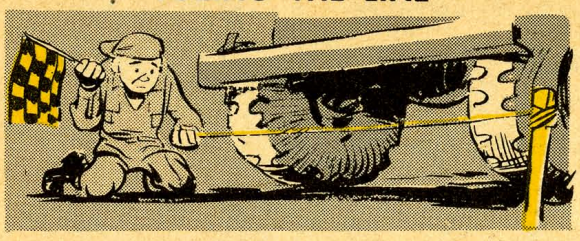
*Sgt T. E. H.*

Dear Sgt T. E. H.,

Ya' gotta keep those tires at road pressure all the time for a very simple reason. When ya' get orders to go you gotta go . . . and in a hurry. No time to run around pumping up tires. Of course, if the gun is being blocked up for storage, the tire pressure should be reduced like it says in TB Ord 363.

Half-Mast

## TOEING THE LINE



*Dear Half-Mast,*

*Does the toe-in procedure in TM 9-819A, for the 2-1/2-ton Hydra-Matic trucks work? It looks like the torque rods get in the way at the front-wheel's rear.*

*CWO W. J. M.*

Dear Mister W. J. M.,

It works all right. But you gotta take off the gage before you move the vehicle forward—or the torque rods'll stop you.

With its pendant-chains' ends an equal distance off the ground, put the gage on at the front and chalkmark its position. Then take off the gage and move the vehicle about 1/2-wheel revolution forward. Now replace the gage in the same chalk marks—making sure the chains' ends are the same distance from the ground as before. The marks should come out below the propeller shaft and above the torque rod.

*Half-Mast*

## 2-1/2-TON TRUCK FANS

*Dear Half-Mast,*

*The mechanics here have been wondering why the new 2-1/2-ton trucks do not have their fan blades spaced evenly. Could you give us some reason for this?*

*Sgt E. G. T.*

Dear Sgt E. G. T.,

There's a good reason. If those fan blades were evenly spaced you'd soon know about it because it would sound like a siren.

As for balance—when the fan was designed it was balanced both statically and dynamically and should give you no trouble. Just looks out of balance—but it's much quieter.

*Half-Mast*

## GREASED SPARK PLUGS

*Dear Half-Mast,*

*We've been having trouble with our spark-plug-cable springs corroding and sticking to the plugs. At worst we can't separate 'em and have to get a new cable and plug. We found a white powdery cake on the cables' cadmium-plated springs, which seemed to cause the trouble.*

*Is there some harmless-to-rubber compound we can use in there on the springs to keep them from corroding?*

*H. A. P.*

Dear Mr. H. A. P.,

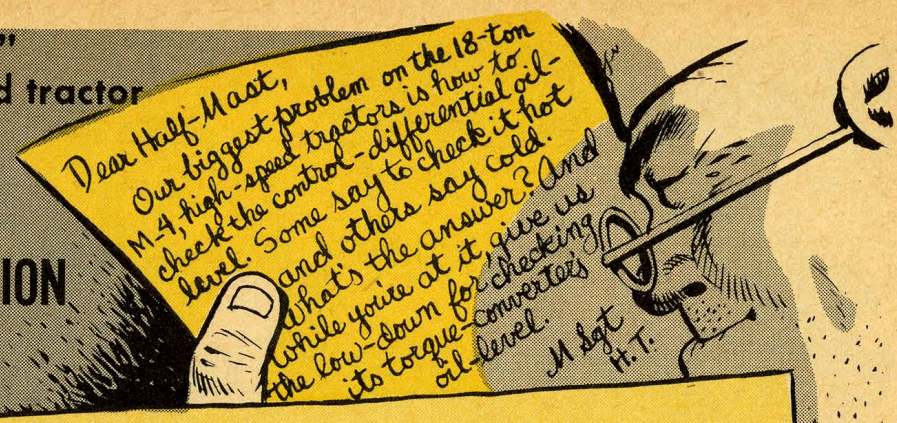
You use Grease, silicon, Ord Stock No. 14-G-1650, 8-oz tube, till it's exhausted; then use Compound, insulating and sealing, Ord Stock No. 52-C-3096-790, in 8-oz tubes.

Just put it on the springs at your regular *C* maintenance intervals.

*Half-Mast*

For a "hot-shot" M-4 high-speed tractor

# WATCH ITS TRANSMISSION OIL-LEVEL




Dear MSgt H. T.,

You ought to check the transmission and differential oil-level on that high-speed tractor while she's hot. So—check 'er and fill 'er hot, and she won't burn up later.

Drain the oil hot, too—every 100 hours. If she's at rest, first put her to work for at least 5 minutes before you milk her. And work doesn't mean just idle the engine—let her track tracks. Then after you've drained and replugged 'er, fill up with 28 quarts of oil—that's what it takes. A last check to be sure she's full, and you've got it.

Check that level every day. And within two minutes after stopping your engine. The oil should be at normal operating temperature to be on the level. Then add oil if necessary to bring it up to the gage's FULL mark.

**Torque-Converter**—Like the differential, the M-4's torque-converter needs a hot oil change every 100 hours too. Dump the goo by letting it pour and drip through the converter's drain-plug and reservoir-drain-cock. Then screw the drains back again, start and run the engine at half-throttle (1300-RPM) and pour about 25 quarts of oil, Fuel, Diesel into the reservoir.

Next, engage the master clutch to get the torque-converter moving, and slowly add oil until you've put 34 quarts in there. Its capacity is 35-1/2 quarts, but with 34 you won't overfill in case you didn't drain off all the old oil.

Keep running the engine until the converter's pressure gage shows normal (40 to 45 pounds—with no needle flutter), and until the oil temperature rises. At that point, lower the engine speed to idle (600-RPM).

Now level off. Add or drain oil until the level in the reservoir stays constant at the dipstick's FULL mark.

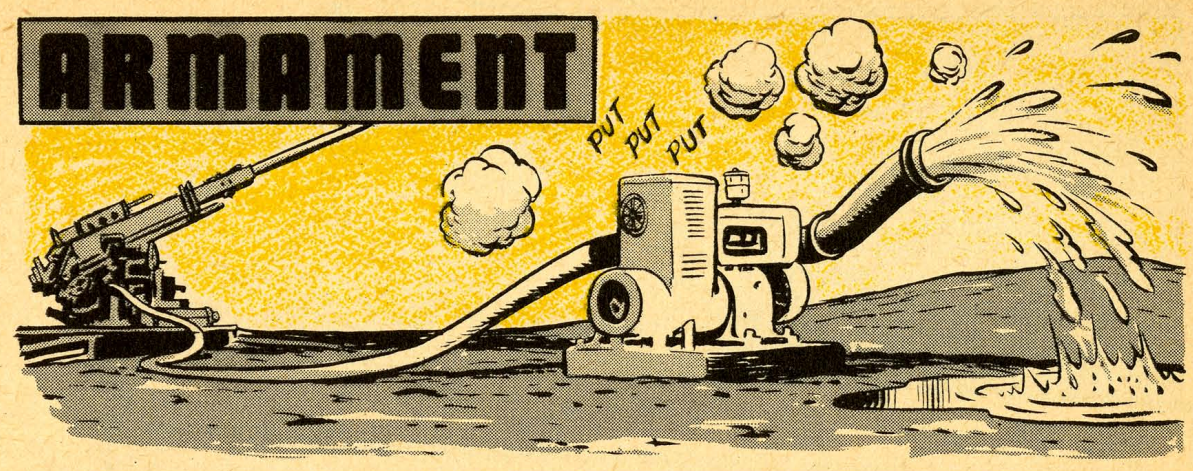
To be sure you don't go off half-torqued, check the converter's oil-level bayonet-gage every day—with the oil hot, the master clutch engaged, and the engine idling. Then if it needs it, add oil—up to the FULL mark.

