





whether it's Not many people make silk purses out of sows' ears ou can perform a little How? Why, by doing he right kind of maintenance miracle all your own. on your Army equipment-

or whatever. (Just in case you may not know exactly what to do and how-

just give your ol' TM or FM the glad-eye. There's one for

Ask your sergeant.) Keep'er slick, keep'er clean, whatever equipment you've got

keep'er lubed, keep'er adjusted and working rightand your equipment'll pay big dividends

like more cash in your pocket

or maybe bring you through rough weather and rougher terrain, or maybe even keep you alive and kicking (no statement-of-charges), when things really bust loose.

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N THIS ISSUE

FEATURE ARTICLES

2828652 38 884 M74 Recovery Vehicle Boom Loads M48 Tank Gun Automatic Elevator Small Arms Lubes and Cleaning Li'l Joe Output Adjustment 5-Ton Truck Sprag Trouble M41, M42 New Numbers Keep Your RCAT Afloat Supply Room Operation M1 Rifle Quick-Check Air Compressor Care Cartoon Section) Clean Ammunition Welding Rod Care Materials

> tank, truck, dozer

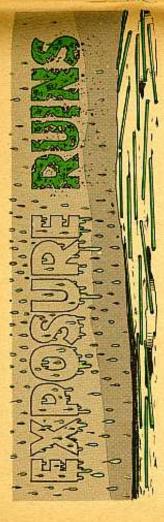
DEPARTMENTS

Connie Rodd

48844444 Engineers Publications Round-up (Engineers) Publications Scoop (Ordnance) Connie Rodd's Briefs Contributions Sgt Half-Mast Armament

glad to answer your questions. Just write to: Sgt Half-Mast, PS Magazine, Raritan Arsenal, Metuchen, New Jersey. Names PS Magazine wants your ideas and contributions, and addresses are kept in confidence.

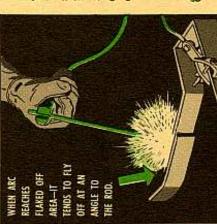
Sure 'nuff-your own miracle



Electric welding rod, of course,

It's a fact, the boss welder of all time couldn't do a good job with rod that has been exposed to moisture.

Once the flux gets wet, it never dries quite right, and it flakes off while you're welding. In the first place, when your arc gets back to the flaked off area it tends to fly off at an angle to the rod, and it's darned hard to handle, especially if your training has all been on fluxed rods.



Also, in the absence of the protective flux gases over the arc and the molten flux over the bead, your weld picks up nitrogen from the air like crazy, and

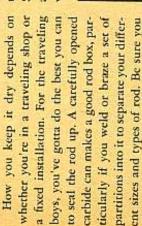
is likely to be hard and brittle. None of this is good for your weld, or for your pride and reputation as a welder.

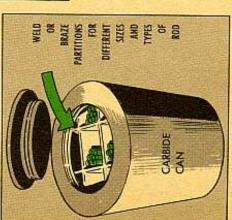


But the answer is real simple: Only open **one** of the 50-lb tins of wire at a time, that is one of each type you stock and use where you are working. Also build a dry-box for your open-stock of rods. This dry-box can be any sort of a cabinet that suits your fancy and whatever you can get to make it out of.



OUR ROD



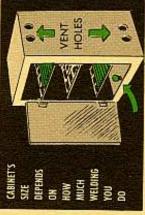


keep it sealed up when you're not using it. A couple of good dry silica gel bags inside will help.

But if you're in a fixed shop with regular electric current, your best bet is a ventilated cabinet with an electric light bulb in the bottom and some way for

the water vapors to ger out at the top.

Such a cabinet can be as large or as small
as you need, according to how much
welding you do.

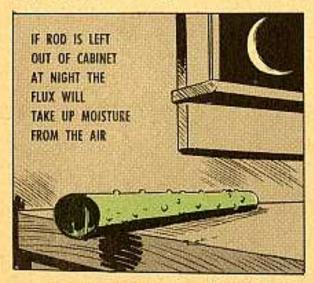


You don't need a big bulb burning, a 25-wart bulb will take care of a small cabinet, and 60- to 100-wart is plenty for a big cabinet. And never let anyone kid you—the savings in rod will far outrun the cost of any current you use. Not to mention the peace of mind you get from knowing that when you weld in a critical place your weld won't fail.

Now don't go overboard on this matter of heat, because you can also spoil the flux on the Exx10 type rod by getting it too dry. Your box should average about 10° warmer than the surrounding air, and should not get more than 20° warmer. So ya see, ya don't need big

KEEP IT DRY

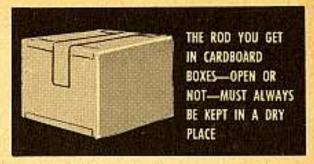
Unless the atmosphere is wringing wet, your rod is QK if it stands out during the working day and you store it in the cabinet at night. But if you leave it out at the welding bench day and night, it won't be long until it starts to fail, even though no water actually touches it. The flux takes up moisture from the air and begins to deteriorate.



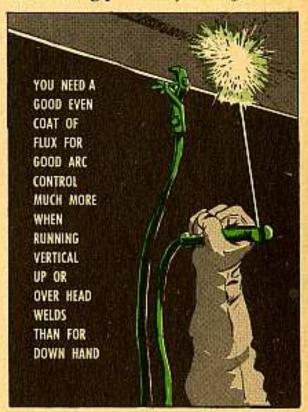
If your rod ever gets really wet, from rain, for example, the best you can do with it is junk it.



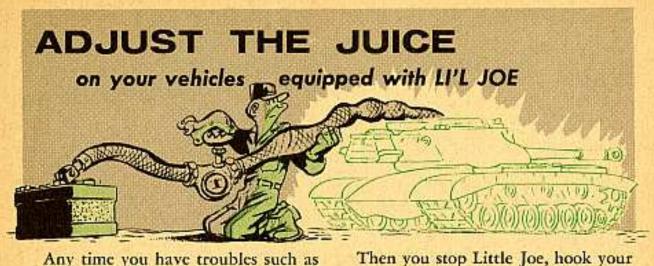
Everything said about open tins of rod goes double for rod you get in cardboard boxes, whether open or not. These must always be kept in a dry place or they'll be ruined.



Of all the rods, the most sensitive to wet flux troubles are low hydrogen types, or your reverse-polarity all-position rods, the Exx10 series. This is not only due to the nature of the fluxes used on these rods, but also because of difficult welding positions you tangle with.



If you get a batch of spoiled rod when you have much out-of-position work to do, get rid of it, especially if your work is anyways critical, like ballistic welding on tank hulls, or pressure vessel work of any type. It isn't fair to you as a welder, or to the men who will depend on your work to use a doubtful rod.



Any time you have troubles such as low batteries and hard starting on your track vehicles, it's a good idea to check the generator output voltages.

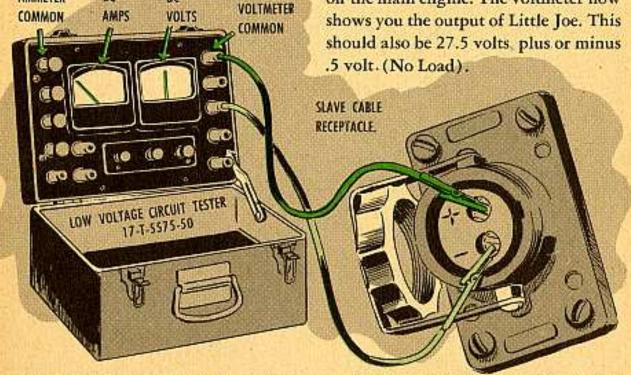
All you need is the Low Voltage Circuit Tester, 17-T-5575-50, or any other voltmeter with 30 volts capacity.

DC

AMMETER

voltmeter to the slave cable receptacle, and run the main engine at about 1500-RPM. The reading you get on the voltmeter is the output voltage of the mainengine generator. This should be 27.5 volts plus or minus .5 volt. (No Load).

Then you start up Little Joe and shut off the main engine. The voltmeter now



You first warm up both the main engine and Little Joe for at least 45 minutes. (Smart men catch the tanks when both engines have been running for some other purpose.)

If either of these voitages is off, send the tank to Ordnance to have it adjusted, or get an Ordnanceman to come to you. Tell him which generator is off, and how much.

SOOM LIF

Here's the latest poop on using recovery vehicle.

