

PS

THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY

Issue 35 1954 Series



**WAG TANK  
OPERATION**  
See Page 22



STARTIN', STOPPIN'... CARE AND OPERATIN'

# YOUR M48 TANK

FOR STARTING, OPERATING AND  
REPAIRING THE M48 IS  
A SIMPLE MATTER IF YOU  
FOLLOW THE M48 TANK  
MANUALS

BEFORE YOU START

SAVE BR &  
LOADING  
OVER

MANUALS IN  
M48 TANK  
OPERATING AND  
REPAIRING  
MANUALS  
BEFORE YOU  
START

OPERATING AND  
REPAIRING  
MANUALS  
BEFORE YOU  
START

FOR  
STARTING  
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BEFORE YOU START  
OPERATING AND  
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START



# HOW TO START UP...

1. SHIFT LEVER IN "PARK"



2. MANUALLY DEPRESSURE ENGINE

Start the engine by pulling the manual choke lever. This is necessary to get the engine started in cold weather.

NOTE: If necessary, use the manual choke lever to start the engine. Do not use the manual choke lever to start the engine in warm weather.



3. SET PARKING BRAKE

4. RADIO MAIN SWITCH

5. FUEL GAUGE OFF VALVE BOTH TANKS OPEN

6. AND TURN OFF ALL OTHER ACCESSORY SWITCHES.

7. STARTER SWITCH

8. RADIO MAIN SWITCH OFF



9. IN ORDER TO PREVENT THE ENGINE FROM OVERHEATING, DO NOT RUN THE ENGINE FOR MORE THAN 10 MINUTES AT A TIME IN WARM WEATHER.

If the engine does not start after a reasonable time—after several minutes—stop trying to start the engine and check the fuel gauge and manual choke lever. Make certain the manual choke lever is in the "START" position. If the engine still does not start, check the fuel gauge, manual choke lever, and other accessories. For more information, see the manual.

## STARTING

After the engine has been started, the engine is ready to run. The engine will stop if the engine is not started within 10 minutes after the engine is started. If the engine does not start within 10 minutes, stop trying to start the engine. For more information, see the manual.



CAUTION: DO NOT ATTEMPT TO START THE ENGINE IF THE ENGINE IS NOT STARTED WITHIN 10 MINUTES AFTER THE ENGINE IS STARTED. IF THE ENGINE IS NOT STARTED WITHIN 10 MINUTES, STOP TRYING TO START THE ENGINE. FOR MORE INFORMATION, SEE THE MANUAL.



IF STOPPING THE ENGINE FOR A REASON, STOP THE ENGINE BY TURNING THE STARTER SWITCH TO THE "OFF" POSITION. DO NOT ATTEMPT TO START THE ENGINE UNTIL THE ENGINE IS COOL. FOR MORE INFORMATION, SEE THE MANUAL.



STARTER SWITCH TO THE "OFF" POSITION AND CHECK THE FUEL GAUGE AND MANUAL CHOKER LEVER. MAKE CERTAIN THE MANUAL CHOKER LEVER IS IN THE "START" POSITION. IF THE ENGINE DOES NOT START, CHECK THE FUEL GAUGE, MANUAL CHOKER LEVER, AND OTHER ACCESSORIES. FOR MORE INFORMATION, SEE THE MANUAL.



IF YOU DO NOT WANT TO START THE ENGINE, TURN THE STARTER SWITCH TO THE "OFF" POSITION.





# WARNING UP



**WARNING UP**  
 Before you start, make sure you have the correct size helmet for your head. A helmet that is too small or too large can be dangerous.

## MAGNETS

After you've finished it, do not wear magnets in the car. They will attract to metal parts, and could become loose when it's not moving.



## THEN DO THE FOLLOWING

**1** Put the helmet on your head and adjust it so it's a snug fit. Make sure it's not too tight and it fits in properly. Normally, there should be a "snug" feel around the forehead and chin.

**3** Make sure the helmet is a snug fit. Check the fit by pulling on the sides of the helmet.

**NOTE:**  
 If there are any loose parts, do not wear the helmet.



**WARNING UP**  
 Before you start, make sure you have the correct size helmet for your head. A helmet that is too small or too large can be dangerous.



**2** After a check-out for the helmet is done, make sure the helmet is secure. There's a "snug" feel around the forehead.

**4** Make sure the helmet is a snug fit. Check the fit by pulling on the sides of the helmet.

Do not wear the helmet unless it's in the correct position. If it comes loose, it could become a projectile. Make sure the helmet is secure. If it's not a snug fit, it could become a projectile. Make sure the helmet is secure. If it's not a snug fit, it could become a projectile.

After you check out, there are some things to do.

## RELEASE PARKING BRAKE

By turning the parking brake handle to the right.



## WARNING LIGHT

If you're driving, do not use the warning light. It's only for use in emergencies. . . .



A warning light will be on when you're driving. It's only for use in emergencies. . . .

# LET'S GO

## SHIFTING

### P-PARK

THINKING ABOUT GOING ON AND OFFERING YOUR CAR TO SOMEONE? PARKING IS THE BEST PLACE TO STOP. TO GET INTO PARK, MOVE THE SHIFTER FROM ONE OF THE TWO POSITIONS AND HOLD IT IN THE CENTER. A CHECKERBOARD WILL LIGHT UP TO SHOW YOU DON'T WANT TO START. HOLD THE BRAKE AND THE SHIFTER WILL MOVE BY ITSELF DOWN INTO THE LOWEST GEAR. NO NEED TO HOLD THE BRAKE.

### N-NEUTRAL

THINKING ABOUT GOING ON AND OFFERING YOUR CAR TO SOMEONE? NEUTRAL IS THE BEST PLACE TO STOP. TO GET INTO NEUTRAL, MOVE THE SHIFTER FROM ONE OF THE TWO POSITIONS AND HOLD IT IN THE CENTER. A CHECKERBOARD WILL LIGHT UP TO SHOW YOU DON'T WANT TO START. HOLD THE BRAKE AND THE SHIFTER WILL MOVE BY ITSELF DOWN INTO THE LOWEST GEAR. NO NEED TO HOLD THE BRAKE.

### L-LOW

FOR SLOW MOVING IN CITY TRAFFIC.

### H-HIGH

DOWN THE ROAD FROM ONE CITY TO THE NEXT, IT'S BEST TO STAY IN HIGH GEAR. WHEN YOU WANT TO GO FASTER, MOVE THE SHIFTER TO THE NEXT HIGHER GEAR. DON'T FORGET TO HOLD THE BRAKE.

### R-REVERSE

NEED TO GO BACK THE WAY YOU WENT? MOVE THE SHIFTER FROM NEUTRAL TO REVERSE. HOLD THE BRAKE AND THE SHIFTER WILL MOVE BY ITSELF DOWN INTO THE LOWEST GEAR. NO NEED TO HOLD THE BRAKE.

## A LIGHT STEADY PRESSURE



## STEERING

### IS ALL YOU NEED ON THE WHEEL... NO JERKS!



## OPERATING

**DOWNHILL** DON'T USE THE BRAKE TO STOP. USE THE ENGINE TO STOP. HOLD THE BRAKE AND THE SHIFTER WILL MOVE BY ITSELF DOWN INTO THE LOWEST GEAR. NO NEED TO HOLD THE BRAKE.

