Issue 354

P.S

May 1982

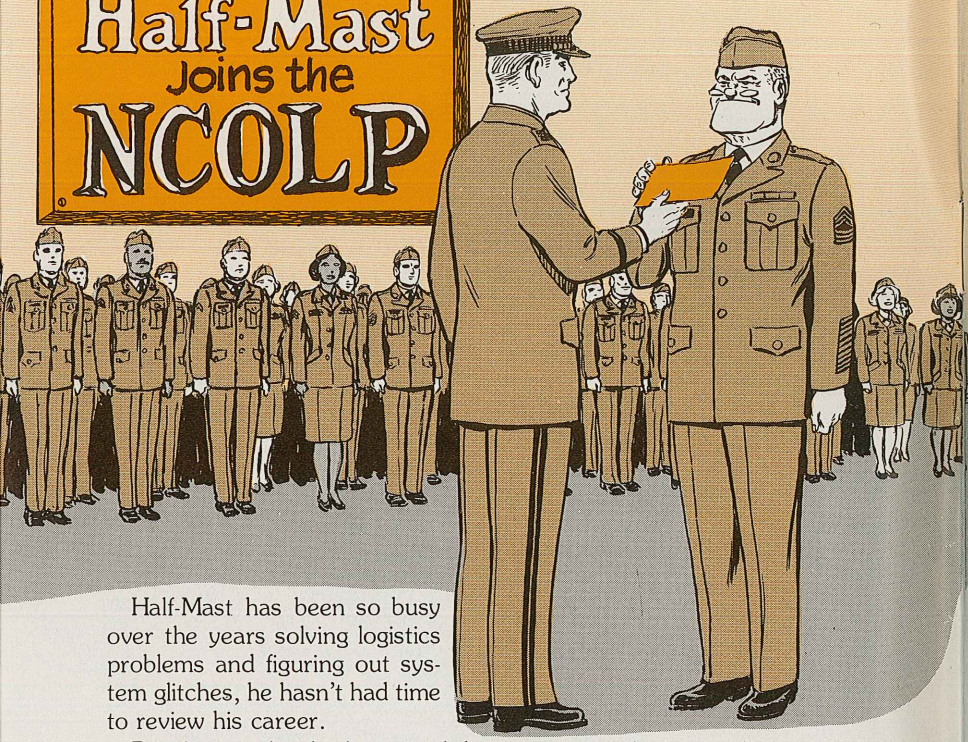
THE PREVENTIVE MAINTENANCE MONTHLY

DESERT OPERATIONS

See Page 29

Pass this copy on!

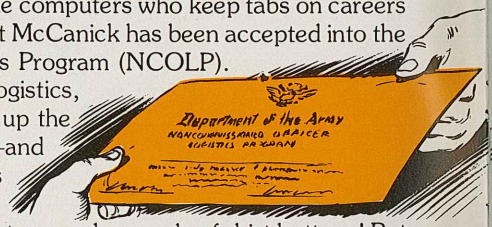
Half-Mast Joins the NCOLP



Half-Mast has been so busy over the years solving logistics problems and figuring out system glitches, he hasn't had time to review his career.

But the people who know and the computers who keep tabs on careers caught up with him! MSG Half-Mast McCanick has been accepted into the Noncommissioned Officer Logistics Program (NCOLP).

The Deputy Chief of Staff for Logistics, LTG Richard H. Thompson, lined up the troops—Connie and Bonnie, too—and presented MSG Half-Mast with his certificate in the NCOLP.

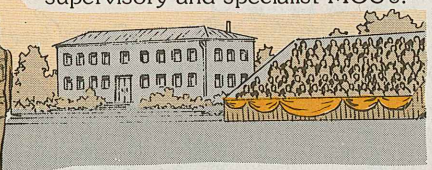


Half-Mast was so proud he almost popped a couple of shirt buttons! But he vowed to keep expanding his knowledge of Army logistics and helping make sure our equipment is maintained by the best prepared soldiers in the world!

Maybe you feel the same way Half-Mast does? Well, if you're an NCO technically sharp in 2 or more logistics areas, you could be a good candidate for the NCOLP, too.

Chapter 7 of AR 614-200, Enlisted Personnel, Selection, Training and Assignment System, can answer most of your questions on the program.

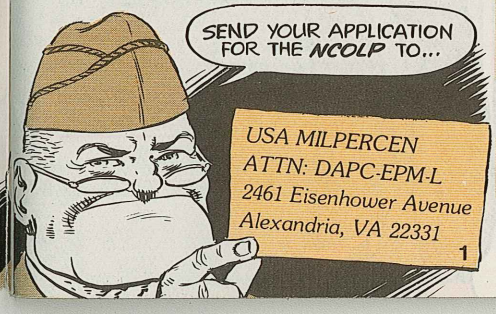
The NCOLP's not restricted to supply types, either. The NCOLP wants top people from 27 MOS's—including a variety of maintenance, supervisory and specialist MOS's.



The NCOLP has recently been revamped with many more jobs available. New procedures, development guides, training and monitors now guarantee that NCOLP members will be recognized and placed in jobs that need and challenge their knowledge.

If you meet the tough requirements to be one of the Army's logistics experts, it's easy to be nominated. Your CO, Sergeant Major or NCOLP members can nominate you.

If you want to talk to somebody in the program, call MSG Robert Vega, AUTOVON 221-8018/8019/8026/8027.



PS THE PREVENTIVE MAINTENANCE MONTHLY

Published by the Department of the Army for the information of all soldiers assigned to combat and combat support units, and all soldiers with organizational maintenance and supply duties.

Within limits of availability, older issues may be obtained direct from Editor, PS Magazine, c/o US Army Materiel Readiness Support Activity, Lexington, KY 40511.

ISSUE NO. 354 MAY 1982

FIREPOWER

GROUND MOBILITY

AIR MOBILITY

COMMUNICATIONS

TROOP SUPPORT

PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to:

MSG Half-Mast
PS Magazine
Lexington, KY
40511

Use of funds for printing of this publication has been approved by Headquarters, Department of the Army, 23 February 1979 in accordance with AR 310-1.

DISTRIBUTION: In accordance with requirements submitted on DA Form 12-5. Private subscriptions: Order from US Govt Printing Office, Supt of Documents, Washington, DC 20402 $12. per year to US and APO; $15. to foreign address.

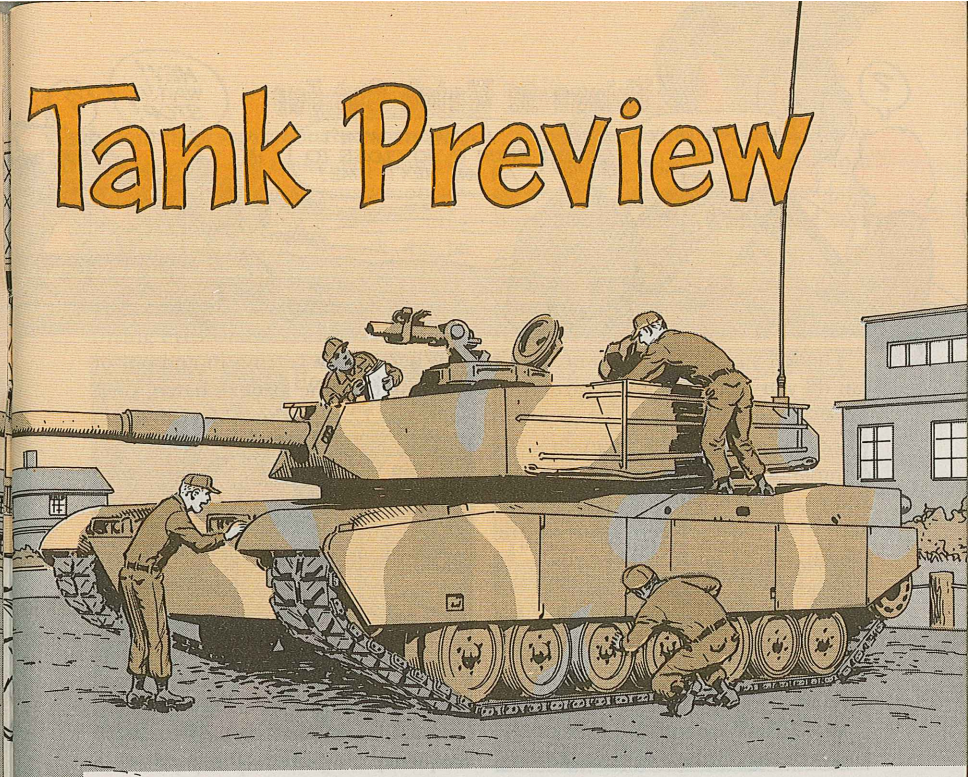
Postmaster: Send address changes to Cdr, US Army AG Pubs Ctr, 2800 Eastern Blvd, Baltimore, MD 21220.

M1 ABRAMS Tank Preview

The M1 is different from any other tank—and you take care of it differently, too. Even where you can aim a high-pressure wash hose is different.

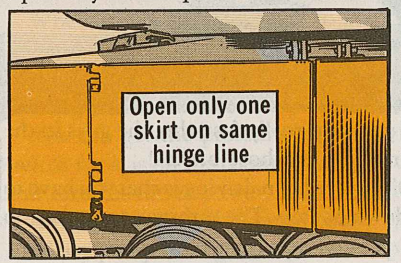
You want to keep the hose aimed away from the optics and sights, natch. You don't want water in them, or inside the tank, either.

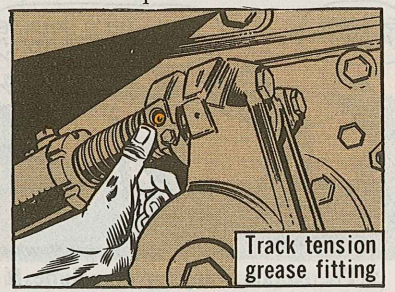
Other things to avoid, tho, are the hubs on the roadwheels. There's a plug in the plastic cover over the hub, and a high-pressure jet from your hose can force water inside the hub. That's bad news!



Eyeball the track PM section of your TM 9-2350-255-10-3 (Nov 81) real close. It's a scary feeling to lose a track at 45 MPH! The word's on Pages 3-132 thru 3-169 of the -10-3.

When you work on your track, don't open any 2-skirt panels that have the same hinge line. Each skirt is heavy, and the hinge can't take the weight of both skirts open at once.

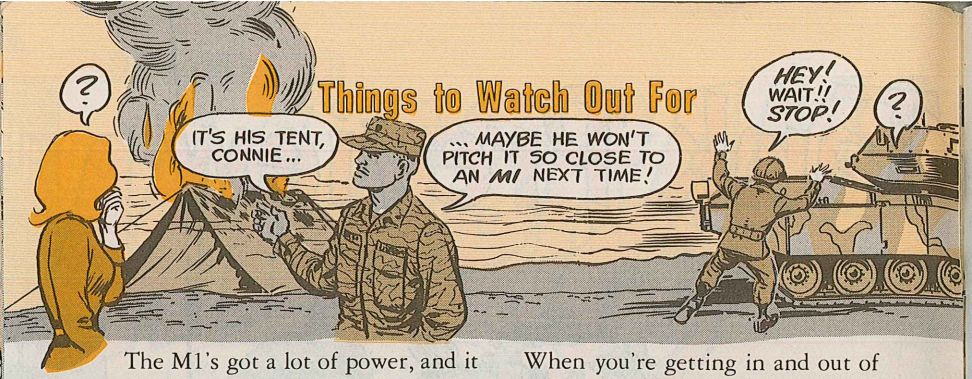




Adjusting track tension is all new, too. You tighten up your track with your grease gun. Check it out on Pages 3-143 thru 3-145 of the -10-3.

PS MORE

Things to Watch Out For



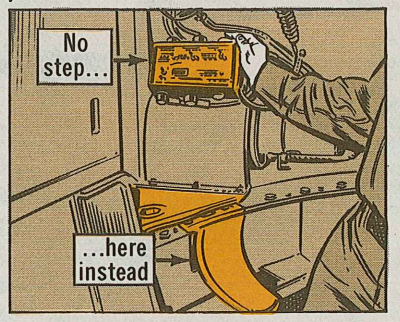
The M1's got a lot of power, and it can do you in if you're not careful.

For example, watch out when you're working around the gunner's or commander's area. If the power's ON and you grab the gunner's handles, the gun may move. Keep clear of the breech—don't let it clobber you!

When you're working outside the tank, keep clear of the gun tube. It's close to the ground, and you can get hit by it if someone inside grabs the handles.

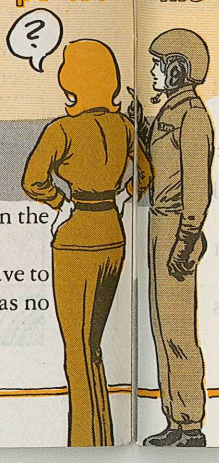
Watch out around the rear of the tank, too, when the engine's running. That exhaust is **hot**—over 700° F at idle. Keep stuff that can burn at least 20 feet from the back of the tank.

When you're getting in and out of the tank thru the loader's hatch, keep your size 12's off the AM 1780 audio



frequency amplifier. It's used as a handy step, but that can tear up your commo. Use the loader's seat post or turret ring instead.

Tips for the Driver



The Abrams can stop on a dime. If you stop really fast, tho, the guys in the turret can get thrown around and hurt. Easy on those brakes!

Another difference from those M60's you've been driving is that you have to use the brake when you want to slow down or stop. The turbine engine has no engine drag to slow you down.

Organizational Maintenance

Pulling organizational maintenance is different—and easier. For example, you can do most maintenance on the pack without pulling it out.

When you do pull the pack, tho, be sure to hook the sling to the power-pack lifting eyes, not the exhaust duct lifting eyes.

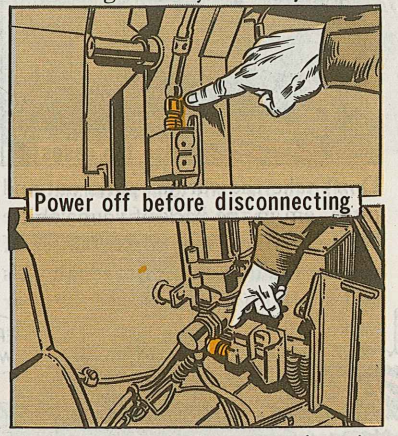
They're easy to get mixed up, but the exhaust duct eyes can't take the weight.

Remember, the pack front lifting eye is under the step plate and is a lot bigger than the duct eyes.

Before you put the pack back into the tank, make sure you're not leaving any tools or trash in the bottom of the engine compartment.

One unit found out the hard way that there's only ¾-in clearance between the hull and the bottom of the transmission. Clean it out—and save your transmission!

Make sure you turn off the main power before you work on the fixed fire extinguisher system. If you leave



the power on and remove the wires from a sensor or the halon bottles, the system will go off.

BIXBY DIDN'T REALIZE HOW FAST TH' BRAKES ON THE NEW M1 ARE, CONNIE... AN' NEITHER DID HIS TURRET CREW, APPARENTLY!

When you're getting ready to start up the engine, eyeball your hydraulic pressure gage. If your tank's been parked for several days, the pressure may be below 1,000 PSI. If the pressure is below 800 PSI, you may not be able to set the parking brake—and you may need it in an emergency.

You can get the pressure up, tho, with the auxiliary hydraulic pump. The switch for it is on the commander's control panel. You can also start the engine and turn on turret power. That'll get the main pump running.

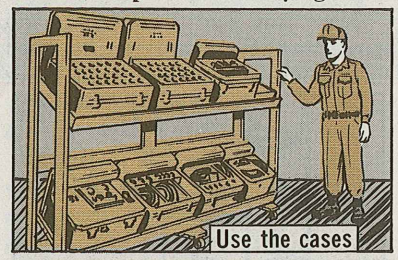
If the pressure has dropped below 1,000 PSI in less than 24 hours, or if the auxiliary pump can't get the pressure up, let organizational maintenance know.

PS MORE

Using the STE-M1

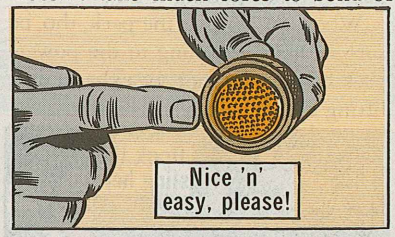
The STE-M1 helps you check out the M1's turret and hull systems. Like any test equipment, tho, you need to handle it with kid gloves.

First, keep it in its carrying cases.

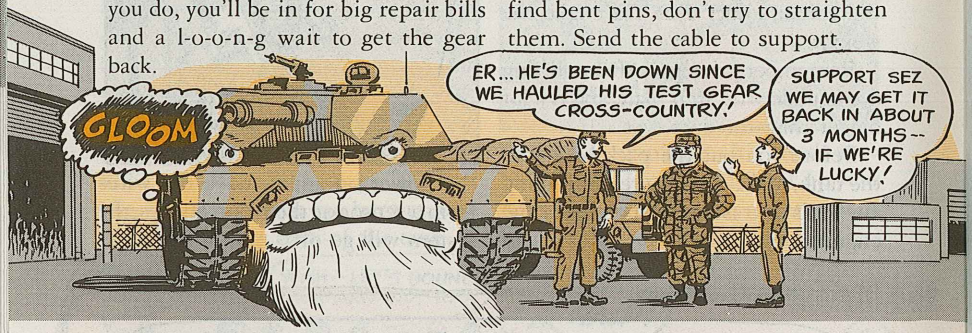


Don't take the various parts out and pitch 'em in the back of your vehicle before you head out cross-country. If you do, you'll be in for big repair bills and a l-o-o-n-g wait to get the gear back.

Be careful when you're hooking the test equipment up, too. The pins in the connectors are real small, and it doesn't take much force to bend or break them. If you can't get a cable connected, **don't force it!**



Instead, check the plug and socket. Make sure there's no gunk on the pins, and that all the pins are straight. If you find bent pins, don't try to straighten them. Send the cable to support.



M88A1 AOAP Sampling Valves

Item 2-6 in TB 43-0001-39-7 has the scoop on adding AOAP sampling valves to the engine and transmission of the M88A1.

Save Those Syringes

The syringes you use to draw oil samples from your non-aeronautical equipment are reusable. Don't chuck 'em after one session.

Other supplies, such as tubing, bottles and shipping sacks, are one-shot items, of course.

But as long as no oil gets into the syringe, it's OK to reuse. Once it's contaminated with oil, tho, get a new one.

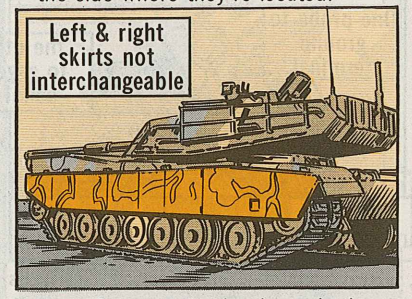
M1 Tank...

Check Out the Skirts

Those ballistics skirts are vital parts of the M1's armor.

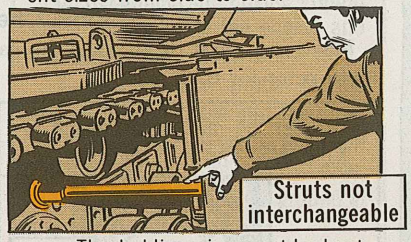
They don't require a lot of maintenance, but you should know a few things about the skirts and the hardware that goes with them.

- The skirts on the left side of the tank won't mix with those on the right side. They can be used only on the side where they're located.

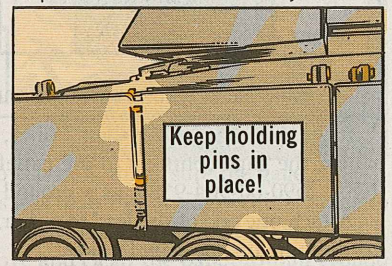


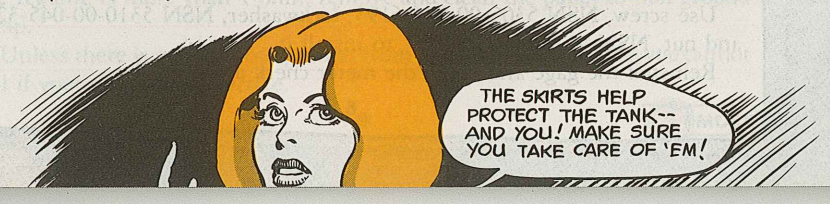
- The mounting hardware is also different from side to side, which means you've got to keep track of each piece when you remove it.

- The support struts are not interchangeable. They are of different sizes from side to side.



- The holding pins must be kept in place and in good condition (not bent, broken) so the skirts can be opened and closed correctly.



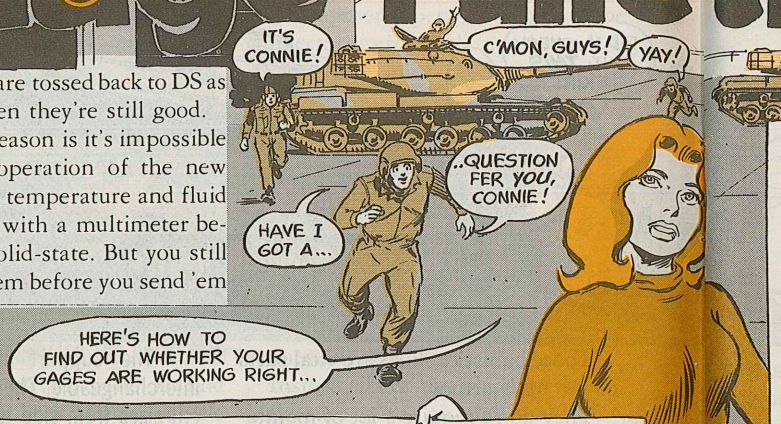


Tanks...