**Final Drive**—To finish the story, change your final drive's oil every 100 hours too. Drain it hot and refill with 10 quarts of the stuff. And like the others, check it every day and keep it level to the plug hole.

You'll keep your tractor happy as a new-born babe—if you change it regularly and keep it full. TM 9-785 dated April 1952 has the formula.

*Half-Mast*

# ARMAMENT



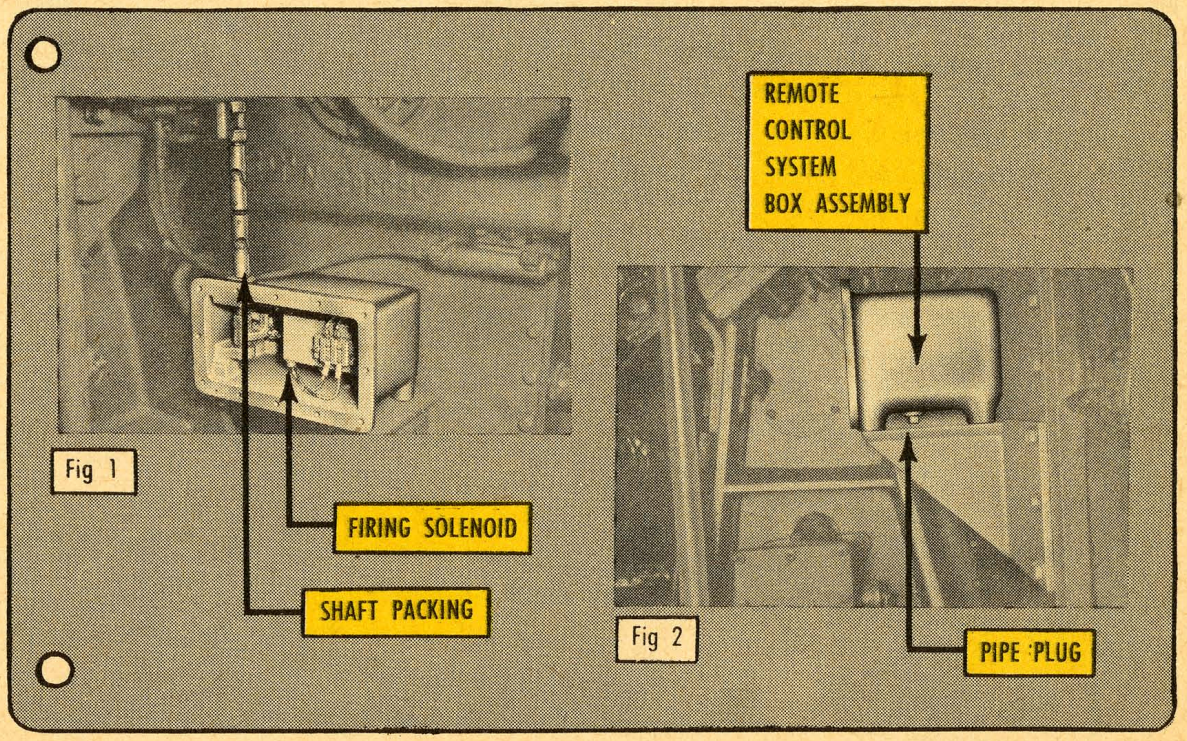

# 120-mm WATER TROUBLES

Water getting in the box assembly of the 120-mm gun mount's remote control system M6A2 is giving the firing solenoid a fit.

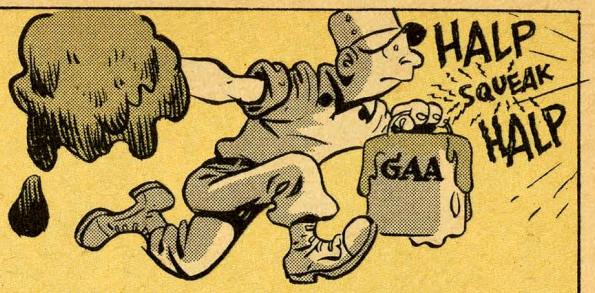
The water is either getting in around the shaft packing (Fig 1) or is formed by condensation that's collected over a period of time. To get rid of the bug, keep a close check on the packing and replace it if it's not up to par.

It'd also be well to remove the pipe plug that's in the bottom of the box assembly (Fig 2) as part of your daily preventive maintenance service.

This'll let out any moisture that happens to get in the box. Put the plug back in at the end of your daily check.



# AAA WHEELS TAKE GAA

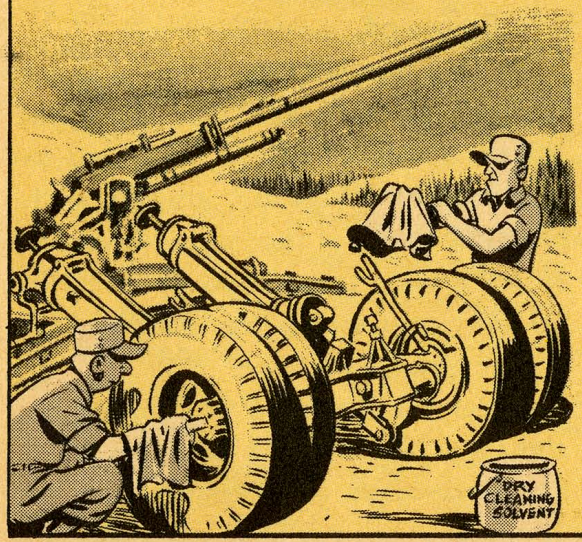



Here's the latest dope on how and what to use in greasing the wheel bearings on your antiaircraft artillery, until you get revisions to your AAA TM's, LO's and TB's.

Take off the wheels according to the TM for the AAA equipment you're working on.

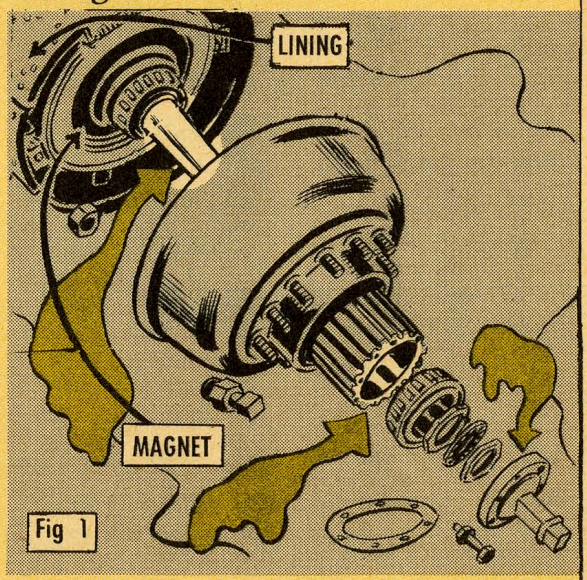
Clean all the old grease from the wheel bearings, drum, armature plate, nuts, axle-spindle washer, hub cap, hub and axle spindle with volatile-mineral-spirits paint thinner (Eng Stock No. 52-7879.700.700) or dry-cleaning solvent (QMC Stock No. 51-S-4385-5).

Clean out every trace of the old grease and wipe the parts dry. At the same time be sure to keep the solvent or thinner off the brake lining or magnet (Fig 1).