**UPHILL** DON'T USE THE BRAKE TO STOP. USE THE ENGINE TO STOP. HOLD THE BRAKE AND THE SHIFTER WILL MOVE BY ITSELF DOWN INTO THE LOWEST GEAR. NO NEED TO HOLD THE BRAKE.

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**REVERSE BRAKE** DON'T USE THE BRAKE TO STOP. USE THE ENGINE TO STOP. HOLD THE BRAKE AND THE SHIFTER WILL MOVE BY ITSELF DOWN INTO THE LOWEST GEAR. NO NEED TO HOLD THE BRAKE.

**OVERHEATING** IF IT'S HOT OUTSIDE, DON'T USE THE BRAKE TO STOP. USE THE ENGINE TO STOP. HOLD THE BRAKE AND THE SHIFTER WILL MOVE BY ITSELF DOWN INTO THE LOWEST GEAR. NO NEED TO HOLD THE BRAKE.

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**DRAG TURNING** DON'T USE THE BRAKE TO STOP. USE THE ENGINE TO STOP. HOLD THE BRAKE AND THE SHIFTER WILL MOVE BY ITSELF DOWN INTO THE LOWEST GEAR. NO NEED TO HOLD THE BRAKE.

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## STOPPING THE ENGINE



## AFTER OPERATING SERVICE



**DISCONNECT** - LEAVE IN  
GOOD OPERATING ORDER.  
WASH DOWN AND PROTECT  
SURFACE WITH OIL GRADE OF  
30 OIL.



**WARRANTY** - RECORD AND KEEP  
THE MAINTENANCE AND REPAIR  
LOG AT ALL TIMES.



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## TOW STARTIN'



**WARRANTY** - RECORD AND KEEP  
THE MAINTENANCE AND REPAIR  
LOG AT ALL TIMES.



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LOG AT ALL TIMES.

## SLATE GRAB STARTIN'



**WARRANTY** - RECORD AND KEEP  
THE MAINTENANCE AND REPAIR  
LOG AT ALL TIMES.



**WARRANTY** - RECORD AND KEEP  
THE MAINTENANCE AND REPAIR  
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**WARRANTY** - RECORD AND KEEP  
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**WARRANTY** - RECORD AND KEEP  
THE MAINTENANCE AND REPAIR  
LOG AT ALL TIMES.

*Connie Todd's*  
TIPS 'n' TRICKS



### *Down the hatch*

Alcohol and gasoline will work together—as long as they're in your truck's tank and not your.

So what? So your sleepbaggy might need a nudge.

When Old Man Winter sends temperatures below 32° F, my worst consideration that much less your fuel tank turns solid. And ice in your tank, fuel pump and gas lines can freeze you in your tracks.

But if you add 1 pint of alcohol to every 10 gallons of gasoline you put in the tank, it'll mix with the water, lowering its freezing point. Pour that much in every time you get fuel and it'll have to be mighty cold to stop you.

When you requisition the stuff, ask for Alcohol, denatured, 1 gal. OX-955, grade No. 1, product 8218, Old Man No. 114-1992. And if anybody asks you why, quote para 38 of Title 3440 (Gov 11) as your authority.

This shouldn't stop you draining out your fuel tank every six months, tho'. Besides getting rid of water, there's other muck that gathers at its bottom. Dirt in the fuel can clog and clog you into major repairs. So—every six, give it a treat when the weather's low—and drain it on time, too.



### *Open that petcock*

Besides water's the only thing that will freeze when you fail to drain your air tanks. During cold spells the hoses in your 2-112-ton truck can freeze and won't blow.

It's caused by ice from moisture accumulating in the air lines that lead into the railroad.

Draining the air reservoir tanks when you're there with the cracks will prevent this from happening. Leave the petcocks open until morning (Fig 11), and let all the moisture drain out. There's not much chance of freezing in close them with that short burst in the cab that warns you when your air pressure is low.



## Here's a

### gripping fact...

Lo, and behold—here's a new use or good use of GAA (Guns, Ammunition and Artillery) but it's a little new and you'll have to look real careful.

The GAA you've been using for some time has been used nearly every place except for certain spots or vehicles that go fording. (Those wet spots take WB

right now.) This "old stuff" GAA is identified in the books as GAA Arsenal #1.

Now you can get a new and better all-around grade, a "super" GAA. It'll be identified as GAA Arsenal #2. And it's to be used in everything.

If you want to see or a picture just how to deal with this greater situation if you can't get the new super GAA take a gander at this chart:

	WHEN	WHERE
		That being, those wet or "old stuff" WB and vehicles that go fording?
	Any place WB is used by WB WB	EXCEPT....
1	If you can't get "super" GAA Arsenal #2 use....	"Old stuff" GAA Arsenal #1
2	In case as you are out "WB" GAA Arsenal #1	"Old stuff" GAA Arsenal #1 (Keep using it up to those spots and it's all gone.)
3	Use all "Old stuff" GAA Arsenal #1 is used up	Use "super" GAA Arsenal #2

WB you get a new vehicle from the depot always use you're all all—keep's new coming them with Super GAA Arsenal #2.

If you're looking for the official numbers on this new stuff, look no more. Here they are:

WB-100-482 Arsenal #2			
Size of Can	Initial Tech. No.	Old Tech. No.	Customer Tech. No.
Quart	WB 10-00-0001	WB 10-00-00	10-0000-01
1 gal	WB 10-00-0002	WB 10-00-01	10-0000-02
1 quart	WB 10-00-0003	WB 10-00-02	10-0000-03
1/2 quart	WB 10-00-0004	WB 10-00-03	10-0000-04
1/4 quart	WB 10-00-0005	WB 10-00-04	10-0000-05
1/8 quart	WB 10-00-0006	WB 10-00-05	10-0000-06

## *Welder's delight*

Here's something that'll give your M4-son truck a real spark. It's the electric arc welder, Valentine Welder & Mfg. Co., Model 2088, Ord Stock No. 17-W-1746, that was so popular back in World War II.



This welder is a power-takeoff mechanism for the Jeep's engine—and together they make a welder's dream come true.

Ord 7-8 891, J-481 is your man for the old World War II Jeep.

But to dig it up on your M38 or M34A1, M4-sonson, you'll need a bit to make it work. For the M38 ask for K4, modification, Valentine Welder & Mfg. Co., No. 385, Ord Stock No. 17-E-571-486; and for the '41, ask for K4, modification, Valentine Welder & Mfg. Co., No. 481, Ord Stock No. 17-E-571-485.

With welder 17-W-1746, a bit and your Jeep—you'll soon have an electric welder that'll make mountains out of mountains.

## *How much oil?*

Your Jeep's crankcase will take just as much oil, if you give it more than it needs, you'll only be wasting the machine. That's why you want to clean up the quantity shown here—much as your love its crankcase.

The confusion is that the M38 dash's service-data plate and LO 7-891 list the crankcase capacity as 4 quarts—but the later dash in TM 7-894, page 48, says it's only 3 quarts.

On top of all that, the old dash shows on page 44 of TM 7-891 in the military-junker cartridge type. But when you'll find in the vehicle is the Case type. It was planned to use the military-junker but that changed to the Case at the start of production of the M38.

The fact is this: With the Case filter, the M38 takes 4 quarts of oil.