You have a choice of combinations you can use to make lifts with the boom and boom-winch on this vehicle. In all cables must be tight. You get them ing your control-valve open until the boom is all the way up, and until you of them, remember, the boom stay tight when erecting the boom by holdhear the safety-valve pop and the engine pick up speed.

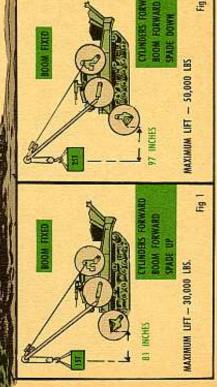
the boom cylinders forward, and the First of all, you have the boom up, With this setup, you can lift 30,000 spade up-like it shows in Figure 1. pounds (15 tons). Any more will nose our vehicle down.

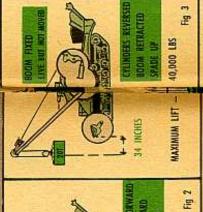
Now, Figure 2 is the same thing with the spade down. With this setup, your capacity is increased to 50,000 pounds or 25 tons and you'll get greater clearance for your load, because the forward edge of the spade is closer to the vehicle.

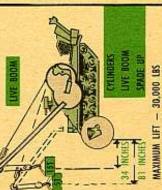
triever, you can lift 40,000 pounds or 20 tons. But, if you want to use your and pinned to the crank arms, and the boom is then retracted. Watch this one boom cylinders to shift the boom and ing a turret or a power pack, then you So be sure you know how heavy your In Figure 3, you have the spade up, but the boom cylinders are turned back -it's tricky. With the boom pulled back so the load is closer to the rethe load forward and back, like installcan only lift the 15 tons like in Figure 4. ift is going to be.

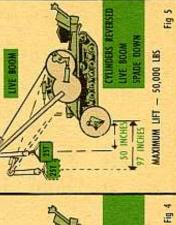
don't know just how heavy it is, take If the lift is over 15 tons, or if you the time to put your spade down before lifting. This puts you into a setup like in Figure 5, where you can lift 50,000 pounds or 25 tons, just like in Figure 2. Now hear this, in this condition with the spade down and the cylinders turned back to the crank arms, you are safe to use the boom cylinders to move a maximum load, 25 tons, back and forth through the whole range of the liveboom travel.

The centerline of your book will move from 97 inches in front of the spade back to 50 inches in front of the spade. You use this travel for spotting your load where you need it.









T AFLOAT YOUR **KEED**

With this new-fangled lassa

for the wing and fuselage

tied together if the shear-bolt breaks in one of these and bring your 'cat up to wing help support the fuselage if your gine some day. yard that keeps the wing and fuselage a landing. This!II let the flotation of the 'cats (made after May 1954) have a lan-As you RCAT men know, the later cat lands in water.

Any of you who're flying the older targets near or over water can install date. It might save a fuselage and en-

FOR 3/8" BOLT, NO. 10 SCREW ONLY IN SIZE OF HOLE FOR ONE OF 'EM CALLS FOR THE OTHER FASTENING.

UNRAVELING. HOLD 'EM IN FLAME OF

TO PREVENT

LINE AND SEAR ENDS

DNE SECOND.

ONE AN 23-10A BOLT, (TC-AIR ITEM) AIR FORCE STOCK NO. 6500-080000

You'll need:

ONE CLAMP, ELECTRICAL, LOOP TYPE, CUSHIONED, S, CADMIUM OR ZINC PLATED, 1 2-IN OD TUBE SIZE, WITH HOLE FOR-

MATCH FOR



TAKE DFF HORSE REMOVE WING BY TAKING FAIRING AND COLLAR OUT SHEAR BOLT. 6

O

SIX FEET OF NYLON SHROUD LINE FROM A SALVAGED PARACHUTE IUNSERVICEABLE AND UNECONOMICALLY REPARABLE!

ONE CLAMP, ELECTRICAL, LOOP TYPE, CUSHIONED, S, CADMIUM OR ZINC PLATED, 1, 2-IN OD TUBE SIZE, WITH HOLE FOR-

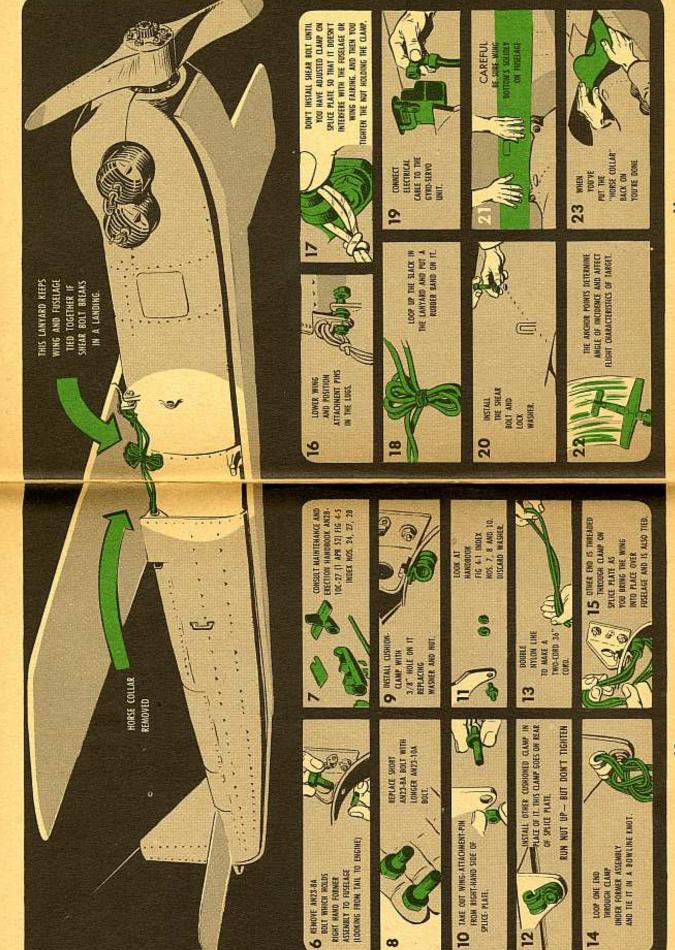
3 8-IN BOLT ENG STOCK NO. 17-3049.600.051.

LO)

MUMBER 10 SCREW ORD STOCK NO. H004-0572904

8

0



CHECK YOUR MI RIFLE FOR THESE

Clip latch—Binding, weak spring or broken Here's a little game you can play with your weapon that'll help make Suppose you've done everything to your weapon that you're supposed to do in the way of cleaning. There's no dirt, foreign matter or just plain muck left on it and you've got a right near you a ready-teddy when the chips are down.

piece. Now give 'er the old eagle eye to see if she's going to come across the next time you give 'er a little squeeze, If she shows any of the following ailments, better turn 'er in for repair. Your armorer can repair some of the damage, and he'll send her on to Ordnance for the full treatment.

Rear sight-Aperiure not blockened, expestments worn or not operating smoothly.

Butt plate-Loose, missing screws.

THIS LITTLE GAME'LL MAKE FOR A SURE WEAPON

Freed sight— Dents, burrs, looseness, blode not

blockened.

ACHES AND PAINS:

and broken firing pin. Bolt-Crocks, burns, nust



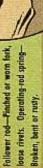




Dents, burns,







Stock and hand guards— Cracked, split or scarred. Screws

loose or with domoged slots.





Safety-Not operating



Sling-Frayed or broken webbing,

weak or faulty buckles.

2

Swivels-Loose in stock

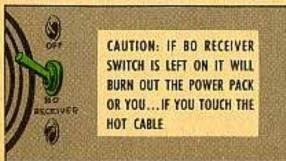


Save your ir power-pack (and yourself)

That BO (black-out receiver switch) on the instrument panel of your battle-buggy can be even more re-volt-in' than the soap-ad variety—unless you're careful. On most combat vehicles this switch is now wired to control the 16,000-volt infra-red (black-out) periscope receiver circuit.



Make ding-dong sure it's always off when the scope's not in actual use. Left on, it'll burn out the power pack—or maybe burn your hide, should y'touch the hot cable.



And make certain that high-voltage plug on the cable's always secured to the dummy receptacle when outta the scope. Better be safe.

Double track wire

Some of you have been wondering why there are three wires in the cable from your generator to the regulator on transport vehicles having 25-amp generating systems. True, the only circuits in this cable are the generator output—running to the regulator and then the battery, and the field input—running back to the generator from the regulator.