Gage Function Check

Many gages are tossed back to DS as "bad eggs" when they're still good.

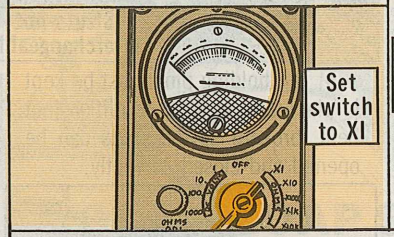
Part of the reason is it's impossible to check the operation of the new Faria pressure, temperature and fluid quantity gages with a multimeter because they're solid-state. But you still need to check 'em before you send 'em back.



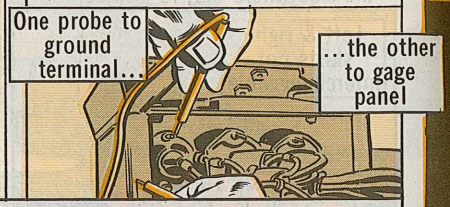
First, Check Ground

Make sure, first of all, that the gages are grounded right. You can use a multimeter for that.

1. Set the multimeter switch to "X1 OHMS" and zero the meter.



2. Connect one probe to the surface of the panel and the other probe to the gage's ground terminal.



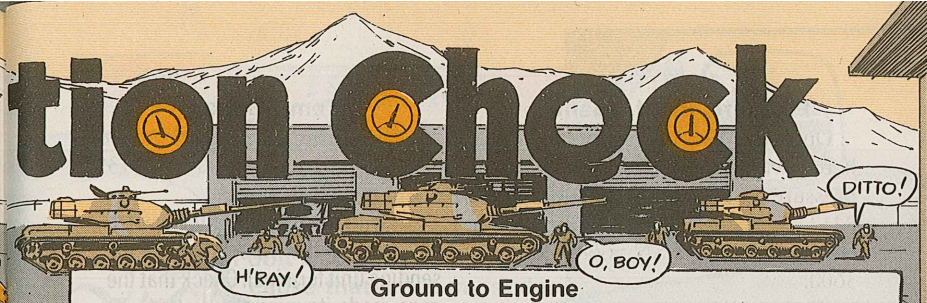
3. If the meter reads less than 1 ohm, your gage is grounded to the panel.

If the reading is more than 1 ohm, remove the gage and clean the surfaces where the gage connects to the panel ground. Or you can order and use lead, NSN 2590-00-904-9580, as a ground wire.

Attach one end of the lead to either gage mounting screw and the other end to the hole on the panel's side.

Use screw, NSN 5305-00-984-6193; lockwasher, NSN 5310-00-045-3299, and nut, NSN 5310-00-934-9757, to install it.

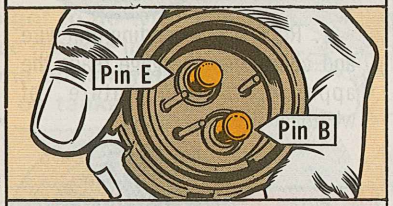
Reinstall the gage and make the meter check again.



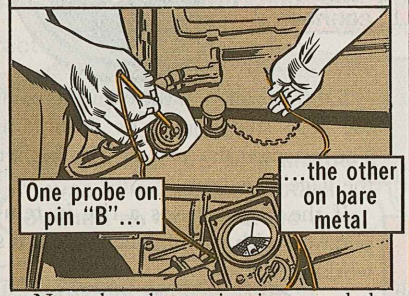
Ground to Engine

Now that the gage is grounded to the panel, make sure the panel's grounded to the engine. Just because it looks grounded is not enough.

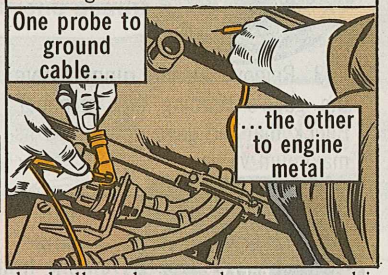
1. Disconnect the engine ground cable from the engine disconnect.
2. Check that pins "b" and "e" are not loose, corroded or damaged.



3. Connect one multimeter probe to pin "b" and the other probe to bare metal on the hull.



4. If the multimeter reading is more than 1 ohm, clean or repair the engine ground cable connection at the hull.
5. Repeat steps 3 and 4 for pin "e".
6. Reconnect the engine ground cable connector to the engine and disconnect the ground at the hull.
7. Connect one probe to the engine ground cable and the other probe to bare metal on the engine. If the reading is more than 1 ohm, clean or repair the engine ground at the engine.



Now that the engine is grounded to the hull, make sure the gage panel is grounded to the hull. If the meter reads less than 1 ohm, connect one probe to the bare metal of the hull and the other probe to the bare metal of the panel. If the reading is more than 1 ohm, remove and clean the panel-to-hull ground strap.

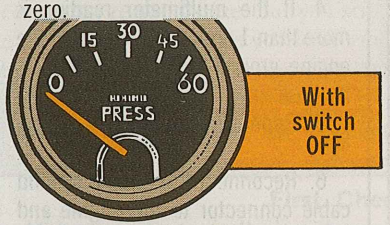
Unless there is a continuous ground from panel to hull to engine, you cannot tell if your gages are defective.

PS MORE

Pressure, Fluid Quantity

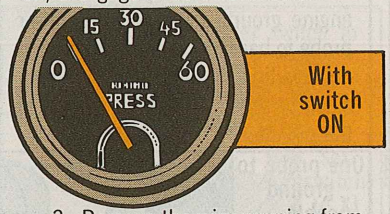
Once the ground has been made, here's what you need to do to check pressure gages, NSN 6620-00-938-8212 and 6620-00-115-9042, and fluid quantity gage, NSN 6680-00-933-3600:

1. With the master battery switch off, the gage should read less than zero.



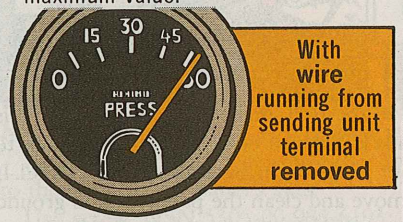
With switch OFF

2. With the master battery switch on, the gage should read zero.



With switch ON

3. Remove the wire running from the gage's sending unit terminal. Check that the gage now reads its maximum value.



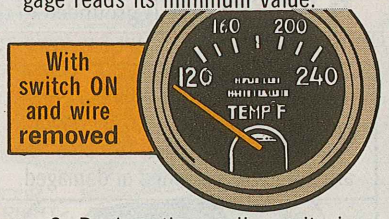
With wire running from sending unit terminal removed

If all checks are OK, your gage is working. If not, turn it in.

Temp Gages

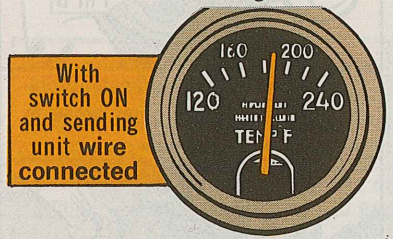
For temperature gages, NSN 6685-00-936-2138 and 6685-00-936-2139:

1. With the master battery switch on, remove the wire going to the sending unit terminal. Check that the gage reads its minimum value.



With switch ON and wire removed

2. Replace the sending unit wire and check that the gage reads the approximate temperature of whatever it is measuring.



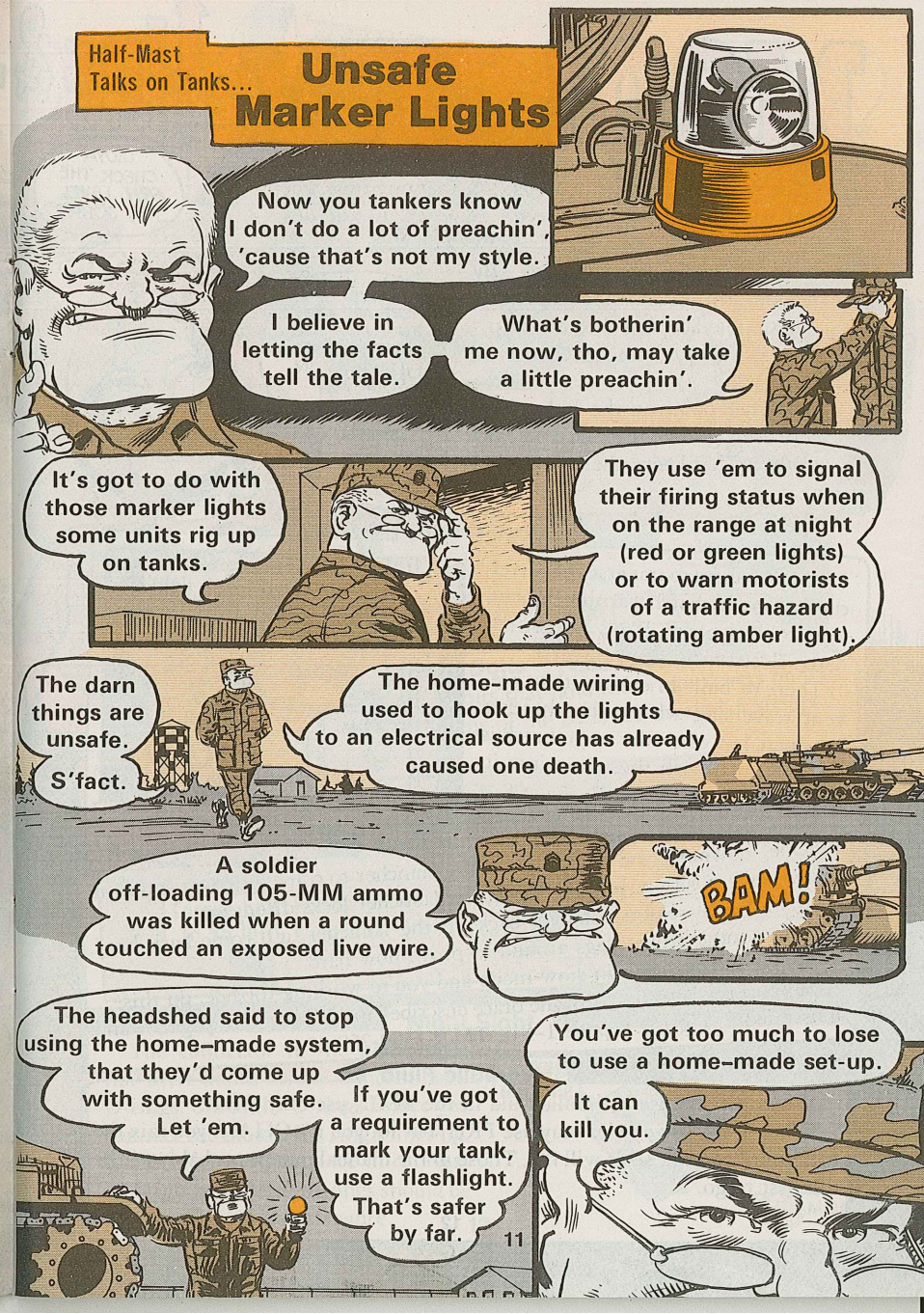
With switch ON and sending unit wire connected

In other words, if the engine is cold, the gage should read its minimum. The warmer the engine, the higher the gage's reading.

If the gage reflects a rise in temperature with use of your vehicle, it's working.

Half-Mast Talks on Tanks...

Unsafe Marker Lights



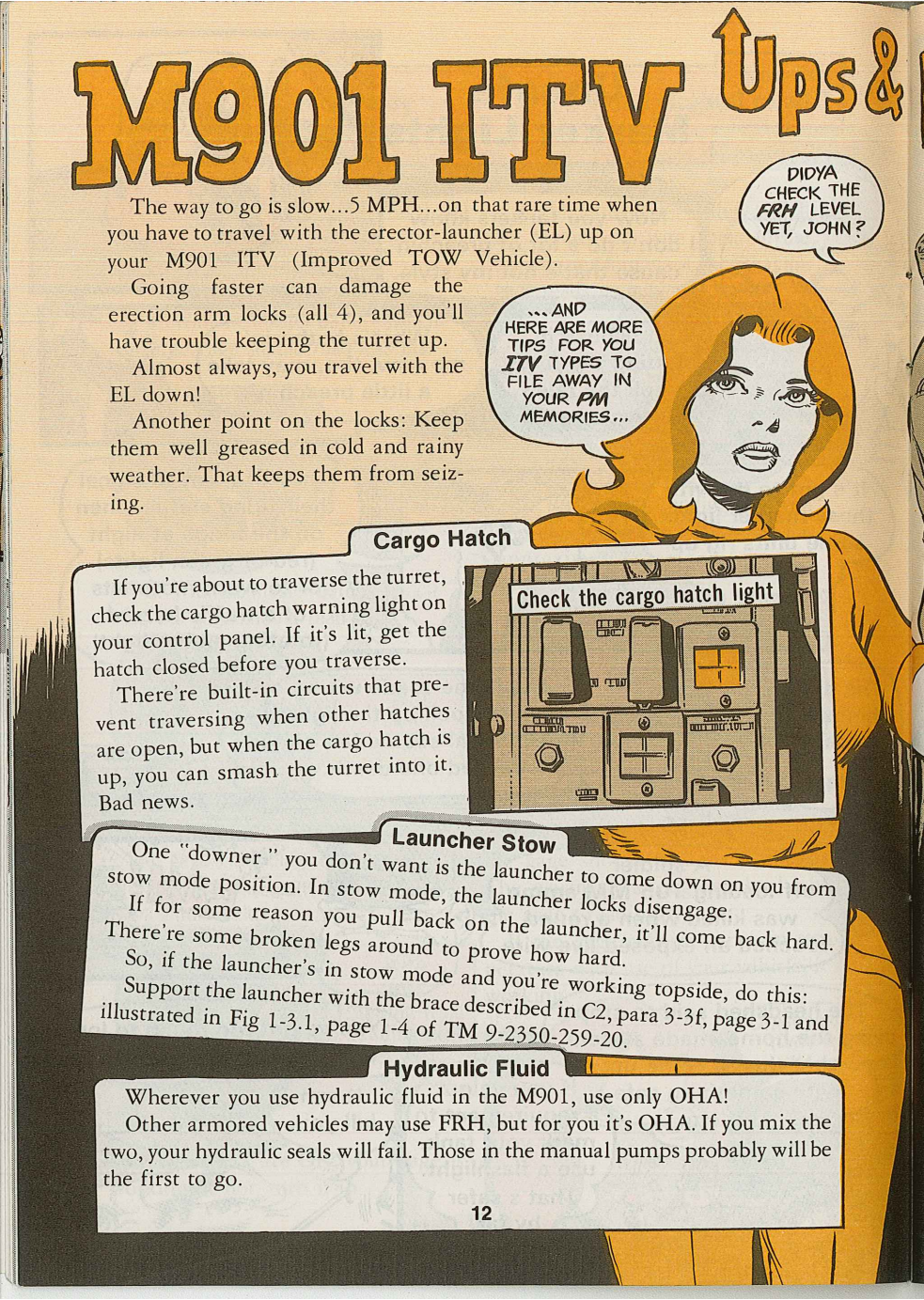
M901 ITV Ups & Downs

The way to go is slow...5 MPH...on that rare time when you have to travel with the erector-launcher (EL) up on your M901 ITV (Improved TOW Vehicle).

Going faster can damage the erection arm locks (all 4), and you'll have trouble keeping the turret up.

Almost always, you travel with the EL down!

Another point on the locks: Keep them well greased in cold and rainy weather. That keeps them from seizing.



Cargo Hatch

If you're about to traverse the turret, check the cargo hatch warning light on your control panel. If it's lit, get the hatch closed before you traverse.

There're built-in circuits that prevent traversing when other hatches are open, but when the cargo hatch is up, you can smash the turret into it. Bad news.

Launcher Stow

One "downer" you don't want is the launcher to come down on you from stow mode position. In stow mode, the launcher locks disengage.

If for some reason you pull back on the launcher, it'll come back hard. There're some broken legs around to prove how hard.

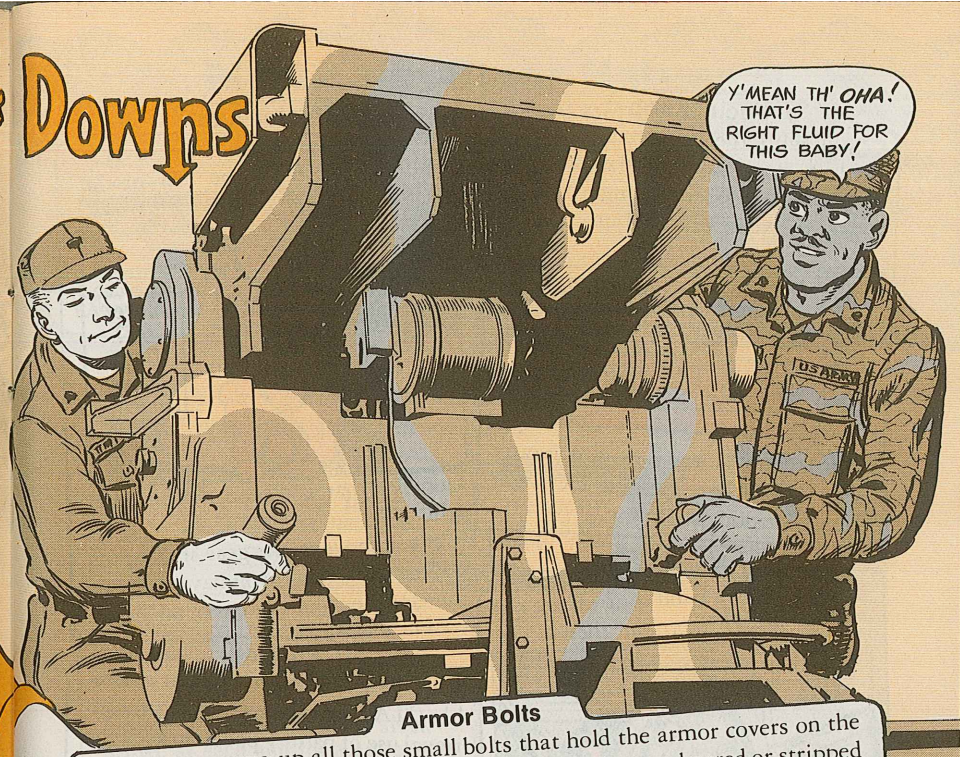
So, if the launcher's in stow mode and you're working topside, do this:

Support the launcher with the brace described in C2, para 3-3f, page 3-1 and illustrated in Fig 1-3.1, page 1-4 of TM 9-2350-259-20.

Hydraulic Fluid

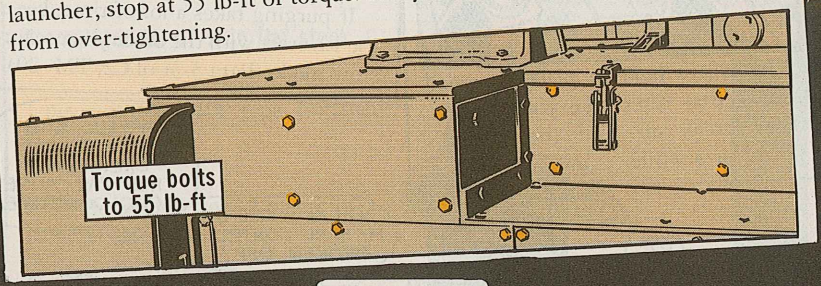
Wherever you use hydraulic fluid in the M901, use only OHA!

Other armored vehicles may use FRH, but for you it's OHA. If you mix the two, your hydraulic seals will fail. Those in the manual pumps probably will be the first to go.



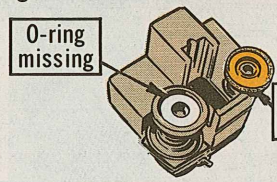
Armor Bolts

When you snug up all those small bolts that hold the armor covers on the launcher, stop at 55 lb-ft of torque. Many of the bolts are sheared or stripped from over-tightening.



Night Sight

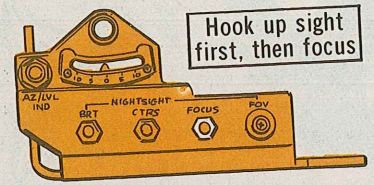
The connector in the night sight hub drive motor on the launcher has 2 O-rings. Check the O-rings before you connect the motor. If a ring's missing, it will affect performance in contrast or brightness. Missing ones should be replaced by DS maintenance.



PS MORE

Focus Knob

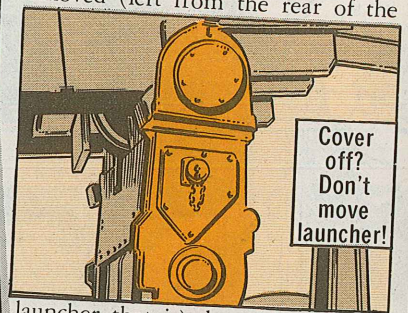
Still with the night sight, never work the focus knob on the gunner's level indicator assembly angle bracket unless the sight's hooked up.



If the range focus is stowed, it can't turn. That'll burn out the DC night sight control drive motor.

Erector Arm

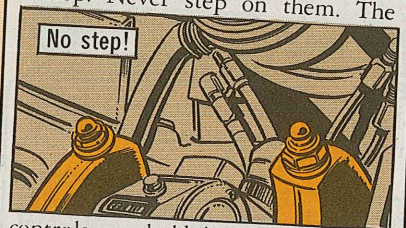
When the left erector arm cover is removed (left from the rear of the launcher that is), keep the launcher still.



If you move it, the gear shaft spurs will be damaged. If you have to move the launcher, put the cover on first!