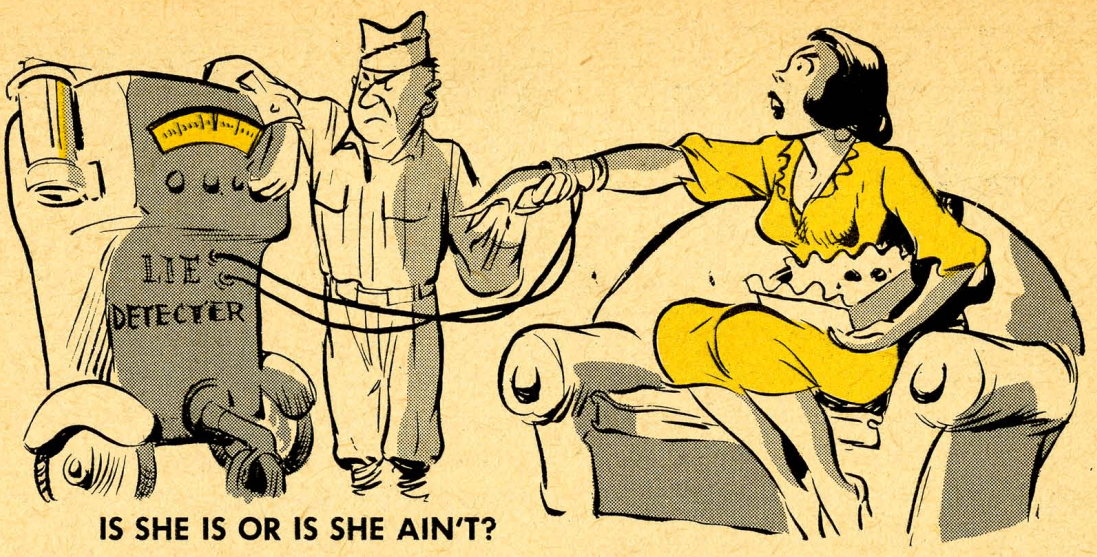

Repack the bearings with Automotive and Artillery Grease Mil-G-10924, Amendment II ("super" GAA). Make sure you work it in around the bearing rollers and all open spaces.

Coat the spindle and the inside of the hub and hub cap with the same grease with about 1/16-inch of grease. This is plenty to keep things from rusting.




The idea of packing the hub cap with grease has gone out the window. With too much grease in the hub you build up heat, blow the grease seal, and wind up with grease-soaked linings—shorted electrical circuits—no brakes.

TB 9-2835-12 (9 July 52) didn't apply to AAA materiel anyway. It's been rescinded by DA Circular 75 (July 54). Use this method instead.




**IS SHE IS OR IS SHE AIN'T?**

Here's one for you Ordnance small arms maintenance men.

Are you sure she's telling the truth? You've known her for years and always believed what she said, but should you?

You've got a way to make sure she means what she says—yessir-ee, you can send your small arms gages to have them checked to make sure they're not lyin'.

Just gather them up and send them to one of these places that's nearest you: Rock Island Arsenal, Rock Island, Illinois, ATTN: Gage Section; Springfield Armory, Springfield, Massachusetts, ATTN: Gage Section; and for the Fourth Army **only,** Red River Arsenal, Texarkana, Texas, ATTN: Gage Section.

If you're in a European command send them to Springfield Armory, or if you're in a Pacific command send 'em to Rock Island Arsenal.

It's smart to spread those shipments out and not send all your gages at one time. This way you'll have some to use while the others are being checked.

Just to make sure the man who gets your package isn't confused, put this note on your regular shipping document: "These gages are to be checked and returned to this station in accordance with instructions in SB 9-75."

And any time you think she might be lyin', just grab her up and ship her off to be checked. Just to be safe, you'll always send 'em in at least once a year.

## RELEASE THAT HANDLE

Seems like some 76-mm and 90-mm tank guns are being put out of whack 'cause the gunners don't let go of the manual firing mechanism soon as the round goes off.

If the hand firing handle is not released after firing, wha' hoppens? When the next round is loaded the breech-block snaps up, smacking the blue-blazes out of the trigger-lever. It's either broken completely or so balled up your gun won't fire. And brother, you've had it!

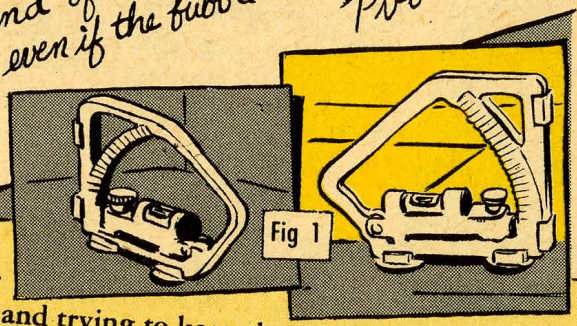
So jot this down on your finger nail right now. Release the hand firing handle as soon as your round goes off. Or you may not get to fire the next one.

# BUBBLE DANCE

Dear Half-Mast,

I'm in an AAA outfit which has 90-MM M1A2's. When we run a check on our level vials to make sure we are leveling the mount we use a gunner's quadrant to do the job. We get the mount level vials centered. Then, with the gun at zero elevation, we place the quadrant (set at zero) on the breech-ring leveling plates and zero its bubble by elevating or depressing. Then we traverse the gun 360° and watch the bubble in the quadrant. If the bubble moves, we're supposed to call in Ordnance maintenance to adjust the mount-level vials. What gets me is this: Every time we make a check, that bubble in the quadrant moves just a little. Don't they allow any kind of a tolerance? Do we have to call the higher ups even if the bubble moves just a hair?

Pvt E.N.R.




Dear Pvt E. N. R.,

Here's the latest on your bubble dance—

Leveling your 90-mm M1A2 gun mount and trying to keep the quadrant bubble at a zero mil tolerance is sure to raise your temperature—just watch that bubble dance.

Next time you want to lay your piece level, try this—

After leveling the mount-level vials make an end-over-end test (Fig 1) so you're sure the quadrant is accurate. To do that, center the quadrant bubble on the leveling blocks at zero elevation—then switch ends with the quadrant. The quadrant's OK if the bubble still ends up centered.

That gives you your check on the quadrant vial.

But you ask about mount-level tolerance. The trouble is this—your manual doesn't mention any tolerance. Since it doesn't, it's natural for you to ask about "just a hair."

Because of that, it's handy for you to know the rest of the story. In the manual that applies to your Ordnance support-unit, it tells the Ordnance boys that a tolerance of one mil is allowed on a mount-level check.

Now that you've got the straight scoop, you know that there's no need to holler for help unless **you've** got more tolerance than **their** law allows. Does that help?

If you come out with a one-mil tolerance on the mount-level check, you've got nothing to worry about.

*Half-Mast*

# ENGINEERS

## SGT. DOZER'S DIRT-STIFF CLINIC

Dear Sgt Dozer,

The dope on fire extinguishers that's in PS 20, page 919, doesn't apply to all vehicles. SR 385-155-1, Change 2 (which PS quotes) says that these regulations do not apply to Engineer equipment such as construction or maintenance pieces designed for off-the-road services. And AR 700-105, para 27, says the same thing.

Could be we're missing a regulation, 'cause we've looked through everything and can't find a word on keeping fire extinguishers on or off this type of equipment. What's the score, anyway?

I'm assigned to a technical inspection team and it sure would help us with inspection chores if you could quote us a reg to follow.

J.C.B.