The M34A1's got its problems too. That Jeep's service-data plate says its crankcase capacity is 4.5 quarts. But TM 7-894A, page 44, says it's 3 quarts. Unlike the '41, the '41 began its career with the Case filter and changed to the cartridge type, after a couple of thousand were made.

Here it is in its brief:



Remember that Item 2 of LO 7-894 and LO 7-894A says to drain crankcase and refill to FULL mark of the gage.

## THE SCOOP

HERE'S A LIST OF ADDITIONAL CRUCIAL PUBLICATIONS ON OUR EQUIPMENT. CONTACT YOUR DEALER OR INTERESTED TO A LIST OF THEM.

### 1984

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### Truck cleaners

Here are the numbers on jointer tools for cleaning up your truck. Now, you can get 'em and use 'em.

Truck, cleaning, chrome, 3-inch wide, 21 1/2 x 4 1/2 inch long, Eng. Stock No. 38-3840-300-217.

Truck, cleaning, engine, fanbelt style, 1 1/2 x 5-1/8 x 3-1/2-inch brush pot 10 inches long, Eng. Stock No. 38-3840-400-200.

Sponges, synthetic, vinyl type, compressed, Cat Stock No. 41-G-4040-555.

### Send the forms

Whenever you send a vehicle to Caltrans for repair, be sure to send along the Revised Inshop, CA Form 478, and be sure that any CA Form 7-68's and the latest CA Form 461 or 462 go with it. Checking these forms will not only clear the job sheet—it'll help Caltrans make sure that all machines are connected.



# BABY IT'S

# COLD OUTSIDE

## PLEASE—GOHT—STOP

If you don't see track like no other, check your carburetor.

The throttle of some Harley carburetors (Model 84-177C) won't close all the way when the accelerator pump link is in its winter or summer position. The link hits the carburetor body's bezel before finishing its full sweep. Just with that in the set-up, you'll get a hot idle and might see go-go carburetor you need when it's cold outside.

But as emergency fix, move the linkage up to the normal (summer) lever hole or summer position. There's hole above in the branch that's—hey you can't depend on it in the real cold.

For a permanent fix, try this: If the throttle plates are straight and in line, file some metal off the top of the linkage. And if that's not enough, scrape a little indelible ink to the carburetor body where the link hits in Fig. 11. Scrape only enough to clear the linkage, but

1/8" INCREASE  
IN SUMMER POSITION



no more than 1/8 inch—or you may put a hole all the way through the carburetor.

Go home you'll find this speeding operation quiet and before you get in the Harley's lanes you'll have a run away in this point, and full throttle is a sure bet with no fidget necessary.

## WARM 'ER UP

Before your engine is revved against high RPM, do make to pull a heavy load, all the harder so as thin-film friction surfaces—the cylinder walls, connecting-rod bearings—should have a slick coat of engine oil.

Otherwise you'll get dry scratches and wear marks on those polished surfaces. This in turn will heat and wear your engine in practically no time.

It's especially true in cold country. Tipt a foot start on slow you down to a halt. You have time to do lubrication when you go racing a cold engine that has consumed the oil in its combustion.

The early life of a vehicle is often made up of lots of starts and short runs, meaning lots of cold starts. To give it a little extra maintenance and warm her up before driving off.

The men with the 2-1-1 numbers and up are the biggest warm-up gals, but because on cold days it takes them time

a little longer to get in the mood. And those who handle the tracks with the air tanks are the biggest. You gotta take in any gas that has got out of your nose. No sense in killing a good engine just because the heater's freezing.

Warm 'er up at a fast idle until you've got the right operating temperature (about 160° F.). The right way to warm up is given in the 10-100 book you're to be sure. And if your engine doesn't heat up within 1 minute or so, or overheat later—then your thermostat checked to see if it's up or stuck. It could be frozen, too.

It's tough for an engine to take itself in mild weather circumstances with winter-grade light-weight oils. If you're trying to make time, scrape your nose over the cushions while it's killing in hot down cold air blows from the fan. But for god's sake, don't open the engine, or leave the car there after the temperature reaches normal.

When the engine takes and picks up



speed smoothly (with the choke) just started, and the oil pressure drops normal for the temperature, after that hitting unusually high, you're ready to go. But if the oil pressure stays low after the engine's warm, that drops quick. Should a visual check not solve the problem, let a mechanic dig for the reason. Could be water and sludge

trapping in the oil pump screen; that'll stop the oil pump—and that's not good.

Use the choke as little as possible. Besides the smell from a flooded carburetor, too-much choking leaves liquid gasoline in the cylinder that washes away the lube from the cylinder walls. Push the choke all the way in as soon as the engine runs smoothly.

## WINTER TUBES

This'll give you an idea on what tubes to use during the winter in your local climate:

See areas like:	Temperature	Tubes to use	Features
The north half Alaska, the Canada, etc.	Below 0° 1-12° to -25° F	 95, 90, 85, 80, 75, 70 Special	4 1/2 diam. Exp. 30 1-1/2 heavy
The middle half Alaska, the U.S., etc.	0° to 1-12° to -25° F	 95, 90, 85, 80, 75, 70 Special	4 1/2 diam. Exp. 30 1-1/2 heavy
The south half Texas, Okla., Missouri, etc.	Normal/Warm Temp. 1-12° to -10° F	 85, 80, 75, 70, 65, 60, 55 Special	4 1/2 diam. Exp. 30 1-1/2 heavy
The south half Okla., Mo., Ia., etc.	High Winter Temp. 1-12° to -10° F	 85, 80 or 75, 70-75, 65, 60, 55, 50, 45	4 1/2 diam. Exp. 30 1-1/2 heavy

And as for getting the tubes, dig up a copy of *SAE J11-1* (The S11-1 covers the tube situation pretty well, with numbers and all.

# JOE DOE



## THE MAINTENANCE SALESMAN AND THE FARMER'S DAUGHTER

**S**EEMS THIS SALESMAN WAS ON HIS WAY TO SOME POST OR OTHER..... IT WAS GETTIN' LATE AND COLD.



**S**O HE KNOCKED AT THE DOOR OF THE NEAREST FARM HOUSE... AND PARKED HIS VEHICLE NEARBY



**W**ELL SIR (chuckle) AFTER SUPPER THE FARMER SAID...

ONLY ONE  
BEDROOM IN  
THE HOUSE,  
JOE...



**T**O WHICH JOE REPLIED...



WELL FARMER  
MIGHT AS  
WELL CHOOSE



CHARITABLE DURING  
THE NIGHT... JOE  
WAS AWAKENED.



# LUBRICANTS



<p>FROM ANY FLUID OIL OR GREASE</p>	<p>IT'LL BE THE TEMPERATURE</p>
<p>LUBE TO VEHICLE</p>	<p>BEFORE YOU START THE ENGINE, MAKE SURE YOU'VE LUBED THE ENGINE</p>

# IGNITION



# BATTERIES

WATERING MIGHTY  
WHEELS ON BATTERIES  
MAKES LEAKING, BUBBLING,  
CRACKING... SO CHECK  
IT... KEEP BATTERIES  
FULLY CHARGED  
AT ALL TIMES!



CABLES  
GOOD?  
TEST CELLS...  
CLEAN  
AND  
TIGHTEN  
CLAMPS

# COOLING SYSTEM

I'LL  
GET RID  
OF ALL  
THE FLUET  
AND  
FLUET



AFTER THE WINTER, SUMMER HEAT UP THIS  
RAN HOT TO GET A REAL GOOD OVER...