No Step

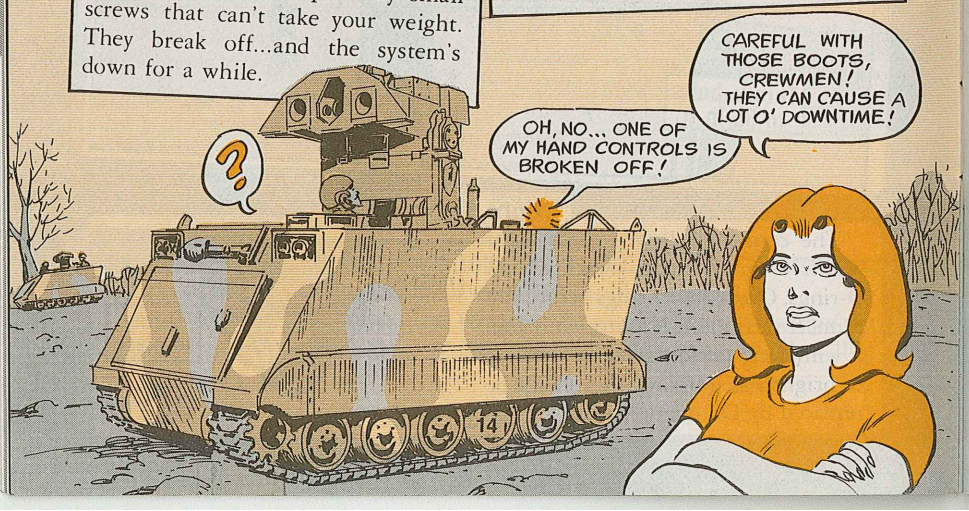
The gunner's hand controls are not a step. Never step on them. The controls are held in place by small screws that can't take your weight. They break off...and the system's down for a while.



Purging

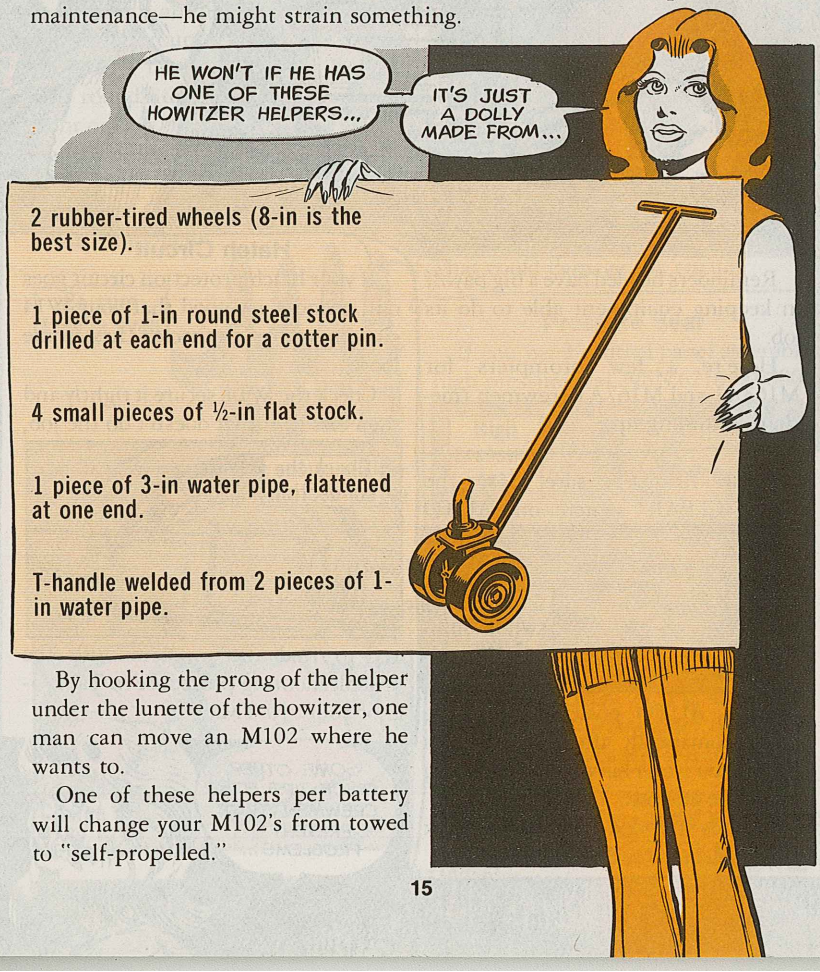
Purging the image transfer assembly (ITA) can take awhile, with continual use of battery power to keep the launcher erect.

If purging takes a lot of time, keep the EL erect with the brace you use for stow mode (Para 3-3f of C2, TM -20).



M102 Howitzer Helper

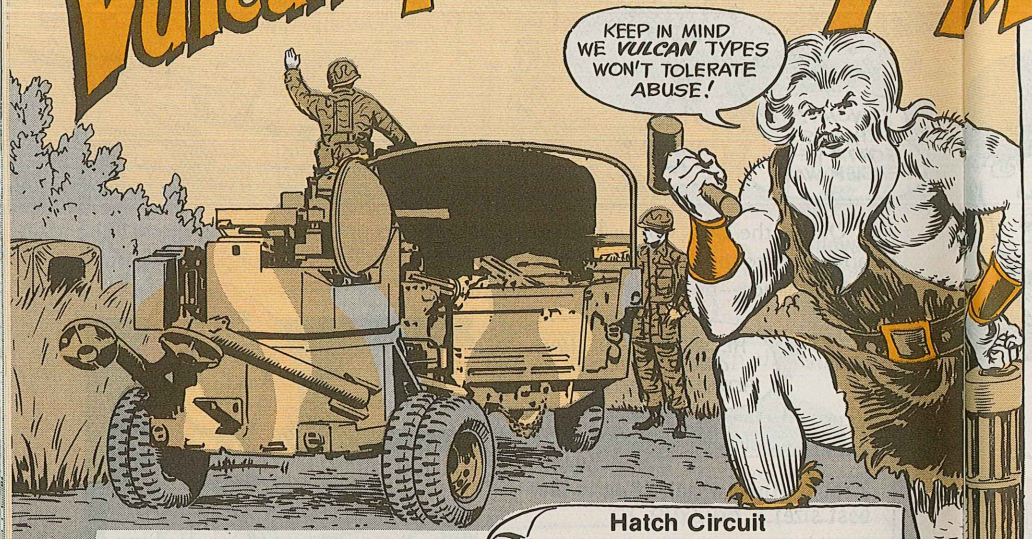
Out in the field with a full crew, you have no problem shoving the M102 howitzer around. But if one crewman has to move it in the motor pool—like for maintenance—he might strain something.



By hooking the prong of the helper under the lunette of the howitzer, one man can move an M102 where he wants to.

One of these helpers per battery will change your M102's from towed to "self-propelled."

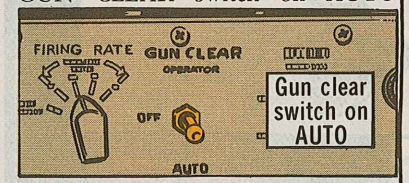
Vulcan Parts and PM



Reminders heeded have a big payoff in keeping equipment able to do its job.

Here're a few prompters for M163A1 and M167A1 crewmen (mechanics coming up):

Before firing, be sure to set the GUN CLEAR switch on AUTO



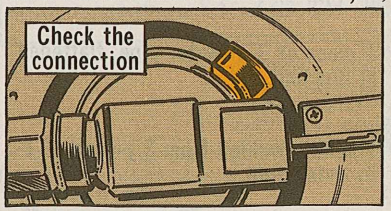
(down). AUTO position clears the gun automatically after firing, which means you won't have rounds hanging up in the barrels.

Rounds stranded in hot barrels cook off—and that's bad news!

Hatch Circuit

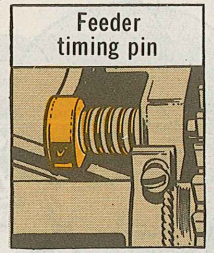
If your hatch protection circuit goes out, chances are good that your W14 slipring cable connector has come loose.

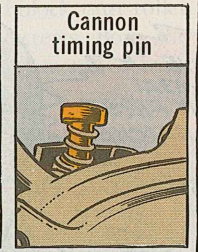
Check the W14, secure it tightly and then test it. If that doesn't do the job,



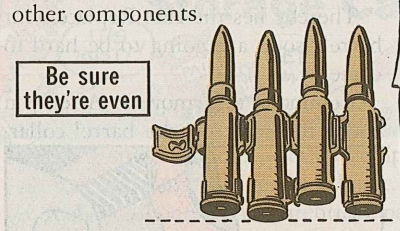
try to find the problem with the troubleshooting procedure in Table 3-2 of your -10 TM.

• Time the system every time you load it and after you take it down.

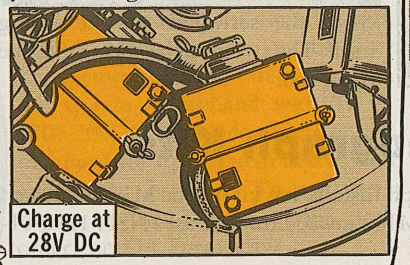




• Eyeball ammunition for "short" and "long" rounds in the belt, before you load it in the feed chute. Reposition rounds that stick out too far in front or rear. Be sure to follow ammo loading procedures in your -10 TM's in order to avoid improper loading, damage to the declutching feeder and other components.



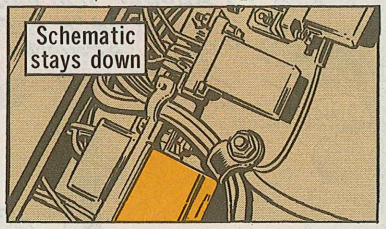
• When you charge your nickel-cadmium batteries, do it at 28V DC. If you increase the charging rate because you think you'll get a faster charge, you'll damage the batteries.



Time Delay Relay

Mechanics take note:

Next time you install time delay relay, NSN 1285-00-050-5971, in the Unit #5 power supply of the M163A1/M167A1, keep the schemat-



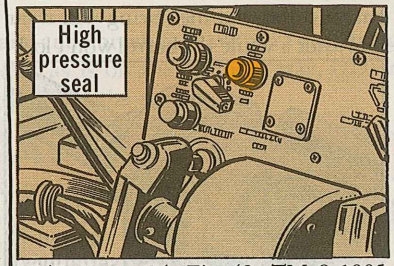
ic side of the relay down (yep, down).

Seems like it should be facing up, but down it goes.

If you put the relay in wrong, you won't have the 2-minute time delay warmup for the receiver-transmitter. That could damage the circuits.

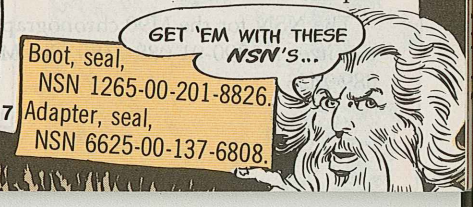
Pressure Seal

If you need control panel assembly high pressure seal, NSN 6210-00-880-



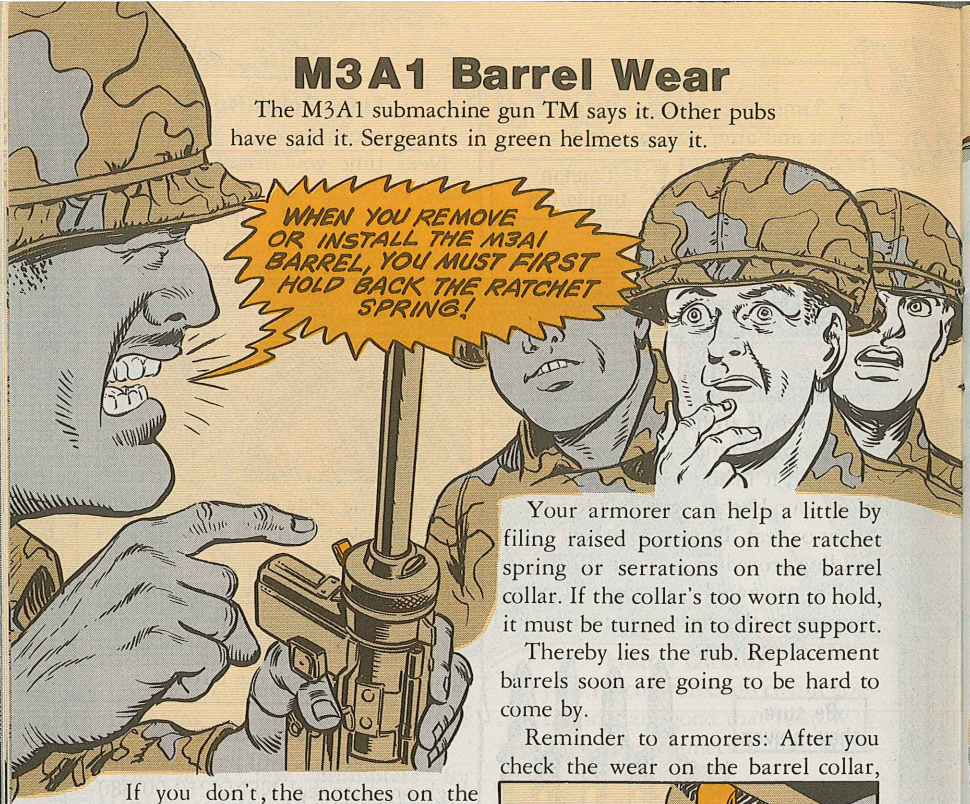
1247 (Item 24, Fig 49, TM 9-1005-286-20P and Item 21, Fig 41, TM 9-2350-300-20P), remember this:

You now need a seal and an adapter.

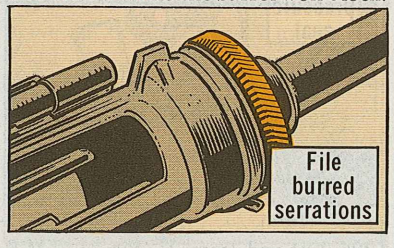


M3A1 Barrel Wear

The M3A1 submachine gun TM says it. Other pubs have said it. Sergeants in green helmets say it.



If you don't, the notches on the barrel collar and the spring will wear and after a while the barrel won't lock.



Your armorer can help a little by filing raised portions on the ratchet spring or serrations on the barrel collar. If the collar's too worn to hold, it must be turned in to direct support.

Thereby lies the rub. Replacement barrels soon are going to be hard to come by.

Reminder to armorers: After you check the wear on the barrel collar,

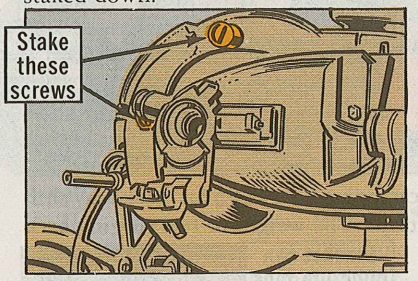
check the serrations in the spring itself. The rivets on the spring must be tight, too.

M90 Chronograph Kits

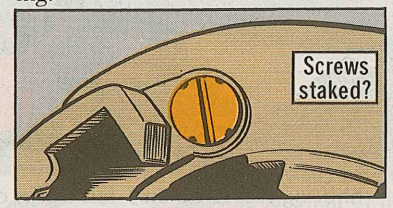
The NSN for the M90 chronograph installation kit for the M101A1 towed howitzer is 1290-01-088-2380. The M102 towed howitzer uses NSN 1290-01-089-7453.

M114A1 Towed Howitzer Fix

Check the breechblock cam roller housing for loose screws. Both the breechblock rotating cam and rotating roller screws should be tight and staked down.

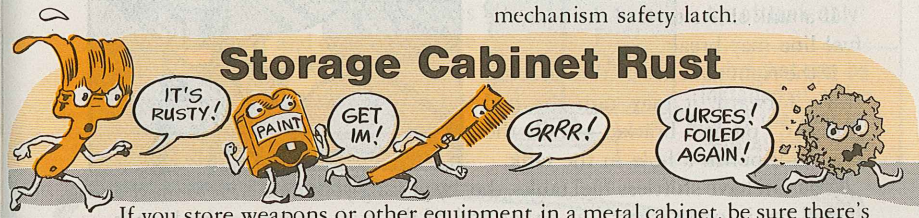


If they're not staked, get your 45L artillery repairer to do the job. He will also take care of any burrs or flat spots on the working surfaces of the housing.



When the screws are staked, your breechblock will close correctly and you'll have no problem with the firing mechanism safety latch.

Storage Cabinet Rust

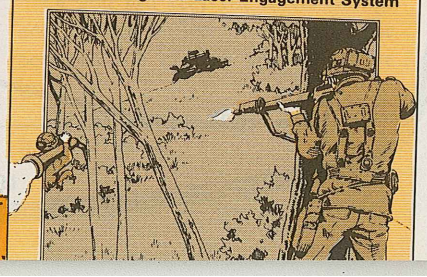


If you store weapons or other equipment in a metal cabinet, be sure there's no rust inside or outside the cabinet.

A short session with a wirebrush, paint and a brush can save you a gig during an inspection. Use the same color paint as is on the cabinet (gray, OD or whatever). The paint protects your gear...and the cabinet.

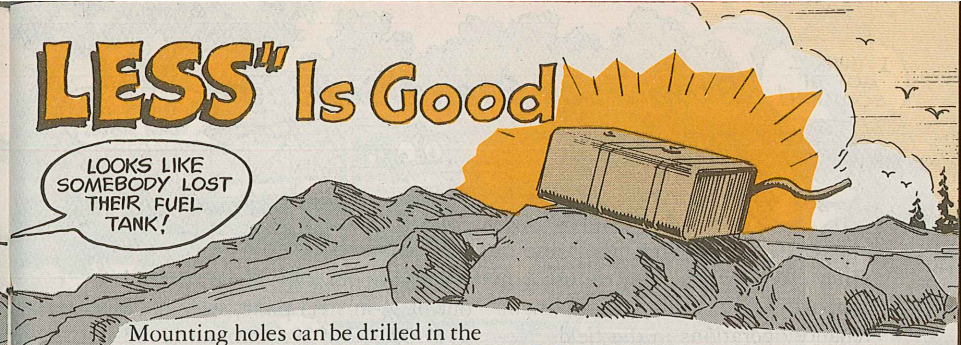
MILES TB Available

Units scheduled for training with MILES (Multiple Integrated Laser Engagement System) can brush up on the system beforehand with TB 9-1200-209-10. It includes operator and maintenance tips, system description and safety cautions. To get extra copies of the TB, your pubs clerk orders on DA Form 4569.



TM-211/TM-260-Series 5-Ton Trucks...

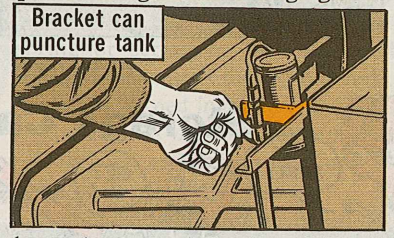
When "SHIFT LESS" Is Good



Shifting fuel tanks on 5-ton trucks can be a pain—and a fuel tank may shift no matter how tight you've got the straps. The weight of fuel surging back 'n' forth can do it. Hitting brush in cross-country travel can do it.

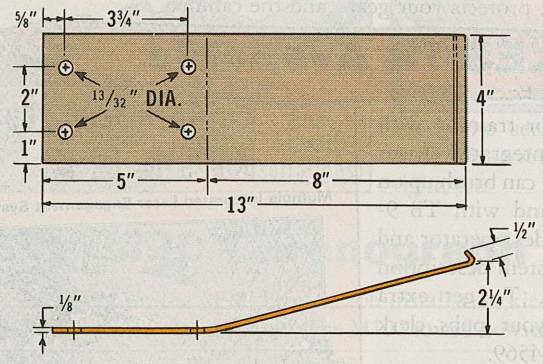
If a tank shifts toward the rear, the fuel line may break.

If the right tank in a dual-tank setup shifts forward, it may ram the fuel transfer pump bracket—and the bracket'll punch a hole in the tank.



You can have shiftless fuel tanks, tho, by getting your mechanic to make and install retaining brackets—at either end of the tank or even at both ends.

The bracket's made from ⅛-in thick steel, NSN 9515-00-184-8811, 4 inches wide and 13 inches long. You'll have to specify the thickness, width and length when you order.

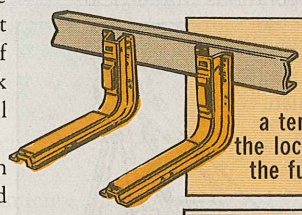


Before ordering the strip, measure from the tank support to the end of the tank. It may be more or less than the length shown here

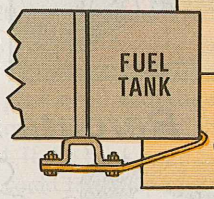
Mounting holes can be drilled in the fuel tank supports (hangers) without removing the tank. Hold a sheet of metal against the bottom of the tank to prevent damage when the drill breaks thru the support.

The bracket is mounted with screws, NSN 5305-00-269-2803, and self-locking nuts, NSN 5310-00-982-4908. These are used in several places on your 5-tonner and are listed in the truck's -20P TM.

Watch it! The bracket should just hook over the lip on the tank—without touching the wall of the tank.



Use the fabricated bracket as a template to mark the location of holes on the fuel tank support



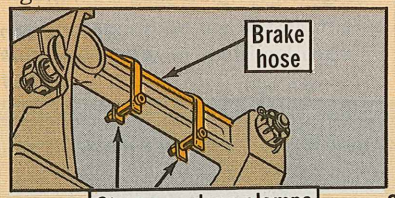
Bracket contacts lip of tank only

A bracket can be installed at either end of the fuel tank —or at both ends

Strap Saves Brake Hose

It may seem like a losing battle—replacing the brake hose that runs along the top of your 5-ton truck's upper torque rods.

