

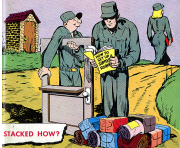
**PS**

THE  
**PREVENTIVE  
MAINTENANCE  
MONTHLY**

**READ THIS MONTH**  
**Pages 2-12**

June 28

1955 Series



**STACKED HOW?**



Bookman's Column  
Chapter and Verse on...

# CANNIBAL STEW



*Dear Staff - What  
a fine job you've done on the cannibalization  
of vehicles. I'm glad to see you've  
done it, but I'm sorry that you've  
done it. I'm glad to see you've  
done it, but I'm sorry that you've  
done it.*

Dear Sgt. K. L.

To clear the air let's start with a definition. The DASA defines cannibalization as, "to remove serviceable parts from one item of equipment in order to install them on another item of equipment."

Now that we stated questions, let's go a step further and quote from Army Regulation AR 750.3, Section 13, paragraph 13 as amended by Change 1 says, "Maintenance by cannibalization, that is, the removal of serviceable parts from one item of equipment for use in repairing another item of equipment will not be accepted except—"

- 1. In emergency repair cases in forward areas where removal with a supporting unit cannot be quickly obtained.
- 2. As may be specifically authorized by the head of the activity in which assigned depot maintenance responsibility for the equipment concerned or assigned maintenance responsibility when depot maintenance is the responsibility of another Department."

There's a trouble: Taking parts from already cannibalized vehicles to perform maintenance from being the trouble when you can't get parts in our great country. And we should note that any equipment that runs on organizational parts runs up with the Main Transporter.





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The magazine needs your ideas and contributions. Don't let a passing moment pass. Send ideas to Sgt. William P. Wagner, Machine Firing Squad, Hurlburt Barracks, Fort Belvoir, Fort Belvoir, Illinois. All contributions are kept in confidence.

In order to remain an excellent company journal, this magazine must be read by the largest number of company personnel. It is your responsibility to keep the magazine in the hands of all interested personnel. Encourage your fellow company personnel to subscribe to this magazine. Inform them of the valuable information and articles contained within the magazine. Encourage them to send in their own articles and contributions. Encourage them to send in their own photos. Encourage them to send in their own letters to the editor. Encourage them to send in their own suggestions for improvement. Encourage them to send in their own feedback. Encourage them to send in their own comments. Encourage them to send in their own praise. Encourage them to send in their own criticism. Encourage them to send in their own everything. Encourage them to send in their own nothing. Encourage them to send in their own everything and nothing.

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# FOR A

## AND BAIL MISSION

Gather round, folks, and let's look over some of the things who've been happening to the M48 medium tank since the first began rolling off the assembly line.

There hasn't been a pinch-pipe-fitter factory, changes and a lot learned about 'er through testing and use in the field. In there's made a few supply and maintenance staff that you'll be interested in.

Why not just start at the front-to-rear end again, say—and work work our way up? OK?



**Front-wheel hubs** have new design, emergency brake plugs. The earlier type plug has a 1/2" in. of free space, which will avoid one problem you've awfully careful in removing it. If one gets damaged, y'can enter the lower eye plug, which has an external hex head and uses a standard OVM nut/wrench. It's Ord Stock No. 11-38-044402.

To take front-wheel bearings, you remove the bearing plug and use the

same hole for checking the oil level. Fill the hub when the side plug will not run on this same hole. Side hole hole must be above the level hole.

The new model hub has a hole on each side. This is so that you're always up-for-filling—now, huh?

**Hub nuts** and O-rings should be replaced when you find excessive hub-upte around the hub. But remember: don't do this—always because oil around



# SMOOTHER RIDE ON YOUR M48

the hole, since the metal depends on the shape of the corner being filed.

When inserting the Dring—its cone with a new seal—first lubricate the seal and with liquid hand soap or saddle soap and then roll the seal up the spline and into the groove. Take it easy! Don't stick or pinch the Dring—you'll ruin it.

Both ends have a tendency to back off when legs ride right. Keep 'em right as possible. When the rear wheel

disk is mounted to the fork, the cone should be tightened—then retightened after the tank runs down miles.

When replacing a rear wheel cone, check the cone quickly—as well as the inside surface of the main hub housing—the edges of steel or dirt. If yoked any, better replace the inner seal and with a double lip seal (K&L Seal No. 0254-053556).

Keep in mind that the cone is loaded by a cone installed on a white bearing.

## TRACK WEDGE-BOLTS

Heavy good track, heavy heavy track and connector wedge-bolts should be kept right. But, you can't always do it.

How right is right—and how right is not right? Good question.



THEY ARE THE HEAVY BOLTS THAT HOLD THE TRACK TO THE TRACK LINKS. THEY ARE THE HEAVY BOLTS THAT HOLD THE TRACK TO THE TRACK LINKS. THEY ARE THE HEAVY BOLTS THAT HOLD THE TRACK TO THE TRACK LINKS.



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Surely, what's the best test for  
driving the connectors into place?

Let J. L. R.

Dear J. L. R.,

Your letter with those real connectors is so useful so that the connector  
wedges will answer as nearly as possible—in the trade—the question.

REMARKS BY JOHN L. RICHARDSON, JR., OF THE  
FORD MOTOR CO. THE NEW TYPE WEDGE IS THE  
BEST OF THE TYPE AS FAR AS THE NEW TYPE  
WEDGES ARE CONCERNED. IT IS THE ONLY ONE  
WHICH WILL HOLD IN PLACE AND NOT  
SLIP OFF THE END OF THE CONNECTOR.



IN OTHERS, THE WEDGE SLIPS OFF THE CONNECTOR AND  
THE WEDGES ARE THE ONLY TYPE WHICH WILL  
STAY IN PLACE WITH A WEDGE OF THE TYPE WHICH  
WILL HOLD IN PLACE AND NOT SLIP OFF THE  
END OF THE CONNECTOR. IT IS THE ONLY ONE  
WHICH WILL HOLD IN PLACE AND NOT SLIP OFF  
THE END OF THE CONNECTOR. IT IS THE ONLY ONE  
WHICH WILL HOLD IN PLACE AND NOT SLIP OFF

A labor experimenter has shown the best way to install a block of work on the  
M-48 is:

THE FIRST STEP  
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## Down in the '40's



### GET OUT

Lifting your 1948 with power-park with the main sling system you have to disconnect the governor linkage to prevent bending it when you hook up to the necessary end of the engine.

You can leave lots of fun trying to see that governor linkage when you inspect the engine.

If you transfer up a little longer hook-like device below, out of 1/2" or 1-1/4" inch unthreaded rod stock, you'll be able to hook it into the main beam in the necessary case lifting plane without removing the governor linkage, and can lift the engine without having anything.



### WALK THE BIRDY LINKAGE

You've gotta give a little extra attention to detaching and rearing linkage.

If it's an early 48, the rear vertical shaft on both the steering and shifting linkage are equipped with a square drive that merely fits out of a square socket deep down on the vehicle base.

But in the later 48's the linkage rods don't come apart in this joint. Both shaft's dimensions at the bearing mounting location are cut high on the transmission. Double-check this and you'll rip something up.

Here's how to disconnect the linkage on the later job:



The early models with the torque-drive set-up come apart very enough. But putting 'em back together is something else again. You find it isn't so easy hooking up the drive and torque, while at the same time grappling with a few more of power plant.