NO LET'S NOT FORGET THOSE  
LOWEST POINTS OF LEAKS, WATER  
PUMP, LEAKS FROM BELT,  
BAD GASKETS, NOISE NOISE,  
AND THERMOSTAT... THEY  
CAUSE THE MOST PROBLEMS

ON THESE MACHINES, THE  
CONDENSER AND  
ALSO CHECK  
BEFORE WINTER  
ANTIFREEZE.



NOW'S  
THE  
TIME FOR  
ANTIFREEZE  
-KEEP FOR  
LEAKS

# ESPECIALLY OVERCOOLING

THAT'S  
MY ANGLE  
ON WINTER  
OPERATION  
ALSO DON'T  
THINK ABOUT



I NEVER

MAKES SURE WATER PUMP RAN BEST, AND  
THERMOSTAT ARE IN WORKING ORDER!

THIS IS IMPORTANT TO  
PREVENT OVERCOOLING

...THE IMPORTANT IN  
VEHICLE THAT DO A  
LOT OF DRIVING AND  
OPERATE UNDER LIGHT  
LOADS... THESE FLAME  
BURNERS RUN AT LOWER TEMPERATURES



WATER PUMP... THERMOSTAT... CONDENSER...  
PUMP... THERMOSTAT... CONDENSER...

BY THE WAY, CHECK  
THE PRESSURE IN  
YOUR TIRE!

JOE'S

# Dope Sheet

I'm donning long johns for the spell,  
Do the same to your fine truck as well  
Go over it, Joe  
Before the first snow  
This winter could be coldernell.

*Connie Rodd*



WE HAVE THE WORLD'S BEST EQUIPMENT... *Take care of it*

DOWN... THE THINGS THEY'VE BEEN HAVING IN COLD WEATHER.

NOT ONLY THAT BUT WITH A "COOL" ENGINE THE FOLLOWING HAPPENS.

VENT SYSTEM GETS BLOCKED... LETS PISTON EXPLODE IN CHAMBER!

OIL FILLS CHAMBER!

**SLUDGE!**



PISTON GETS AND EXPLODES

PISTON BECOMES STUCK IN CHAMBER... AND... JAMS UP THE PISTON!



OIL FLOW CAN BE BLOCKED!



ICE CRYSTALS FORM IN OIL...

NOT ONLY THAT, BUT CARBON DROPS COME FROM COMBUSTION... JOINED WITH OIL... FORMING LACRIMAS... WHICH WILL GET ON THE ENGINE!

YES! I'M GLAD I CHECKED THE OIL AND WENT ON!



## EXHAUST

NEED A MORE TIGHTLY FITTED BRAKE??



## BRAKES

CHECK ADJUSTMENT, FLUID LEVELS AND CONNECTING TIGHTEN UP!



# VISION HOW TO KEEP WINDSHIELDS CLEAR

**ALL** LEADERS WINDSHIELD

**YEP?**

**WASH WITH WINDSHIELD WASH**

**WASH WITH CARBONATED DETERGENT**

**KEEP GOOD REPUTATION**

# FUEL SYSTEM

WHEN YOU THINK YOU'RE RUNNING INTO TRAPERS, ALWAYS WASH YOUR WINDSHIELD WITH A WINDSHIELD WASH TO KEEP THE 2,000 WASH.



**WASH WITH WINDSHIELD WASH AND ADD 2 MORE WASH TO KEEP THE CARBONATED DETERGENT WASH TO WASH 20 MILLIONS OF WASH ... THE WASH WASH YOU CAN GET**

**FUEL TANK SHOULD BE CLEANED PERIODICALLY TO REMOVE ANY WASH THAT WOULD ACCUMULATE**

**WASH WITH FUEL WASH AND TRASH TO WASH WITH THE WASH OF THE WASH.**

**WASH WITH THE CARBONATED DETERGENT WASH TO WASH WITH THE WASH.**

**WASH WITH THE WASH TO WASH WITH THE WASH.**

**WASH WITH THE WASH TO WASH WITH THE WASH.**



# WINCHES

REACHES INTO CLOSET IN NEXT ROOM TO WINCH

"WHEN CABLE RUNS OUT AND YOU SEE ONE BUBBLE OF OIL"



WINDM AND CLEAN WINDM BEARING AND DESPILL WITH THE CORRECT LINE



INSPECT COILS RELEASE AND INQUIRY IT IF NECESSARY



THE SMART VEHICLE OPERATOR SHOULD CHECK THE OIL IN HIS VEHICLE REGULARLY BECAUSE HE KNOWS THAT OILS ARE NOT MEANT TO BE USED IN A WARM AREA AND OIL



...SUN<sup>2</sup>...



**A**ND SO THEY (chuckle) SETTLED DOWN FOR THE NIGHT.....



## SGT. HALF-MAST MECHANICS

ANSWERS

Q-101



### WHEEL-BEARING ADJUSTMENT

Dear Half-Mast:

It's the TBI adjustment for wheel bearings on the Jeep, the M15 and M15B. It's spin the wheel and tighten the adjusting nut until the wheel binds. Then back the nut off about 1/16th of a turn more if necessary until the wheel spins freely.

When we do this the wheels become loose after several miles of ordinary driving.

What's the cause?

PTC H. M.



Dear PTC H. M.,

Could be that you're not pulling the adjusting nut up tight enough. Try pulling the nut up good and tight, then back off on the nut until the wheel spins freely. Turn the wheel to make sure the bearings are seated. Check the bearing play by grabbing the tire at the top and pulling back and forth on the tire. If you've got the adjustment right, you'll only get a slight movement of the wheel.

These mechanics (Fig. 1) are important, too. You've got to lock the nut just the way it tells you in the TBI's. No give 'em the answer.

*Half-Mast*

### ANYTHING FOR MORE LIFE

Dear Half-Mast:

Clutch and cables and I'd love to change over from OE 10 to OE 16 in my GMC Hydra-Matic transmission for temperatures above 12° F. Ha, why? That's all I ask. Why? What good is it, ha?

Mr. J. J. G.

Dear Mr. L. L. G.,

That's a good question and you'll get a good answer.

Recent transmission tests proved that GE 80 gave the Hydra-Matic transmission a lot longer life. Any time you can find an oil that'll do better for a transmission, throw it on her, Right?

Incidentally, you'll soon see this tube change to revised LP's.

*Half-Mast*

#### THAT CRACKY COMPRESSION

Dear Half-Mast,

I guess you could call me a cranky, cranky old kid. Mine's hoping you are overlooking me out. TR 5-110 sounds off that the normal cylinder compression for the 401 800-0 engine is 110 to 141 PSI.



Then PS 274 says on page 419 that the normal compression pressure should be from 75 to 85 PSI.

And the manufacturer's representative here I've talked to say it should be 75 to 80 PSI.

Now I ask you—who's right and why?

Pat O. L. L.

Dear Pat O. L. L.,

Looks like you're right in just the Old Judge hit the right ball. But see this time, 'cause I've got no answer for you.

The basic dope is that 75 to 80 PSI is the normal compression reading on

that Continental engine. That reading, however, is for a new engine or one in top-notch condition. You're likely to get a reading as low as 70-75 PSI on engines with many hours on them, but that's normal for them.