# ENGINEERS

SGT. DOZERS

DIRT - STIFF CLINIC

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J. C. B.



## FIRE EXTINGUISHERS — WHERE AND WHY?

Dear J. C. B.

Yep, that's what the AR and SR say all right, but don't let the wording throw you for a loss. Read paragraph 27 of the AR carefully and I think you'll find that it does cover the type of equipment you're concerned with.

It says that construction and maintenance equipment is exempt only from **such** provisions of the AR that are clearly not applicable to equipment that's used strictly on off-the-road operations. Remember, now, the AR doesn't say this equipment is exempt from **all** the provisions of paragraphs 22 to 26, inclusive, only those that don't apply to the activities for which this equipment is used.

The clincher comes in the very last sentence of paragraph 27. It says "However, the provisions of these paragraphs (22-26, incl.) normally apply to construction or other special purpose, self-propelled vehicles when operated on roads, streets, or highways."

Whether the equipment be off-the-road or on-the-road, safety precautions certainly apply to construction and maintenance equipment powered by internal combustion engines. Regulations prescribe the minimum requirements, and I don't think you'll find a regulation prohibiting the use of fire extinguishers where conditions warrant their use.

As far as your tech inspection chores are concerned, I think you'll find that your major command has some sort of a directive or SOP regarding the use of all types of fire extinguishers.

You'll find that in most cases the fire extinguisher is scheduled to get the once-over at the weekly, monthly and technical inspections.

The truth of the matter is that this type of equipment normally has fire extinguishers mounted permanently. You'll find that most people go to great lengths to fasten 'em securely so they won't get shaken loose on the job or pilfered . . . and so they'll be handy in case of emergency.

At one installation where this type of equipment doesn't have fire extinguishers mounted permanently, it's common practice to have one mounted when the operator picks up the equipment. And checking the fire extinguisher is considered a must before the operator fires up the engine.

Sgt. Dozer

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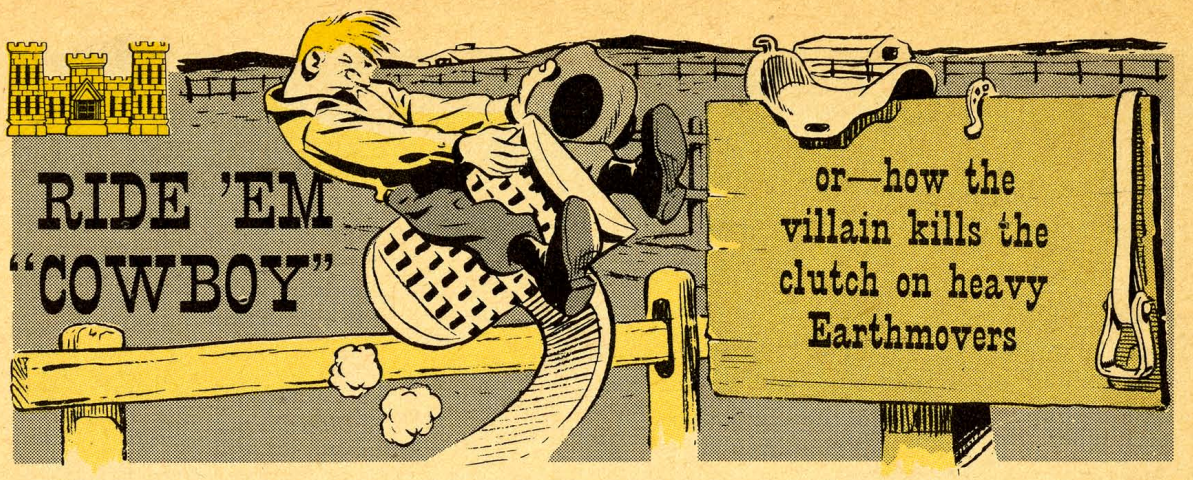
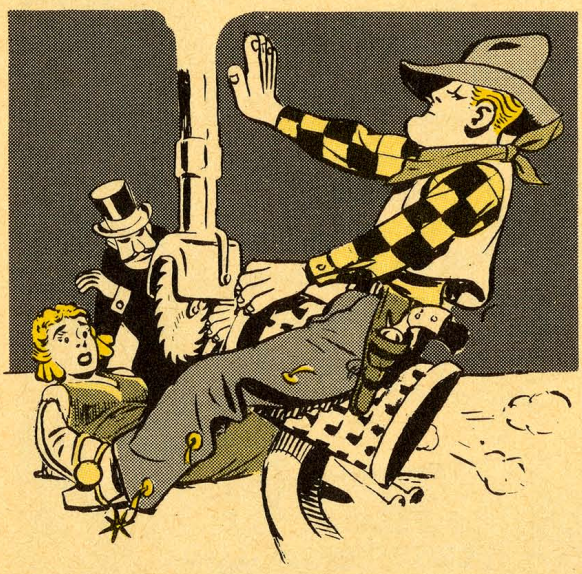
Sgt. Dozer




Riding the pedal (or control) of the flywheel clutch on earthmoving equipment is no way to play cowboy. That clutch takes a lot of punishment under ordinary conditions, 'cause it carries the engine's full power or cuts off that power whenever the operator wants to.

The life of that clutch depends entirely on the way you (the operator) use it. And turning on or cutting off the engine power to the transmission is not instantaneous. That clutch does some slipping during each engagement and disengagement.



This is where you have a chance to prove if you're a hero or a villain. The way you engage or disengage the clutch determines how much slippage there'll be. Partial engagement or disengagement always results in wear.

It's best to engage a clutch when the engine's turning slowly. Know why? Less slippage than at high engine speeds. 'Course, you can't always do it at low speed, 'specially when you've got a heavy load. But in many motor graders and wheel tractor operations, you can let the clutch out and then rev up the engine.

When you've got the clutch only partially disengaged, the release bearing comes in contact with the clutch-release levers. This cuts down the pressure on the clutch plates, and you've got slippage that causes wear on the clutch and generates heat. And she gets hotter and hotter. You get more heat, too, from the release bearing which turns when it's not supposed to. Before long your clutch is gone to the dogs.

Now, that's what happens when you give the clutch a ride. Just keep in mind that the clutch pedal is not a foot-rest. By keepin' your foot on the floorboard, you can bet that your equipment's clutch will last a lot longer.

# THE ROUND-UP

## Of Engineer Publications

### TM's

**5-9397,** Truck, fire, pwrd, pump, 500-gpm Howe Fire Apprtus w/Am cn-March Mod F-500 Pump, (less trk), Mar 54

**5-5047,** Gen, acet, port, 24-cu ft/hr Marquette Mod 612, Mar 54

**5-5061,** Compress, air, gas-dr, 210-cfm, LeROI Mod 210-G2, Feb 54

**5-9447,** Trailer, 2-wh, util, pole, 2-1/2-ton, 25-ft util, pwr boat, Connecto Mod, Feb 54

**5-2021,** Pump, cent, gas-dr, 1-stg, self-prim, trlr-mtd, 2-in dis, 166-gpm 25-ft head, Gorman-Rupp Mod 3205, Feb 54

**5-9087,** Sweepr, rtry, tract-mtg, powered 1-way sweep, 30-in x 7 ft brsh, (for Case DL Tract) Little Giant Prod, Mod SC-100, Jan 54

**5-9490,** Crane shvl, pow-unit, revolv trk-mtd, gas-dr, 2-eng-dr, 10-ton cap, 1/2-cu yd, Harnischfeger Mod 150TC, Dec 53