To save time and temper, detach the linkage from the transmission and replace it after the power pack's installed.

## engine room

You'll note that on this early operator-bearing engine, the cooling fan is not like the rotating fan on all the transmissions.



THE 100 IN DIMENSION IS THE SAME AS THE 100 IN DIMENSION OF THE TRANSMISSION HOUSING.

THE 100 L DIMENSION IS THE SAME AS THE 100 L DIMENSION OF THE TRANSMISSION HOUSING.

### TRANSMISSION HOUSING

In case you should ever have to make an emergency transmission repair, note on the M-1 for the T-11—here it is.

Before having another shaft-hub into place, make sure it's got three holes in the end-cover supporting its mounting flange. They're put in at the factory or in rebuild for use on these two models. In either it's a model CD-400-4, -11 or -12, check for these holes in the flange. Or you may end up in the hole yourself.

For emergency use of one of the earlier jobs (without the holes), your Chevrolet supports and might make a few tricks in end-covers. They'll be you up, one way or another. A Modification Work Order covering this subject is on the way.

Transmissions with non-drilled flanges can't be handled in all cases with the using the CD-400 motor with no trouble at all.



## SKIRTING WOE WITH LITTLE JOE



**Hydrocarbon lock** can come from a leaky water-valve being run full way into the cylinder. Or, from water getting in through the exhaust system. (They ruin that wash job.)

You dig the water to BENCH, and adjust—the piston rings up against a "block" of fuel that won't give the scumming air way.

To avoid damage, check for hydrocarbon lock before you start—particularly if jets are been used for a few days. You do this by running for one hour with the manual choke (Fig. 1), if there's one. Can you don't have a hand

Chokeless, you'd turn a hydrocarbon lock position like this out to 20 inches. But if you give make emergency use of LFI for low-revving the lock by taking out the spark plug and hand-cranking 'em till the cylinder's clear of fuel.

Always "test out" a brand new LFI. Just as you don't drink from a jug—before you start it. Chances are there'll be enough petroleum oil in the cylinder to start a lock. If so, heat it out the same way.

**Water vapors** can happen if your fuel pump-diaphragm gets porous and lets enough gas into the carburetor to allow the oil so much it won't lubricate the cylinder. Watch for these danger signals: all level run high, bubbles on



manifold, run 'em over with a tank of clean-but dirty—ON-OFF manual mode of the starter (squirter) switch (Fig. 2). If don't locked, you'll find it.





for repairs, or installing "gaskets" (Fig. 11). If they show up, let Oel know about it.

**What's** any oil left in your generator housing, if it's an early model with no drain hole provided? You can fix things in three ways by drilling a 1/16-inch hole in the bottom of the generator housing at the lowest point of oil flow (Fig. 11).



**Oil** drain-neck handles can get too short or of poor enough so to let oil run out of the crankcase. You can get



handles clip (Oel Item No. 2144, 1000041) that'll hold the handle steady (Fig. 11). But unless you can't get one, always make sure that handle's turned right to **CLOSED**.

**The** oil drain cap has two shut-off valves and the drain hose can be another source of pain for your car. It often gets clogged with mud and debris or drains, or the opening on top fails to engage the quick-disconnect valve-to-drain tube. In either case the oil runs into the fuel tank and you've got a fire hazard or a polluted engine.

**Best** way to beat this one is to have a man underneath or use whatever else means to flow or move it you can the handle to **DRINK**. If not, wind a wire up through the drain hose till it locates any clog or that's clogging the cap. Then try again.

**Caution**, if the drain tube where the opening in top of the cap, there's not much you can do but fix or gaggle—and that changes the ball. (And maintenance is gone, scratched the tank cover L71 for the power pack is pulled.) So if now, there's no way to get at this little drain thingy when L71 and the power pack are in place.

If and when the ball gets used for a drain run, get rid of all the gunk by opening the ball-flow drain valve, or moving the main engine filter and drain-hole covers.

# M48

## SPECIAL TOOLS



Here's the latest addition to special tools you'll need for organizational maintenance on the M48: Tool Set, Organizational Maintenance (Oid Exhaust, Special, Set A, Bufile 41-T-3448-306; Tool Set, Organizational Maintenance (Oid Exhaust, Special, Set B, Bufile 41-T-3449-302.



	Part No.	Quantity	Unit Price	Total Price
1. Oid Exhaust (Special, Set A)	41-T-3448-306	1	\$1,000.00	\$1,000.00
2. Oid Exhaust (Special, Set B)	41-T-3449-302	1	\$1,000.00	\$1,000.00
3. Oid Exhaust (Special, Set A)	41-T-3448-306	1	\$1,000.00	\$1,000.00
4. Oid Exhaust (Special, Set B)	41-T-3449-302	1	\$1,000.00	\$1,000.00
5. Oid Exhaust (Special, Set A)	41-T-3448-306	1	\$1,000.00	\$1,000.00
6. Oid Exhaust (Special, Set B)	41-T-3449-302	1	\$1,000.00	\$1,000.00
7. Oid Exhaust (Special, Set A)	41-T-3448-306	1	\$1,000.00	\$1,000.00
8. Oid Exhaust (Special, Set B)	41-T-3449-302	1	\$1,000.00	\$1,000.00
9. Oid Exhaust (Special, Set A)	41-T-3448-306	1	\$1,000.00	\$1,000.00
10. Oid Exhaust (Special, Set B)	41-T-3449-302	1	\$1,000.00	\$1,000.00

	Part No.	Quantity	Unit Price	Total Price
11. Oid Exhaust (Special, Set A)	41-T-3448-306	1	\$1,000.00	\$1,000.00
12. Oid Exhaust (Special, Set B)	41-T-3449-302	1	\$1,000.00	\$1,000.00
13. Oid Exhaust (Special, Set A)	41-T-3448-306	1	\$1,000.00	\$1,000.00
14. Oid Exhaust (Special, Set B)	41-T-3449-302	1	\$1,000.00	\$1,000.00
15. Oid Exhaust (Special, Set A)	41-T-3448-306	1	\$1,000.00	\$1,000.00
16. Oid Exhaust (Special, Set B)	41-T-3449-302	1	\$1,000.00	\$1,000.00
17. Oid Exhaust (Special, Set A)	41-T-3448-306	1	\$1,000.00	\$1,000.00
18. Oid Exhaust (Special, Set B)	41-T-3449-302	1	\$1,000.00	\$1,000.00
19. Oid Exhaust (Special, Set A)	41-T-3448-306	1	\$1,000.00	\$1,000.00
20. Oid Exhaust (Special, Set B)	41-T-3449-302	1	\$1,000.00	\$1,000.00





DESCRIPTION	QTY	UNIT PRICE	TOTAL
Hand saw	1	10.00	10.00
Circular saw	1	25.00	25.00
Power drill	1	30.00	30.00
Hammer	1	15.00	15.00
Wrench	1	10.00	10.00
Screwdriver	1	5.00	5.00
Tape measure	1	12.00	12.00
Utility knife	1	8.00	8.00
Flashlight	1	18.00	18.00
Work light	1	22.00	22.00
Power cord	1	15.00	15.00
Power strip	1	12.00	12.00
Power outlet	1	10.00	10.00
Power switch	1	8.00	8.00
Power plug	1	5.00	5.00
Power cord reel	1	20.00	20.00
Power cord extension	1	15.00	15.00
Power cord adapter	1	10.00	10.00
Power cord converter	1	12.00	12.00
Power cord splitter	1	8.00	8.00
Power cord comb	1	10.00	10.00
Power cord protector	1	15.00	15.00
Power cord cover	1	10.00	10.00
Power cord sleeve	1	12.00	12.00
Power cord braid	1	15.00	15.00
Power cord shield	1	18.00	18.00
Power cord shielder	1	20.00	20.00
Power cord shielder kit	1	25.00	25.00
Power cord shielder kit with instructions	1	30.00	30.00
Power cord shielder kit with instructions and a power cord shielder kit with instructions	1	35.00	35.00

Any changes to the list will be made to the publication for which you order.