As for the TR, it is being changed to show that the compression reading is 75 to 80 PSI. And that makes it official.

*Half-Mast*

#### TAKE 'EM ON

Dear Half-Mast,

What's the final answer to the Jeep trailer safety-chain usage?

According to information here, it's on again, off again. Please help us out.

Pat J. H.

Dear Pat J. H.,

There's a TRish answer to this situation pretty well. It's TR 5-271A.1, (1 July 54) "Removal of Safety Chains."

It says that 1946-50 2000 models equipped with convolving ladders, are safe for operation with any 1946-on truck whether or not safety chains are



provided on the trailer. In fact, if your trailer's got the chains, you are to take 'em off. Unless you're in a state where they're required by law.

*Half-Mast*

## NORMAL BATTERY SPARK

Dear Half-Mast,

Why is it that when all circuits are turned off and everything else's OK, I get a weak spark when I connect the ground cable to the negative post of an AAAA's battery?

Sgt L. V. L.



Dear Sgt L. V. L.,

Unless you know the answer to that one, it can put you to a lot of useless work trying to get it out.

The fact is, in some vehicles a small loss of electricity is normal. It's caused by the filter condenser "charging up" in the regulator when done in. You'll find this leak in all Jeeps and 5/4-ton trucks with the 24-volt Auto-Lite regulators. But it's got to be very small—so's not to hurt the batteries. The filter's in there for radio-noise suppression.

And here's another one. Some vehicles, especially the 3 1/2-ton full M100 series trucks, which have heavy lead-

casted Grid Stock No. G145-Tell-Tone (the manufacturer calls it an automatic), will give you a spark, too. This gadget is actually a low-drain voltmeter and causes a small constant drain of 30 milliamperes when hooked in the circuit. This drain by itself can discharge a 675 battery in a four-month period and a 100V battery in two months.

You can open the battery indicators by its three colored segments on the dial.



But if you've more than a weak one going, that's another story. Any leak that'd make a test light burn is your signal that you've got a short that needs fixing. And it could be anywhere in the electrical-circuit—starter switch, accessories, dirty battery top, etc. That's the kind that needs tracing and digging out.



## LET YOUR HAIR DOWN

Be sure to "let your hair down" when you've got something on your chest and you write to Sgt Half-Mast about it. Tell him everything—including what you and your buddies think. He won't tell a soul—not even his old lady—who or where you are. Just address it Sgt Half-Mast, c/o PS Magazine, Aberdeen Proving Ground, Maryland.



# ARMAMENT



## ANTIFREEZE BOWS AS GREASE TAKES

### M33 fire-control gets a new

Armored drive units on your M33 and T34 fire-control systems are getting a new dust seal. Antifreeze is being stored out of the picture by MIL-G-1275, Aircraft and Aerospace Grease.

With grease on a dust seal, you won't have to blowing out in high winds like the antifreeze from tubular-bling. And, you won't have to worry about grease spilling out when you're working in an arctic environment. You just have to be precise in deciding to which antifreeze.

You'll find that some of the spaces already have the grease dust seal. Take a look at your drive assemblies and find out what you're got at a dust seal. If they have glycol water seal when you open the antifreeze-bling process, here's the steps to take to get it out-and get the grease in.



### DRAIN ANTIFREEZE



Take the drive from your antifreeze out of the open parts container in the maintenance and spare parts center. Mark one end of the hose to the end and the other end of the hose to the petcock on the side of the antifreeze drive. Open the petcock and drain the antifreeze from the antifreeze drive. Close the petcock and take off the hose.



When you take the antifreeze out of the bin, take the bling off the rubber door in which the bin is located.



You'll have to fill the antifreeze, and any other that you have in your spare parts center, to your local antifreeze supply in it can be found to make another center.

# OUT OVER



## dust-seal

### PUT IN THE GREASE

Now you've got the antifreeze out to maintain, get all the picture-bling get with the grease.

Take the M33 antifreeze out of the bin, if you're with the T34 remove the bin and the antifreeze.

Remove the clamp assemblies from the antifreeze drive. Remove the screws and metal strips which hold down the filter cover on the antifreeze assembly and take the cover off.



Also note in the filter use suitable filter dust-bling. Mark the hose and hose connections with your dipping sticks "Excess Material-Ord 7, Ins. F-82."



Secure the bling of the antifreeze the rubber door of the bin where you found it. On the hose bling, you get change the number of hose assemblies allowed from two to one. The hose you'll keep for filling the petcock-center.



Get your Ord 7 Ins F-82 and connect the dust seal to the antifreeze and the filter cover. Press down the quantity of hose assemblies you're authorized from two to one.



Make sure the antifreeze reservoir is clean. Fill the reservoir with Aircraft and Aerospace Grease, MIL-G-1275, Ord Stock No. 140-011-9L, to a level 1/2 inch below the top of the reservoir.

Close the filter cover back and install the clamps and screws. Replace the clamps and



the antifreeze from mounting and hose-assembly supply for the wind and free to travel without a drive job. You'll see this in T-8-0091-1.

## HERE'S A HOT ONE

You'll be loading a hot-line when you clear the area behind your excellent rifle—if you do a lot of repeated firing from one spot—like on the range.

Your excellent rifle shows and sends small grains of powder in back of you and besides, it'll burn in a flash—even on plain fire. A hot line can't.

If you've been a long while from the same position, you'd better have the area checked for powder. The area can be cleared by burning with a flame thrower or by cautious, controlled burning.

Might not a truck body or over your rifle way.

## BOOKS RUN SHORT

Shield doors on your M41 motor shield, multiple-machine gun mounts are being up that M41 rifle sight if you've not careful when opening or closing them.

It's best to keep the shield door either fully opened or fully closed and make no half-way steps. And before you

change the position of the door either way, always the right way in horizontal position.

When you look right or left your sight up with the gun, be sure you have enough clearance between the shield door and the sight loading knob or the . . .

## THE THINNER YOU WANT . . .

When you order your supplies for the M41 low-control system's antenna, know what you're getting. Buy book No. 12-7895-200-018. And right now you'd better replace the thinner neck number given on page 449 of *PL 418* with this new neck number.

In case you're wondering . . . you need no primer or medication on this primer job. The complete instructions of manual for the antenna in manual, synthetic, semigloss, air drying, silver dust, No. 1458 (3 gal) (PWT-1-129), Reg Book No. 12-3476-017-100.

## WHEN THE TEMPERATURE DROPS—IT'S GORDON PADE

When you're being over 11-100-gon or heavier, 3-inch gun or heavier, or your 240-mm howitzer and the temperature's below minus 25° F, you gotta check that aluminum gascheck pad.

If the pad's Mayonnaise made with solid Neoprene rubber and unswollen, stick to the Gordon type. The Gordon type is made of rubber-like compound, covered with wire mesh and asbestos.

Neoprene pads will contract in sub-zero temperature and let gas escape



put the distance. This, in time, will lead your gas or turbine to the ground.

Think in a clean, dry cloth or soap and water when you clean either of these parts. Solvents or oil will ruin them.

### GUYS NEED BALANCING

Bouncing, bounding over the rough terrain—

Take yourself for instance. When you're in an M41 tank that's galloping over a new pasture, you hold yourself balanced and steady. If you don't, you'd find yourself bounding around like a loose gas in a tank.