But, that generator has a big output, sometimes as high as 30 amperes, so they are using two leads in parallel to carry it back to the regulator. You see, the type of cable and connectors used here were already standard items when this system was designed, and rather than wait to set up machinery to make a two wire cable with one heavy wire and one light one, they found it was faster and easier to use a three wire setup and divide the heavy load between two of the wires.

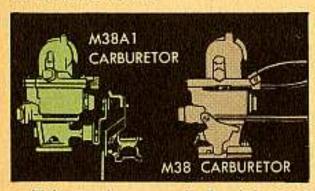
So, for gossakes, **don't** go taking out the third wire: It's needed.

The SNL blues

Been hearin' a lot of guys gripe 'bout gettin' wrong parts for their Jeep. Easy to understand why. When they order a part for their M38, they use the SNL for the M38A1, and vice-versa.

Sometimes it'll work, 'cause some parts are the same for both Jeeps. But there're many parts that 'are different too. So, with the wrong SNL, you might get the wrong part.

Take f'example the carburetors. They're as different as Marilyn Monroe and Lena the Hyena. When you put the M38 carburetor on the 'A1, or viceversa, the passages won't line up, the throttle linkage controls are different, the mountings are different and the air horns are different.



Take another example. Puttin' a M38 wheel-cylinder and brake-shoe in an 'A1, or vice-versa, will cause nothing but trouble. The brake-drums of the two Jeeps are different.

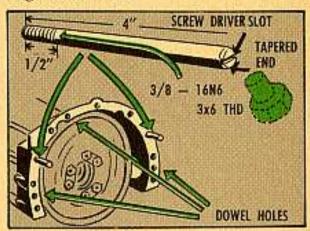


Which all boils down to one thing use the right SNL to be sure. For the M38, SNL G-740 gives you the poop. The 'Al Jeep uses SNL G-758 as its parts bible.

Studding transmissions

You can give yourself a helping hand by using alignment studs in the front half of the M133-series flywheel housings. It makes the transmission easier to install and'll lower the chance of transmission mainshaft and pilot bearing misalignment or damage.

You can make the studs out of screws (Ord Stock No. H101-0100142, H101-0109443 or H101-0110209). Gut the heads off the screws and cut a screw-driver slot in the top of the stud so you can install or remove the studs. Taper the studs at the slotted ends to make alignment easier.



Put the studs, one in the first or second holes to the left and one in the third hole to the right of the top front half of the flywheel housing dowel holes.

With the studs in place, the rear half of the flywheel housing will pilot them on, and you can align the flywheel dowels and bolts from underneath.

Over the hill-slanchways

in the world has to go over the hill. Like when you're towing a tank behind your M74 recovery vehicle, and your road Comes a time when the best soldier home drops down into a steep gully.

enough ridge, the rear end of your M74'll rearway up when the nose starts down. It's possible for your tow to so that you go down the hill with only But, if you drive straight over a sharp coast up under it and cock the tow bar Well, if you've gotta go, you gotta, part of your M74 track on the ground.

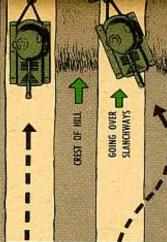
This, of course, can play hob with your control, and no telling what you'll run into.

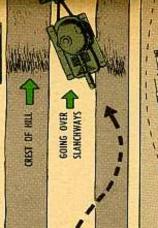


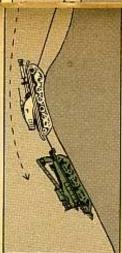
with the road you've got, but don't take you don't go over the hump straight; you go over slanchways. Take just as long an angle over the hump as you can so much that you tip your buggy over. In about 99 times out of 100, you'll find But, the answer is real simplethat you can angle over real nice.

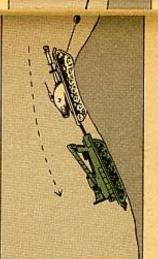
when it's on the grade-just when it If and when you do find one that you gotta go over straight, you can use another tank or M74 to hold your tow back, or use a two-part line on a winch truck, chock the towed tank with logs, or use a heavy rope snubbed on a tree. You don't have to hold back the tow goes over the hump. Take it casy,





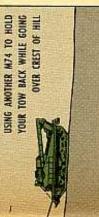


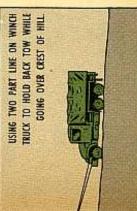




IT'S POSSIBLE FOR YOUR TOW TO COAST UNDER IT.







He who switches gas tank caps brings trouble into his hack.



This cap for the M38, the 21/2-ton Reos and the 5-tonners is air tight. The venting and prossure-relief valves are on the tank itself.



This cap is for the M3BA1, the M37 Dodges and M133 series GMC's only. It has the presbuild up in the tank and push gas all over if sure relief valve in the cap, and pressure'll you use the other cap.

1

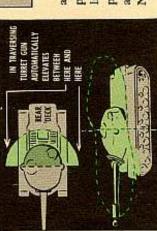
M48's gun hangin' low? This'll give ya a lift-



tank commanders and gunners know better'n to smack their gun into the traversing. They just naturally elevate above the danger point before they slew side of the tank or other objects while er around.

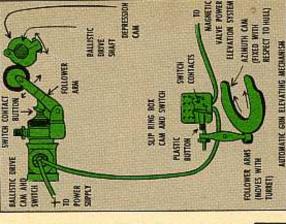
the thick of things, your M48 has an over the rear deck. The system consists of two cam and switch combinations ated by a solenoid. One combination However, just in case of a relapse in elevating mechanism which automatconnected in series with a valve operically lifts the gun when it is traversed is located on the ballistic drive and the other is on the slip ring box.

The switch on the ballistic drive vate. It goes into action when the gun determines when the gun will ele-



goes below the interference setting. The cam and switch on the slip ring box determine where the gun will elevate.

proaches the rear deck and stays ready to go into action until the gun is clear It gets all heated up when the gun apof the obstruction area,



pens. So the only time the automatic lift operates is when the gun is depressed below the interference setting But **both** switches have to be closed at the same time before anything hapand is near or over the rear deck. Neat, huh? To keep the system operating as it should, adjust her now and then, 'specially after dogging it over rough terrain.



ON BALLISTIC DRIVE WIRES OF SWITCH AND LOOSEN CAM

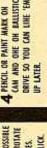
SET SCREW.

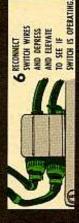
DISCONNECT

FOR INTERFERENCE SETTING













CLICK AS CUN PASSES NEAR 90° SIT SHOULD







PASSES HEAR 2700 MARK SWITCH OFF WHEN IT BRING GUN AROUND TO POINT FORWARD.

O IT SHOULD



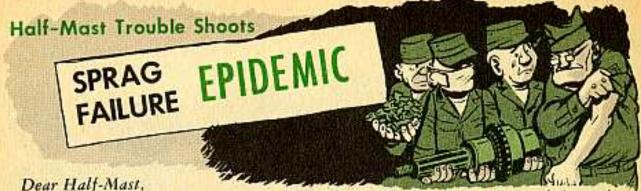


FERENCE SETTING AND TRAVERSE OVER REAR AREA. IT SHOULDN'T LIFT, IF IT DOES RE-ABJUST CAN ON BALLISTIC DRIVE, MAKE ELEVATE GUN ONE DEGREE ABOVE INTER-

LIFTS WHEN HEARING 900 MARK, IF

It's a pretty near little trick. But it doesn't entirely take the place of the SURE CAM SET SCREW IS TIGHT. IT DOES GRADUALLY INCREASE SPEED TO FULL SIEW AND TRY FEW TIMES WITH GUN FULLY DEPRESSED

ol' bean when it comes to manipulating those controls.



Some dope other than what's in the TM is needed on the 5-ton truck sprag units, pronto. An epidemic of them are locking in front-wheel drive, or just breaking up—'specially on the M52 truck tractors.

Aside from normal wear and jamming due to improper directional shifts, we can't seem to put our finger on what's causing the failures. Can you give us any dope that'll help us prevent these costly breakdowns?

M. L.

Dear Mr. M. L.,

Here're a few not too well known causes that could be your trouble.

The earlier models of M52's had transfer-case shift-lines of the same length. This caused trouble because when they were disconnected it was a bet they'd be put back on wrong.

With those lines switched, the sprags would work bassackwards. To prevent this, most outfits would mark one line and fitting. Later models came out with one line longer so's you couldn't get 'em switched.