But all the changes at—

## TANK ENGINE HYDROSTATIC LOCK

Hydrostatic lock-out is a pain in the neck (and for diesel using air-cooled engine tanks).



Here's what's happening to 404-1770 and 403-893 power plants. A radiator's left standing with a full fuel tank. Rising temperature cools the gasoline in suspension. Then, when the pressure in the fuel-tank, filter-assembly (L243), or hose, it'll cause the caps to open and let the excess fuel drain out. But sometimes, the caps fail to open—because of a bent rubber gasket seal bleeding in the cap-spring, for example.



If sedimentation occurs, there's a good chance, starting with your carburetor and (and) into the other cylinder.

When the tank has been fully primed, however, after initial start, you'll see a "hydrostatic" lock situation.

The next time you try to start, or attempt that, you'll be hydrostatically lock.

**NOTE:**  
Always use the  
appropriate  
torque.

A common mistake is to use too much torque on the screws that fit the fuel filter housing. A "rule" is that you should use 10.



Always torque to 10.

Question is how to keep this from happening to you. There's one sure way—and you'll never be writing a letter—on the subject. Just be sure that the

ball shut-off valves are closed when you're not operating the vehicle (Fig. 1). And before starting "ball run" your engine for hydraulic leaks.

Keep in mind—we're talking about the shut-off valves—not the fuel shut-off switch or dipper at your instrument panel.

Also TM's will be closing the valves when the tank is to be left unused for any extended period of time. That includes such as your overnight stops. A

ball valve usually stays—but a small price to pay for having your engine inoperable. Right?

On the M47 you'll want to take special care with handling of the fuel shut-off valve assemblies on the ballhead (Fig. 2). See that it fits snugly and snug them together you get on the valve handles. Otherwise, you'll get exhaust leaks from the personnel frame to the crew compartments—and you'll get no sleep without benefit of "Taps."



### LIGHT TANK EDITION

Your walk-out will get copies of that special issue of *PS Magazine* which tells all about the M47 winter tanks. All you need do is drop a card to *PS Magazine*, at Aberdeen Proving Ground, Maryland, and tell how many copies of the special light tank issue you need. They'll be sent right to you.

You can get copies of other back issues of *PS* the same way. Of course, you get distribution of new issues through your regular publication channels.

# SAVE A CABLE

YOUR WIRE IS MADE OF COPPER, WHICH CAN BE RECYCLED WITH STEEL AND BRONZE. BUT WITHOUT THE PROPER FACILITIES, THE COPPER IN THE WASTE WASTEWATER, THE COPPER WIRE THAT WOULD BE RECYCLED, AND THE COPPER WIRE THAT WOULD BE RECYCLED, THE COPPER WIRE THAT WOULD BE RECYCLED, THE COPPER WIRE THAT WOULD BE RECYCLED.

IN THE U.S., THERE ARE A FEW FACILITIES THAT CAN RECYCLE COPPER, BUT THERE ARE MANY MORE THAT CAN'T. THAT'S WHY WE NEED TO RECYCLE COPPER. WITH YOUR WIRE, WE CAN RECYCLE A LOT OF COPPER. WE CAN RECYCLE A LOT OF COPPER. WE CAN RECYCLE A LOT OF COPPER. WE CAN RECYCLE A LOT OF COPPER.

## STEP 1



WITH YOUR WIRE CUTTERS, CUT THE WIRE INTO 12 INCH LONG PIECES. THIS IS THE BEST SIZE FOR RECYCLING.

THE WIRE IS MADE OF COPPER, WHICH CAN BE RECYCLED WITH STEEL AND BRONZE. BUT WITHOUT THE PROPER FACILITIES, THE COPPER IN THE WASTE WASTEWATER, THE COPPER WIRE THAT WOULD BE RECYCLED, AND THE COPPER WIRE THAT WOULD BE RECYCLED.



WITH YOUR WIRE CUTTERS, CUT THE WIRE INTO 12 INCH LONG PIECES. THIS IS THE BEST SIZE FOR RECYCLING.



THE WIRE IS MADE OF COPPER, WHICH CAN BE RECYCLED WITH STEEL AND BRONZE. BUT WITHOUT THE PROPER FACILITIES, THE COPPER IN THE WASTE WASTEWATER, THE COPPER WIRE THAT WOULD BE RECYCLED, AND THE COPPER WIRE THAT WOULD BE RECYCLED.



THE WIRE IS MADE OF COPPER, WHICH CAN BE RECYCLED WITH STEEL AND BRONZE. BUT WITHOUT THE PROPER FACILITIES, THE COPPER IN THE WASTE WASTEWATER, THE COPPER WIRE THAT WOULD BE RECYCLED, AND THE COPPER WIRE THAT WOULD BE RECYCLED.

WE CAN RECYCLE A LOT OF COPPER.

THE WIRE IS MADE OF COPPER, WHICH CAN BE RECYCLED WITH STEEL AND BRONZE. BUT WITHOUT THE PROPER FACILITIES, THE COPPER IN THE WASTE WASTEWATER, THE COPPER WIRE THAT WOULD BE RECYCLED, AND THE COPPER WIRE THAT WOULD BE RECYCLED.



WE CAN RECYCLE A LOT OF COPPER. WE CAN RECYCLE A LOT OF COPPER. WE CAN RECYCLE A LOT OF COPPER. WE CAN RECYCLE A LOT OF COPPER.

## Connie Rodd's "WORT IS WORTH GETT'N"



### *Don't mow*

Your truck might finally be back to work in a condition resembling systems oil treated up. Which can be one of the reasons engines go on the block early.

TR God (TR says to clean this system, the circulating rubber and all the remaining sludge once every six months. But nothing says you can't do it more often, particularly on older engines. And be sure to buy protection to eliminate blow-back on the pump—correctly sized and not linked or exposed first.

### *Hydraulic fluid's up oil*

Oil may be OK in some hydraulic machines, but when it comes to the hydraulic brake system of your truck—no way.

The trick is that hydraulic oil is a mineral oil, the kind that comes out of the ground. And mineral oil is bad on rubber—makes it swell. If you put it in your brake system, it'll swell the cups in the master cylinder or feed, you'll soon have no brakes at all.

That's why you've always wanted to keep your greasy hands off those caps. Even a greasy fingerprint can swell

your braking system, or at least make it tougher to work.

When it comes to your vehicle's braking system, stick to Fluid, hydraulic brake, God Stock No. 51-F-100-711. Unlike oil, this is a mixture of organic stuff like alcohol, glycol and ester oil. Which doesn't affect rubber.