Same goes for the gas and gas mount on your M41. When you're cruising along with the gas out of the travel lock, that gas and gas mount's got to be steady and balanced. If they're not, you're going to wind up with a bunch of scrap-iron churning parts.

Be sure to keep all the equipment like periscopes, machine gun, etc., mounted with the gas.

If for any reason you've added anything to or taken from the gas or gas mount, be good when you get ordinary maintenance in on the tank.

They'll be sure that gas and mount on the M41 and M41A1 is 18-in-20 foot-pounds mechanical heavy with a deal in the hands. Your wrench will be over-used if you put or take again.

### ROLL OUT THE

Was working some folks in an AAA outfit's outfit they and they did they pull in.

They were setting up a 50-man job for being and the big boy gave the



order to roll out the logs. They didn't believe—went right to it. But was their time out.

They forgot to disconnect the electric lock-cable that's between the hinge and the gas pedestal. As the hinge rolled away the wire the cable right out of the plug and attacked the electric machine.

Don't let it happen to you—please.

### NO MONEY BUSINESS

This is not the wrench that was turned into the wheel—this is the one you've been looking for if a 30-man maintenance gas mount M41 is your baby.

You won't find 3/8-inch, hinge, spline, etc. one 1/4-inch and rule, etc., size of opening 5/8/32 and 1-27/32 inches, length overall 8 inches in your Old 7 SFL D-36. But here's how you can get it—call for it under Old tank No. 41-70-1725-158. This will be found in the revised Old 7 SFL D-36 for time to 2nd edition.

Your TM says you can take the wheel off and replace the wheel bearings. Use that as your authority to ask for the wrench.

## SUPPLY & DIRECTIVES

NO TICKET, NO DRIVE

# YOUR NEW TRIP TICKET



HERE'S THE NUMBER ONE  
WAY TO GET TO PLACES FAST

Draw up a trip ticket and there's one if you happen to be a member of an auto operating under THE 1958 Act and want to hear about the new trip ticket—the one issued 1 Dec 58.

No matter what you drive—a compact car, four-door, truck, heavy wagon or less going your way will give you a trip ticket in this man's way. It's your authority for driving the vehicle.

So, if you get in with one, you might as well know what it's all about. Here are the ABC's of the ticket.

Your vehicle gets a new trip ticket each day. It's used the whole 24 hours just for the other driver and the vehicle before we get it.

This part's filed out by the speaker before you get your vehicle.

This tells what more you'll be doing with the vehicle's form.

This vehicle is referred to here.

Description of vehicle.

Don't forget your form.

**YOU START HERE**

For your own safety.

And don't forget to fill in this with it in ready to go!

And again you put that up 1 Dec 58 if it's in the 1958 Act or 1958 Act's.

VEHICLE AND EQUIPMENT	
Make and Model	Year
Color	Registration No.
License No.	Ins. No.
Owner's Name	Address
City	State
Zip	



DO NOT WRITE IN THESE SPACES

IDENTIFICATION SERVICE

12/1/58

This last part fits with the

to number parts to see you start vehicle out of water pool.

This is the number entered for the vehicle.

And this is the way that should be put.

Registration number.

**OPERATIONAL RECORD**

Vehicle No. 123456789

Operator's Name J. K. Smith

Address 123 Main St, City, State

Phone No. 123-4567

Registration's always guaranteed by 1 Dec 58 or 1958 Act, so it's always the number, and the year that's a registration "Number".

Don't forget these when you start your vehicle back to the water pool.

Don't forget to get your car back to the water pool.

12/1/58

12/1/58

It's given out of about.

This is for which number. (Registration and it "number" number.)



The number of gallons of gasoline here, the cost and the number of gallons you get each time. If you get it from this area, put it down. If you did not get any gas from behind other work area.

This area procedure goes for all the down number of work's added and added. If you didn't add any other than and back.

Don't get things in these spaces. These are the next steps might need some space too.

Here for your signature.

Here's the kind of work you do. Some can be for the day, including them, where they're from in sign.

Water pool can't get this.



## THIS IS WHAT YOU DO TO MAKE SURE YOUR VEHICLE'S READY TO GO.

If it's been damaged or overhauled, it's always best if you'll better have a technician check it out first. You might get a chance to go for it if you don't.

Take a look at your vehicle for fuel, oil, coolant, gear oil, water, or brake fluid leaks.

Check fluid oil and water levels. Look for leaks in engine compartment.

Start the engine and take it through the enough working speed. Make sure vehicle is warmed up before you take off—and that motor warming up at high idle only. Be sure no leaks, the battery's charged. If it doesn't, check the air filter's clean-ness.

Make sure your oil pressure gauge or light works, alternator, instruments, fuel gauge, oil-level pressure gauge, voltmeter and temperature gauge are all working like they should.

If your vehicle's equipped by law with the safety lights, see that the lights aren't covered. See that windshield wiper, horn, lights, mirror are in good condition.

Tools and equipment belonging to vehicle should be there, ready to use, and in the right place. There's where your vehicle storage kit will help.

Take care of your obligations that all you should your vehicle. Make sure you're up to date. This includes your tax and title status. And license points or other compliance you should have. If it's, State's Report Card, OR 201, US Government Operator's Permit and OR 21-001, Driver's Manual.

## YOU PULL UP ANCHOR AND YOU'RE OFF—BETTER WATCH THESE SO YOU'LL HAVE SMOOTH SAILING.

Your temperature gauge should be in normal range (when you've got engine warmed).

Your oil pressure gauge should double in 10 to 15 seconds, stop. Could be your oil pump or oil filter or tank. Some bearings or a bad oil pump. Whatever it is, report it to an oil dealer.



This is where you get what you've made sure you've done off the things in your vehicle that you're responsible for. Before, during and after a trip. You've got to know it's every other while you're stopped. The check one

And check your brakes for side pull when you'll be sure to stop when you want to. If you've got steering and squealing, but no noise, it's the shock that's keeping you steady—brake not good. It's not supposed to squeal either.

Check the water in steering lines. Be sure it's approximately equal. Steer there's too much after in the steering gear, loose pins, not adjusted tight. Loose wheel bearings, check on wheel nuts or tie rods.

Be on the lookout for things that are loose. Your engine not up. There it's loose the wheel power? Sure, it isn't in it's adjustment.

Check on any unusual noises, rattle, knock, squeak or clunk.



make you noticed while operating, and you look over your vehicle for anything who's going wrong, think it's safe or probably deficiencies in the "Warning" system. Of course, you're working that you are.

## WHEN YOU STOP OR RETURN TO THE MOTOR POOL, YOU'VE GOT SOME CHECKING TO DO.

The lights should be checked. Make sure they glow and off when they should. Get your buddy to help you test-out for sure the stop light goes on when you stop on traffic light. Don't forget to turn your lights off when you've checked them.

When you've used the fire extinguisher, make sure you report it so it can be refilled or replaced.

Check your brakes to make sure they're in good order. Your hand brake should be checked, but make sure your release is when you start your vehicle. There's a chance to check that valve you tested.

Open the panels of the air intake—drain out all water and close the panels.

Wash or your face water to see what type all you need. If it's low, add water. Better check for leaks if you need lots of it.

Fill up the spare tank, oil and water cans.