The 5-ton fire trucks have had some sprag troubles—caused by backing the truck into the fire house and parking it with the gear shift in reverse until the fire bell rang. The sprag, of course, remained in the reverse position. Came a

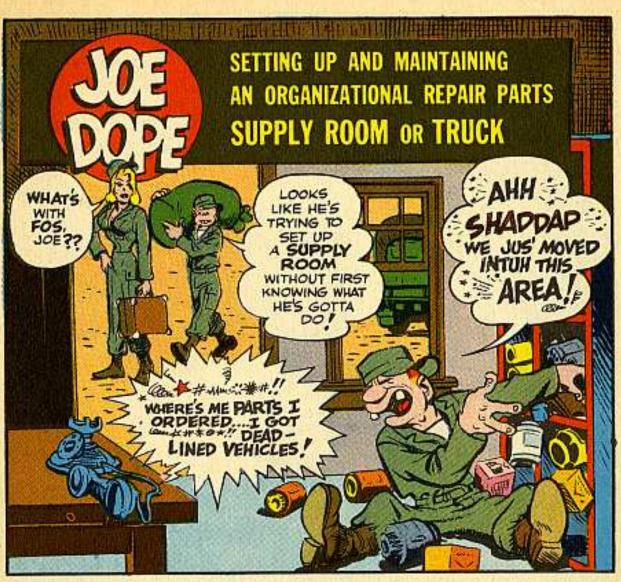
fire call, the driver jumped into the truck, started the engine and pulled out like a bat-out-of-hell, with his sprag still in reverse position. Why? He didn't allow enough time to build up air pressure to shift the ram and throw the sprag into forward. Of course you're supposed to get that air pressure built up anyway so you'll have brakes.

This could also happen to M52 truck tractors, 'specially when you back a semi- into a loading platform and pull out a couple of hours later without building up enough air pressure to shift the sprag to forward.

Could also happen when you back a tractor under a semi- and lose air when you hook up the air lines or lose air when you break the lines to pull from under the semi- after you've spotted it.

To boil this down to specific points—make dog-goned sure your drivers always return their shift to neutral when stopping and have the right air pressure in their tanks before pulling out. You'll see the dope on this in a change to TM 9-837. It'll tell you all about waiting for the air-pressure to build up before moving your truck.

Half-Mast

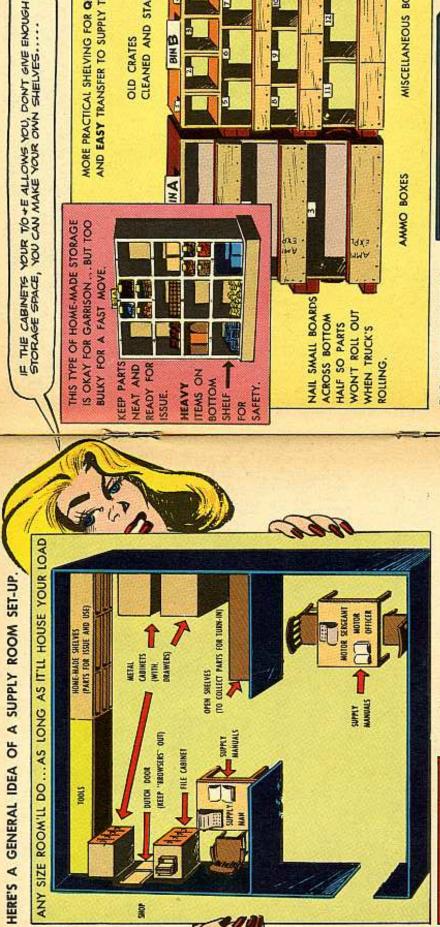












CLEANED AND STACKED

OLD CRATES

BINB

3

MORE PRACTICAL SHELVING FOR QUICK AND EASY TRANSFER TO SUPPLY TRUCK

LETTER EACH CABINET

ALL STORAGE SPACE...BIG OR LITTLE...NEEDS A DEFINITE CALLING NAME.

IDENTIFICATION

NUMBER EACH BIN OR DRAWER -

0

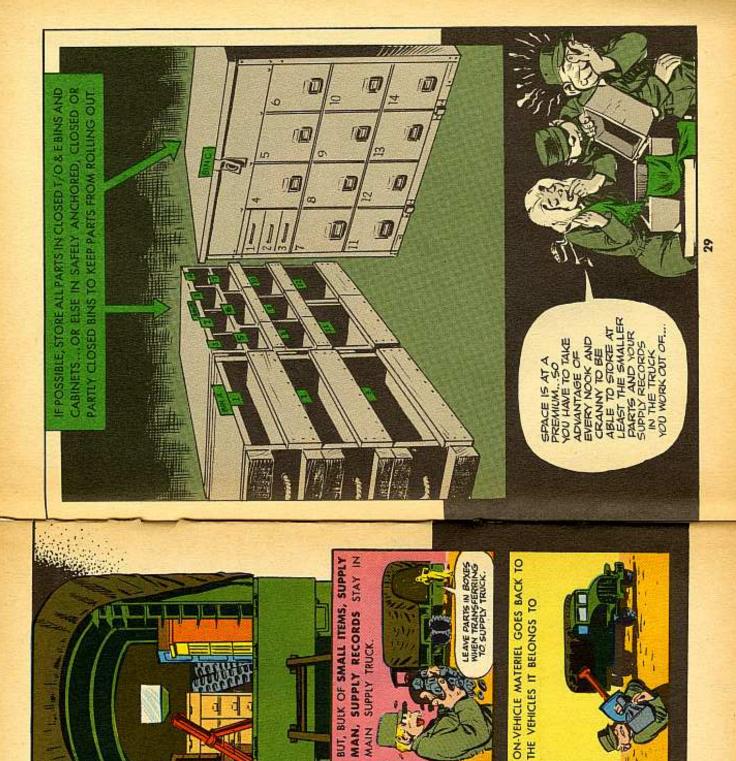
0 15 THRIBAN TAG EACH SUB-DIVISION WITH A SMALL LETTER 5 9 CABINE

MISCELLANEOUS BOXES

0 IN SOME READY-MADE CABINETS UIKE TYPE I M1940, USTED IN ORD 3 SNL J-17, 12 MAY 54)...

36

... A DECAL UNDER THE LID SHOWS HOW TO PLAN AND IDENTIFY SPACES.



MAIN SUPPLY TRUCK.

YOU MAY HAVE TO USE MORE

FIELD OPERATIONS

TELS PROPE

ALMAYS KEEP YOUR EGGS IN ONE

SUPPLY TRUCK

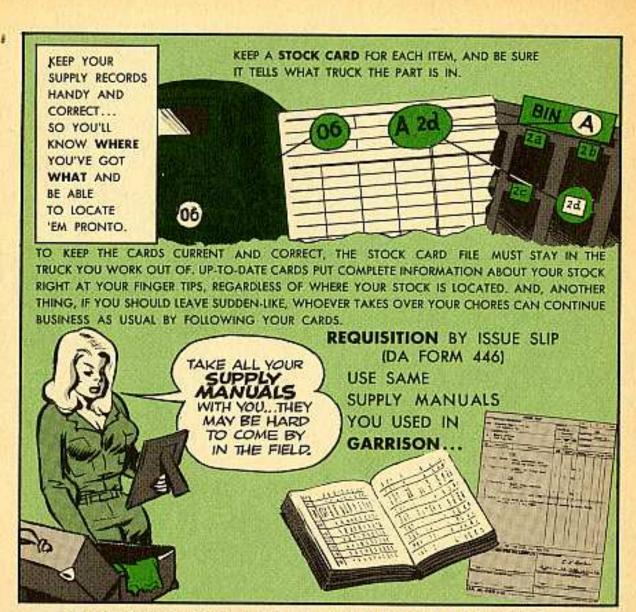
里

THAN ONE

SUPPLY TRUCK

THE VEHICLES IT BELONGS TO

BULKY REPAIR PARTS, TOOLS IN OTHER TRUCK ... OR IN TRAILER ... OR ON VEHICLES MOST LIKELY TO USE 'EM



OF COURSE YOU'LL ALSO USE YOUR DIRECT EXCHANGE



AND WHETHER YOU OPERATE IN GARRISON OR IN THE FIELD... BEFORE FILLING BINS, KEEP THESE POINTS IN MIND...