To make sure the next guy doesn't foul the works, warn this in big letters on every can of hydraulic oil.



And to drive the easy home, hang up this sign in your shop:



You'll save yourself a lot of work, Uncle Sam a lot of money and give yourself on your buddy a break. And that's no oil.

## Battery short?

Is that battery on your M17 coming up short? If so, chances are the left battery-to-main-jumper-bus cable insulation is being cut by the sharp edge of the fuel tank. The same problem popped up on the M41's and M46A's, but MPM and GCH-11 found that



is a fixer. It stopped the trouble by covering the cable. Why not do the same thing for your M17.

## Tight nuts

Like so many other nuts on the loose, battery hold-down washers get with lock washers. And with batteries bouncing around, you'll probably find yourself with broken retaining cables.

Make sure your 115-amp truck's hold-down wing-nuts have washers, and if they haven't—put 'em there. And be sure those wing-nuts are on tight. Otherwise they'll fly away.



And while you're at it, check the jumper cable between the batteries everyday. Warden from cables, sockets and bad insulation can be the beginning of trouble. Straighten wires out and you'll be right. There's a TB on the way about this.

## Tire fixings

Take care of those storage-box hinges on your 115-amp tank, because after that box is gone you won't get another. TB 3-271-2 says it's to be removed and scrapped after it's served its time—and no replacements are being provided.



Take the hinges at every C service (1000 miles) if you're carrying fuel. If by chance the hinges are already shot, try welding on a set of matched hardware hinges. That'll give the old box a new lease on life.

## Slow-hand

The last thing from the rubens of an M17 wrecker can burn the paint off your equipment. And if it gets in the job, it can make you feel like James cooking a steak.

But add the right extension to its pipe and it'll blow right, sure as shootin'. Pumps that could wear and blow

the pump on nearby pumps or cloth back from the cab onto the airway.

The V6's working extension is a 1-in pipe, 12 inches long. Curve it so that it faces downward (Fig. 1). And at the



back end, weld a flange with hole holes that match those in the tall pipe's flange. Then bolt the flanges together.

The removable flange makes it easy to take off the extension, so you can use your forklift equipment—should you want to go working.

You can regulate the M6's extension point by setting for:

1. 20° extension	2. 30° extension
3. 40° extension	4. 50° extension
5. 60° extension	6. 70° extension
7. 80° extension	8. 90° extension

But make sure you don't drive a curve on your tires while that extension or the wheels will wring out. The heat you dry out cracks the rubber and weak-



ens it breaks in less work's dough-ness. Be kept in pointed away from the rubber always.

### *Life-cost against cost*

Refusing too long can make you sorry.

That's what happens in the 1-141-ton M64 water's hand-held cable and its housing, if it's run over for a long time. When you start out again, the run makes the cable kink where it enters the housing—won't let the brake release. Unless you do something up it, you'll have the brake bring.



By simply lubing the cable where you park the rollers, you'll change its future. Not only will it help the cable, but the tube'll speed onto the housing and help there, too. Should the housing run too much, it's time for a change.

With holes in the cable, you won't be dragging your wagon. It'll still move along, but you gotta be careful not to overtake. Too much oil might get on your skin. And that's not good for nobody.



## *Do your attic better?*

Some like the colder the weather, the more chance there is that you'll burn up the engine in your Car (MFI: unphilosophical organization). And it's likely to be your own fault.

**It works like this:**

**WALLS HEAT UP** AND COOL AT NIGHT

When it's dark outside, the sun's rays are scattered away, and the air around the house is cooled down. The air in the house warms up. It "flows" to the top of the house and gets trapped above the ceiling. Call 1-800-275-1844. Please don't ask for a free copy of the book.

**WALLS HEAT UP** AND COOL AT NIGHT

When it's dark outside, the sun's rays are scattered away, and the air around the house is cooled down. The air in the house warms up. It "flows" to the top of the house and gets trapped above the ceiling. Call 1-800-275-1844. Please don't ask for a free copy of the book.

**DO NOT BUY AN ATTIC INSULATION KIT FROM ANY STORE. IT WON'T LAST IF IT'S MADE IN THE U.S.A. AND IT'S MADE IN THE U.S.A. THAT'S WHY THEY CAN'T GET TO THE STORE TO BUY IT. DON'T BUY ONE.**



**When it comes to insulation:**

## *Not too much, not too little*



For the results you want, you have to use just the right amount, and you'll feel that in your life when:

Insulation can cause your equipment to fail or cause damage to existing gear, and the whole you start like a dog.

Insulation is a continuous takes the place of air that's needed for ventilation. And it's your safety and you're in the engine's heat.

Insulation can cause your work to slow down, and the life'll need over your time, think things will be.

But if no your attic things and you're asking for trouble, it can cause the whole to get like a dog.

If your attic order doesn't tell you how much space to use on a fitting, then you're not it right to use from the part being used. This way of the total part is the one's better around the fitting.

There's more than things in controlling that controlling. If the engine of your job is too low, there's not enough air to clear and cool the engine like it should. It means you're using too much insulation and you'll get the most work. So, make sure for the right life level in all your home and equipment.

So then, there's no such thing as a free lunch, unless you've got your life under and your life is not you.



## BELT THEM AROUND

Check your car-belt's condition. With its belly whirling from pulley to pulley, it gets lots of wear. The best way to cut down this wear is to tighten it like your DM says. But wear it will, so keep your eye on it, and when you see these signals's time for a change. If your vehicle's got double belts, change 'em both at the same time.

### CRACKED BELT

CRACKS ARE THERE HAVE "CRACK" THERE, IT CAN BECOME WEAR WITHOUT ANY WARNING.



### LOOSE BELT AND BUCKLE

IF YOU CAN'T GET IT TIGHT, YOU'RE IN TROUBLE. IF YOU CAN'T GET IT TIGHT, YOU'RE IN TROUBLE. IF YOU CAN'T GET IT TIGHT, YOU'RE IN TROUBLE. IF YOU CAN'T GET IT TIGHT, YOU'RE IN TROUBLE.



**CRACKED BELT** ... CRACKS AND WEAR ARE SIGNS YOU SHOULD REPLACE THE STRAP IMMEDIATELY. CHECK FOR CRACKS AND WEAR ON THE FRONT AND BACK.

**LOOSE BELT AND BUCKLE** ... IF YOU CAN'T GET THE BELT TIGHTENING STRAP TO FIT, OR IF THE BELT IS LOOSE AND SLACK, YOU MAY BE IN TROUBLE. IF YOU CAN'T GET IT TIGHT, YOU'RE IN TROUBLE.

**LOOSE BELT AND BUCKLE** ... IF YOU CAN'T GET THE BELT TIGHTENING STRAP TO FIT, OR IF THE BELT IS LOOSE AND SLACK, YOU MAY BE IN TROUBLE. IF YOU CAN'T GET IT TIGHT, YOU'RE IN TROUBLE.

# JOE DOPE

## HEADSPACE

on the modified  
10-cal Browning  
M2 machine gun





HOWARD? YOU DO BY INSTRUCTIONS IN THE TOOL, ORANGE 4, PARA 11C



WHEN IT'S SCREWED IN ALL THE WAY, THE BARREL STICKS OUTTA THE BARREL EXTENSION.