**5-1143,** Mxr, concrt, gas-dr, liq-cool, end dis, trlr-mtd, 16-cu ft, Gilson Mod 16-S-SCE, Mar 54

**5-9051,** Semitrlr, low bed, rr and side ldng, 25-ton, all makes and modls, Mar 54

**5-9109,** Cleaning unit, stm, shp whl-mtd, oil-burn, one gun, nozzle contrld, Homestead Mod JL, JMI, JO, and OD150, Apr 54

**5-1207,** Scrpr, rd, mtrized, cble-optd, 12-cu yds, Heil Mod 2C500 with Heil Mod MS-13 open top scraper (less eng), Mar 54

**5-9035,** Tank, water, stl, semitrlr-mtd, 1500-gal cap, Littleford, JAN-T-505, Mar 54

**5-5161,** Gen set, port, dsl-dr, skid-mtd, 15-kw, 120/208 or 240/416-v, 3-ph, 60-cyc, conv to 230/400-v, 3-ph, 50-cyc, Buda Mod 4BDG-182, Dec 53

**5-1061, Roller,** rd, tow type, 4-whls, 50-ton, William Bros Mod 450, modified, Jan 54

### TB's

**5-5211-2,** Engine, dsl, 2-cyc, GMC Mod 6-110 (62300 RA), Mar 54

**5-5333-1,** Gen set, elec, port, gas-dr, skid-mtd, 30-kw, 120-v, 3-ph, 60-cyc, 3-wire, Delta-Cntd, conv to 120/208 or 240/416-v, 3-ph, 4-wire, wye connected or 25-kw, 240/416-v, 3-ph, 50-cyc, 4-wire, Davidson Mod DEC-30 GCK, Feb 54

**5-6133-1,** Mach, prtg and dvlp, amm process, cont tone, 120-v, 1-ph, 60-cyc, 42-in, cap, Ozalid Mod 100,000, Feb 54

**5-2023-1,** Well-drlg mach, rtry-type, skid-mtd, gas-dr, airborne, George E. Failing Mod 43-SA, Feb 54

**5-4013-1,** Saw, table, tilted-type, port, mtr-dr, base-mtd, 3/4-hp, 110/220-v, 3-ph, 60-cyc, 10-in blade, Delta Mod No. 34-305, Feb 54

**5-5007-1,** Gen set, elec, port, dsl-dr, skid-mtd, 30-kw, 120-208 or 240/416-v, 3-ph, 60-cyc, conv to 25-kw, 240-416-v, 3-ph, 50-cyc, O'Brien Dslectric Corp Mod (less eng) (wintzd unit), Feb 54

**5-5121-1,** Welder, elec arc, gas-dr, 200-amp, skid-mtd, Hobart Mod DW, Feb 54

**5-5368-1,** Chgr, batt, port, base-mtd, gas-dr, 2-kw, 12-v, Onan Mod 2 BH-212E, Feb 54

**5-9035-1,** Tank, wtr, stl, semitrlr-mtd, 1500-gal cap, Littleford Mod JAN-T-505, Feb 54

**5-9233-1,** Sawmill, port, dsl-dr, Amcan Sawmill Mach Mod 7-1/2 (less eng), Feb 54

**5-9454-1,** Trlr, full, low bed, 8-ton, John Mod LKS-408, Feb 54

**5-9623-1,** Convyr, drag-type, car unldr, self-prop, gas-dr whl-mtd, 18-ft long, 75-TPH cap Barber-Greene Mod 92, Feb 54

**5-1081-1,** Tank, asph, stl, trlr-mtd, with stm coils, 1500-gal, Vic Mod 72, Jan 52

**5-5135-1,** Gen set, port, dsl-dr, skid-mtd, 100-kw, 127/220-v, 3-ph, 60-cyc, or 230/400-v, 3-ph, 50-cyc, Herc Mod DNX, Feb 54

**5-5153-1,** Gen set, dsl-dr, base-mtd, liq-cooled, 500-kw, Chicago Pneu Mod 612 CPS (less strtg air comp), Feb 54

**5-9085-1,** Sweeper, rtry, 3-whl, trlr-mtd, gas-dr, 2-way swpng 30-in x 8-ft brush, Meili-Blumberg Mod 53 M (less eng), Feb 54

**5-5365-1,** Prev Maint Serv: Chrgr, batt, port, hdld, base-mtd, gas-dr, 24-v, 240-300 w, Cont Mtrs Mod I-244, Tiny Tim Gen Unit, Apr 54

**5-9494-1,** Prev Maint Serv: Crane, pwr unit, revlvg, crwlr, dsl-dr, 65-ton cap at 12-ft rad, Manitowac Mod 3900, Feb 54

**5-1052-1,** Prev Maint Serv: Stabilizer, sail, sgle-pass, dsl-dr, crwlr-type, Harnischfeger Mod LA-88, Feb 54

**5-2013-1,** Prev Maint Serv: Pump, cent, gas-dr, base-mtd, 2-in dis, 2-in suc, 100-gpm at 100-ft head, Gorman-Rupp Mod 1205A (less eng), Feb 54

### LO's

**5-9078,** Sweeper, rtry, 3-whl, trlr-mtd, gas-dr, 2-way sweep, 30-in x 8-ft brush, Grace Mod MB-100, Mar 54

**5-9095,** Ice plant, 1-ton, equip only, gas-dr, Reco Mod G 2000-550D, Mar 54

**5-9481,** Air-cond Unit, base-mtd, self-cont type, air-cld, elec mtr-dr, 110-v, 60-cyc, 6150 BTU p hr, (for camera trk darkr'm) U. S. Air Cond Mod ARY-001, Mar 54

**5-5011,** Gen set, port, dsl-dr, skid-mtd, 15-kw, 120/208 or 240/416-v, 3-ph, 60-cyc, conv to 240/416-v, 3-ph, 50-cyc, Hill Dsl Eng Corp Mod 4 PF-1, Feb 54

**5-2020,** Pump, cent, gas-dr, base-mtd, 1-1/2-in dis, 2-1/2-in suc, 125-gpm at 300-ft head, Carter Mod 501 LE-1-1/2, Feb 54

**5-5339,** Comprssr, air, stnry, rcvr-mtd, gas-dr, 3-cfm, Kellogg-Amcn Mod GE-140 (less eng) Feb 54

**5-5065,** Comprssr, air, trk-mtd, gas-dr, 210-cfm, Le Roi Model 210 GI, Feb 54

**5-5335,** Gen set, port, dsl-dr, base-mtd, 100-kw, 240-v, 3-ph, 60-cyc, w/cntrl panel (PE-220-A & PE 220-B) Intrntnl Dsl Elec Mod Q-2471, Feb 54

**5-5374,** Chrger, batt, port, base-mtd, gas-dr, 12-v, 300-w, Cont Mtrs Mod L121, Feb 54

**5-9230,** Crane, trctr-optg, whld, 2000-lb cap at 10-ft rad, 30-ft boom Le Tourneau Mod AD-3, Feb 54

**5-9525,** Crane-shvl, pwr unit, revlvng, trk-mtd, 2-engine drive, gas-dr, 20-ton, 3/4 cu yd, Unit Mod 1220-CE (less carrier and engines), Feb 54