And you'd better see that there's no glass, milk, etc. in your tank that will do damage.

After you've got it all done, there'll be taken care of in the 10 minutes inspection.

# AND HERE'S WHAT THE BACK SIDE LOOKS LIKE.

Place you want to  
Time you arrive Time you leave  
Always when you return  
Level in passenger or vehicle when leaving, down or same level.

DATE	TIME	TYPE	LEVEL	STATUS	REMARKS
2/1/2025	10:00	ARRIVE	1		
2/1/2025	11:00	DEPART	2		
2/1/2025	12:00	ARRIVE	1		
2/1/2025	13:00	DEPART	2		
2/1/2025	14:00	ARRIVE	1		
2/1/2025	15:00	DEPART	2		

The meter will tell you if they want you to fill the meter.

The meter will tell you and your vehicle when you should leave the meter.

Always - Stick on left front wheel.  
Always - Roll to left front.

This space can be used for putting down what you bring with your vehicle. There's plenty of room to give the whole story.

If a vehicle has been returned to the meter and you've been given a driver to park, you'll see something in the meter that the meter will tell.

and this includes the before, during and after operation procedure with meter cards. And please you'll see the meter and what from meter.

# THE RIGHT ONE

FORM DD-8

FORM 480

## FOR THE RIGHT JOB

NEW EQUIPMENT - NOT UP TO PAR IN MAINTENANCE AND QUALITY USE...  
**USER (FORM 480)**

NEW EQUIPMENT DAMAGED BY USE...  
**DD FORM 88 (FORM DD-8)**

### IN EITHER CASE

- ★ If it's equipment for weight, send DIRECT TO OFFICE CHIEF OF ORDNANCE, WASHINGTON, DC 20315.
- ★ If it's equipment substantially used report TO OFFICE CHIEF OF ORDNANCE, WASH. D.C.

### CAN'T GET ENOUGH

Here's the answer to your problem if you can't get enough know-how on Ordnance equipment: Take an extension course from the Ordnance School.

See your own CD and mail Depart-

ment of the Army Pamphlet 20-100 which lists courses available. If you want more dope, write to Director, Extension Training Division, The Ordnance School, Aberdeen Proving Ground, Maryland.



# ENGINEERS



BY BOB WELLS, CHICAGO



## BOOM HOSE SAWW

Dear Eye Doctor:

Our D-4 and D-4-Caterpillar tractors come to us with their boom hydraulic hoses connected to the cylinder with straight 90° street connections. This caused the boom to rise up and form a slight loop. And when we operated the blade on a job, boom and branches caught in the loop and damaged the hose at the connection.

We eliminated the problem by adding a 45° street fitting to the original 90° fitting. We installed the extended

connection so the boom flat across to level flat and eliminate the loop. (See Fig. 1.)

It's worked fine—we never have hose failures to replace.

Mr. E. T. F.

Dear Mr. E. T. F.:

Sounds like good preventive maintenance thinking that'll help some others, too. Just be real sure you've placed the hose so it doesn't get tangled with other moving parts on the tractor.

*Bill Dwyer*














# CAT STAKE-OUT



With a Campbell tractor that gets stake-out to a stationary power-unit—no wish one that must be kept idling for a long spell—you want to be real sure you've got continuous lube going out in the transmission. How you protect the transmission when you're not turning a crank depends on which size Cat you're responsible for. Here's what to do, to do, and why:

Cat... 	Fix... 	Reason... 
<b>B1 and B4</b>  	Put all gear in <b>NEUTRAL</b> .  	The transmission shafts and the gear shafts are driven from a pinion that constantly is mesh with the lower shaft which is below the oil level. When the top shaft is engaged the pinion will force shaft bearings the transmission spread with oil.
<b>B6 and B7</b>  	Leave gear vehicle in <b>NEUTRAL</b> . Forward Reverse lever engaged before <b>STOPPED</b> or <b>STOPPED</b> gear.  	If all the gears are in <b>NEUTRAL</b> the bearings on the upper shaft wear out the continuous lubeing they need. But with the transmission in <b>NEUTRAL</b> and the forward Reverse lever engaged, the lower shaft, which is below the oil level, keeps turning and its gear spins oil in the transmission gears, shafts and bearings get their proper share of oil.
<b>B8 (only models B4, B6 and B7 with 24-tooth PTO)</b>  	Leave gear lever in <b>NEUTRAL</b> or <b>reverse</b> position. 1. Put gear third gear 2. Release both steering clutches 3. Engage forward shaft for about one minute.  	With the engine running the rotating shafts agitate the oil supply of the upper and intermediate shaft bearings.
<b>B8 (models with serial numbers 100001 and up, D41 and up)</b>	Put both the gear vehicle lever and the forward Reverse lever in <b>NEUTRAL</b> .	With the forward shaft engaged, the oil comes in the transmission distributor, the lube through-out the transmission.

## AND ON ALL CATS

WHEN YOU SHUT-OFF FOR THE DAY MAKE SURE THE MASTER-CLUTCH IS DIS-ENGAGED SO AS TO KEEP THE CLUTCH PLATES FROM STICKING.



# LOVE THAT LUBE ORDER!

You're a faithful keeper if you treat your Engineer equipment by its own lube label orders. Regardless of its size, shape, power or age, it'll be stronger and live longer if you use so it than it gets the right kind of lubrication care.

Lubing instructions always go along with a piece of equipment... so whether it comes to you new or set-to-run... there's always a TM, LO, or the manufacturer's manual that you can rely on to tell you how the lubing choices are handled.

Less or modified LCP's need to be explained on the inside. If an LCP when it can do the job or gets you heat up or cool, and a replacement isn't easy to come by, you might find it helpful to keep this chart handy as a reference of lubes that are available to users of Engineer equipment.

INDUSTRIAL (MOTOR/GEAR)				
Army Symbol	Grade	Lubricant	Where Used	Temperature
10-10	100-100	Engine Oil	Engines, oil or grease	Below 32° F.
			Hydro engines and gear boxes Start a new engine	All temperatures
10-10	100-100		Engines, oil or grease	Above 32° F.
			Engines and gear box, heavy	Above 32° F.
10-10	100-100		Oil service in cold engine regions	High temperatures
10-11	100-11	General low viscosity	Gear boxes	Above 32° F.
10-12	100-12	" " "	" "	Above 32° F.
10-13		General purpose and other gear	Heavy duty, universal and oil shaft bearings	100° to + 325° F.
10-14	100-14	Water pump gears, 1	Water pumps and equivalent water cooling	All temperatures

For usage of 100, see page 18 of this issue.

SPECIAL LUBRICANTS				
Army Symbol	Grade	Lubricant	Where Used	Temperature
10-15	100	Steel and wire rope oils	Open gears and wire rope ropes	All temperatures
10-16	---	Exhausted oil light	Oil contaminated with coolant or oil	Above 32°
10-17	---	Shell-Morley Shell Light	Shell bearings, ball races	All temperatures
10-18	---	" " " Heavy	" " " ball races	" "
10-19	---	Shell-Morley Shell	Shell-Morley bearings	" "
10-20	---	Shell-Morley oil	Shell-Morley gears	" "
10-21/22	---	Two wheel engine oil	Engine lubrication for most two wheel engines	" "

Wherever equipment uses fluids, refer to the label and use the exact equipment oil and lube brand.