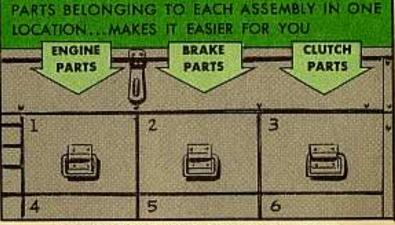






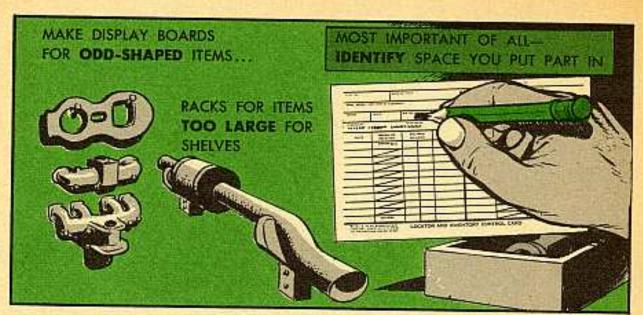
PUT FRAGILE PARTS IN WELL PROTECTED BINS....





IF YOU'RE AN OLD HAND IN SUPPLY, YOU CAN KEEP

DIVIDE SOME BINS FOR SMALL ITEMS





NO ROOM IN TRUCK?

...THEN PUT 'EM IN WEATHER-PROOFED BOXES OR CRATES IN THE TRAILER.

BUT DON'T HOARD TURN-IN ITEMS









Can you give me any exact figures for the personnel capacities of Army vehicles? I have found that the existmany men make a safe load.

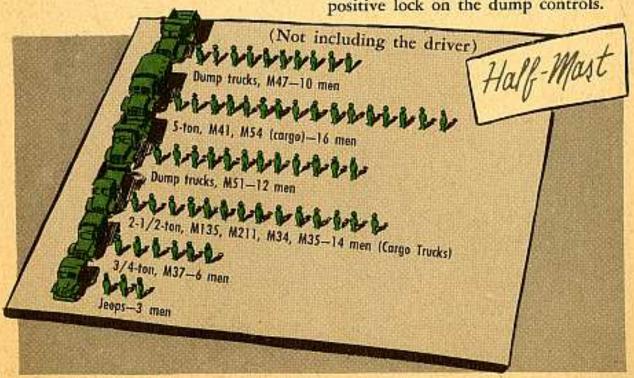
MSgt D. R. S.

Dear Sgt D. R. S.,

You're right, the manuals do give conflicting figures for the safe load of men in the different tactical trucks. There's a TB coming out to settle the

ing manuals do not agree as to how matter and will establish the figure of 21 lineal inches of space per man. Tactical trucks will be loaded like they're shown in the picture.

> And be sure, like it tells you in AR-385-55 that any men you carry in a dump truck are seated completely inside the truck, and that you have positive lock on the dump controls.



TWICE-A-MONTH MEN

Dear Half-Mast,

Our Army reserve units meet twice a month. That's the only time our M-series vehicles get a work-out. It's not enough for their batteries—they soon run down and we've got the problem of charging them up again.

Would you recommend removing all batteries and leaving them near charging equipment between meetings? Then before the meetings they could be quickly tested—then charged if need be. H.F.S.

Dear H. F. S.,

That's OK as a last resort—if you've got the battery storage facilities for the job. But in most cases, taking the batteries out of the vehicles isn't necessary.

First—a fully charged battery selfdischarges in about four months. So, if your batteries are constantly running down between meets, you probably have a hard-to-find slow leak somewhere in your electrical system. To eliminate this type of drain, other than finding the short and fixing it, disconnect the battery's ground strap after your meets.



Incidentally, you can remove the strap without bothering its clip just by unscrewing the single nut tying them together. Which'll save wear and tear on your battery posts.

Then every time you meet check their specific gravity. When it goes below 1.225, take it off the vehicle and



charge it for at least 70 hours at no more than 5 amps. Or until the specific gravity rises to about 1.270 (at 80°F.). This way you'll only be pulling the batteries that need recharging.

See TB Ord 463 for all the details on battery charge. Half-Mast

M5A4 CLUTCH STUFF

Dear Half-Mast,

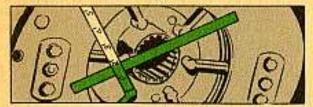
How's about giving us a rundown on clutch and clutch linkage adjustments for the M5A4 high-speed tractor? Sure would be helpful.

SFC H.S.

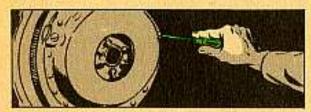
Dear Sgt H. S.,

All righttteeeee! Here're the adjustments specified for:

Clutch-release finger. With clutch assembly installed in flywheel, the distance from top of the pressure plate cover to the six thrust buttons should measure 1-3/8 inches. All fingers gotta be the same distance (within .010 inches).



Center drive-plate. Turn the three center drive-plate adjustment screws clockwise till they bottom lightly; then turn 'em back — four notches.



Clutch-pedal. Remove pin from clutch-rod and adjust clevis to get 1-1/2 inches free-travel at the clutchpedal; install pin and tighten the locknut.



Clutch-brake. Adjust the driveline brake application-valve to have the brake applied when the clutch is fully disengaged and the pedal's at the end of its travel.



Half-Mast

M52 TORQUE RODS

Dear Half-Mast,

Every time we take a Truck Tractor M52 to Ordnance we get gigged for having loose torque rods. The 3/4-in drive socket set doesn't have a socket big enough to tighten it, in fact, there is no wrench in the tool set No. 2 big enough. My impression is you only tighten or repair the equipment for which you have tools authorized. Is that right?

WOJG A. J. M.



Dear WOJG A. J. M.,

You're right on both counts—there's no wrench in your tool set big enough to tighten those torque rods, and you only tighten or repair the equipment for which you have tools authorized.

One of these days you'll see something in black and white that'll tell you what tool you can use or it will delete that part of your TM that tells you to tighten those torque rods. Until it does come thru, better tell your supporting Ordnance maintenance unit you don't have the tool so something can be provided or instructions issued as to what to do.

Half-Mast



S'funny how gosh-awful particular some men can be about their shootin' irons—and how careless they can be about what they shoot in 'em.

They shine like crazy on their weapon —but when they go to fire they slam any old dirty round home. What they don't know is that dirty ammo'll tear up a gun faster'n anything else—except maybe incoming ammo.

The round you're firing (from .22cal. to 280-mm) needs the same lovin' care as the piece that fires it. (Unlike your weapon, the ammo is somebody else's worry **after** you fire it.)



Let's say you throw a round in with a grain or two of sand on it. What happens?

The projectile goes spinning on its way, taking the sand with it—right through the barrel. Something's gotta give, and oddly enough, it's usually the metal.

That sand will put a scratch in the barrel every time. The scratch becomes what's called a "stress area." The gas from each round you fire later gnaws away at the spot and you get a bigger scratch.

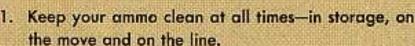
The barrel at that spot gets weaker and weaker. Until one day you throw in a round with a little oil, water or dirt on it and—blooey! Scratch one gun and maybe half a crew.

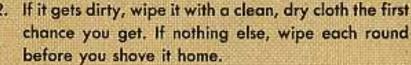
'Course, the more dirty rounds you fire the more stress areas the barrel's gonna have. And it's nip-and-tuck as to which area will blow first.

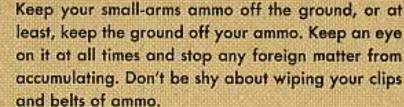
Ah, it'd never happen in a million years, you say.

Just ask somebody who's been around. It's just as likely to happen with your 280-mm as it is with your carbine. Any time a round is forced through a barrel with a smaller diameter than the round you've got a lot of pressure on the barrel. Whether the round goes on through, or whether the barrel busts wide open depends on how strong the barrel is. To make sure it's always the round that moves, keep the barrel as strong as possible and the round as small as possible. Dirt, water, oil or sand just make the round bigger and the pressure on the barrel greater.

Here're a few pointers on keeping your ammo clean, your barrel strong and your pressure down:





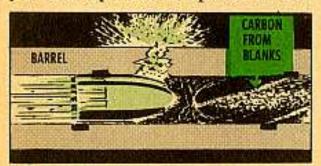




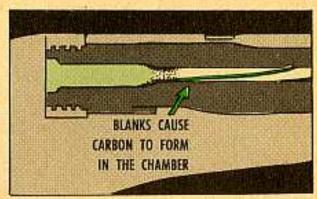
CLEAN AFTER BLANKS

Firing live ammo in your small-arm right after firing blanks is strictly verboten...unless you clean your piece first.