IF THE GUN ACTS SLOOOW OR THE GUN BACK IN ITS HOOD AND UNSCREWS THE BARREL, ONE MORE CLICK. THE SHOT IS ENOUGH ADVANCEMENT FOR A GUN THAT'S IN GOOD SHAPE.



IF STILL IN GOOD SHAPE, ONE MORE CLICK MIGHT BE CLEAR. IF NOT, LIGHTS LIGHTS CRITICAL OR OTHER ADJUSTMENT.



3 UNSCREW THE BARREL TWO MORE TIMES TO RELEASE THE RETRACTING HOOD. SO THE GUN GOES INTO BATTERY...



LEFT BARREL... WHEN YOU FINISH TAKING BARREL OFF CLICK, THE SOUND OF THE BARREL SHOULD EXTEND THROUGH THE BARREL EXTENSION.



"YOU FELLER SHOULD PUT UP A PW-UP ABOUT IT. MORN' LIKE A GUYER PW-UP!"



"WE ALWAYS HAVE."

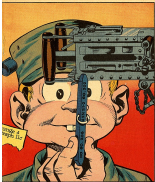


# Dope Sheet

Setting headspace by ear is old hat  
Or by pre-arranged marks, this-or-that.  
Modern headspace adjusting,  
Will keep you from busting.  
A weapon that'll go right to bat.



**WE HAVE THE WORLD'S BEST EQ**



**EQUIPMENT... Take care of it**

HEY, WHO  
DROPPED  
THAT  
MAGAZINE?  
WHEN I  
SAID  
"HEY,"  
YOU  
DROPPED  
IT!

LOOK, THE HEAD-  
STRUCK SOLDIER  
TAKING CARE  
WASN'T COMING WITH  
YOUR HELPER!

IT'S A PRECISION  
INSTALLED! DO  
PRACTICE WITH IT  
BEFORE BLACKOUT  
OPERATIONS!



THE END IS AT HAND!

1. RAISE RECEIVER COVER... PULL BACK SLIDE BRACING HANDLE... INSERT BRASSER END OF A .30-CAL. METAL LINK BETWEEN BRASSER END AND BARREL EXTENSION. PRESS END OF THE LINK WITH THE TOE OF THE RECEIVER.



2. SCREW BARREL IN ALL THE WAY... IT'S END UP BY TIGHT THE BARREL EXTENSION



3. SMOOTH BARREL TWO SLACKS



4. REMOVE THE END 30 BOLTS GO FORWARD









EXACTLY! THE WAY YOU CAN RELY ON THE GADGETS TO CHECK READER!

A DICAL LABEL BELONGS ON THE RECEIVER FORWARD OF YOUR GUN... TO BEING ANY ERRORS ABOUT THE NEW METHOD OF READER ALIGNMENT.

1. A COAT OF CLEAR LACQUER TO HELP THE DICAL STICK... LET IT DRY.
1. THEN APPLY DICAL.
2. ANOTHER COAT OF LACQUER ON TOP.



GET  
HALF-MAST  
MAGNOLIA'S

ADVICE

ON



## MY HYDRAULIC LEAK OUT

Dear Mr./Miss,

You said in PE 14, that if we couldn't get 3-798 hydraulic oil for our 874 Fish Mower (2000 cc) OE 10 is temperature down to -10° F. Possible is that you didn't say whether the two oil's could mix.

The 874 hydraulic oil tank holds about 80 gallons of oil. When we put the container they had the type 3-798 oil in the hydraulic system. When the oil first went down there was, and we tried to get the 3-798—no dice. We don't want to drain all of that oil and put 80 gallons of OE 10 in there, get 3 more, etc. If we can get that and add OE 10, it'd be the answer?

Ag 3, R. P.

Dear Ag 3, R. P.,

One thing is certain—you don't mix OE 10 and the 3-798.

Here's how to solve your problem: Completely drain the 3-798 from one of your tractors. Careful, tho'—when you drain it, use it, cause you'll use this oil for the other four vehicles.

Make sure you don't get dirt in the oil when you're draining it. Put it in clean, tight containers for storage. Take

the vehicle you drained and fill it with OE 10.

When you run up all the stored 3-798, drain another one and fill 'er with OE 10. Go right down the line like this until all the 3-798's used. You've got it made. Be a good ole' to make which tractor has which in it.

Half-Mast

## CRACK YOUR BRIDGE

Dear Half-Mast,

The bridge markings on my 861 wonder say "15". Shouldn't it read "20.125"?

Ag 3, E. Mott.

Dear Ag 3, E. Mott,

The reason you see only a "15" on your 861 is that fully equipped, it should be able to cross a bridge that can hold 15 tons. The "dash-125" would mean it's a vehicle that weighs 12 tons and, plus its payload, of 7 tons, OK for a bridge that can take 19 tons.

But unlike a car or other carrier, the tractor doesn't carry its own. So, the only reason you see you need to do "15", then, you add the total weight of its

which, and even your bridges. When you take it I when you come to them.

*Half-Mast*

### IN THE GROUND

Dear Half-Mast,

How can the cable be kept from coming out from between the sheaves on the 180° member's rear wind section? Every time we do a steady job we have that as an added headache.

CHAS. D. B.

Dear Chas. D. B.,

To keep your cable between the sheaves on the rear wind section, and not happily-leaping about, you've got to get the sheaves adjusted right. And to do this, first lay a 1/8-in. diameter rod between the sheaves (Fig. 1).



Then adjust the sheave rod and so the she-cylinder attachment to the hoisting rockers arm, so that when you put the hoisting air-valve into the OFF position, you'll just close the sheave on the rod (Fig. 2). That way, there'll be no less than 1/16-in. space between the two sheaves in the engaged or SQUEEZE position. Which allows no more than 1/16-in. play on the 1/8-in. cable.



Now shift the hoisting control valve into the ON position (Fig. 3) and measure the gap between the sheaves. That should be between 1/16-in. and 1/8 in. (Fig. 4). The cable will then slide freely between the sheaves when you put it out.



And always leave the hoisting sheave air-control valve in the OFF position when putting in cable and OFF when putting it out.

Sometimes the sheaves are set a little too close so you hit them the roller (Fig. 5). That could put enough side-play in the rope to pull it from the sheaves. To fix this, simply move the sheave out in the hoisting bracket, and give the rope the vertical pull it needs (Fig. 6). If you can't move them enough, you'll have to make the bracket's holes longer. A round file is all you need for that job.



After you've done all that, you doubtless have any doubts. For more tips see **THE 30000** (Feb '84).

*Half-Heart*

### OIL CONTROL

Dear Half-Heart,

Can you tell whether the oil in your engine needs a change by checking the color of it on the dipstick? Some say you can. Some say you can't. How about it?

FPC 13, J. R.

Dear FPC 13, J. R.,

Nope. You can't go by looks. Only way you can tell when to change engine oil is by watching the vehicle mileage and oil lubrication chart for your particular vehicle. Of course, you've got different types of operation that will help determine oil change, too.

The oil you're using is a detergent type which does a washing job inside the engine. Before you know it, new and clean oil will look black.

When oil turns dark it's doing a good job of picking up and carrying off carbon or waste products.