# M R S MODEL 150 TRACTORS



Some MRS Model 150 tractors (Serial Nos. 1114 and up) hit the field with wrong bearing adjustments in the front power-takeoff gear-box. To keep these lubbers quiet until you are "on rights,"

Here's how to go after the needed adjustment and get rid of the sticky shaft:



THE ABOVE ADJUSTMENT IN THE POWER-TAKEOFF OF THE NEW 150 HIGH-SPEED TRACTORS CAN BE MADE WHILE RUNNING AND WITHOUT REMOVING THE COVERS OF THE POWER TAKEOFF. DON'T WORRY, AND LEAVE YOUR DRIVE AND DRIVE SHAFTS COMPANY'S OILING SYSTEM TIGHT AND 1/2 TO 3/4 IN. OIL—IF YOU USE A GRADE NUMBER 150.4 OR HIGHER, IF YOU USE ONE OF OTHER GRADES, USE 1/2 TO 3/4 IN. OIL.

Remove the shaft under the bearing cap. Bring the cap down with only two cap screws—which you space 180° apart—until the bearings are nearly-meshed. Measure the spacing at each cap screw, then adjust all around until all the spacings are equal.

If there are called for, add .001- to .002-inch to the measured spacings a few for the proper adjustment.

That's it, except to watch for over-bearing after the first two or three hours of operation—give or take may be needed on the drive clearance.

# CONTRIBUTIONS

SPRING YOUR  
MINDS UP ON ALL  
REALLY GOOD IDEAS  
BY  
T. J. COY



## LONG PULVER-BASE HOLDER

Dear Editor,

Anybody who has got the heiddest burned out of him when checking valves both calibrated on the M111 or M112 will find a lever-gage holder like the one sketched here to be mighty useful.



One is made from 1/8-inch rod stock about 23 inches long, bent as in Fig. 1 and with a couple of inches of lever-gage stock added or riveted to

the 2-inch end. Of course, you need two, one of 6L7D for the intake valves and one of 6V92D for the exhaust valves.



You gotta check 'em too, so now when we adjust our valves with engine running at idle and hot we don't run the risk of burning our heads.

WOLFG  
Brewer

## WRENCH END'S UP

Dear Editor,

We had trouble with the parts being to be replaced on the disassembling tool and for the machine. Some of the men didn't know which end was up. They were using the assembling end for disassembling; the disassembling end for assembling and as a result the ends of the parts either broke off or bent.



Now we've placed an A on the assembly end and a B on the other assembly end (Fig 2) we've done away with the lockers and loose parts. Now we have parts to spare.

Ed Roger Gary  
 Aberdeen Proving Ground, Maryland

*(Ed Roger-Gary's like a good idea for the guys who work on that belt. Just remember, old, that a screw that's too tight on the tool can also help damage the part itself.)*

**DISCOVERING THE TOOL MAKERS**



### PLATE IN SHAPE

Dear Editor,

On our 2-1/2-ton M108 truck (GMC), we have a protective plate for the fuel tank shut-off valve like a valve for a THERM-11. We have found that this plate gets bent out of shape by the cab-overhang when the vehicle is operated over rough terrain.

By cutting 1-inch from the inside of this plate (Fig 3) the cab no longer bumps the plate.

Ed Roger F. Monte  
 Camp Chaffin, Aberdeen

*(Ed Roger-M's a darn good idea. Should keep these plates in shape.)*





### *Even vision blocks?*

How's the view from your A22 snowblower's windshield lately? If it's being hazed up by deflating vision blocks—air bubbles, separations along the polymer's edges, etc.—get new ones. Order five regular supply channels. They're One Block No. 0184-000790.

### *Long and short of it*

If the cable connecting your 604 back to the A is too short, make a new one, like the 18 One 509 says. Now that all 604's are made this year, the problem's on its way out with the full crew in supply.

### *Backlash tolerance*

Here's the latest news on standards of traversing and clearing backlash tolerance on the 75-mm, 105-mm, 115-mm and 8-inch barrels and the 150-mm and 202-mm guns. Allow 1/16 inch of the backlash to govern organizational maintenance and 1/16 inch to govern field maintenance. The manuals are being revised to show this.

### *I've got it-jobs*

There are four universal bolts in your 540s truck's universal joints. You've gotta take the flanges apart to tighten 'em. I went to see point 117, 104-P-002

### *Retraction coils*

Get change a groove tool just because it's well liked? That's necessary. These tools have quite some late-l releases also they'll dry out and become worthless.

### *M215 dump tracks*

Increases on the 2-117-ton M215 dump-track (M215) seems to come at the transfer case and pillow-block mounting bolts. Take a gander at them daily. (And safety that bed before you get under it.)

### *Which way did he go?*

Just based about an M215 whose steering balljoint's self-locking nut and the rod end nuts were found to be loose. That's the pivot between you and your wheels—between you and stability. Check now—and for some years to light. Read all about it in 104-P-004.

### *Battery check*

You follow who's plastering your batteries with point boxes think it over, but. If these vent holes on top of the battery get plugged, brother you've had it. The fumes'll eventually build up on the inside and blow it sky-high. So, save the point, check.

# PERPETUAL INDEX

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PERPETUAL INDEX		1	2	3	4	5	6	7	8	9	10	11	12	13
ADVERTISING EXPENSE														
AGRICULTURE														
AMERICAN AUTO.														
AMERICAN BANK														
AMERICAN C.														
AMERICAN ENERGY														
AMERICAN FOOD														
AMERICAN HEALTH														
AMERICAN HOTEL														
AMERICAN LIFE														
AMERICAN MEDIA														
AMERICAN PETROLEUM														
AMERICAN REAL ESTATE														
AMERICAN RETAIL														
AMERICAN SERVICES														
AMERICAN TECHNOLOGY														
AMERICAN TELECOM														
AMERICAN UTILITIES														
AMERICAN VEHICLES														
AMERICAN WORKERS														
AMERICAN ZONE														
AMERICAN YOUTH														
AMERICAN WORLD														
AMERICAN AIR														
AMERICAN SPACE														
AMERICAN DEFENSE														
AMERICAN POLICE														
AMERICAN SECURITY														
AMERICAN HEALTHCARE														
AMERICAN EDUCATION														
AMERICAN ENVIRONMENT														
AMERICAN ENERGY														
AMERICAN MEDIA														
AMERICAN RETAIL														
AMERICAN SERVICES														
AMERICAN TECHNOLOGY														
AMERICAN TELECOM														
AMERICAN UTILITIES														
AMERICAN VEHICLES														
AMERICAN WORKERS														
AMERICAN ZONE														
AMERICAN YOUTH														
AMERICAN WORLD														
AMERICAN AIR														
AMERICAN SPACE														
AMERICAN DEFENSE														
AMERICAN POLICE														
AMERICAN SECURITY														
AMERICAN HEALTHCARE														
AMERICAN EDUCATION														
AMERICAN ENVIRONMENT														



THE **BEST** INSURANCE  
YOU'VE GOT FOR YOUR TRUCK...

DD FORM 110  
(Your trip ticket)

- It's your authority to use the vehicle.
- It lets everybody know how you take care of your vehicle. (Before, during and after operation checks.)
- If used right, it'll help to keep your vehicle rolling...through thick or thin.

**USE IT...RIGHT**