For one thing, the carbon from the blanks builds up in the barrel, leaving you wide open for a rupture. For an-



other, the blanks cause a ring of carbon and stuff to form inside the chamber,



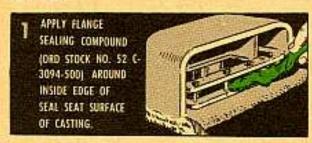
keeping the live rounds from seating just right. This not only has an unhappy effect on your disposition, but it plays hob with your headspace.

So clean your barrel immediately after firing blanks. You'll have much more fun on the wet runs when you've got a good clean piece.

MUD IN YOUR EYE?

Some of the outside seals on the M41A1 tank periscopes aren't as watertight as they could be. Particularly on tanks with Ordnance serial numbers below 3211. A new type sealer was developed with that number.

If you're getting mud and moisture in your eyepiece, here's what you can do:



2 PUT ON EHOUGH
TO CLOSE ANY
OPENING BETWEEN
EDGES OF CASTING
AND CUT OUT RELIEF
IN GASKET SEAL
AT THE BOLT HOLES,

3 WITH OBSERVER
IN CUPOLA OR
DRIVER'S SEAT TO
WATCH FOR LEAKS
POUR WATER DIRECTLY
ON SEALED EDGE,
IF LEAK SHOWS
REPEAT SEALING.



Remember, tho-do not use water under pressure. Pour it on, don't shoot it.

T69 BOGIE BLOOPER

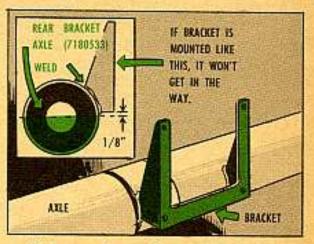
Dear Half-Mast,

Before MWO Ord D48-W3 was applied to our T69 gun mount (75-mm gun) we had trouble with the wedge handle hitting the receptacle box on the rear bogie. The MWO took care of that by moving the box, but now the box gets in the way when we put the mount into firing position. What gives? Did somebody foul up here?

Sgt J. S. B.

Dear Sgt J. S. B.,

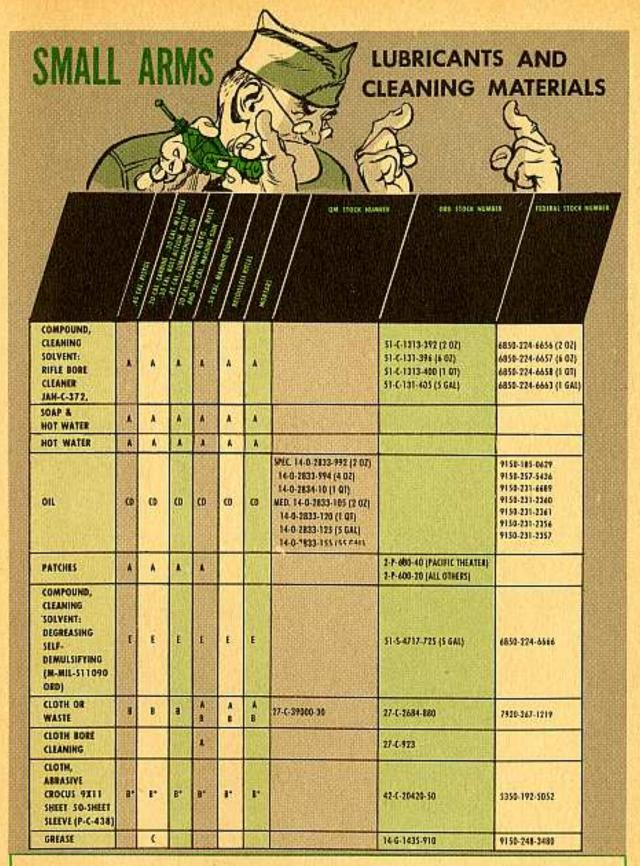
Somebody put that bracket back too high or too low on the bogic axle, and not according to figure 3 of the MWO. And believe me, that's an easy mistake to make. About the only time the axle is in the right position for the MWO is when the bogic is in the traveling position. (The MWO told you about that.)



If the work was done while the bogie was detached, the bracket was probably put on wrong. It may have looked right then, but when the bogic was attached for traveling, the axle turned and threw your bracket off the beam.

Yell for Ordnance and have 'em put it on right—while the mount's ready for travel.

Hall-Mast



/-- To clean bare

I-To clean weapon (other than bore)

-To lubricate

*Crocus Cloth is used only by the armorer artificer and weapons repairman

B-To preserve (short term)

Med, wt, all for above 32" F and salt water

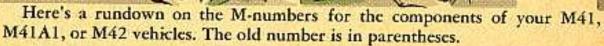
Spec. wt. oil for below 32° F

E-To clean after storage

Light Tank Vehicles...

WHAT'S NEW IN NUMBERS.





M41, M41A1 LIGHT TANKS PRESENT COMPONENT NUMBERS (OLD NUMBER IN PARENTHESES) MOUNT, COMBINATION, 76-MM M76 (T138E1) GUN, 76-NM M32 (T91E3) DRIVE, BALLISTIC M4 (T23) LIGHT, INSTRUMENT M30 MOUNT, PERISCOPE M93 (T176E1) MOUNT, PERISCOPE M94 (T177E2) MOUNT, TELESCOPE (M41 ONLY) M92 (T178) MOUNT, TELESCOPE (N4TA1 ONLY) M92A1 (T178E1) PERISCOPE, LOADER'S M13 PERISCOPE, DRIVER'S M17 PERISCOPE, DRIVER'S, INFRA-RED M19 PERISCOPE, M20AT QUADRANT, GUNNER'S M1, M1A1, W/CASE, CARRYING, M18, M56 OR M82 SETTER, FUZE M27 TELESCOPE M97 (T156) INDICATOR, AZIMUTH M31 (T24) TRANSMISSION CD 500-3 MAIN ENGINE AOS 895-3 AUXILIARY GENERATOR ENGINE A-41-1 AND A-41-2

- 500	ADMICIAL STREET, OR ENGINE	
	M42 (TWIN 40-MM)	PRESENT COMPONENT NUMBERS (OLD NUMBER IN PARENTHESES)
	LOCAL CONTROL SYSTEM DRIVE CONTROLLER OIL GEAR WIRING SET SIGHT, COMPUTING INDICATOR, AZIMUTH PERISCOPE, DRIVER-COMMANDER PERISCOPE, IMFRA-RED MOUNT, 40-MM GUN, 40-MM TRANSMISSION MAIN ENGINE AUXILIARY GENERATOR ENGINE	M16A1E1 M12E2 M6A1E1 M10A1E1 M38 (T154) M27 M13 M19 M4E1 M2A1 CD 500-3 A05 895-3 A-41-1 AHD A-41-2



SNL's

Ord 7 SML C-77 Rifle, 105-mm, M27, M27A1; rifle, 105-mm, M75, M75A1, Mar 55

ord 7 SNL 0-28 Gun, 50-mm, M1 series on mt, gun AA, 50-mm, M1A1, M1A2 w/mech, recoli M1A1 series, Mar 55

Ord 8 SML D-49 Howitzer, 8-is, 189, gus, 155ein, TBO; mt, 155-mm gus, 8-is how, 158, Mar 55

Ord 8 SHL 6-249 Vel 36 Winteriz equip for tank, med, M46, Feb 55

ord 8 SNL G-249 Vet 39 Winterla equip for tank, 50-mm gus, M47, M46A1, Feb 55

Ord 6 SNL J-8 Sec 1 Tool set, Field maint, expl ord 6isp sqd (41-7-3537-100), Mar 55

Ord 8 SNL J-16 Sec 42 Tool sets, field and depot maint for: Trace, N135, M211, M215, Truck, stop van M220, Track, Iank, gastilnt 1,200-gal, M217, Truck, water tank, 1,600-gal, M222, Truck Tractor, M221, Mar 55