On the other hand, if the oil stays light in color to clear you can make a bet—it's leaving the dirt or carbon on the inside of the engine instead of picking it up and carrying it to the sump.

Nope. You can't depend on your looks. Think on the mileage, tube color and driving conditions for the when to change oil.

*Half-Heart*

### RUSTY BRAKE-CYLINDERS

Dear Half-Heart,

Here in Puerto Rico we have found a lot of broken brake cylinders, and almost all are caused by rusty brake-cylinders. In all our semi-annual inspections we find them locked on both sides by rust.

Can you tell me what causes this?

Ign J. N.

Dear Ign J. N.,

Your trouble seems to be caused by salt air and dampness, and you've plenty of rust in your locality.

Your best bet would be to get Out-caster to inspect your cylinders more often than six months. Have them thoroughly cleaned (your master cylinders, too), and any rust removed by polishing with green cloth.

You can look for cracked or out-cylinder boots, and if you find any you'd better get them replaced. Also have the boots shoes checked to make sure they don't have distorted toes. You'll also check sharp edges are really round-bottomed. Smooth off the sharp edges with a file.

Washing your vehicle by driving it into a shallow system is a sure way of making for trouble. You'll get rust in these brake cylinders for sure.

*Half-Heart*

# ARMAMENT



## AVOID CRASHED NUTS

Most, but not most, anti-aircraft units' kind, wing nuts, and people (the ones that leave the wing nuts on their dining chairs's legs folded when they close doors).

As you won't be in a room, remember those wing nuts have to be in the floor if you want to keep them out of the corner table of your 80's airport that's used with your M1 dining chair.

And you'll not have to sit a wing around your finger to remember if you do this—



Now get out those white paint and paint a thin line that shows center of clamp and flange (Fig. 1).



These little white lines will tell you to line up those nuts before the legs are pushed together.

## 4-10-1987'S RIGHT

You can't be too careful with the plasticizing clamp screw (Fig. 2).



When disassembling the M1 machine-gun screw, if you cover the handle on

## HOOD GOOD

OK, he just's the delectable service leader in this man's camp. Smooth, fast, automatic delivery. Watch it, the! You may be one good. That automatic motion can lay you some trouble if you don't have your mind on your business.



You have to make sure one round comes out before you find in the area one. Two shells in the tube can be as dangerous as two men up your shirt and a hole in your shirt. That's just not with it, man.

Just make a face ... ~~smile~~ a smile.

## THE BRUSH OFF

There's no one waiting for the 30-cal. cleaning brush (M), Del Brush No. 30 28-7-000000. Guess you won't get it. There's the wonderful, brush-type brush that's used for cleaning most guns.

This little number's being deleted from supply. Here's what there is to make a manual case so you'll see under something you can't get.



one for the locking block (Fig 1) will pull off inside the air-water motor.



Four-and-a-half turns of the handle are enough to let you remove the plate from the air-water motor without breaking the link. It's 4-1/2—that's enough.

## HOOD YOUR BOO

Some like some operating tools (M) with water's not being turned in and considered obsolete when there's still plenty of slip left in the old pipe.

After without the new relief cut in the red assembly are still going to and will they're rejected for work on the pipe or other cases—not because they're making a relief cut. Hang on to keep it a chance to do its job.



THE RESCUEE SHOULD HOLD ON TO THE ROPE. HOLDERS SHOULD HOLD THE TAG AND KEEP IT FROM SLIPPING OFF THE END OF THE STRAP. WITH THE STRAP SECURED ON THE END OF THE STRAP, THE RESCUEE SHOULD HOLD THE TAG. —AND IT HELD! WHY? BECAUSE THE TAG IS NOT HELD BY THE TAG. IT IS HELD BY THE ROPE.

### 3. SECURE THE TAG FOR HOLDING.



THE RESCUEE SHOULD HOLD THE TAG IN ONE OF THE FOLLOWING MANNER:

### 6.

ONE OF THE OTHER RESCUEE SHOULD HOLD THE TAG WITH THE OTHER HAND. SECURE IT TO THE STRAP. HOLDERS SHOULD HOLD THE TAG AND KEEP IT FROM SLIPPING OFF THE END OF THE STRAP. WITH THE STRAP SECURED ON THE END OF THE STRAP, THE RESCUEE SHOULD HOLD THE TAG. —AND IT HELD! WHY? BECAUSE THE TAG IS NOT HELD BY THE TAG. IT IS HELD BY THE ROPE.



- 1** PLACE THE SHIP WHEEL  
TUBE AT BRASSING POINT ON  
WEST SIDE OF HEADLINE  
SIDE OF TUBE WITH HOLES ON JOE.



- 4** THE BATTERY VOLTAGE SHOULD CHECK OUT WITH  
THE GOOD ONE.



- 7** STAY TO A MINUTE (APPROXIMATE) FROM THE GOOD ONE  
(APPROXIMATELY 100%.)



- 2** PLACE THE BATTERY  
ON THE BRASSING END  
OF THE SHIP WHEEL.



- 5** MAKE CONNECTIONS TO THE BATTERY AND  
CHECK VOLTAGE WITH VOLTMETER. CHECK WITH BATTERY  
AND CHECK VOL. CURRENT TO MAKE SURE IT'S  
GOOD.



- 8** HOLD TUBES IN PLACE (APPROXIMATE) WITH ONE  
HAND. STAY TO A MINUTE (APPROXIMATE) FROM THE  
GOOD ONE (APPROXIMATELY 100%.)



**9** THE BRIDGE AND OTHER BRIDGE PARTS MUST BE PLACED IN THE BRIDGE FORWARD-HOLD IN THE FORWARD END OF THE HULL. THE LEFT END OF THE BRIDGE SHOULD BE ON BOARD IN THE HOLD IN THE FORWARD END. THE BRIDGE PARTS SHOULD BE KEPT IN ORDER BY SIZE. BRIDGE PARTS SHOULD BE KEPT IN ORDER BY SIZE. BRIDGE PARTS SHOULD BE KEPT IN ORDER BY SIZE.



**10** IF BRIDGE PARTS ARE KEPT ON BOARD, THEY SHOULD BE KEPT IN ORDER BY SIZE.



**13** THE BRIDGE PARTS AND OTHER PARTS SHOULD BE KEPT IN ORDER BY SIZE.



**14** THE BRIDGE PARTS SHOULD BE KEPT IN ORDER BY SIZE.



**17** THE BRIDGE PARTS AND OTHER PARTS SHOULD BE KEPT IN ORDER BY SIZE.



**18** THE BRIDGE PARTS SHOULD BE KEPT IN ORDER BY SIZE.



11

HOW WILL THE SIGNAL WORK?

ANYONE WITH THE SIGNAL DEVICE  
WAS PROMISED THE BOMB—THE  
ONE OF THE BOMB BROTHERHOOD  
WAS TO GET. IT WON'T BE LONG  
IF IT GETS IN YOUR HAND TO HOLD.  
IT'S YOURS TO HOLD.



12

THE SIGNAL DEVICE WAS IN  
YOUR HAND ON THAT  
DAY IN MARCH—SOMEONE  
WANTED YOU TO HOLD IT.



15

YOUR SIGNAL IS BEING  
RECORDED IN A SECRET  
PLACE.