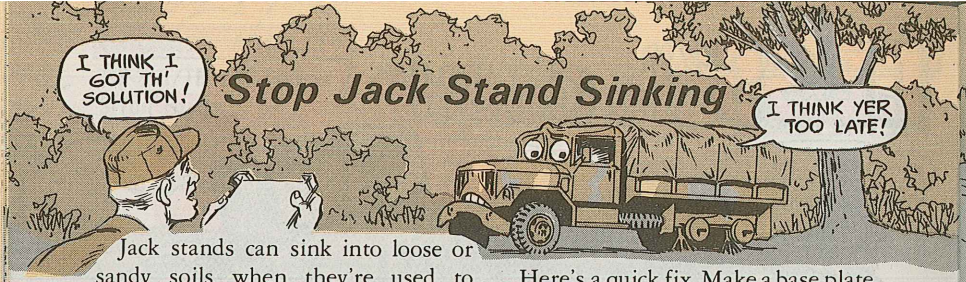
Those metal clamps cut into the hose. You put on a new hose—and the clamps just do a number on the hose again.



Good ol' plastic to the rescue! Replace the metal clamps with plastic tie-down straps—the same as used on 2½-ton trucks to hold the brake hose onto the upper torque rods. The strap, NSN 5975-00-156-3253, is listed in the deuce-and-a-half's TM 9-2320-209-20P.

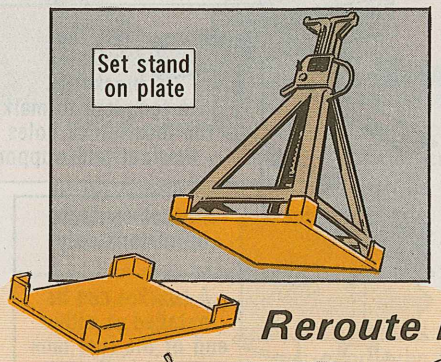
Or you can keep the metal clamps and just put a piece of old inner tube between the clamps and the brake hose.

Do whichever makes your brake hose feel good!



Stop Jack Stand Sinking

Jack stands can sink into loose or sandy soils when they're used to support heavy loads during maintenance operations in the field.

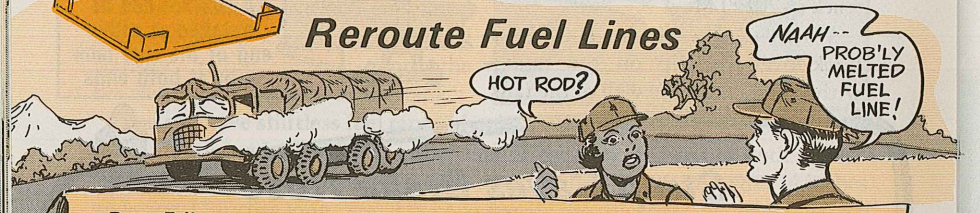


Here's a quick fix. Make a base plate out of ¼-in steel plate, such as NSN 9515-00-187-3959. Cut out a 15-in square plate—bigger if the ground's really soft.

Weld a 1-in piece of 2-in angle iron, NSN 9520-00-277-4911, at each corner of the plate. The legs of the jack stand should just fit between them.

Use this plate to spread the weight over a larger area when you're working on soft ground. Never use it on concrete or asphalt; it could slip!

Reroute Fuel Lines

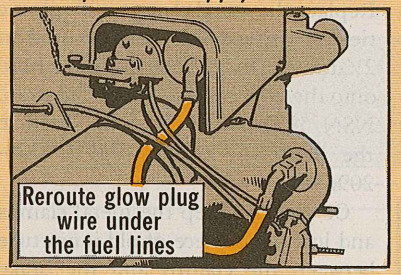


Dear Editor,

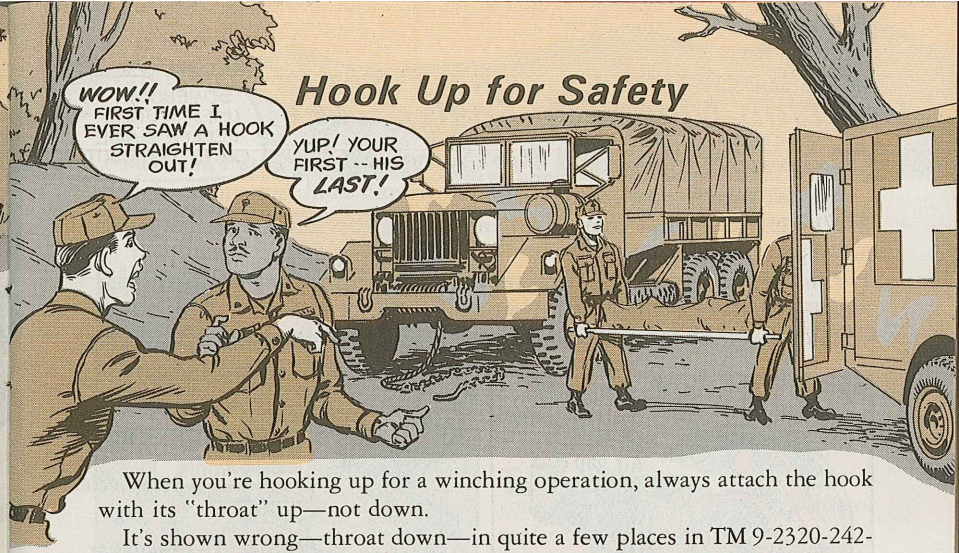
The preheater supply and return fuel lines on the M757 and M656 trucks may melt and cause a fire if they touch the exhaust manifold.

To prevent this, loosen the glow plug wire at the preheater and the glow plug. Reroute the wire under the supply and return fuel lines. Make sure the fuel lines don't touch the manifold. Retighten the glow plug lead.

2LT Carson
APO New York
09281



(Ed Note—Sounds great. The lines made with improved plastic shouldn't melt, but this is a good way to make sure.)



Hook Up for Safety

When you're hooking up for a winching operation, always attach the hook with its "throat" up—not down.

It's shown wrong—throat down—in quite a few places in TM 9-2320-242-10-1, TM 9-2320-209-10-1, TM 9-2320-211-10-1 and TM 9-2320-260-10-1.

So what's the difference? FM 20-22, Vehicle Recovery Operations, Para 34, tells the story:

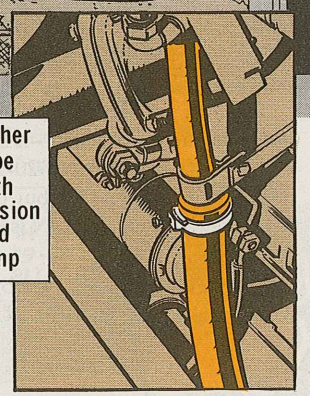
"A hook used in rigging should be positioned with the open part (throat) upward. If the hook should straighten out from overload, the tendency will be for the rigging to be forced downward. If the hook were positioned with the open part (throat) down, the rigging could travel upward unrestrained."

Multifuel Engines...

Extend Crankcase Breather

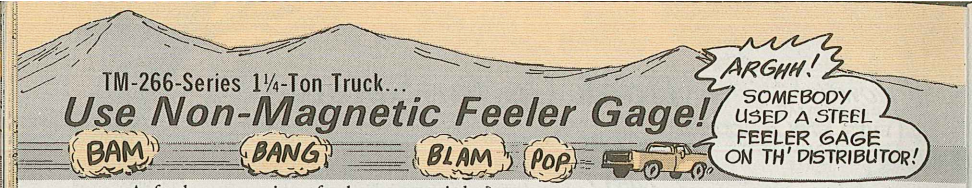
You don't have to put up with crankcase glop on the starter, engine and frame of your multifuel truck.

Extend the breather tube with a 10-to-12-in piece of 1¼-in ID rubber tubing, NSN 4720-00-541-8358, and a hose clamp, NSN 4730-00-585-8394.



TM-266-Series 1¼-Ton Truck...

Use Non-Magnetic Feeler Gage!

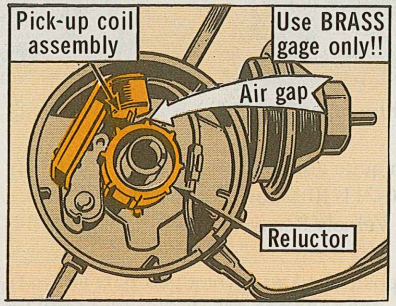


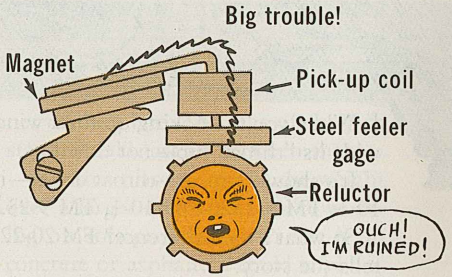
A feeler gage is a feeler gage, right?

Wrong! Feeler gages come in different sizes, shapes, and material—steel, brass, plastic, etc.

This difference is mighty important when you're checking the air gap in your M880-series 1¼-ton truck's distributor.

You've got to use a non-magnetic feeler gage to check that air gap! The right gage is the brass job, NSN 5210-01-026-9571, listed among Special Tools on Page 3-1, TM 9-2320-266-20P.





Steel feeler gage transfers magnetism to the reluctor

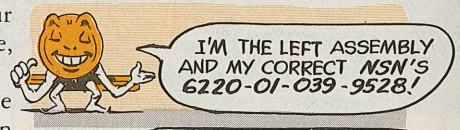
Never use the steel feeler gage, NSN 5210-00-221-1999, in your General Mechanic's Automotive Tool Set—or any other steel gage. You'll screw up the works for sure. You'll magnetize the reluctor. Then the engine will misfire. And when the reluctor is magnetized, it's ruined.

M886-M893 Ambulances...

Tail Lamp Assemblies

To get a tail lamp assembly for your M886 or M893 1¼-ton ambulance, read on!

The left tail lamp assembly—the one with the tag bracket—is shown in Fig 93, Item 1, of TM 9-2320-266-20P. The part number's OK, but the NSN is wrong. The correct NSN is 6220-01-039-9528.

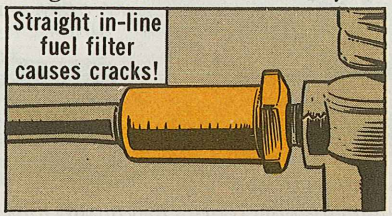


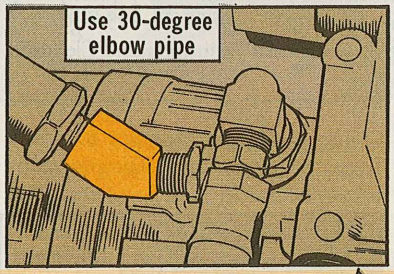
The right tail lamp assembly has no NSN yet. You can get one, tho, with PN 3730983 and FSCM 86403. Use a DD Form 1348-6 to order it.

M151A2-Series ¼-Ton Trucks...

Carburetor Crunch

Mechanics are busting carburetors when they screw the taper-threaded straight in-line fuel filter directly into the carb during replacement.



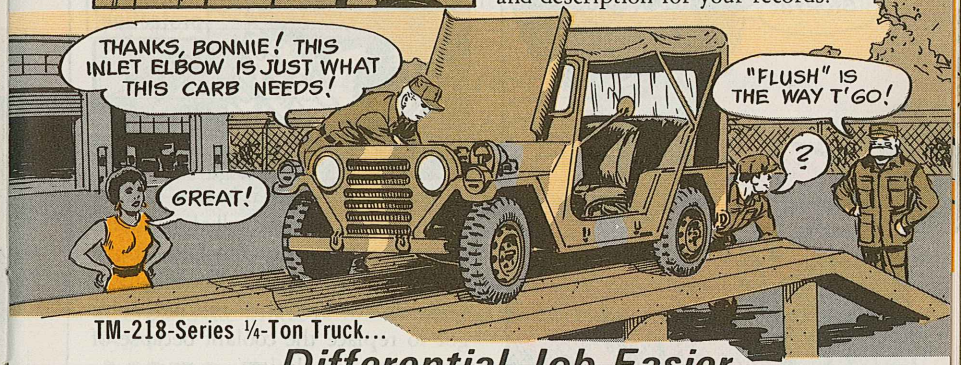


Add a 30-degree carburetor fuel inlet elbow and fuel line inlet pipe locknut to the in-line fuel filter to stop expensive carb replacement costs.

Para 2-44, C5 to TM 9-2320-218-20 has the word.

Adding the elbow—NSN 4730-00-006-4005, Item 1, Fig 12, TM 9-2320-218-20P, and the locknut, NSN 4730-00-832-5670, Item 2, Fig 12—saves you about 66 bucks in carburetor replacement costs.

Forget the illustration for Item 1 in the -20P. Fig 2-82 in C5 shows it like it is. Also, scratch the description of the elbow on Page 25. Note the new NSN and description for your records.

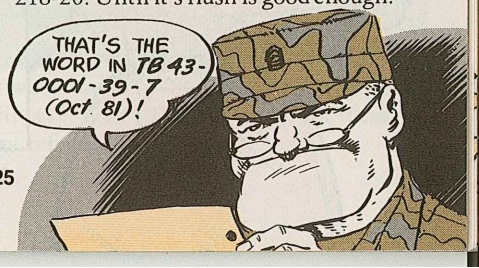


TM-218-Series ¼-Ton Truck...

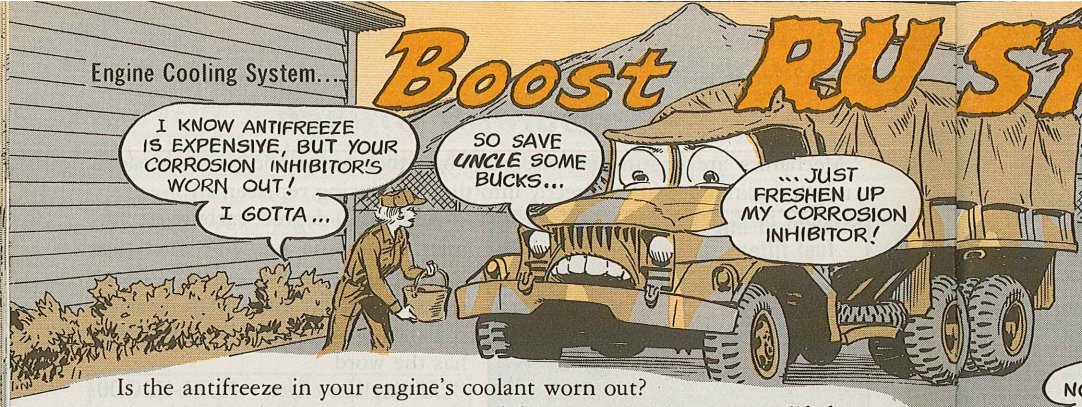
Differential Job Easier

"Flush" is in, "bottoms" is out when you're installing the wear sleeve on your ¼-ton truck's differential carrier pinion flange.

You no longer are required to drive the sleeve on "until it bottoms" against the base of the flange, like it says in Para 2-134, C 5, TM 9-2320-218-20. Until it's flush is good enough.



Boost RUST Protection



Is the antifreeze in your engine's coolant worn out?

If the only problem is worn-out rust inhibitor, your coolant may qualify for a dose of inhibitor, corrosion, liquid cooling system, NSN 6850-00-753-4967. It's listed in Para 2b (3), TB 750-651, Use of Antifreeze Solutions and Cleaning Compounds in Engine Cooling Systems.

First, your coolant's got to pass a freeze protection test. The procedure is spelled out in Para 5a of the TB.

If the freeze point is below -7°F, go on to the reserve alkalinity test (corrosion protection) in Para 5b.

The TB says that a yellowish green color on the test stick means you've got to replace the coolant because of low reserve alkalinity.

- Drain the cooling system and, if needed, filter the coolant thru cheese-cloth, NSN 8305-00-205-3496, to remove rust and solids.
- Add corrosion inhibitor to the coolant at the rate of 9 ounces for each 17 quarts.
- Flush the cooling system with water until the water is clear.
- Put the re-inhibited coolant back into the cooling system.

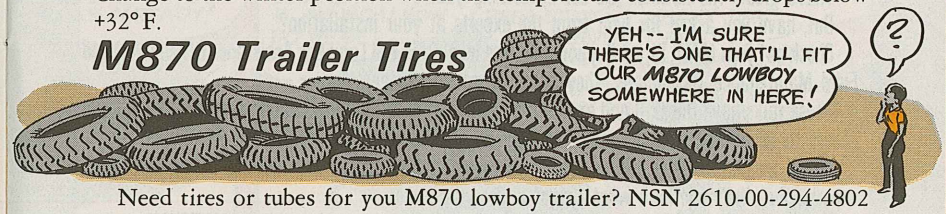
This is a one-time deal. You jack up your coolant's corrosion protection only once. If it fails the reserve alkalinity test again, you've got to replace your coolant.

Make a note that you did this job by recording it in the REMARKS block of DA Form 2408-1 with the other antifreeze info required by Para 5-4d (15) of TM 38-750.

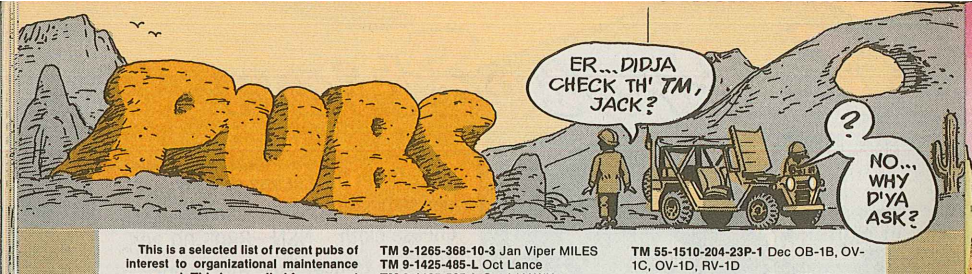
M915-Series Transfer Oil Pump

Be sure to change the transfer oil pump spacer on your M915-series truck like it says in Para 7-9 of TM 9-2320-273-20 and Page 25 of PS 344. Change to the summer position when the temperature is consistently above +32°F. Change to the winter position when the temperature consistently drops below +32°F.

M870 Trailer Tires



Need tires or tubes for you M870 lowboy trailer? NSN 2610-00-294-4802 gets you a 10.00 X 15 tire. A tube to fit is NSN 2610-00-260-7354. Jot these numbers in TM 5-2330-360-14 for easy reference.



This is a selected list of recent pubs of interest to organizational maintenance personnel. This is compiled from recent AG Distribution Centers Bulletins. For complete details see DA Pam 310-4 and DA Pam (C) 310-9.

TECHNICAL MANUALS

TM 3-1040-267-20&P Dec Launcher, grenade, smoke M243, M257

TM 5-1940-277-10-HR Dec Boat, bridge erection Mod USUSBMK1

TM 5-2090-202-12&P Dec Cradle, bridge erection boat

C 2, TM 5-2410-233-20P Dec Tractor, full-tracked, D7F

C 2, TM 5-3805-249-20P Dec Grader, road, DED, Cat Model 120

C 2, TM 5-3810-294-10 Dec Crane, truck mtd 20-ton M320T2

TM 5-4310-367-24P Nov Compressor, recip air: handtruck mtd gas eng, 8-CFM, 175-PSI and 5-CFM, 175-PSI, C & H Distr Mod 20-905 and 20-910.

TM 5-4310-368-14 Dec Compressor, air, GED, recip 15-SCFM (Bauer Mod KA15-03-P)

TM 5-4310-368-14-HR Dec Compressor, air, GED, 15-SCFM (Bauer Mod KA15-03-P)

TM 5-4520-244-24P Dec Heater, duct type port 400,000-BTU Fiesta Mod FC-400-1

TM 5-5420-209-20P Dec Improved ribbon bridge Class 60

TM 5-5420-226-20-2 Nov AVLB

TM 5-5420-226-20-4 Nov AVLB

C 2, TM 5-6115-275-14 Dec Gen set, GED, 10-KW Models MEP-018A, MEP-023A

C 7, TM 5-6115-545-12 Dec Gen set, DED 60-KW

C 1, TM 9-1005-286-20-2 Nov Vulcan M167A1

TM 9-1265-368-10-1 Jan Dragon MILES

TM 9-1265-368-10-3 Jan Viper MILES

TM 9-1425-485-L Oct Lance

TM 9-1425-525-L Oct I-HAWK

TM 9-1425-1525-24P Sep I-HAWK

TM 9-1425-1586-10-HR Sep Chaparral

TM 9-1440-1585-20-1 Aug Chaparral

TM 9-1440-1585-20-2 Aug Improved Chaparral

C 2, TM 9-2350-217-10N Oct Howitzer, M109, M109A1, M109A3

C 1, TM 9-2350-258-20-1 Dec M48A5 tank

TM 9-4935-585-24P Sep Chaparral

TM 9-4935-1587-14 Sep Chaparral

TM 9-6920-480-24P-1 Sep Dragon

TM 10-3930-643-14&P Nov Truck, forklift RT, diesel eng, 10,000-lb Int Harvester Mod M10A, MHE 236

TM 10-3930-647-14&P Oct Truck, forklift, gas eng, 4,000-lb Clark C500445, MHE 243

TM 11-1290-388-24 Dec Sound ranging, data processing gp OL-274/TNS-10

TM 11-5810-222-24P Dec TSEG/KG-13

TM 11-5820-498-20P Dec AN/VRC-53, -64; AN/GRC-125, -160 radio sets and OA-3633 and -3633A amplifier power supply groups

TM 11-5820-518-20P Aug AN/ARC-51X and -51BX radio sets

TM 11-5820-882-23P Jan AN/PRC-68 radio set

TM 11-5826-300-20 May AN/ARN-124 distance measuring set

TM 11-5830-256-23P Aug LS-147F/FI intercom sta

TM 11-5841-291-12 Oct Radar warning system

TM 11-5895-955-10-1 Feb AN/ALQ-133, AN/USM-393, AN/ALM-154

TM 11-6130-227-20P4 Dec PP-1660A/G battery charger

TM 11-7025-202-14-1 Nov TD-976/G multiplexer

TM 55-1510-204-23P-1 Dec OB-1B, OV-1C, OV-1D, RV-1D

TM 55-1510-204-23P-2 Dec OB-1B, OV-1C, OV-1D, RV-1D

TM 55-1510-204-23P-3 Dec OB-1B, OV-1C, OV-1D, RV-1D

MISCELLANEOUS

AR-340-18-14 Dec Maint disposition logistics files (fiche)

CIR 310-81-11 Oct Base level commercial equip

DA Form 1687 Jan Delegation of Authority Receipt for Supplies (replaces DA Form 1687, Dec 57)

DA Form 3056 Dec Report of missing/recovered firearms ammo & explosives

DA Form 3266-1 Jan Missile Materiel Readiness Report (replaces DA Form 3266-1, Jan 80)

DA Form 3328 Jan Serial/registration number record

DA Form 3645 Jan Organization clothing and eqpt record

DA Form 3645-1 Jan Additional organization clothing and equipment record

DA Form 3749 Jan Equipment Receipt (replaces DA Form 3749 Aug 71)

DA Form 4949 Jan Admin Adjustment Report

DA Form 4999 Jan Due-In Record

LO 9-2330-220-12 Dec Semitrailer, wrecker, M269, M269A1, M270, M270A1

LO 5-6115-597-12 Oct Gen set, gas turbine eng skid, AC, 400-HZ, 10-KW, D423A

PAM 310-4 Oct Index of tech pubs (fiche)

PAM 310-8 Jan Index of personnel tests

PAM 700-3 Nov Use SF 364 to report packaging discrepancies

TB 750-651 Oct Use of antifreeze solutions and cleaning compounds in engine cooling systems

Hotlines . . .