Ord 7-8 SHL 3-117 Orill, elec, port, 115-W, univ curr, h-6, 1/4-in cap (Black & Decker mods L, and V-32) (40-0-341) and drift, elec, port 115-V, univ curr, h-d w/vert stand, 1/4-in cap (Black & Decker mods L and V-32) (40-0-354), Mar 55 Ord 7-6 SNL J-124 (TO 3282-2-30-4) Drill, elec-135-V, univ curr h-d, 3/3-in cap (Albertson mod-No 1517 (40-0-343), drill, elec- 155-V, univcurr h-d, w/vert stand, 3/5-is cap (Albertson mod No 15178A) (40-0-344), Mar 55

Ord 7-8 SHL 1-494 Grinder, pness port, pistol grip handle, w/one 6x1-in wat (viliritied), and one size 8x1-in wheel (organic) (Chi Pnes Tool, Size 331-P-4250, mod A) (40-G-169), Mar 50

Grd 7-6 SHL 3-496 Orill, elec, port 115-V, univ cerr h-d. 3/8-in tap (Millers Falls, No. 5338A) (40-0-343), Mar 55

Ord 7-8 SNL F507 Drill, elec, port, 115-V, univ curr, h-d, 1/2-in cap (Stanley Works med 122) (40-0-345), Mar 55

Ord 7-8 SNL 3-317 Spray guns, paint press feed, 7 CFM (DeVilbiss mod PMSC-510 No. 58-FX) (4940-261-8413); syphon feed, 4-1/2 CFM (DeVilbiss mod PMSC-510 No. 45-E) (4940-261-8414); syphon feed, 7 CFM (DeVilbiss mod PMSC-510 No. 58-E) (4940-261-8415); Mar 55

ORDNANCE MWO'S

F235-W15 Periscope M19; Install recept cap, F. Mar 55

01-W60 SP twin 40-mm gun M42 (T141), 76-mm gun tank M41 (T41e1), and 3P 155-mm how M44 (T194), Install new spring pins in range selector contrassy, F, Mar 53 6245-W1 Amphib cargo carrier M76 (T4661)-Install new transmand engine oil-fill pipes and modif crankcase breather pipe, F, Mar 55

0252-W1 Cargo tract MBA1 (MBE2): Modif air system to gravide man centr of elect brakes on towed yeh, F, Mar 55

6781-W1 37-pass 4e2 integ flus (ACF-Brill mod C-37M): Install protective shield for gen, F, Mar 55

TECHNICAL BULLETINS

T 89-894-12 (TO 3945-1-241) L/4-ton 4xd utill truck M38: To prev contact of front wheels against chassis frame, fender, and tilting book, 0, Mar 52

TB 9-1573-1 Wristwatches: Install waterprooftype case, D. Mar 55

TB Ord 507 (TO 394-54-13) Repair of small arms wooden comps, D, Apr 53

MISCELLANEOUS

SB 9-75 Inspection of small arms gages, D, Mar 55

£0 9-3058 Rifle, £05-mm, M40, (T170E1); mt, 105-mm rifle, M79, Feb 55

NOTE-On TB's, \$8's and MMO's: 0-Organizational Maintenance F-Field Maintenance 0-Depot Maintenance



DANGER ... CARBON TET

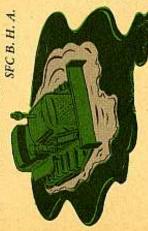
Hold off on cleaning bearings and other things with carbon tetrachloride. Its vapors are dangerous to you and other guys around you.

And while you're at it, cross out that item No. 3, page 5, in PS Magazine Issue 32, which tells about using carbon tet. That step in cleaning bearings can be left out anyway because the other steps in cleaning do a real good job.



Dear Sgt Dozer,

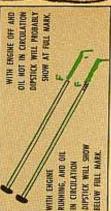
I've noticed that on all Engineer equipment, especially Caterpillar, there is an excessive amount of oil put in all engines. Every time we change oil on our D7, we always put in from 5 to 6 quarts over the full mark. That seems like a lot of waste. The equipment's got dipsticks, so why not use them?



Dear SFC B. H. A.,

That's a point well taken, Sergeant, As for your D7, LO 5-3068 tells you to put in 22 quarts of oil when you fill the crankcase—no more, no less. It's nothing but waste when you go over that. When you overfull the crankcase, the engine'll lose power and be short on breathing space and room for expansion foaming.

Too much oil will end up being blown out the crankcase vent...Then you've got a messy engine.



You can't go wrong by going by the book. When you check the oil with the engine running, it'll register a little under the full mark. That's nothing to worry about, 'cause you've got oil out circulating in the system. When you shut off the engine, check 'cr again, and chances are you'll find the oil right up to the full level.

Sof Doger

CLEAN AS A WHISTLE

"Keep it Clean" is one slogan that never grows old with maintenance men. Sharp operators and greasy-mitted mechanics really know the importance of the constant battle against the dirt vil.

lain. This is 'specially true-around hydraulic systems. Dirt'll give fits to hydraulic pumps, valves and cylinders—the same way it does to other parts of your Engineer equipment.

When you do maintenance on any part of a hydraulic system, keep an eye peeled for that troublesome character named I. M. Dirt. Plan your maintenance job so that dirt won't stand a chance of creeping into the system. You've got to have clean tools and parts when you tie into a hydraulic system.

Cleanliness in working with hydraulic systems is just like standin' pat with a royal flush in a draw poker game....

HERE'S A HOT LINE

Here's a hot line you can well do without. It's one of the leads from the overspeed switch to the control panel on the Hobart 400-cycle generator. Some of the units in overseas areas have been having trouble with this lead touching against the exhaust pipe and burning in two.

Normally, this'd never happen, but



when some of the sets were packed at the depots for overseas shipment a silicagel bag was forced down behind this wire. The guy packing the set probably figured this'd be a good way of holding the bag in place. His intentions were good, but as a result the wire was forced over against the manifold and didn't return to its original position when the bag was removed.

Then, when the ser was started up, the wire burned in two, grounded out, and caused difficulty with the control system. Also, when the wire burned in two, the contactor wouldn't close,

This might be a good thing to remember—'specially if you're doing any unpacking of generator sets at overseas points. It'll only take a second to put that wire back in its original position, and it's sure to save you a lotta headaches.



TECHNICAL MANUALS

\$5,116 Multin mad, GED, 5-6 lint, Calipa mod 176, 10 lint 55 5-69 GPD, Dens, Dort, 10ch, Davey mad

26,910 Gen sed, 30-17%, Detrait Diesei mes, 16,100 St. 2001 Gen sed, 13-14%, US Motors ned 15-US-100274, 13 Detrait Motors ned 15-US-2017 Miller and 15-US-2017 Miller and 10,100 St. 2017 Miller and 2017 Miller

LUSE ORDERS 2 5477 Air consisten unt, Typicen mod 54,500 2 feb 55

2-2029 Purp gethall, for the mild, Dalley need and County of the County

FOR KEEPS. PUT YOUR CONFIDENCEN AN AIR COMPRESSOR

First and foremost give careful attention

valves. An automatic unsor before checking the safety

loader pilot is set and sealed at factory . . . Don't monkey with it. It could be very nasty should its safety valves get accidentally damaged or plugged and fail to unload air

> assembled by the right rules and you've got yourself a Get a compressor brokenin by the book, installed and ment that's well on its way to delivering trouble-free service till she's retired to contented piece of equipthe heap.

The initial care, as well the size and brand of air as the regular maintenance required, may vary with val (which comes with the compressor) is the best guide compressor in question. But, name, the engineer or manufacturer's maintenance manto follow in giving each unit regardless of size and callin' its just due from the very beginning.

Here're a few worthwhile rules that'll help most any unit and its operator live longer—

in good working order:

RIGHT SIDE to the lubing instructions for the entire unit before you so much as tighten a nut.

COMPRESSOR FROM THE EDGE OF A PIT OR BANK OR WHERE STUFF OVERHEAD MAY FALL ON TOP OF IT! AND FOR GOSH AND NEATNESS SAKE, KEEP YOUR

Use engine oil to clear

broken must be reported immediately. Don't do your own patching. You may be Anything damaged or Check new compressor entitled to new replace.

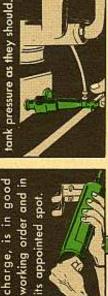
econds.