16

AN EARLY INVESTIGATION  
WAS DONE—COMPLETELY  
UNEXPECTED—AND IT  
TOLD US YOU WERE IN  
CONTACT WITH US.



19

THE SIGNAL WORKS  
BY TAPPING INTO YOUR  
PHONE LINE IN THE  
MIDDLE OF THE LINE.



THE  
SIGNAL DEVICE WAS  
YOUR AND WE WERE  
YOUR.

# YOU DON'T HAVE TO BE A SECOND GUESSER



When spring has sprung, most smaller big excavators in the chain. And the masses and grams of guys trying to keep their identification weights are about as good as the chance for chains that follow the first winter snow.

Usually as long as good identifying ones, the size fits, but being stamped on the inside back of the chain. But this gets scratched, torn, worn, rusty and otherwise hard to make out. So identifying chains can become largely a matter of record-keeping.

There's a chart that can be a real help in figuring out just which of which. When identification's lost, just make some quick measurements of the length of the cross chains (Fig 1), count the links, also the number of cross chains—then check the chart for the corresponding size size and/or track number.

In most cases, just this cross chain data will identify the firm for you. However, now and then you may have to check the side chain dimensions too.

Of course, the manufacturers won't be exact in used chains because of stretching and bending. But they'll be close enough to let you guessing by a long shot.



Cat. Model No.	Exc. Size	SIDE CHAINS		CROSS CHAINS	
		Length in. (mm)	No. of Links	No. per Track	Link Length in. (mm)
<b>TYPE 13 TRACK, SINGLE</b>					
963 10000-1	4.00 ft.	64.7"	81	9	13.07"
963 10000-4	4.25 ft.	72.7"	87	9	13.07"
963 10000-7	4.50 ft.	80.7"	93	9	13.07"
963 10000-9	4.75 ft.	88.7"	99	9	13.07"
963 10000-12	5.00 ft.	96.7"	105	9	13.07"
963 10000-15	5.25 ft.	104.7"	111	9	13.07"
963 10000-18	5.50 ft.	112.7"	117	9	13.07"
963 10000-21	5.75 ft.	120.7"	123	9	13.07"



## IT'S IN THE NUMBERS



There'll be no more hassles! Instead, looking for numbers of subscription (G-Group) individual manuals if you grab a pencil and go this down. I'll list these magazines which go out of lines: TM 9-7000-1 (50-man self-propelled How 884); TM 9-7001-1 (50-man self-propelled How 884); TM 9-7011-1 (50-man gas motor engine).

ISSN	TM #	ISSN	TM #
1555-1074	7-10	1555-1077	7-10
1555-1078	7-10	1555-1079	7-10
1555-1079	7-10	1555-1080	7-10
1555-1080	7-10	1555-1081	7-10
1555-1081	7-10	1555-1082	7-10
1555-1082	7-10	1555-1083	7-10
1555-1083	7-10	1555-1084	7-10
1555-1084	7-10	1555-1085	7-10
1555-1085	7-10	1555-1086	7-10
1555-1086	7-10	1555-1087	7-10
1555-1087	7-10	1555-1088	7-10
1555-1088	7-10	1555-1089	7-10
1555-1089	7-10	1555-1090	7-10
1555-1090	7-10	1555-1091	7-10
1555-1091	7-10	1555-1092	7-10
1555-1092	7-10	1555-1093	7-10
1555-1093	7-10	1555-1094	7-10
1555-1094	7-10	1555-1095	7-10
1555-1095	7-10	1555-1096	7-10
1555-1096	7-10	1555-1097	7-10
1555-1097	7-10	1555-1098	7-10
1555-1098	7-10	1555-1099	7-10
1555-1099	7-10	1555-1100	7-10

As other numbers are assigned, they'll be listed in PS Magazine.

Just to keep the record straight, special's manuals (70) and 100-volume how-to manuals and maintenance manuals (40) are listed here.

The new numbers will progressively take over all new manuals and revisions of old manuals will pick up the new numbers when published.

### WARRIA, COOO WARRRY!

The ratings in PS starting with issue No. 21 and 18 210-20 20 (see 18), with its Change 2 (3 4 Sept 84) will keep you posted right up to the minute on your PS ratings. To stay there, every month add to your file from "The Scoop" section of PS.





# THE SCOOP



HERE'S A LIST OF ADDITIONAL SPECIAL PUBLICATIONS OF THE CAREER DEVELOPMENT MONTHLY THAT ARE ON ORDER BY A LOT OF YOU!

**1990-91** **COLLEGE CHOICE**—This special publication is a guide to the top 100 colleges in the United States. It includes information on admissions, financial aid, and campus life.

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### COST CONSCIOUS

Dear Sgt. Davis,

I've been looking for some authority that'll allow me and my squad the use on the pieces of heavy Engineer equipment we use. Our squad is assembly-minded and I think it would help if the men were aware of the cost of the items, should we ever drop them. If it's OK to put the price on the equipment, please tell me what I can use for authority and where I can find the prices of the various pieces of Engineer equipment.

W. C.

Dear W. C.,

Your squad's outfit's doing so high gear if you wanna control the cost on your



equipment. There's nothing that keeps you from doing just that, providing, of course, you get commander approval. It falls right in line with the Army's Cost Consciousness Program.

And for those prices on Engineer equipment, you find 'em in Department of the Army Supply Manual, Eng 5-1.

Sgt. Dwyer

### CASE NUMBER

Dear Sgt. Davis,

What's the story on EO 1-1448 covering the J-1/J-2a pulse-type reader that requires a refrigeration source? For some time identical copies of the EO, one dated 4 September 1951 and another dated 25 November 1951. They had exactly the same. What's the story?

Cpl J. W.

Dear Cpl J. W.,

You're really a sharpie to catch that one. I've seen 'em both too. There's nothing on the one dated 25 November to indicate that it supersedes or replaces the one dated 4 September, but since it's



the laws, that's the one to use. You can't requisition one of the least ones and bring yourself right up to date.

*Sgt. Dwyer*

#### WORKING WITH THE LIGHTS

Dear Sgt. Dwyer,

Recently had an inspector lower the beam on my "beam not painted over or after" beam sign, yellow.



As far as we're concerned, our idea is a proven safety feature, especially when working near power lines. The sign it's manufactured painting.

The yellow area stands out, like a hot stove from the driver. It helps crane operators judge distance a lot better since the yellow light area's not always clear when the beam's aimed in line with trees, buildings or wires. An O-D-painted beam at times naturally blends with dark objects which can result in dangerous confusion when paying distances around the beam.

It's not just a regulation that says we can't carry one that sort of safety device. Can you point us anything that'd cover us?

Sgt. W. R. C.

Dear Sgt. W. R. C.,

Your O-D and your good safety ideas can get together on your suggestion and have it standardized into a good safety sig-

nature. And then, when the inspector complains, tell him to see AR 301-12 (Mar 53), para 3.

*Sgt. Dwyer*

To Prospective Maintenancemen...

Buy Don't's Don't...

It Don't Buy Don't's Don't...

Many maintenance people like a good handling job, never get's out-dated.

Knobless steering trials that are entirely "old stuff" to you, might land a hand in your team makes handling Engineer equipment up north of the hoodstock and in other top-off points.

He's a about checking that stuff been and sending it to Sgt. Dwyer to be sure you're it along.