**5-9586,** Conveyor, drag type, piler, gas-dr, crwlr-mtd, 35-ft long, 75-tph cap, Barber-Greene Mod 681, Feb 54

**5-9634-1,** Crane-shvl, pwr unit, revlvng crwlr-mtd, 30-ton, 1-1/4-cu yd, Lima Mod 604 with attach (less eng), Feb 54

**5-1458,** Crane-shvl, pwr unit, gas-dr, revlvng, crwlr, 5-ton cap at 12-ft rad, 3/4-cu yd, Link Belt Mod 75, Feb 54

**5-4396,** Lathe, brake drm, mtr-dr, 1-hp, 208-v, 60-cyc, 3-ph w/accssries, Van Norman Mod 303, Feb 54

**5-5240,** Gen, stm, oil-fired, port, for sterilizers, complete with boiler, pump and accssries; 400-lb stm ph, 100-psi, Cyclatherm Corp Mod C-12, Feb 54

**5-5313,** Gen set, elec, port, gas-dr, skid-mtd, 7-1/2-kw, 120/208-v, 1-ph, 400-cyc, 2 wire, with rectifier, 750-w output, Master Vibrator Mod EG-107, Feb 54

**5-5333,** Gen set, elec, port, gas-dr, skid-mtd, 30-kw, 120-v, 3-ph, 60-cyc, 3 wire, delta connctd, conv to 120/208 or 240/416-v, 3-ph, 4 wire, wye connctd, or 25-kw, 240/416-v, 3-ph, 50-cyc, 4 wire, Davidson Mod DEC-30GCK, Feb 54

**5-5445,** Engines, dsl, Cummins Models H, HS, HR, HRS-NH, NHB, and NHRS, Feb 54

**5-9492-1,** Crane-shvl, pwr unit, revlvng, crwlr, 30-ton cap, 1-1/2-cu yd, Harnischfeger Mod 655B (less eng), Feb 54

**5-9634-2,** Crane-shvl, pwr unit, revlvng, crwlr-mtd, 30-ton, 1-1/2-cu yd, Lima Mod 604, w/ attach (less eng), Feb 54

**5-1000,** Spreader, aggregate, towed-type, trctn-pwrd, 8-ft width, Good Roads, Berna Mod 8, Jan 54

**5-1070,** Tamper, farm concrete, gas-dr, adjstbl, for 7 to 10-in forms, Jaeger Mod 1, Feb 54

**5-2034,** Pump, cent, gas-dr, base-mtd, 2-in dis, 2-in suc, 60-gpm at 125-ft head, Gorman-Rupp Mod W52-10A, Feb 54

**5-2038,** Pump, cent, gas-dr, base-mtd, 2-in dis, 2-in suc, 60-gpm, at 125-ft head, Gorman-Rupp Mod W52-10, Feb 54

**5-4104,** Sharpeners, chain saw, mtr-dr, 110-v, Disston Mod E2-C5, Jan 54

### MWO's

**9510-1,** Crane-shvl, pwr unit, revlvng, trk-mtd, pneu tires, 6x6, 2-eng dr, 20-ton cap at 10-ft rad, 3/4-cu yd, Harnischfeger Mod 225A-TC, Mar 54

**9852-1,** Crane-shvl, pwr unit, revlvng, trk-mtd, pneu tired, 2-eng dr, Thew-Lorain Models MC-3, MC-4 and MC-416, Mar 54

**9491-1,** Crane-shvl, pwr unit, revlvng, crwlr, 10-ton cap at 12-ft rad, 3/4-cu yd, Harnischfeger Mod 255A, Mar 54

### ENG's 7/8

**1160,** Distributor, wtr, trk-mtd, 1000-gal, ES 44-68, Littleford Mod M-75 (78-3295.100.500), Jan 54

**4018,** Grinder, pneu, rtry-type, 6x1-in max whl cap, EST-1820, Thor Mod 255 w/6 accssories (40-5257.600.100), Jan 53

**5005,** Gen set, elec, Port dsl-dr, skid-mtd, liq-cld, Mil-G-10327, type II, cls A, 60-cyc, 120-208, 240/416-v, 3-ph, 4 wire conv to 50-cyc, 240/416-v, 3-ph, 4 wire at 83% of 60-cyc full-load cap, 30-kw, Hill Dsl Mod 6K (Eng Stk No. 17-4665.750.400) (Fed Stk No. 6115-371-7651), Jan 54

**5053,** Gen set, elec, Port, gas-dr, skid-mtd, liq-cld, Mil-G-10236, type II, cls A, 60-cyc, 120/208, 240/416-v, 3-ph, 4 wire conv to 50-cyc, 240/416-v, 3-ph, 4 wire at 83% of 60-cyc full-load cap, 30-kw, Reiner Mod GGC-30AC (Eng Stk No. 17-4780.650.700) (Fed Stk No. 6115-376-7006), Jan 54

**5081,** Gen set, elec, port, gas-dr, skid-mtd, liq-cld, Mil-G-10285, type II, clss A, 60-cyc, 120-208-v, 1 and 3-ph, 4 wire, 5-kw, Kohler Mod 5MH81 (17-4780.525.500), Jan 54

**1143,** Mixer, concrete, gas-dr, liq-cld, end dis, trlr-mtd, 4 stl whls, 16-cu ft, JAN-M-686, class B, Gilson Mod 16S-SCE (78-5824.816.400), Jan 54

**1164,** Distributor, bit mtrl, trk-mtd, 800-gal, Mil-D-575, type I, Rosco Mod RRE (78-3265.080.775), Jan 54

**2014,** Pump, diaphragm, gas-dr, push cart mtd, 2-whl, stl tires, 4-in dis, 100-gals per min at 10-ft suction head, JAN-P-509, Novo Model AD4 (Eng Stk No. 11-5620.410.500) (Fed Stk No. 4320-376-8746), Jan 54

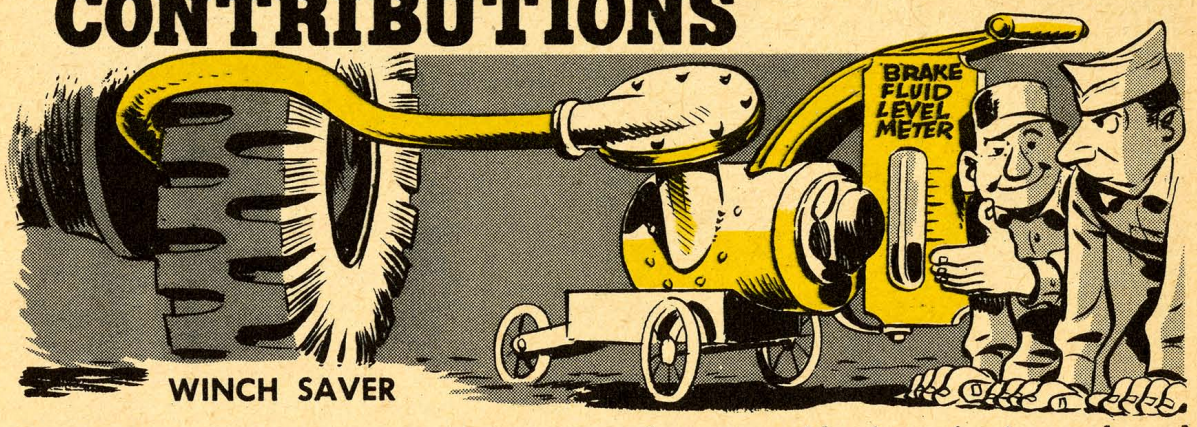
**2068,** Distillation unit, gas-dr, trlr mtd, thermo-comprssn-type, 60-gal ph, HAN-D-165, Badger Mod (Eng Stk No. 66-4428.612.200) (Fed Stk No. 4620-269-0181), Jan 54