Help is Close at Hand

Thinking about calling the depot hotlines for help with your equipment problem?

That's great. The hotlines are set up to help you.

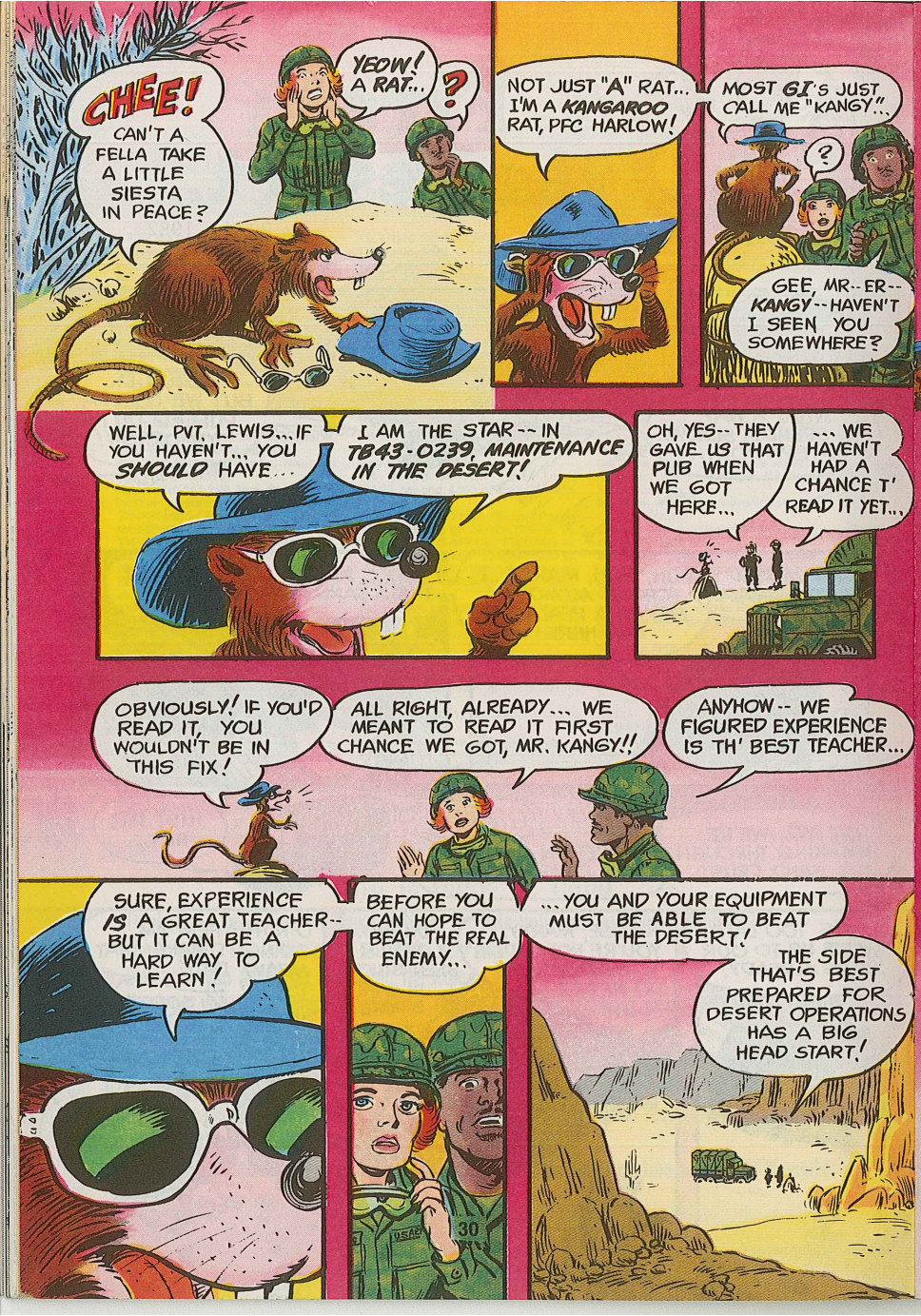
But, have you asked for help from the experts at your installation?

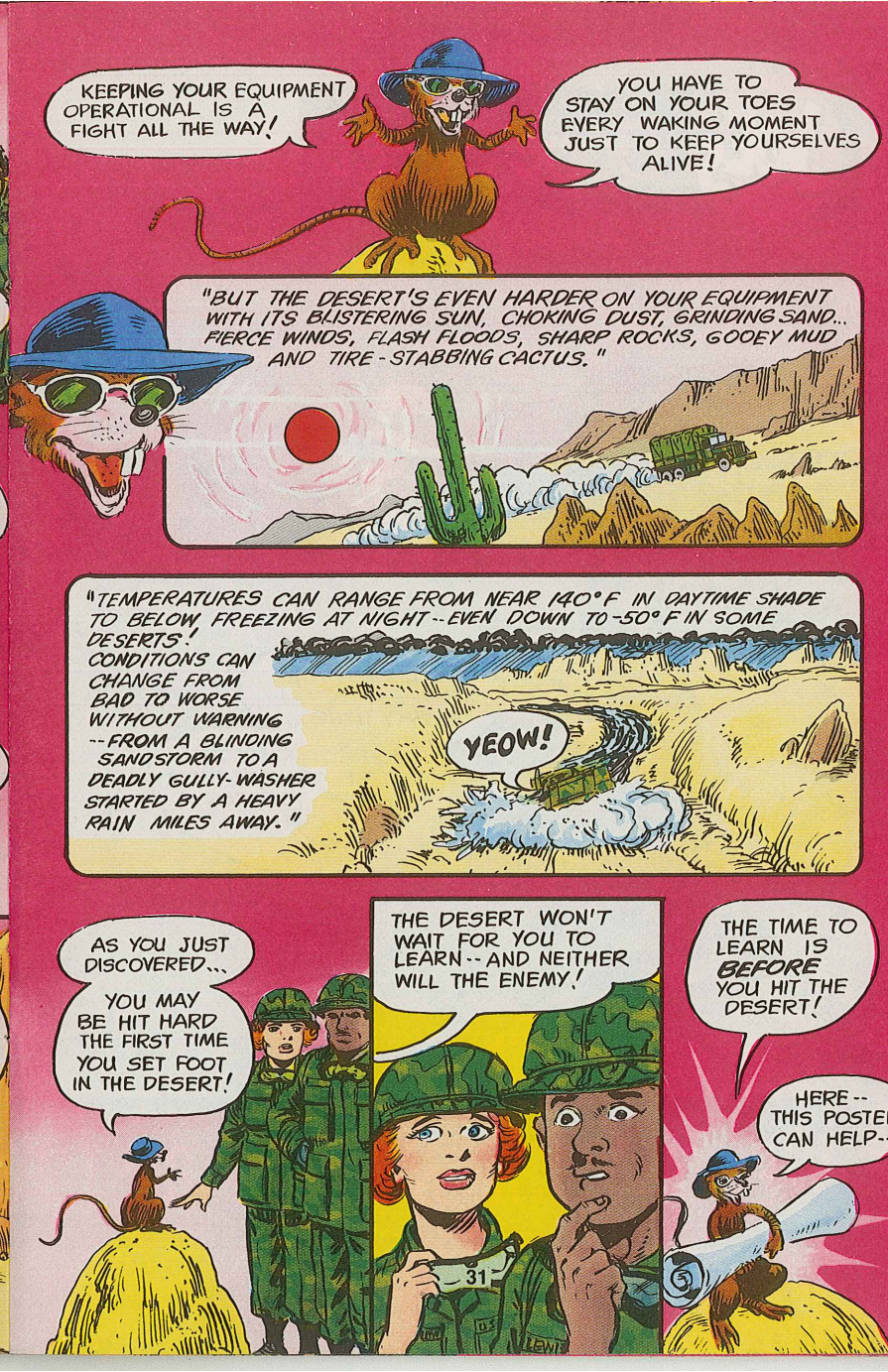
Check out your MAIT, Direct Support Unit, the local DARCOM Logistics Assistance Office (LAO) and Field Maintenance Technicians. They are also working to help you.

Those folks have the skill and experience to help you solve many of your problems, and they have access to information on the latest changes in maintenance and operation.

By all means, call the hotlines if your problem is a tough one and requires the help of depot experts. But don't overlook what's right under your nose.

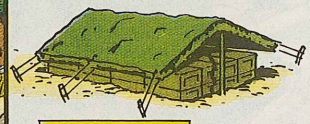
When you call, sound off—loud and clear. Give your name, unit, location and AUTOVON number.

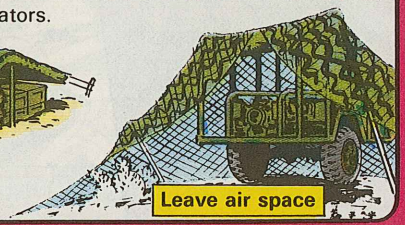

CHEE! CAN'T A FELLA TAKE A LITTLE SIESTA IN PEACE?
YEOW! A RAT..
?
NOT JUST "A" RAT... I'M A KANGAROO RAT, PFC HARLOW!
MOST GI's JUST CALL ME "KANGY"...
?
GEE, MR--ER--KANGY--HAVEN'T I SEEN YOU SOMEWHERE?
WELL, PVT. LEWIS... IF YOU HAVEN'T... YOU SHOULD HAVE...
I AM THE STAR--IN TB43-0239, MAINTENANCE IN THE DESERT!
OH, YES--THEY GAVE US THAT PUB WHEN WE GOT HERE...
... WE HAVEN'T HAD A CHANCE T' READ IT YET...
OBVIOUSLY! IF YOU'D READ IT, YOU WOULDN'T BE IN THIS FIX!
ALL RIGHT, ALREADY... WE MEANT TO READ IT FIRST CHANCE WE GOT, MR. KANGY!!
ANYHOW--WE FIGURED EXPERIENCE IS TH' BEST TEACHER...
SURE, EXPERIENCE IS A GREAT TEACHER--BUT IT CAN BE A HARD WAY TO LEARN!
BEFORE YOU CAN HOPE TO BEAT THE REAL ENEMY...
...YOU AND YOUR EQUIPMENT MUST BE ABLE TO BEAT THE DESERT!
THE SIDE THAT'S BEST PREPARED FOR DESERT OPERATIONS HAS A BIG HEAD START!
30


KEEPING YOUR EQUIPMENT OPERATIONAL IS A FIGHT ALL THE WAY!
YOU HAVE TO STAY ON YOUR TOES EVERY WAKING MOMENT JUST TO KEEP YOURSELVES ALIVE!
"BUT THE DESERT'S EVEN HARDER ON YOUR EQUIPMENT WITH ITS BLISTERING SUN, CHOKING DUST, GRINDING SAND... FIERCE WINDS, FLASH FLOODS, SHARP ROCKS, GOOEY MUD AND TIRE-STABBING CACTUS."
"TEMPERATURES CAN RANGE FROM NEAR 140° F IN DAYTIME SHADE TO BELOW FREEZING AT NIGHT--EVEN DOWN TO -50° F IN SOME DESERTS! CONDITIONS CAN CHANGE FROM BAD TO WORSE WITHOUT WARNING --FROM A BLINDING SANDSTORM TO A DEADLY GULLY-WASHER STARTED BY A HEAVY RAIN MILES AWAY."
YEOW!
AS YOU JUST DISCOVERED... YOU MAY BE HIT HARD THE FIRST TIME YOU SET FOOT IN THE DESERT!
THE DESERT WON'T WAIT FOR YOU TO LEARN--AND NEITHER WILL THE ENEMY!
THE TIME TO LEARN IS BEFORE YOU HIT THE DESERT!
HERE--THIS POSTER CAN HELP--
31


JOE'S Dope Sheet
The sand and the dust and the heat
Are some of the foes you will meet!
You'd better prepare
Before you get there
Or you'll be the one who gets beat!
TB 43-0239
MAINTENANCE IN THE DESERT
DESERT OPERATIONS
FM 90-3
DIRT, DUST AND SAND GET INTO EVERYTHING...
YOU GOTTA WIN THE BATTLE AGAINST THEM BEFORE YOU CAN PUNCH OUT AN ENEMY!
WE HAVE THE WORLD'S BEST EQUIPMENT ...Take care of it
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

★ Protect equipment and ammo from direct sun as much as possible. This goes especially for any equipment that makes its own heat—like radios, engines and generators.

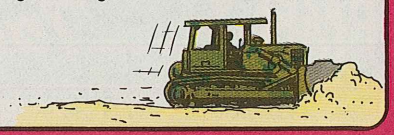




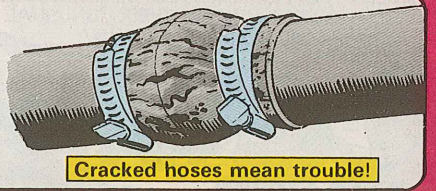
★ Keep dust and sand away from glass. This's life-or-death for optical parts of sighting and fire control equipment.

★ Keep lube containers covered. Lube equipment must be kept clean. Frequent lubing flushes dust out of moving parts.

Exposed bearing surfaces—like in artillery and other weapons—get only slight lubing. More lube only catches more dust 'n' sand. You wind up with a real grinding compound when dust and sand get into grease and oil.



★ Liquid cooled engines need frequent, eagle-eyed inspection for cooling system leaks. Even a tiny leak can lead to disaster. Just one drop a second means a loss of 7 gallons over 24 hours!



★ Engine air cleaners can plug up with dust in only a few hours. Keep air filters clean!

★ You can't keep all dirt out of your fuel, so drain fuel filters often.

★ Flour-like dust gets into everything! What you can't keep out, you've got to clean out.

- Page 2-20, Environmental Effects on Equipment
- Page 3-7, Special Equipment Techniques
- Page B-1, Employment of Army Aircraft in Desert Operations
- Page C-1, Techniques for Operating Equipment in the Desert
- Page D-1, Effects of Environment on Nuclear, Biological and Chemical Weapons

HEY-- YOU KNOW YOUR STUFF, LITTLE FELLOW, BUT DON'T OVERLOOK...

...YOUR OWN EQUIPMENT PUBS!

YES, THEY TOUCH ON DESERT OPERATIONS AND MAINTENANCE PROBLEMS IN THEIR "UNUSUAL CONDITIONS" SECTIONS!

S-SERGEANT SPARKS ... HOW--?

?

BONNIE... WHERE...?

I SEE Y'GOT MY SOS, MACON...

RIGHT, KANGY! BONNIE AND I WERE JUST BEYOND THAT RIDGE...

...SO WE POPPED RIGHT OVER TO LEND A HAND!

WE'VE GOT PLENTY OF SHOVELS -- LET'S GET AT IT!

OK, GANG! LET'S GET THIS TRUCK OUT -- LIKE IT SAYS ON PAGES 62-63 OF FM 90-3!!

:URG:

I'LL HELP!

SOON... ?WHEW! WE MUSTA MOVED HALF THE DESERT...

...BUT WE GOT OL' DEUCY OUT!

RIGHT -- NOW LET'S HEAD BACK T' POST FOR TH' HOLIDAY EVE BASH!

SERGEANT SPARKS -- DON'T FORGET OUR DATE T'NITE! YOU'RE GOING TO REVIEW DESERT COMMO PM WITH ME -- REMEMBER?

HOW AWFUL!

I DO INDEED, PFC. HARLOW! BUT BRING ALONG YOUR 7843-0239 AND FM 90-3!

RIGHT, SGT!

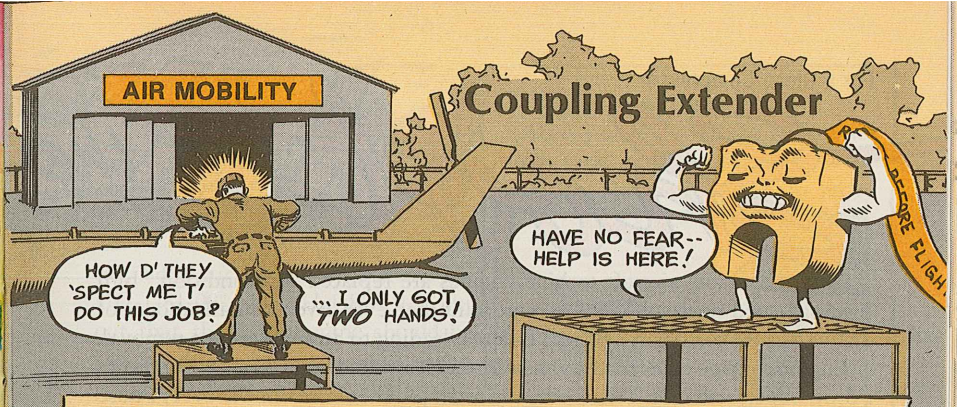
SAY -- MACON... WHAT HAPPENED TO KANGY?

OH -- I SAW HIM HOP IN HIS BURROW -- POOR LITTLE GUY LIVES HERE IN TH' DESERT!

YEAH -- US KANGAROO RATS JUST GOTTA TOUGH IT OUT HERE IN OUR DESERT DIGS!

NOW... TONITE'S GAME --

WANT ANOTHER COLD ONE, HONEY?

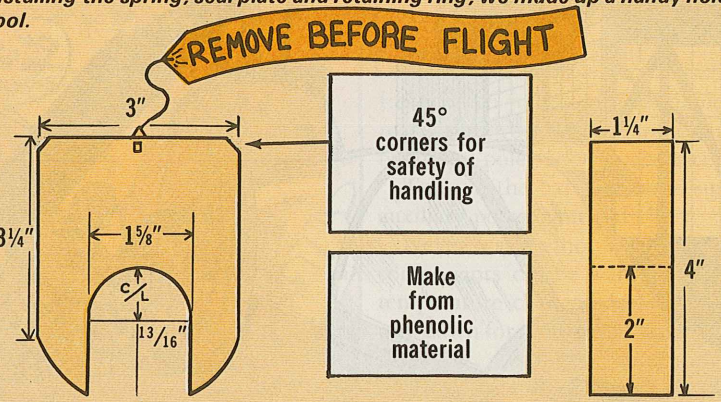


Coupling Extender

Dear Editor,

Greasing the tail rotor drive shaft couplings on a Cobra and Huey when they're installed on the tail boom can be tricky. The coupling has to be held fully outboard. At the same time, you have to hand-pack the splines with grease.

To keep the coupling from compressing during cleaning, greasing and installing the spring, seal plate and retaining ring, we made up a handy holding tool.



Just insert the work aid between the coupling and hanger assembly and you won't mess up the 0.12-in coating of grease on the top of those splines.

It works.