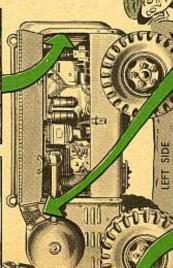
A compressor's cranking motor must not be mended limit—usually 30 operated over the recom-



charge, is in good working order and in extinguisher has a full Before starting gine make sure







sounds and smells during

Keep alert for unusua

checks for trouble by the book. Correct faults immediately if possible, otherwise report 'em to the right

people

operation. Make necessary



tions labeled on that while unit is never remove guards, shields or serve any special maintenance cauoperating you'll fittings. Also, that you'll faithfully obcompressor.



When you refuel laway from open borhood can mix with gas vapors and flame and with the engine off, of course) keep the funnel in contact with metal fuel tank. Electrical sparks in the neighmake horrible music together.

> this cleaning job can cause an explosion in a

compressor's air receiver.

Gasoline or kerosene for

compressor's air cleaner.



4

5

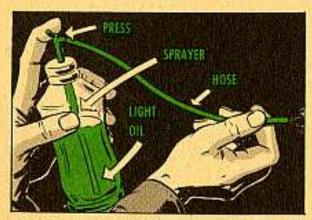


SHORT SNORTER

Dear Editor,

Here's a little idea I use to get light oil into difficult places—a bottle sprayer with a small hose attached.

5gt W. O'N



(Ed Note—Good idea if you have the bottle sprayer. Otherwise you can put the small hose over the end of your pistol oiler or squirt oil can.)

PROTECT YOUR GASKETS

Dear Editor,

Those disk support gaskets on the inside of the acquisition radome (M33 fire-control system) really take a beating when the cover is removed or replaced. They stick to the radome and get the L torn out of 'em. Here's how we prevent it:

We take off the end covers and boost one of our small men up so he can screw the disk supports away from the radome. We tighten 'em back up the same way when we replace the radome.

> A. Gleaton Fort Belvoir, Va.

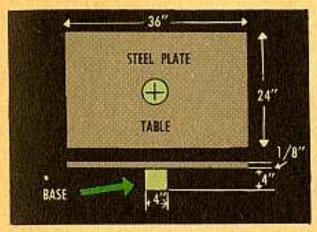
(Ed Note—Great—as long as you have a small man handy. Try putting some talcum powder on those gaskets the next time. It'll keep 'em from sticking.)



ACQUISITION TABLE

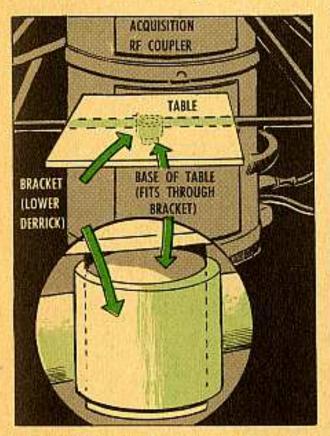
Dear Editor,

Here's a table we've found to be very handy for holding the frequency meter, oscilloscope, etc., when we're working on the acquisition RF unit. It's made of 1/8-in steel plate, 2 feet wide and 3 feet long. A piece of 4-in pipe 4 inches long is welded in the center. To use the table we just put on the lower derrick bracket and slip the pipe extension down into it. 'Course, we



primed the table and pipe and finished them with OD paint.

> Wm. A. Frazier, Jr. Aberdeen Proving Ground, Md.



(Ed Note—Now that's a real able table!

If you could scrounge up a piece of plywood and use a wooden extension,
you'd have about the same strength but
a lot less weight.)

KNUCKLE SAVER

Dear Editor,

The wheel-bearing nut wrench that comes in the vehicle tool set for the M37 3/4-ton truck can sure draw knuckle blood. The long metal rod handle fits into the wrench head easily enough, but it takes a lot of maneuvering and care to adjust your grip with every turn so's not to hit the fender or be stopped by the ground.

Here's how we cured that knuckle buster.

The fix: A round piece of scrap metal welded to the outside end of the wrench head. A 3/4-in bolt-head welded to the center of the round piece to take a 3/4-in socket wrench.

By adding extensions to a ratchet wrench we have a handle for the nut remover that gives us turning room away from the fender and the ground and saves bruised knuckles.

The Signal Bn Motor Pool

(Ed Note—Your treatment of the wrench for the M37, 3/4-ton truck seems like the long way around and is not recommended. If you'll just insert



the 30-in turning handle half-way thru the wrench you'd have enough room to clear the fender and ground, plus have enough leverage for torque requirements.)

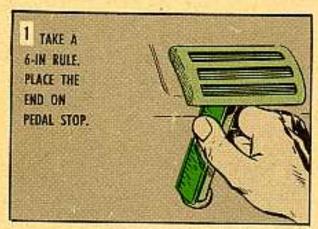
FOOLPROOF FREE-PLAY

Dear Editor,

Watched several fellas check the clutch pedal free-travel on their 5-tonners. They used a 3-ft folding rule for the job. They placed one end of the rule on the toe board and ran the rule up along the pedal shaft to the pedal pad.

This kind of measuring is inaccurate because you have to remember two figures, and then subtract one from another.

To get a true reading easier I suggest using a 6-in rule. Place the 1-in end of the rule on the pedal stop (grommet) which is attached to the pedal shaft. Push the pedal in until the free-play is all gone (release-bearing contacts the release levers). The rule then should be 1-3/4 to 2 inches thru the hole in the toe board. This same method can be used on other trucks.

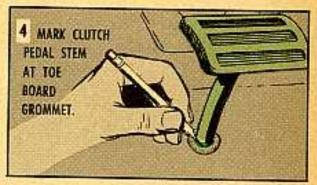




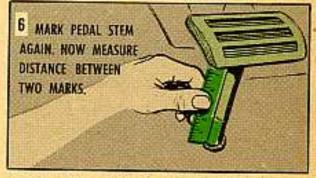


CWO G. W. Schmidt Aberdeen Proving Ground, Md.

(Ed Note—To get a true reading, measurements should be made like in TM-9-837, Fig 44 and change 3. Another way is to—







and you'll get the free pedal play.)



Hey, there_

You with the M42's. Didn't you read "Fuel Filter Flush" on page 19 of PS #29? Keep hearing guys're goofing—not flushing that filter every day like it says. Lets water collect in the drain-valve line, freeze, bust the line (or separate the hose from the steel tubing), spill gas in the hull. Watch that stuff, huh? Wanta cook on the rear burner? (You'll see the word on this in the next revision of the TM.)

Anybody seen Rube?

Ever heard the story of the private named Rube,

Who stacked his bazooka and dented the tube?

The dent held the next round firmly in place,

And away went the launcher, like a jetpropelled ace.

It hit the dirt with a terrific roar.

Ain't much of Rube around any more.

No boufires, bub!

The space around the mufflers on your tank is no place for kindling. In normal operation those muffler shields get hot enough to set off most anything that'll burn. Keep 'em clear of debris and you'll avoid unscheduled fires.

Goose gotta go

Good idea to keep a civil foot in your boot when it's on the accelerator of that medium tank. Guys goosing the throttle too fast don't help the life of the oilcooler-fan drive-shafts. Easy does it, hey?

So there you are

Heading the list of sins you may have committed on optical equipment is screwing around with delicate parts when you know you're not supposed to. So curb your ambition to be an optician to tinker with lenses and such. Give Ordnance a call and leave it to them. They've got the tools that're needed—and the touch.

Watch that ammo

Some guys'll never learn, it seems like. They're the ones who forget to put in that special crimped grenade cartridge instead of regular ball ammo when firing off rifle grenades. Tie a string on your finger, if need be, to remind you to use that special ammo for those rifle grenades. Regular ball ammo'll blow that grenade up—right in your face.

EVER HEAR THE ONE ABOUT PAT AND MIKE?



PAT WROTE TO P.S. MAGAZINE ABOUT A PROBLEM FIXING A WIGGLING WASHER

HE ALSO
INCLUDED A
TIP ON HOW
TO FIX A
SLIPPING
SHAFT



MEANWHILE, MIKE
WAS WRITING TO ASK
ABOUT A SLIPPING
SHAFT, ALSO
INCLUDED A TIP
ON HOW TO FIX
A WIGGLING WASHER





...YEP...YOU GUESSED IT.
BOTH READ THE TIPS IN P.S....
SOLVED THEIR PROBLEM AND
GOT THAT STRIPE THEY WERE
BUCKING FOR.





TAKE ANOTHER TIP FROM PAT AND MIKE...SEND YOUR GOOD IDEAS TO SGT HALF MAST OR SGT DOZER, PS MAGAZINE, RARITAN ARSENAL, METUCHEN, N. J.