**3023,** Tractor, whl-type, 4x2, gas-dr, 5200 to 7775-lb drawbr pull, Mil-T-3229, size 5, Mpls-Moline Mod UMIL (Eng Stk No. 78-8225.000.800) (Fed Stk No. 2420-190.0348), Jan 54

**5332,** Gen set, elec, port, dsl-dr, liq-cld, Mil-G-10327, type II, cls A, 60-cyc, 120/208, 240/416-v, 3-ph, 4 wire conv to 50-cyc, 240/416-v, 3-ph, 4 wire at 83% of 60-cyc full-load cap, 60-kw, Consolidtd Dsl Elec Mod 1697 (17-4665.770.225), Jan 54

**5394,** Comprssr, air, trk-mtd, gas-dr, 210-cu ft per min, Davey Mod 210 WD, mtd on M45 Ord chassis (66-3269.210.150), Jan 54

# CONTRIBUTIONS

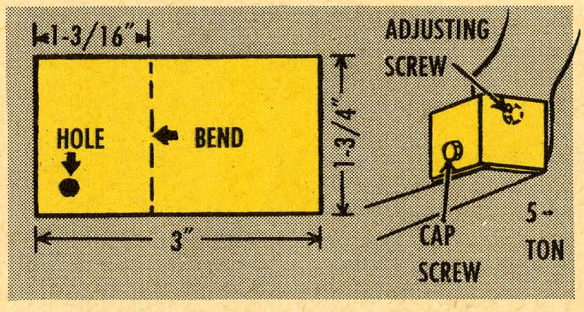


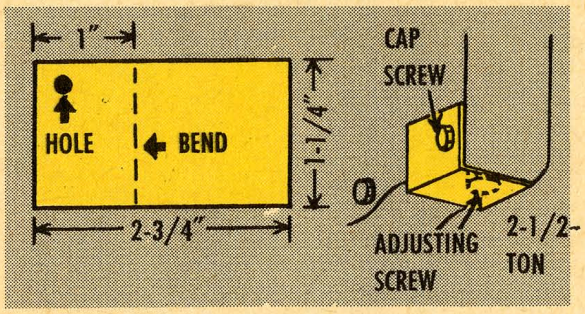

## WINCH SAVER

Dear Editor,

We've had quite a number of winch failures on our 2-1/2- and 5-ton trucks. The trouble usually began with the automatic brake getting screwed down by people not knowing what they're doing.

Here's a way to make the wrench-happy people think twice before laying a wrench on that adjusting screw.




Make a protective shield for the adjusting screw and anchor it to one of the cover cap-screws. The sketches will give you an idea how they're made and attached.

**Mr. P. Porter**
**Ft Benning, Georgia**

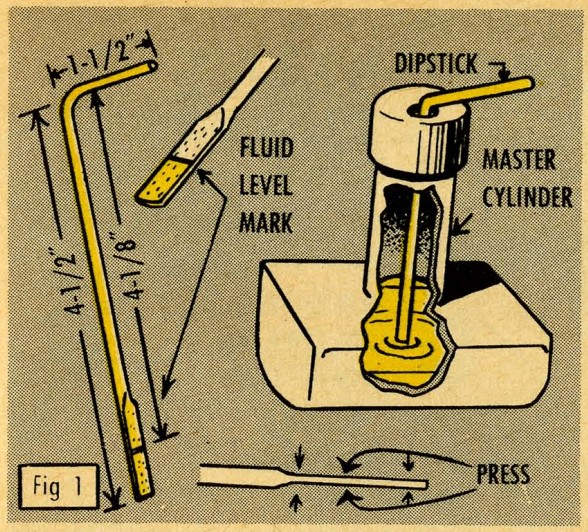
*(Ed Note—Darn good idea. Should save a lotta winches. MWO Ord G742—W7 and MWO Ord G749—W9 give you a caution plate for the M34 and M135, too.)*

## BRAKE MASTER-CYLINDER DIPSTICK

Dear Editor,

Ever try getting your eyeball down in the brake master-cylinder extension-tube on the GMC 2-1/2-tonner to check the fluid level?

We have . . . and it doesn't work so good. We've fabricated a dipstick out of a 6-in piece of 1/8-in acetylene welding wire that you can use. We allowed 4-1/2-inches for the part that goes down in the extension tube and bent one end over to make a 1-1/2-in handle. We heated the long end of the wire and pinched about 1-1/2-inches of it flat in a vise. The teeth in the vise also made the pressed-dot pattern in the metal at the dip-end for us (Fig 1).




We checked the hard way and got a master cylinder that had the correct fluid level one-half inch from the bottom of the extension tube. By holding the dipstick parallel with the top of the master cylinder, we got a fluid mark on the dipstick about 4-1/8-inches from the handle bend, so we scored the dipstick with a hacksaw at that point. We then measured off the rest of the dipsticks (250) by using the first one as a pattern and scored them. There's one in every GMC map compartment in our outfit, and we wouldn't be without them.

**Maryland National Guard**
**Havre de Grace, Maryland**

## SHOES TOO TIGHT?

Dear Editor,

Now it can be told—we've licked the 2-1/2- and 5-tonners' hand-brake trouble.

The brake-shoe-lever pins in the inner and outer brake shoes no longer rust and stick.

Before—some drivers thought their brake was off when they released the brake lever, but they were so wrong . . . rust gummed the works.

Here's what we've done to get rid of this troublemaker. We removed the brake-shoe pins and cleaned them and the pin hole with fine emery cloth. Then drilled a hole into the pin hole of both the inner and outer brake shoes and tapped them for grease fittings (like below). Now we just shoot some lube in them at every *D* service, and our worries are over.

**Joe Louch**
**Aberdeen Proving Ground, Maryland**


*(Ed Note—Careful—only a little lube for inner shoe; linings and lube aren't meant for each other.)*

# HOME-MADE BEACON

Dear Editor,
When we were caught without a voltmeter for checking bulbs and grounds in vehicle wiring, a home-made test light was our answer—Here's how we made it!

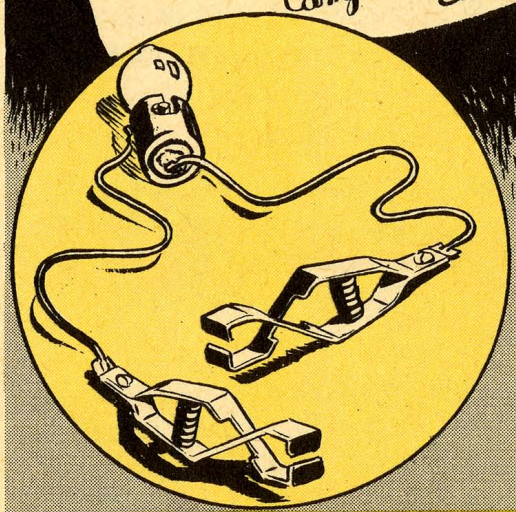
Of course, on 6-or 12-volt vehicles, we used 6-or 12-volt bulbs.
PFC Douglas Watson
Camp Carson, Colo.