Alfred Morgan
Ft. Eustis, VA

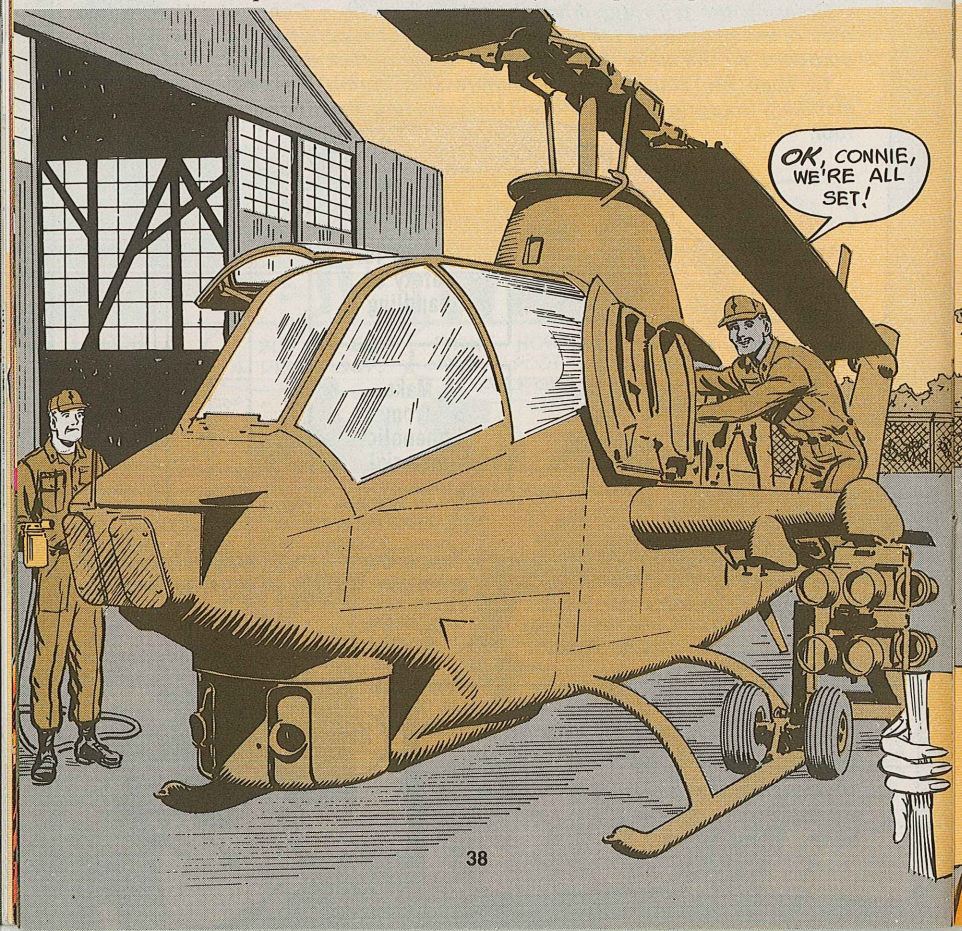
(Ed Note—Dry couplings have led to accidents, so it's important to lube them right. Your work aid looks like a winner.)

For a Clean Compressor...

Shoot the Works

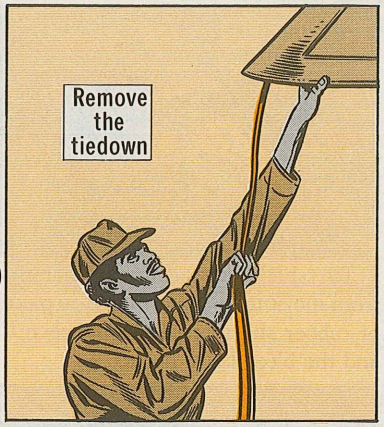
Now that many aircraft turbine engines are replaced "on condition," bird mechs, a good wash job is more important than ever. Even a small amount of dirt will cause corrosion and seal failures, leading to an early engine removal.

Engine damage takes place even **before** a Health Indicator Test (HIT) shows a drop in performance. That's why the wash job should be done at every Phase Maintenance inspection—more often when you're operating in dust, sand or salt-laden air. TSARCOM messages UH-1-81-09 and AH-1-81-19 point out that the T-53 engine should be cleaned every 25 flight-hours when you fly in dusty or sandy conditions.



Get Ready

After you've moved the bird to the wash rack, remove the main rotor tiedown. The blades have to move



freely when you motor the engine, so make sure you have clearance from buildings, poles or other obstructions.

To save the battery, wheel up an auxiliary power unit (APU).

Never wash a hot engine because components can be warped by rapid temperature changes. Let the engine cool down for **at least** 45 minutes after flight.

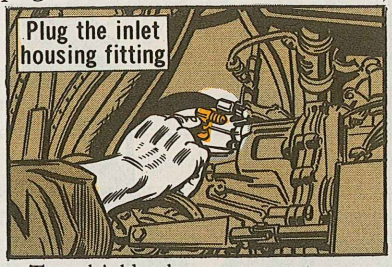
Use a suitable sprayer and make a mixture of 1 part non-flammable turbine engine cleaner, B&B 3100, to 4 parts water. NSN 6850-00-181-7594 will get you a handy 5-gal can; NSN 6850-00-181-7597 a 55-gal drum. The sprayer nozzle should give you a flow of 2½ gallons per minute.

Remove the upper **and** lower halves of the particle separator. Then, check the variable inlet guide vanes to make sure they're open.

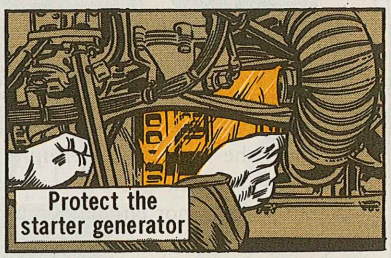
PS MORE

Protect Engine Components

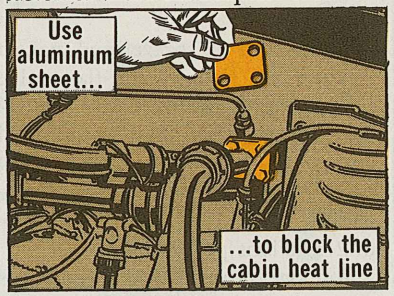
Disconnect the fuel control pressure sensing line (P1). Cover the inlet housing fitting and line with a suitable plug.



To shield the starter-generator from moisture, put a 6-in by 8-in piece of rubber sheet or plastic between it and the bleed band ports.



Disconnect the cabin heat line at the customer bleed air adapter. Block off



the line. Some outfits use a piece of aluminum sheet formed to fit the adapter, with 4 holes drilled in it to accept the line attachment bolts.

Disconnect the pressure hose line (P3) at the air diffuser. Use a suitable

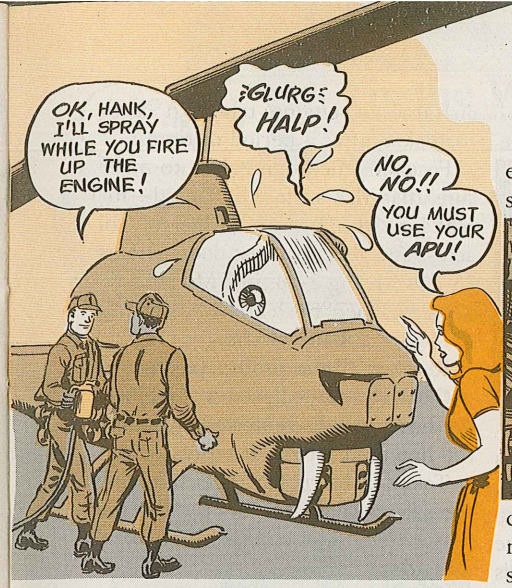
plug to cap the fitting.

The engine should never be cleaned without first closing the bleed band. This will prevent the cleaning solution from spraying out the bleed band ports. You'll also prevent a build-up of dirt in parts of the engine where seals and bearings can be ruined, heading off an early engine removal. To close the ports, use metered compressed air.

First, protect the bleed band actuator from moisture by covering it with a sheet of plastic.

Next, disconnect the pressure hose from the fuel control to the air bleed actuator and cap the union.

Then, connect the compressed air hose to the pressure hose. Use 30-40 PSI air pressure to close the bleed band. Never go beyond 60 PSI or you might rupture the diaphragm in the bleed band actuator.



A Little Hand Action, Please!

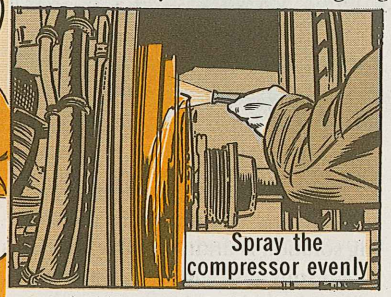
Before you spray the compressor, swab the engine inlet guide vanes with a soft cloth that has been moistened with the cleaning solution. Use a stiff fiber (not wire) brush to remove any dirt caked on the inlet housing. Rinse the area with water when you've removed all the dirt.

The engine must not be fired-up when you're using the cleaning solution or plain water. Any stream of liquid against the compressor blades at operating RPM will cause the blades to oscillate at high frequency...you would end up with metal fatigue and blade failure!

Ask your qualified buddy to plug in the APU and start it up. He then makes a beeline for the cockpit. Once seated, the de-ice switch is placed in the OFF position. The igniter solenoid circuit breaker is pulled, and the fuel switch is placed in the OFF position.

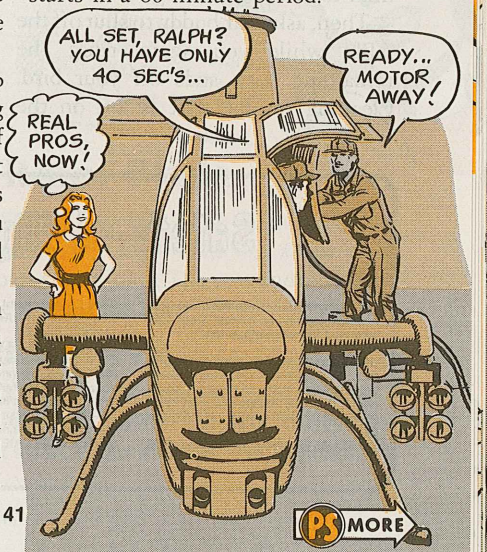
Spray Evenly

Signal your buddy to motor the engine while you spray the cleaning solution evenly into the inlet, going



completely around the housing to make sure all the compressor and stator blades are covered.

The mech in the cockpit times the starter engagement to last no more than 40 seconds to prevent starter overheating. Three minutes of cooling time is required between each use of the starter. You're only allowed 3 starts in a 60-minute period.



While the starter cools, immediately run clean, fresh water over the

fuselage and engine where the cleaning solution is draining. The cleaner is tough stuff and, without a water rinse, it'll stick to the paint.

Spray the compressor a second time for 40 seconds as the engine is motored over. That'll give you a "spic and span" clean engine.

After the starter cools, signal your buddy to motor the engine again. This time, spray a minimum of 2½ gallons of clean, fresh water evenly around the inlet to remove the engine cleaner.

Then, ask your buddy to shut off the APU while you again rinse the remaining soap suds off your bird. Cleaning residue that is left on the airframe or engine tends to cause corrosion, after a period of time.

Focus on the engine deck to make sure that flat surface is rinsed—for real! First, tho, remove the fuel control access and general access doors (Items 23 and 31, Fig 2-18, in TM 55-1520-210-23). Then, flush and dry the deck.

Button Up

Remove all the protective caps.

Clean the capped ports and connect the hoses you disconnected, including the line used for the compressed air.

Take off the rubber sheet shielding the starter-generator and remove the plastic cover protecting the bleed band actuator.

Put back the particle separator, button up your bird, tie down the blade to prevent flapping, and tow it to the flight line. A pilot will take over.

Pass the word to operations that the aircraft is ready for the flight-idle run of 2 minutes (with de-ice switch ON) to dry out the engine.

That's the way to keep 'em flying longer, bird mechs!

END

Safety-of-Flight Messages

If your unit has not received a message in which you have an interest check with your next higher headquarters.

UH-60A-82-01 Maintenance Mandatory, RCS CSGLD-1860, recurring inspect UH-60A Black Hawk shaft assy, engine output, P/N 70361-08004-042, NSN 2835-01-093-4763 DRSTS-MEA 141500Z Jan 82.

UH-60A-82-02 Maint Mandatory, RCS CSGLD-1860, maint procedures (instrument marking) UH-60A DRSTS-MEA 141530Z Jan 82

UH-60A-82-03 Operational, RCS CSGLD-1860, airspeed limit UH-60A Black Hawk forward flight with cabin doors open. (UH-60A-82-04) DRCPM-BH-L132045Z Jan 82

UH-60A-82-04 Maint Mandatory, RCS CSGLD-1860, maint procedures check UH-60A DRSTS-MEA 151500Z Jan 82

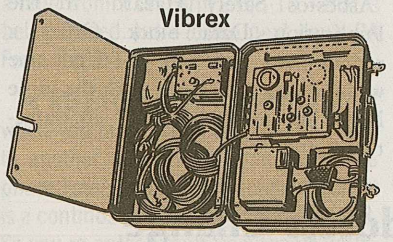
UH-60A-82-05 Technical, RCS CSGLD-1860, install UH-60A BlackHawk engine exhaust deswirl duct, P/N 70070-30011-108, NSN 1560-01-100-8243 DRSTS-MEA 202230Z Jan 82

OH-58-82-01 Maint Mandatory, RCS CSGLD-1860, maint procedures, engine performance check for OH-58 DRSTS-MEA 202230Z Jan 82

Cat 1 EIR Phone: AUTOVON 693-2066 (24-hr)

You say your Vibrex balancing kit is beyond repair? Hold it!

Before you send it to the manufacturer for repair, see if it can be fixed locally.



First, do the tests and troubleshooting called for in Chap 3, TM 55-4920-402-13&P.

Next, give AVIM a crack at the problem. C 1 to the Vibrex TM lists many AVIM-level repair parts. So, never ship the Vibrex to the manufacturer without first giving AVIM a chance to fix it. It will save some tax money.

If the needed repairs are beyond AVIM capabilities, then it's time to get the manufacturer in the act.

When preparing the Vibrex for shipment, make sure to package the whole kit.

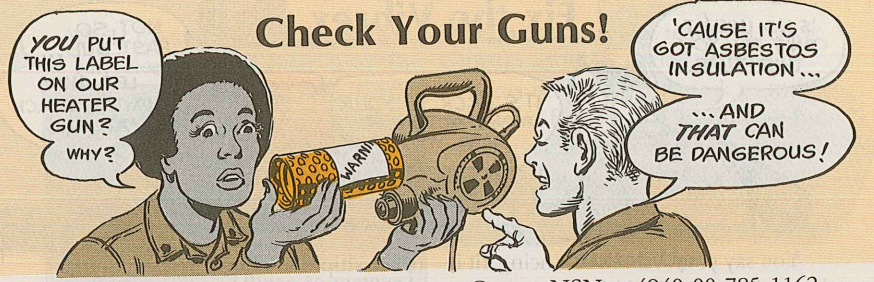
New Huey Rotor Blade

There's a new main rotor blade, NSN 1615-01-092-1256, on the scene for UH-1H, EH-1H and UH-1V helicopters. The new blade has a one-piece leading edge strip that eliminates the outer scarf joint. The new and old blades can be mixed or matched on the same main rotor hub.

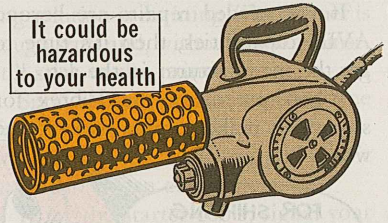
Doppler Battery

Need a battery for your Modernized Cobra's or Black Hawk's AN/ASN-137 doppler navigation set? Get the 9-V battery, BA-1090/U, with NSN 6135-00-835-1023. The number is not in the set's TM, so jot it down. Use Appendix A, CTA 50-970 as your authority.

Check Your Guns!



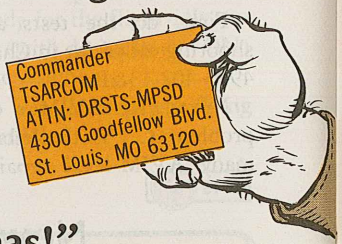
If you use the electrical heater gun in your AVUM Number 2 tool set, it could be hazardous to your health.



Gun, NSN 4940-00-785-1162, made by Clements of Chicago contains asbestos insulation. If you have one, turn it in on DA Form 2765-1. Write "Asbestos Safety Hazard" in the Publication Data block. Order a replacement gun and you'll get one without asbestos. Guns with the same NSN but made by other manufacturers are OK.

TSARCOM Address Change

If you work with gear or pubs managed by the US Army Troop Support and Aviation Materiel Readiness Command (TSARCOM), make a note. Here's the new address for SF 368 Quality Deficiency Reports (EIR's), Warranty Claim Actions and DA Form 2028 Recommended Changes to Pubs and Blank Forms.



No More "Gotchas!"

The pitot tube on the OH-58A/C sticks out like a sore thumb.

In close quarters—like a hangar—the tube can get busted.

Vehicles have been driven into the tube. Strong-arm types have used it to pivot around the aircraft.

So, hang the red warning streamer on that baby and save a part replacement.

Aircraft Forms...

Term Talk

When you move an entry from one form to another, you transcribe it, right? Well, yes and no on aircraft forms.

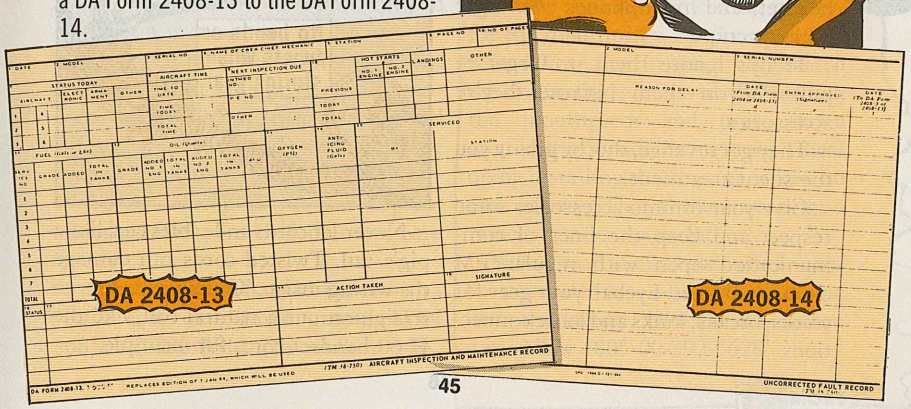
Because you transcribe in different ways, TM 38-750 adopted new words for the different actions.

- **CARRY FORWARD**—You carry forward an entry when you move it from one form to another form with the same number. For example, you carry forward a fault from a DA Form 2408-13—that is being closed out—to the next day's DA Form 2408-13.

- **RE-ENTRY**—You re-enter an action when you take it from one area of a form to another area of the same form. The phased maintenance inspection checklist is a continuation of the DA Form 2408-13. So you re-enter a fault from the DA 2408-13 to the checklist.

- **TRANSCRIBE**—You transcribe an action by moving the entry from one form to a different form. For example, you transcribe when you move an entry from a DA Form 2408-13 to the DA Form 2408-14.

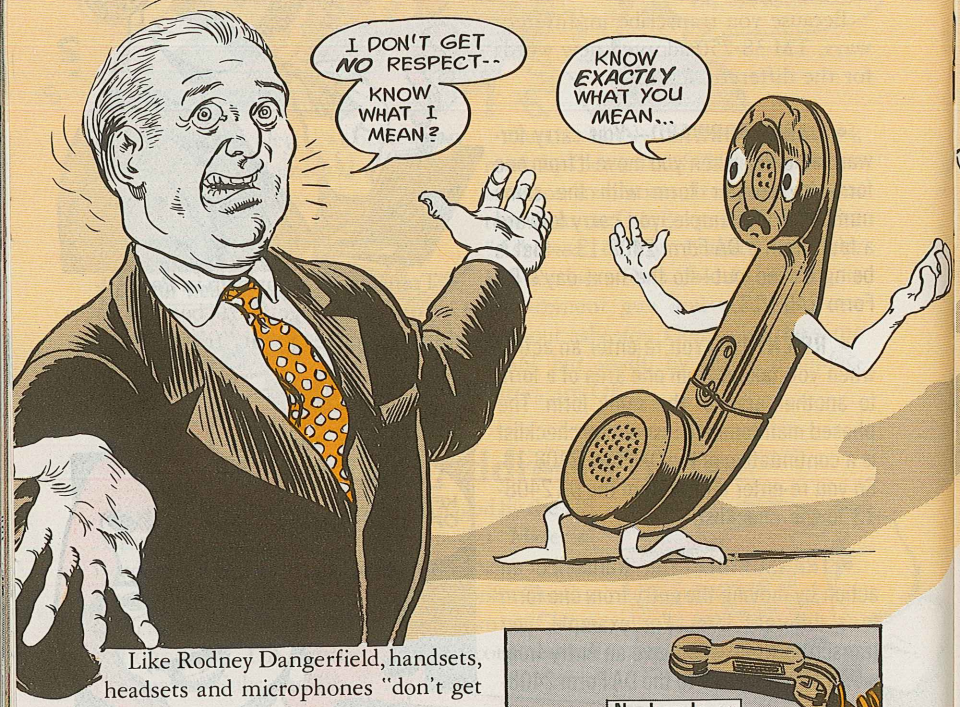
"Transferred" shows up in Para 10-37c (6) (b) on Page 10-70, but that's a typing goof. Read that "transcribed."



COMMO

Handsets, Headsets, Microphones...

A Little Commo(n) Respect

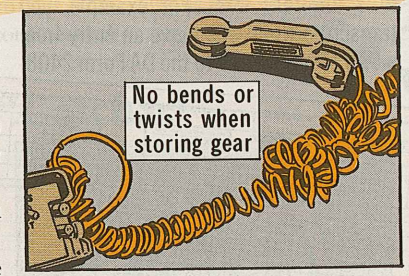


Like Rodney Dangerfield, handsets, headsets and microphones "don't get no respect."

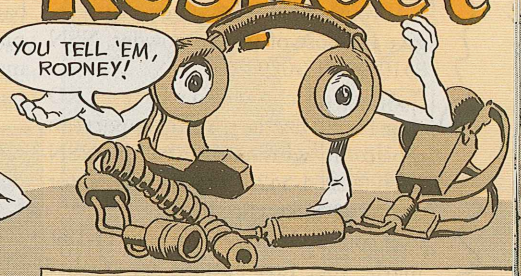
Troops ignore them or forget to pull PM on them because they're accessories.

They get revenge, tho, by giving you the silent treatment.

Give your commo accessories some respect and keep the lines of communication open with regular PM checks and fixes. Eyeball your gear for cracks, breaks, kinks and loose connections.

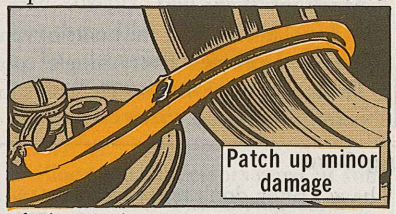


Never let cords and cables curl like a pig's tail. Twisted cords can damage the wiring inside. 'Course, never try to straighten out a natural coil, like the H-60 handset cord, for example.