MAIL IT TO:

SGT DWYER

c/o P. O. WASHINGTON

KEENEEN PROMOS COUNCIL, INC.

#### MORE WATER

You can increase the amount of water you're moving if you're using a 24-F-40 German Bopp pump. You see, this pump's a five job reduced to 2-inches.

You get a larger section hose—anything between 2 and 4 inches—and a discharge hose to match. Then change the pipe reducer on the pump to match the hose you're gonna use. Hook 'em up and you're ready to roll.

And you don't hafta worry about the hoses in the engine. They can handle the increase—up to 4 inches.





It's a wise operator who regularly checks the heater tubes and manifold connections on his diesel engine for leaks. It's easy to find an air leak there. And if it's repaired right away, the engine'll get many hours of added life.

Exhaust gases from the pistons start long before they run through a diesel valve inside the diesel engine into manifold and give off heat. This starts the air temperature upward and makes starting easier and easier. But this action of the exhaust has to be completely shut off from the diesel engine tubes too, because any small leak or crack in the manifold connections could let through additional air and cause wear to the cylinder liners, pistons or rings.

A gasket can't be used at both ends of the heater tube because of the expansion and contraction from the temperature changes. It bellows (Fig. 1) as it reacts to expansion in some engines,

while other heater tubes have sleeve-type packings (Fig. 2) instead. Either one provides a good seal.



Here's how you check the intake manifold houses for leaks.

Use the same paper as a starting valve with the exhaust valve closed, and hold a small fire to heat your test papers just as the exhaust valve.



If the exhaust leak shows the paper in, or blows it out, that's the sign of a leak in either the heater tube or seal. The direction depends on whether the diesel engine has a blower. Since a blower puts air in the manifold under pressure, the paper would be forced from the exhaust leak in case of a leak.

You might to check this often. Takes just a minute. Once you find a leak, have it fixed quick. You'll be helping your diesel grow to a ripe old age.



# CONTRIBUTIONS



## BOOM MARKS

Dear Editor,

No need for gawking here for our 1961 week's boom is extended. Just draw right and cover down.

We extend the boom all the way and paint a vertical line on it where it meets the shipper's boom. From that line,

we mark off every foot of the boom with parallel white lines. And at each foot we paint the weight that can be lifted with and without outriggers as stated on the operator's Safe Load Chart.

Allyn W. T. Williams

Abundant Printing Ground, Maryland



## CABLE CURE-ALL

Dear Editor,

We've got a string of M121 and M211, 2-1/2-ton trucks around here. It took two men a helluva long time to changeable Hydra-Matic transmission so when it ran out weight oil—well we started using our time-saving grease slusher.

To make it, we got a barrel of about 5-gal capacity and took a filter cap from a salvage transmission. Then we cut

and a 1/4-in copper tubing down against the barrel's inside so that 2 inches each way of both top and bot-



cap. After that, we drilled a hole in the cap big enough to hold the pipe tightly, and soldered them together. That was it.

With the rig screwed onto the main engine filter-cube, the fumes go down smooth, with the displaced air going up the tube. And nobody has to hold the funnel while you pour.

**Allyl Paul L. Carlyle**  
*Missouri National Guard*

(*The New-Brand's pack of solder-free fluxes drops the spent solder it puts into the cap, one substitute for the other—**if you use gel.***)

### CRACKS OUT OF CRACKS

Dear Editor,

We've found that the photo of the M&M's Igniter and Ignition cables, Fig. 17, page 115, in *The 2-Stroke Manual's* goes with the wiring diagram on page 152 of the same TM.



The guy who put the labels on most of the parts on the No. 1 cylinder cable going into the diaphragm valve is not a very primary level



connection. However, left as the igniter for the spark, and the rest of the cables connect 1, 3, 4, 1 around counter-clockwise.

**PFC Albert Petrella**  
*AFSC (R), San Francisco*

### WASTE, GROUND-SPRING

Dear Editor,

Here's a simple fix for waste ground spring trouble in the light tank family (such as M41, M42, M421, etc.) waste-support rollers.

As is, when you assemble the cap and spring to the roller, the spring has to be placed on the end of the spindle with the loop on the large end of the spring sticking in one of the slots in the bearing supporting one.

About half the time the spring won't hang straight on, when the cap's put on,

the pig tail on the spring won't slide in the center of the cabinet opening of the cap like intended. This means the spring will tend to flex—and it can get wedged in the bearing, with undesirable results.

For a practically fool-proof method of getting the spring in the right place, take a No. 31 drill and put a hole 1/16" deep in the center of the cap. The pig tail on the spring can then be inserted



in the hole first and the loop guided into a slot on the adjusting nut as the cap is put in place.

You've got to be careful. Don't drill the hole too deep and risk a flat-top.

Robert C. Mills

W. Lewis, Washington

(Ed Note—A 1/16 inch is too much—wouldn't leave enough thickness in the cap. Make it 1/32 inch, and you're OK. Four things are completely fool-proof. For your fit—and a little extra—should deep three springs growing in the right place.)

## IT'S A SNAP

Dear Editor,

Those window regulator handles on the M37's (and others) may snap off now and then. When we can't get a quick replacement we do this:



Just you get your glass on the move.

Pat Donald Finley

APG 261, San Francisco

Ed Note—This may be OK, if you're really driving for a window handle, but does your car have a USB to the Chief of Debusen's?



## *Connet Rodal's BRIEFS*

### *Conversion (24/16-D) and brake kits*

If you've been looking for those 24-16 right conversion kits and electric brake-control kits for transport vehicles just take a gander at 24 9-113. It gives the steps you need.

### *Master last longer*

It's easier having it you use OE 18 tubes in your John Deere's steering gear's hydraulic reservoir. Watch for the following steps in LD 9-8034, where +22" F, OE 18, -44" F to -18" E, OE 18, 0" to -60" G, 015.

### *They gotta be right*

If the words from your 125-watt handaxe aren't falling where you're cutting, could be the equilibrator are causing you' up. They have to be just so—no failure you' can make with the rings. TM's 9-2214 and 2219 tell you how to keep 'em going right.

### *Mail it—direct*

Remember that you fill out your Unsatisfactory Equipment Report (UER) Form 488, and mail it direct to Chief of Customer, AT&T-CEDAR, Washington 25, D. C.—per like it says in 24 790-43-5.

### *It's been updated*

When you adjust the clearance of the bolt in the M&M air-debunching linkage make it 1/4 inch. A little more cover bolts. The clearance was set back as 1/8 inch. 24 20 but should be changed to read "1/4 inch." This change will appear in the next version of the change to 24 9-607.

### *Gotta soft grip?*

If the plastic grip on your M1 keyseat gets soft in the sunlight, better now it is for another type handle. Some plastic grips are inflammable and don't hold up under heat. And remember, no keyseat handles go into water depressors.



# HOW ADJUSTED ARE YOU?

THE RIGHT ADJUSTMENTS ON  
YOUR EQUIPMENT WILL HELP  
TO KEEP IT (AND YOU) GOING  
THRU THICK AND THIN . . .



ADJUSTMENT IS A CINCH . . .

AND YOU DON'T NEED A HEAD DOCTOR

Just Thru Through Your Equipment's Technical Manual  
it's All There—Turns, Clicks, Natches, Inches.

SEE YOUR **TM** TODAY AND GET ADJUSTED