BULB SOCKET (ORD STOCK NO. H004-0572800)

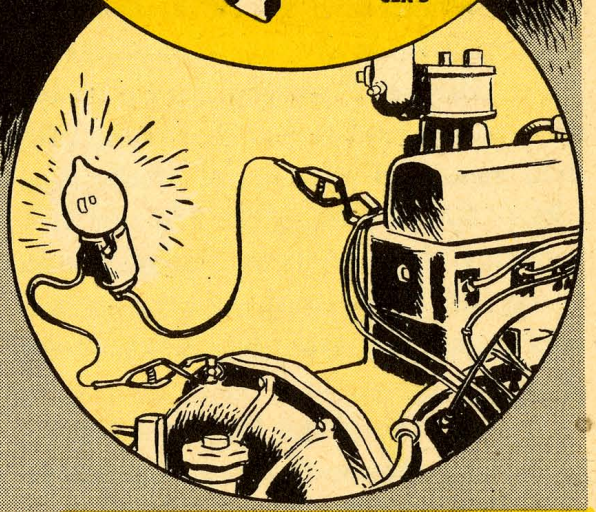
24-VOLT STOP-LIGHT BULB (LAMP ELECTRIC, ORD STOCK NO. H104-0190773)

TWO 12-INCH LENGTHS OF SINGLE CONDUCTOR WIRE

TWO UNIVERSAL CLIPS



SOLDER END OF ONE WIRE TO SOCKET'S BOTTOM—END OF OTHER WIRE TO SIDE OF SOCKET—FASTEN CLIPS TO OTHER ENDS OF EACH WIRE.



ONE CLIP IS A GROUND. THE OTHER IS FOR TRACING THE CIRCUIT. BULB LIGHTS IF CIRCUIT IS CLOSED. IT WON'T IF CIRCUIT IS OPEN.

*(Ed Note—While your light'll brighten a few electrical problems, it'll leave you in the dark about others. It'll tell you if there's an open circuit but not if there's a current leak out of the circuit. And in the waterproof, sealed electrical systems, there aren't many places other than light fixtures, continuity of the battery and the starter system, you can test. Unless, of course, you have a low-voltage circuit tester, Fed Stock No. 17-T-5575-50 with adapter kit, Fed Stock No. 17-A-3150, for wheeled vehicles. Be sure your home-made trouble-shooter's shootin' straight, by checking it across the battery to see if it works.)*


## M211 receptacle care

When you're hauling human cargo and pulling a trailer with your 2-1/2-ton M211 and the tail and stop-light cable is plugged in, you hafta instruct your cargo. Tell 'em not to step on the cable and not to drop the tailgate on it when getting in or out of the truck. That'll break the pins in the cable and bust the receptacle.

## Blowhole open ???

It seems that at least one case has come along where the boys neglected to remove the shipping tape from the air cooling holes on the new 300-amp main engine generators for the M48 tank. So the generator got all hot and bothered. So did the boy who paid for it.

## Light tank poop

Adjusting the tracks on your light tanks can be a pain in the neck if you're not hep. PS 14 (Bulldog Edition) gives you the straight dope on how to do it, as well as a hundred other tips. What? Ya' don't have PS 14! Well just drop me a line, man.

## That patch kit

If your Ordnance supply has been having trouble locating that new repair kit you saw on page 970, PS 21 (Ord Stock No. 52-C-3259-50), maybe requisitions haven't been going to the right place. They should go to Raritan Arsenal.

## Enough's enough

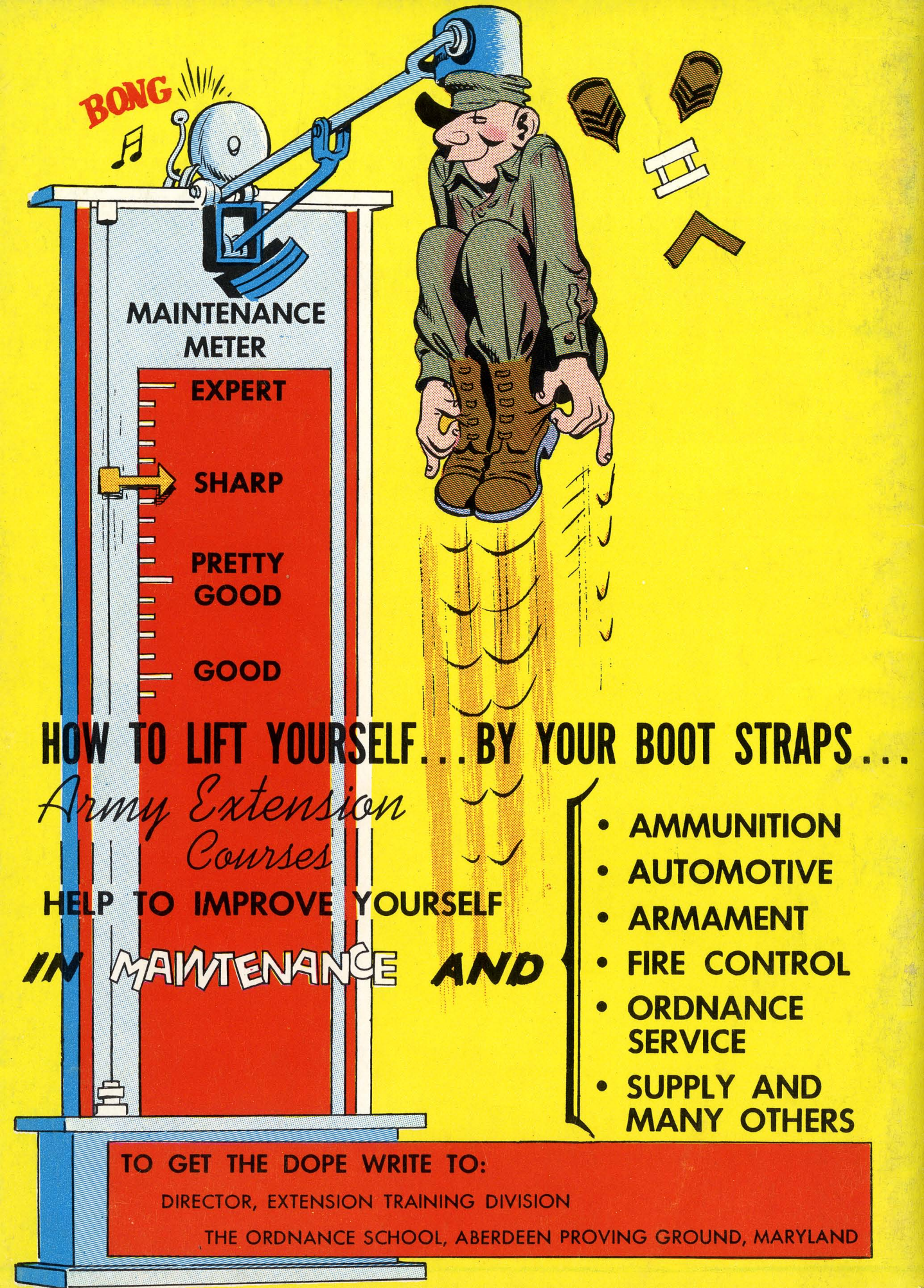
Coat the hubs of your wheeled vehicles with about 1/16-inch of grease—no more. The idea of packing the hub with grease went out the window with the rescission of TB 9-2835-12. Section III, para 5 of DA Circular 75, 2 July 1954, did the rescinding. You can delete the item on page 3c in PS 11, too.

## Powder puffers

Seems like some dizzy lads have been losing their heads and tampering with the powder in the .30-cal. ammo. That's dangerous for you and your buddy. It's best to leave ammo alone.

## New supply SR

You can now get SR 735-30-1 (23 Aug 54), covering supply and property accounting procedures for T/O&E outfits. Do yourself a favor . . . turn to page 984 of PS 21 and scratch out the SR number given in the second paragraph and write in the number of this new SR.




# HOW TO LIFT YOURSELF... BY YOUR BOOT STRAPS...

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