Tape Tip

Minor damage to cords, wires and cables doesn't mean you automatically replace them. Sometimes a few inches



of electrical tape, NSN 5970-00-419-4291, will patch up the problem and keep you in business.

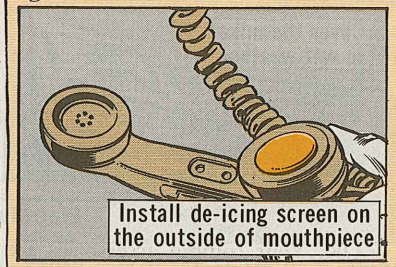
If insulation is frayed or you can see a wire—but it's not broken or loose—tape it up. Use at least 2 layers and spread it an inch both ways from the repaired area.

Forget taping if you see dry rot damage, bad wire or 2 or more bare wires.

Stop dry rot on handset cords with a light coat of silicone grease. NSN 6850-00-880-7616 gets an 8-oz tube.

Moisture Menace

If carelessness is Enemy No. 1, moisture is the No. 2 bad guy. It can corrode or short out your commo gear. So, give your equipment an umbrella against moisture.



For example, most accessories have moisture shields or de-icing screens for the mouthpiece. To put on the H-60's de-icer, for instance, just match the dot on the screen with the notch in the mouthpiece and press down around the outside. Some troops mess up by installing the de-icing screen on the inside. That's like wearing a raincoat under your clothes!

When not in use, the screen goes between the case and the telephone near the buzzer. Order a new screen with NSN 5805-00-392-7628.

PS MORE

Your H-33 handset's moisture shield has NSN 5965-00-280-3571.

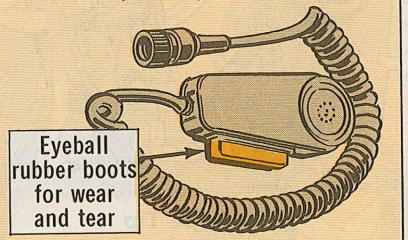
If your shield is sticking to the cap, give it a dose of talcum powder, NSN 8510-00-817-0295.

A broken clip doesn't have to KO your H-189 handset. Your support can replace it with a metal clip, NSN 5340-00-064-5426. The fix is good for the M-80 mike clip, too.

If commo is fuzzy with your H-189, maybe your fuzz buttons are crushed or separated. Rearranging the copper mesh fuzz buttons with a thin, sharp object, like a straight pin, will fix you up.

Make sure you're talking into a live microphone by keeping it high and dry. If necessary, give your mike added protection. Cover it with a thin plastic bag in wet weather. For example, the plastic bag off your C-ration spoon makes a good raincoat for your CVC helmet mike.

Eyeball rubber boots over push-to-talk or generator switches. Look for deterioration, breaks, cracks and tears.



A little silicone adds some life to aging boots and cables. Replace the boots if necessary.

Are there holes in the boots of your TA-1 telephone? Everything's cool. Those are vent holes. They're supposed to be there.

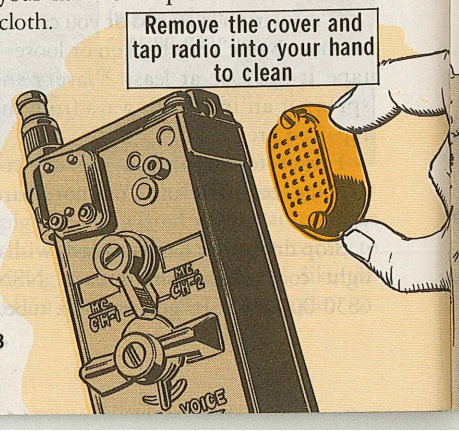
Handling Care

OK. Your commo accessories are waterproof and looking good. You've still got to be careful. Like, watch how you handle 'em. Some cases, like the TA-1's, are plastic and can break easily, especially when they turn brittle in cold weather.

If your commo gear starts showing signs of rust, mildew or corrosion, clean it quick-like. TB 43-0118 on painting and preserving has the word.

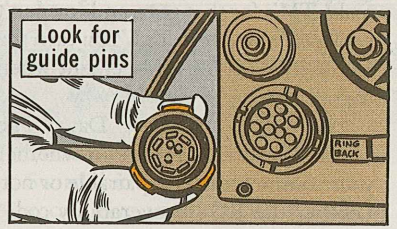
Clean commo cases with cleaning compound, NSN 6850-00-597-9765.

Cleaning the AN/PRT-4 radio transmitting set mike? If yours doesn't have a filter, don't try to blow dirt out. That'll just mess up the works. Take the cover off and tap the radio into your hand or wipe it with a lint-free cloth.



Making Connections

When hooking your accessory to another component, turn the connector clockwise with steady forward pressure. When the guide pins reach the right grooves, the connector will



move forward and seat itself. No wiggling and jiggling now. That can bend or break pins.

When it's seated, turn the knurled part of the connector to the right and pull sharply. Pull on the connector, not the cord.

To disconnect, slowly turn the connector counter-clockwise with a steady forward pressure until it's loose.

Plugs and connectors must fit snug to do the job. The O-ring assures a good fit.

Lube the O-ring with silicone to make it move easily. Careful...keep the silicone away from the contacts. If you get some on the contacts, use

trichloroethane, NSN 6810-00-930-6311, to clean them. This stuff is flammable and gives off dangerous vapors. So, keep it away from heat, like lighted cigarettes. Make sure there's plenty ventilation where you use it, too.

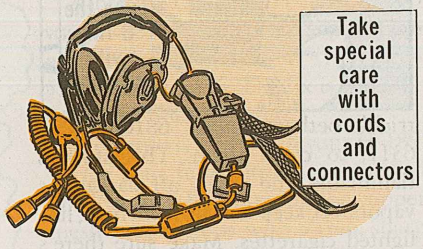
Microphone connectors corrode, knocking you off the air. Here's a quick fix: Erase the corrosion on the connector contacts with a soft rubber

pencil eraser. Never use hard rubber ink erasers or abrasives.

If your headset has a breakaway connector, make sure it will break away. If it won't, the break could come where you don't want it to.

Furthermore...

Eyeball your headsets, handsets and mikes to make sure there are no broken or loose connections.



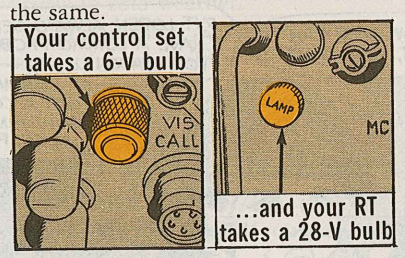
When you're packing your equipment away, take care with cords and connectors. Watch out for bends or twists that could damage wire.

Looking for TM's or repair parts for your H-250 handset or M-80 microphone? Forget it. They don't make TM's for that gear, and you don't get those items repaired. You turn the whole thing in for replacement when it goes down.

The Army Master Data File (AMDF) can clue you in on whether your commo gear is repairable or not. Look at the RC (recoverability code) column. For example, "Z" means that you don't get the item fixed. Turn it in.

Light, Don't Switch

The lamps that light your AN/GRA-39 control group and AN/VRC-12-series radio components are not the same.



They look alike, but the 28-V bulb that lights your radio dial gets just enough juice to flicker in your -39. The 6-V bulb from your control will burn up in the more powerful radio circuit.

Plug in the right brightener. For the -39, order NSN 6240-00-155-7857. For the radio, use 6240-00-155-7836.

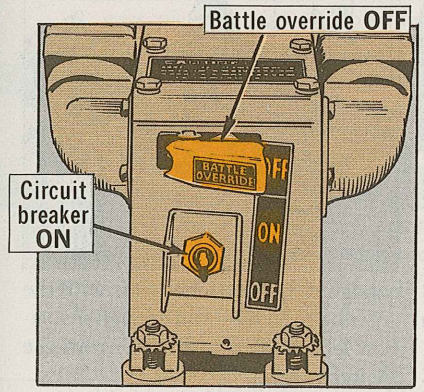
If you already have a bulb, but can't ID it, look at the base. The -39's bulb carries the numbers -328. The radio's bulb has a -327.

No Transients Allowed

Switch hitting is the best protection you can give your tracked vehicles's commo system against electrical current surges.

These transient voltages can KO radio receiver-transmitters or your AM-1780 audio frequency amplifier. You stop 'em by hitting a couple of switches.

Start by putting the MX-7777B transient suppressor's circuit breaker switch ON and battle override switch OFF.

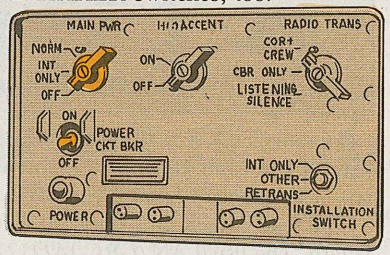


If the circuit breaker switches itself off, that means you've stopped a potential killing surge before it got to your commo gear.

If it does switch, give it a couple of minutes to cool down before switching it back ON. It takes 2 minutes or so.

If your breaker breaks—and it's a commo emergency—use the override. Never use it instead of troubleshooting, tho. That leaves your system open to whatever tripped the breaker in the first place.

For an added bit of protection when you start your vehicle, hit your AM-1780's POWER and CIRCUIT BREAKER switches, too.

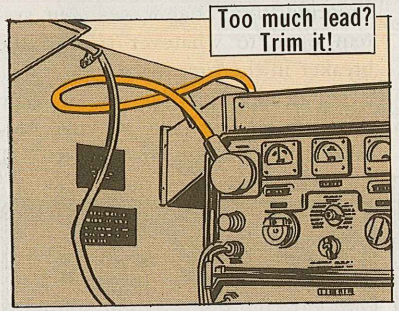


Turn your AM-1780 Amplifier switches OFF

Turning them off while you start up keeps any surge that sneaks past your suppressor from getting to your radio.

Hit the High Ones

More's not always better, as some RATT Riggers trying to load their AN/GRC-106 radio set's whip are finding out.

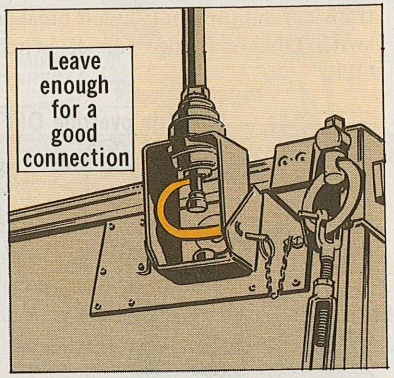


Too much CX-10171 electrical lead keeps them from loading their antennas at frequencies from 23-26 MHz.

The lead comes in a standard 6-ft length. The usual AN/GRC-142/122 radio teletypewriter set installation uses about 4 feet.

That extra 2 feet of cable gets folded, stashed or looped somewhere out of the way. The loop becomes part of the antenna. That little extra reflects RF power and affects the signal, making it impossible to tune and load properly at the higher freqs.

The solution is to cut the cable to the length you need. Be sure you have



enough to make connections with the antenna mast base and enough insulation left to keep bare wire from the shelter's metal.

That should let you tune and load at the full frequency range.

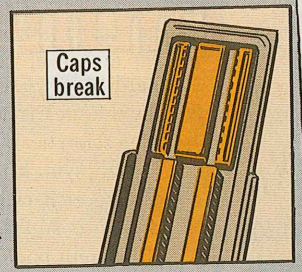
Pair-26 Connector Kits

Dear Macon,

We've got a problem with the MX-3227 contact assemblies on our Pair-26 cable connectors.

The plastic strips (caps) crack or break, leaving contact pins unprotected. Then, when hookups are made, the pins break and bend.

It takes a lot of time and money to replace the whole connector. Is there an NSN for a repair kit or the plastic plates to cover the pins?

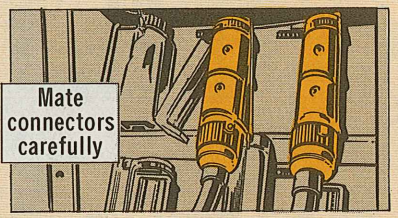


W01 C.M.M.

Dear Mr. C.M.M.,

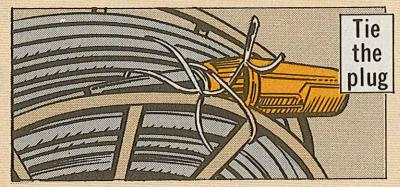
You can get a cap replacement kit with NSN 5999-01-073-5507. Your org shop makes the switch.

Follow the fix by stressing careful handling of those connectors.



Protect plastic strips and pins by mating the plug and receptacle carefully and squeezing them together. Once they're mated, fasten the top and bottom connector locks at the same time. That keeps pressure even.

Finally, when reeling up the cable, protect the plug. Tie it to the inside of



the reel rim to keep it from being knocked around.

Macon

The Right Connections

Worried about making the right connections when you need generator power for your tactical commo gear?

Relax. Get a copy of TB 43-0125, Installation of Communications-Electronics Equipment: Hookup of Electrical Cables to Mobile Generator Sets on Fielded Equipment to Meet Electrical Safety Standards.

The new pub gives power requirements for commo sets, the generator and cable you need, pin arrangement, how to hook the cable to the generator and more.

If you don't have this TB, get your pubs clerk to order it.

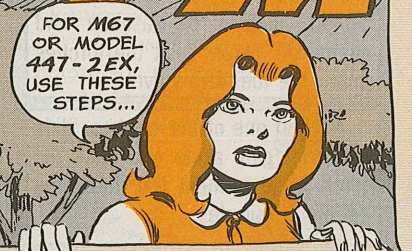
Immersion Heater PM

It's hard to get excited about KP, especially if it means doing the dishes. Your immersion heater makes the job easier by supplying the hot water—if you take care of it right.

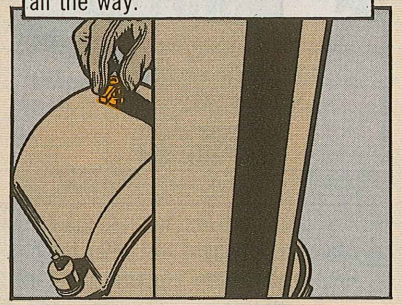
Maintenance smarts come easy if you use the right books. TM 10-4500-200-13 covers immersion heaters with NSN 4540-00-266-6835 and NSN 4540-00-453-9146 (Model 447-2EX). M67 heaters, NSN 4540-00-469-6593, are in TM 5-4540-202-12&P.

The right start-up procedures keep you and the heater safe. They'll vary depending on which heater you have, but here're a few that're good for all of 'em:

- Before you start up, make sure you have the right number of air conditioning pipe sections. Four of 'em give just the right amount of draft to keep the fire going.
- Never fire up the heater if it's not in water. Water soaks up the heat so the heater won't get too hot to handle.
- Always wear non-flammable gloves when you light the heater. They'll save your hands from flare-ups. Keep your face back, too, so the flames won't char-broil you.
- Never let fuel drip into the heater before you've preheated the flue and are ready to light the burner. Otherwise, the heater could light with a bang.

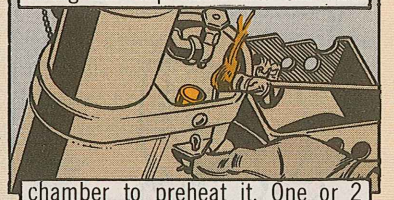


- Open the fuel tank vent valve all the way.

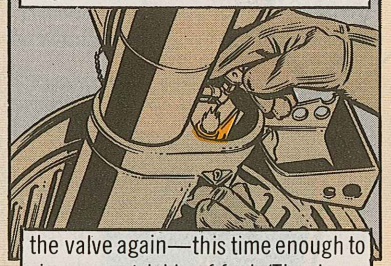


- Move the lighter cup so that it's directly below the drip valve in the burner chamber. Open the valve and fill the cup about ¼ full of fuel—or till the wick is completely saturated. Then, shut off the flow of fuel.

- Light the fuel in the cup and swing the cup back into the flue chamber to preheat it. One or 2 minutes is all it should take. Give it a couple more minutes in cold weather.



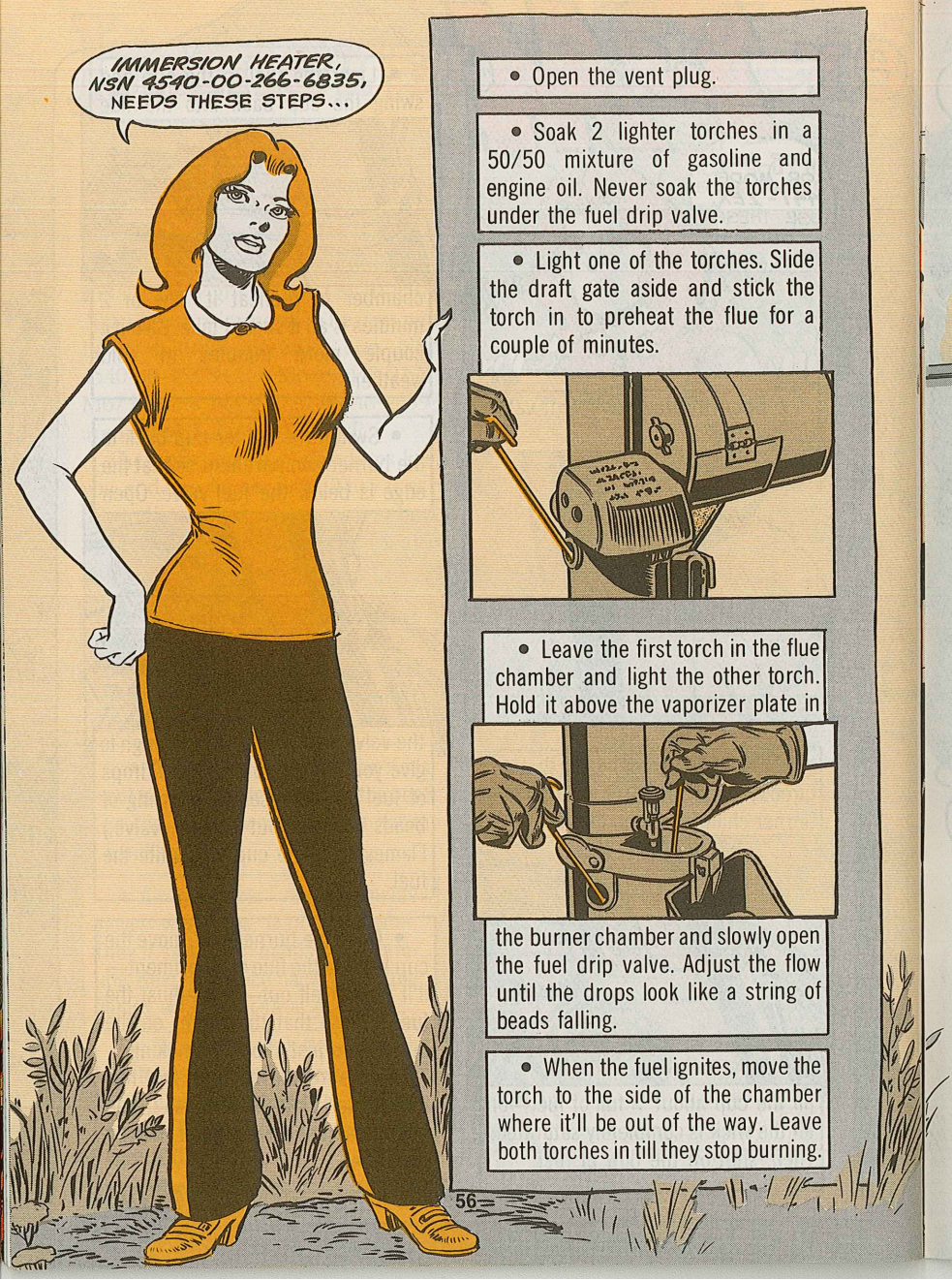
- Switch the lighter cup back to the burner compartment so that the edge is below the fuel valve. Open the valve again—this time enough to give you a trickle of fuel. (The drops of fuel should resemble a string of beads coming out of the valve.) Flames from the cup will ignite the fuel.



- Once the burner is lit, move the cup back to the flue compartment—it'll burn itself out—and adjust the fuel flow so that the flames on the burner are just short of smoking.

Make sure the burning fuel hits the burner plate. If it doesn't, you need to adjust the heater or the can so it does.

PS MORE



- Open the vent plug.
- Soak 2 lighter torches in a 50/50 mixture of gasoline and engine oil. Never soak the torches under the fuel drip valve.
- Light one of the torches. Slide the draft gate aside and stick the torch in to preheat the flue for a couple of minutes.

- Leave the first torch in the flue chamber and light the other torch. Hold it above the vaporizer plate in

the burner chamber and slowly open the fuel drip valve. Adjust the flow until the drops look like a string of beads falling.

- When the fuel ignites, move the torch to the side of the chamber where it'll be out of the way. Leave both torches in till they stop burning.

Temporary Storage

Temporary storage can be the beginning of the end for your immersion heaters...if you store 'em away unprotected. Help 'em beat rust 'n' corrosion with some special PM care.

Cleaning and painting keep parts in working order. Paint only the parts that're supposed to be painted, tho. The TM tells which ones.

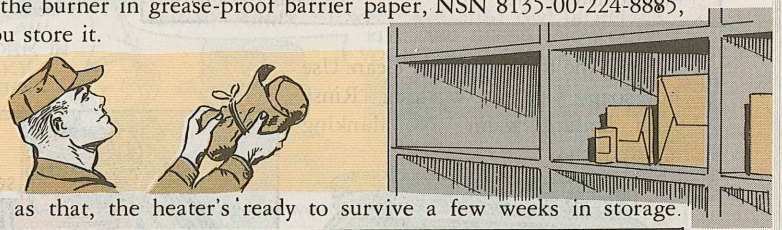
Before you paint, clean the surface with a wire brush or sand it with flint paper. Make sure you get all the rust, grease, moisture and loose paint.

Unpainted parts, like the heater body, the hanger, the hanger screws, and the outside of the fuel tank need PM protection, too. Clean them with drycleaning solvent P-D-680 and dry 'em completely. Then give 'em a coat of corrosion preventive petrolatum, NSN 8030-00-251-5048 (gal).

Empty the fuel tank and pour in a little preservative lube oil, NSN 9150-00-231-2362 (5 gal). Swish it around to give the whole tank a good coat; then, drain any excess.

Put a coat of preservative lube oil, NSN 9150-00-231-2361 (qt) on the air conditioning pipe sections, too—after you've cleaned 'em, that is.

Wrap the burner in grease-proof barrier paper, NSN 8135-00-224-8885, before you store it.

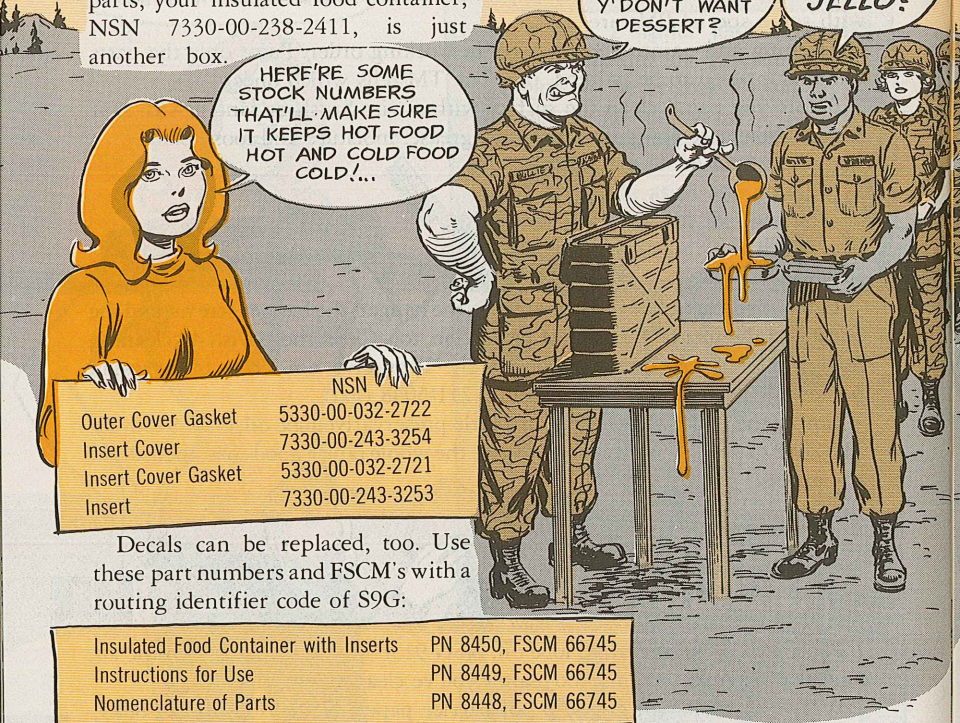


Simple as that, the heater's ready to survive a few weeks in storage.

Insulated Container PM...

A Matter of

With missing or unserviceable parts, your insulated food container, NSN 7330-00-238-2411, is just another box.

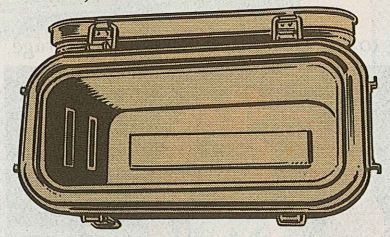


	NSN
Outer Cover Gasket	5330-00-032-2722
Insert Cover	7330-00-243-3254
Insert Cover Gasket	5330-00-032-2721
Insert	7330-00-243-3253

Decals can be replaced, too. Use these part numbers and FSCM's with a routing identifier code of S9G:

Insulated Food Container with Inserts	PN 8450, FSCM 66745
Instructions for Use	PN 8449, FSCM 66745
Nomenclature of Parts	PN 8448, FSCM 66745

Keep the food container clean. Use hot, soapy water for washing . Rinse with boiling water. No dunking allowed, tho.



DEGREES

Clean the gaskets whenever you clean the container and its inserts. Take them out and wash 'em in soap and water. Rinse gaskets in boiling water, shake the excess off 'em, and put them back on the container—open side down. That way, they'll keep their shape as they dry.

When you won't be using the container for a while, put the inserts in—with tops and gaskets on—and close it up. That'll keep dirt out. Make sure it's dry before you button it up, tho.

The insulated inserts work better if you condition 'em for hot or cold food or drinks. Fill them with boiling water or ice water (or ice) and let 'em sit in the case with the cover closed for awhile—at least 30 minutes. Then, empty the water and load 'em with food 'n' drink.

MUST Expandable Shelters...

Seal Repair Kit

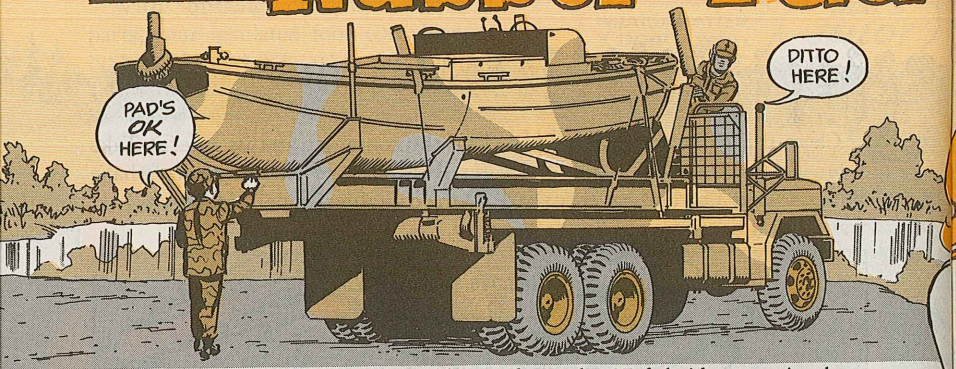
Careless handling is damaging the weather seals on MUST expandable shelter panels.

A new seal repair kit, NSN 5410-01-114-1448, will help you keep seals on doors and panels, and stop equipment damage and downtime.

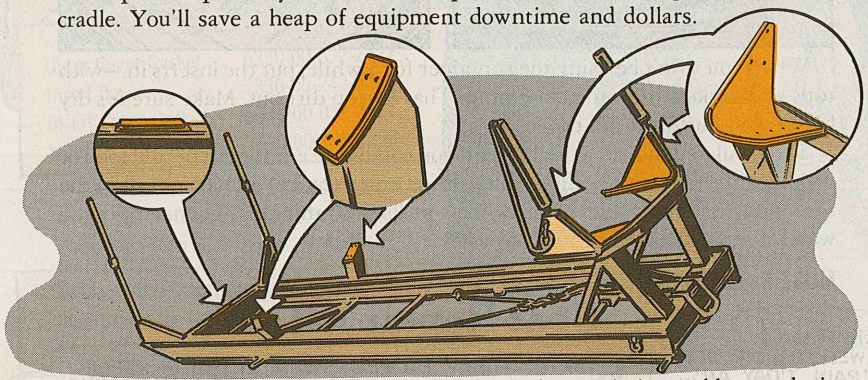
Each kit has enough material to replace every panel seal in one shelter.

Boat Cradle...

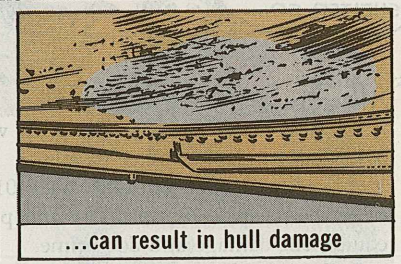
Rubber Pad PM



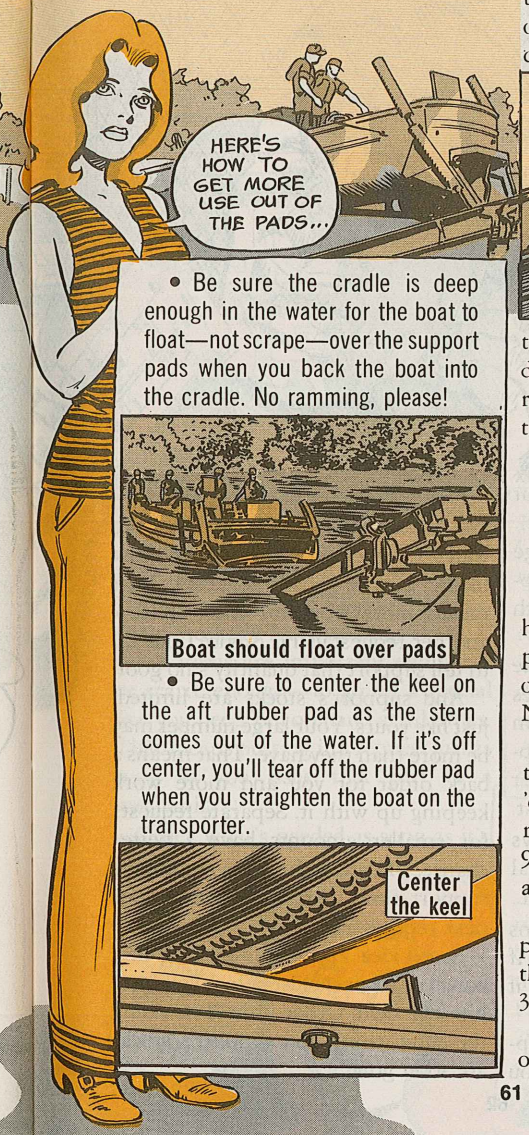
Keep a sharp PM-eye on the rubber pads on the 27-ft bridge erection boat cradle. You'll save a heap of equipment downtime and dollars.



Loading a boat onto a cradle that has bad or missing rubber pads is guaranteed to "deep-six" it for longtime maintenance.



Like so: The aluminum hull scrapes across the cradle supports and shears the hull rivets. You'll have a leaking boat...and that sinking feeling.



• Be sure the cradle is deep enough in the water for the boat to float—not scrape—over the support pads when you back the boat into the cradle. No ramming, please!

• Be sure to center the keel on the aft rubber pad as the stern comes out of the water. If it's off center, you'll tear off the rubber pad when you straighten the boat on the transporter.

Secure the nylon lashing ropes to the front set of cleats. Add another set of lashing ropes to the rear set of cleats. The nylon ropes stretch as the

transporter operator winches the dolly on board. The 2 sets of tiedown ropes mean less slippage and damage to the pads.

NOTE: If your CO gives his OK, use wire lashing ropes rather than nylon. Wire ropes won't stretch and let the boat slip on the pads during retrieval.

Para 4-16, TM 5-2090-200-12&P, has the put-and-take poop on rubber pads. Cut the pads from a square yard of ¼-in thick solid rubber sheeting, NSN 9320-01-020-3543.

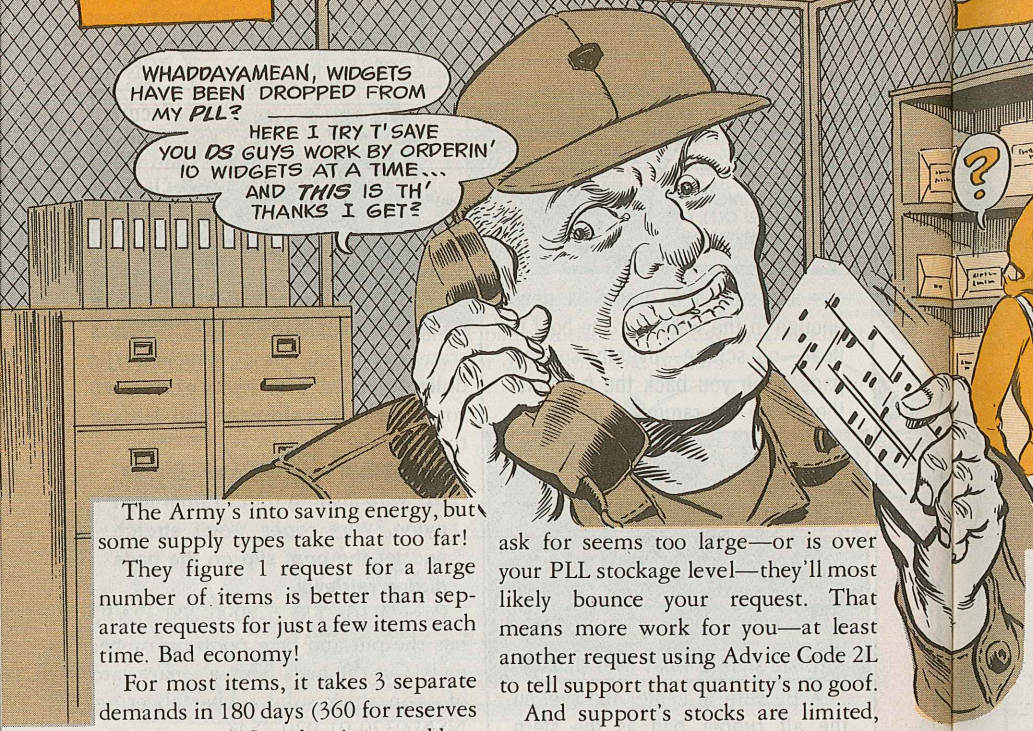
Make the holes, and size and shape the pads like it says in Fig 4-2.2. Glue 'em to the supports with synthetic rubber adhesive. NSN 8040-00-262-9005 gets a gallon; 8040-00-290-4301, a quart.

Never use a cradle with missing pads, pads that are less than ¼ inch thick, or pads that have rips more than 3 inches long.

Never load a boat that's off center on the aft pad.

For PLL Muscle...

Exercise the Demands!



The Army's into saving energy, but some supply types take that too far!

They figure 1 request for a large number of items is better than separate requests for just a few items each time. Bad economy!

For most items, it takes 3 separate demands in 180 days (360 for reserves and National Guard units) to add an item to your PLL. That means 3 separate requests—and it doesn't matter if you ask for 1 or 100 on each request.

You need 1 request each 180 days (360 for Army Reserve and National Guard) to keep an item on your PLL. Holding off for a giant request means the item may never make your PLL. If it's already on PLL, it could drop off if you miss on timing.

Holding onto requests gives support trouble, too. If the number you ask for seems too large—or is over your PLL stockage level—they'll most likely bounce your request. That means more work for you—at least another request using Advice Code 2L to tell support that quantity's no goof.

And support's stocks are limited, just like yours. Your large number may be more than they have. That means a back order for you and more work keeping up with it. Separate requests for smaller amounts have a better chance of fill right away and give support time to restock before your next request.

Same idea applies to putting in a bunch of requests just before your unit hits the field. Other units'll be doing the same thing and support's stocks are soon gone.

Some special parts may be on your PLL permanently—like Mandatory Parts List items or Essential Repair Parts Stockage List (ERPSL) items. If those items are important enough—or scarce enough—to go on a special list, you need 'em on hand at all times. That means putting in a request just as soon as you issue that part to a mechanic.

Order what's needed as soon as it's needed!

Goof? Use New Form

Despite their awesome appearance, DA Forms 2765 and 2765-1 and DD Form 1348-6 are expendable items. So, when you make a goof in the document number, quantity or priority block, it's cheaper and safer to toss the card and start over. For non-PLL items, that goes for the NSN or part number and FSCM, too! Chances are, any corrections you try to make on the cards will just foul up the whole operation. Grab a new form and start over.

Officer's Log Course

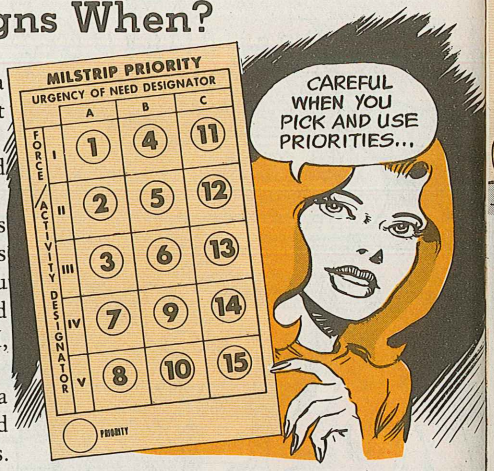
Officers, especially senior officers, get rusty on logistics and maintenance when away from troops and gear. If you are or will be assigned to a battalion, brigade or division, you may need a refresher in maintenance, supply, inspection standards or readiness. A 2-week Senior Officers' Preventive Logistics Course covers all that. Need more info? Write: Commandant, US Army Armor Center, ATTN: ATZK-MAL, Fort Knox, KY 40121. Or call AUTOVON 464-7846.

MUST U-Pack Screen

MUST power plant operators must request the replacement screen—Item 8, Fig 193, TM 5-6115-590-20P—for the turbine air inlet door by PN and FSCM only. Forget about using NSN 2835-01-038-2378...it gets a sediment screen.

DA Form 2064...

Who Signs When?



Sticking a priority designator on a supply request seems like a no-sweat deal.

But there's a lot to picking out and using the right priority.

Except for some hairy emergencies concerning life and limb, each unit has 3—and only 3—priorities. The 3 you can use are based on a DA-assigned Force/Activity Designator (FAD) I, II, III, IV or V.

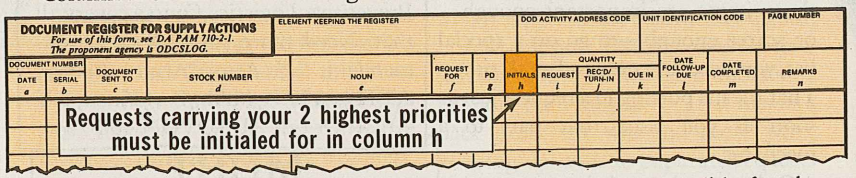
You decide which of the 3 goes on a request from the Urgency of Need Designator (UND) that applies. What that means is you use the higher priorities only when the part or item you're ordering is needed pronto to put your unit back into action.

Your highest priority comes under UND A. Use that one only when the lack of that part or item stops your mission cold.

The middle priority is UND B. Use that one when the part or item hurts or slows down—but doesn't stop—the mission.

The lowest priority, UND C, covers everything else.

UND A and B priorities must be "reviewed" and initialed for on the DA Form 2064 Document Register. But who checks the priority and initials Column h of the document register is a local decision.



Para 2-3a of DA Pam 710-2-1 says commanders are responsible for the accurate assignment of priorities. CO's will either personally review or delegate, in writing, the responsibility to review and initial for those requests.

So who's a CO for this purpose? Any CO at the unit or organizational level—who keeps a document register—and TDA activity chiefs, military or civilian.

And those CO's and TDA chiefs can delegate the job of reviewing all priorities and initialing UND's A and B priorities to anybody they think can handle it.

Para 2-3 of DA Pam 710-2-1 has more on reviewing requests.

CX-4720 Lug, Part II

Hold it! The CX-4720 cable terminal lug listed on Page 50 of PS 348 is too small for the job. NSN 5940-00-838-2984 brings you a lug that'll fit the battery bolt and the cable conductors. It replaces the lug listed in your TM 11-2300-351-14&P-22, also.

Oil Plug Correction

We blew it on Page 59 of PS 351—"Oil Drain Extension." The correct number for the magnetic oil drain plug for the 6-HP Mil Std engine is NSN 4730-00-788-0441.

Address Correct?

When you ship components involved in mishaps, incidents, forced or precautionary landings, make sure you have the right address. The engineers need to look at those items right away because other aircraft could be affected. They'll get the parts only if you send them to the right place. TSARCOM Supply Letters SL 40-81 and SL 31-81 have the addresses. Need the SL? See your AVIM unit. EIR exhibit instructions are in SL 5-82 and TM 38-750.

5-Ton Tire Rotation

Tire rotation intervals for 5-ton trucks were left out of TM 9-2320-260-20-1 and TM 9-2320-211-20-1. Tires need to be rotated semi-annually.

Making Connections

If the war balloon rises, US troops will work with other NATO outfits. So the brass wants to know how to make our gear "interoperable" with theirs. If you know how to make your gear work better with other NATO equipment, let 'em know. Could be you know about a coupling or adapter to make refueling or rearming easier, overcome the difference in metric and nonmetric tools, parts or test gear, or have other ideas. Fill out an SF 368 Equipment Improvement Recommendation (EIR) as TM 38-750 tells you or send your ideas directly to: Commander, DARCOM, ATTN: DRCRE-C, Alexandria, VA 22333.

Didn't Get PS?

A batch of boxes and packages of PS broke loose in the mails recently. So, if you didn't get yours, drop a note to Connie, PS Magazine, Lexington, KY 40511. She may have some copies for your unit.

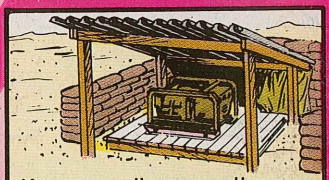
81-MM Mortar Borescoping

Your 81-MM mortar should be bore-scoped and pullover gaged every 500 rounds after 5,000 rounds are fired through it. Paras 2-11b (2), C2, and 3-14b of TM 9-1000-202-14 don't agree (3-14b says 4,000 rounds). But, C2 is right. It's 5,000.

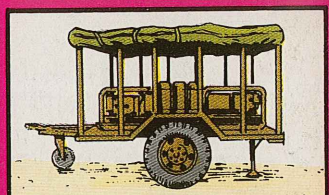
☆ U.S. GOVERNMENT PRINTING OFFICE: 1982—559-009/6

Would You Stake Your Life right now on the Condition of Your Equipment?

GENERATORS Need BREATHING ROOM



Keep sandbags well away from unit—leave vents for air circulation!!



Keep canvas high enough so air gets in!!