

Issue 397

PS

December

1985

THE PREVENTIVE MAINTENANCE MONTHLY

HAVE YOU FOUND
THOSE ARTICLES ON THE
LEAF SPRINGS YET?

I'M LOOKING,
I'M LOOKING...
I'VE GOT TO
CHECK A FEW
MORE ISSUES!

JUST IN TIME.
HERE'S THE 1985
PS INDEX!



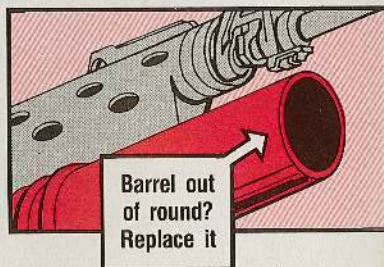
Barrel Straight and Narrow



What time is it when your M203 grenade launcher barrel is egg-shaped? It's time to get a new barrel.

Never try to fire your M203 if the barrel is out of round—it's dangerous. And never try to force the barrel back into shape.

Once the barrel loses its roundness, it's finished. Turn it in for a new one.

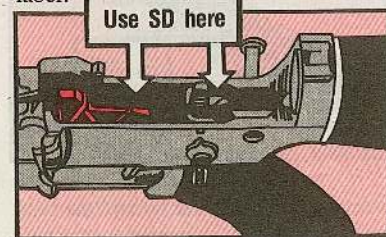


SD Is Back for Small Arms



Well, as you armorers have found out, a chink has developed in the armor of CLP. It can only clean what it can reach—and there're a lot of small arms spots it can't reach.

So, the headshed says it's OK for armorers to use drycleaning solvent (SD), NSN 6850-00-281-1985, on those areas on all small arms. Be sure to follow any cautions in the TM's and on the SD label.



Do not use SD on wood, rubber, plastic or leather parts, sealed buffers, electric solenoids and all other electronic parts.



PS THE PREVENTIVE MAINTENANCE MONTHLY

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

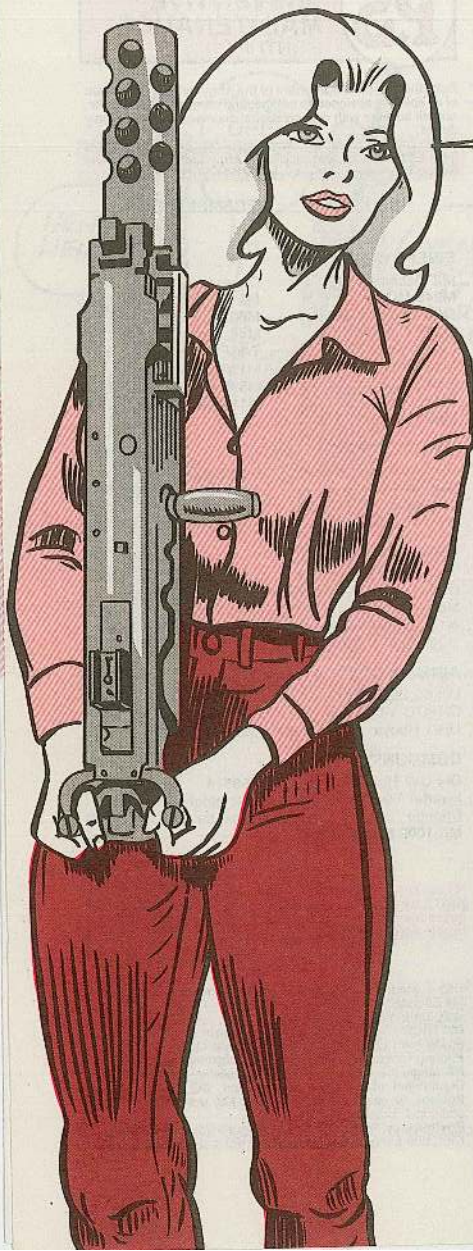
MSG Half-Mast
PS Magazine
Lexington, KY
40511-5101

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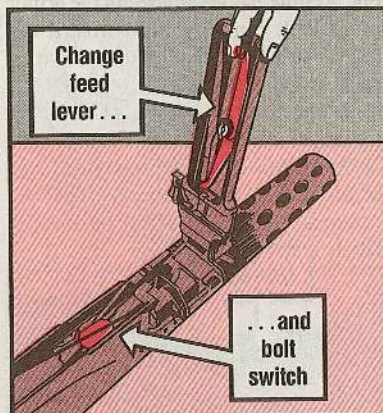
M2 How-To's



Putting your M2 machine gun together the right way is the only way to go.

HERE'RE A FEW HANGUPS THAT CAN BE PREVENTED...

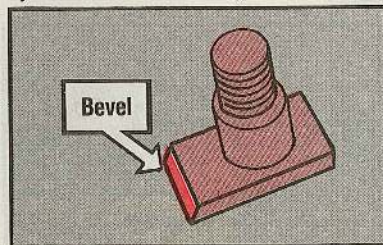
When you change the belt feed lever in the cover from right- or left-hand feed, make sure you change the bolt switch to match up the feed.



If you forget the match, you can damage the feed lever tip and the bolt.

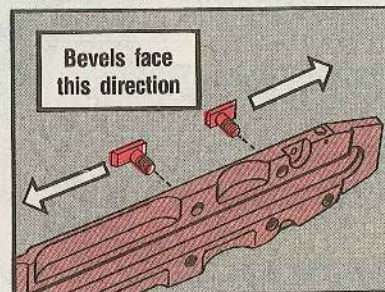
Shoulder Bolts

When you install the shoulder bolts through the retracting slide assembly, eyeball the beveled edges.



The bolt that goes through the barrel side must have its bevel facing toward the front of the receiver.

The rear bolt must have its bevel facing the backplate.

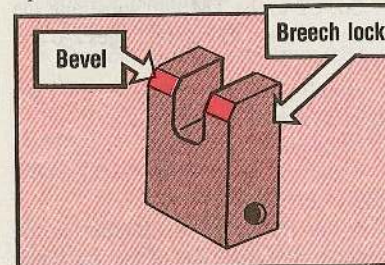


Otherwise, the bolts won't seat, the retracting slide bracket can come loose, and other damage can occur.

Breech Lock

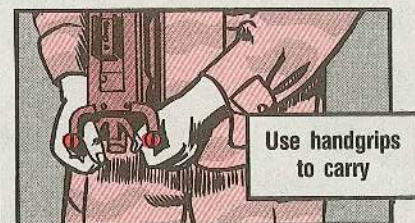
When you install the breech lock into the barrel extension, you've got two things to remember to keep your weapon from malfunctioning or being damaged:

1. The double-beveled side of the breech lock must face the barrel side of the extension.
2. The double-beveled edges must be up...toward the underside of the bolt.



How to Carry

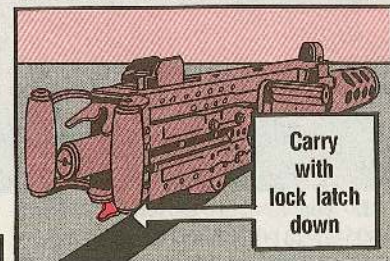
No matter which way you carry your M2 receiver, keep the backplate lock latch side down. That's extra important if you carry it by the handgrips.



When the lock latch is down, the backplate won't fall off.

If you use the handgrips to carry it and the backplate comes loose, you'll lose the gun and gain some expensive damage. If you carry it another way, the backplate will fall and be damaged.

A good carry is to slide your arms under the receiver and pull it into your gut (lock latch down, of course). It's hard to lose that heavy load that way.



Parts Places

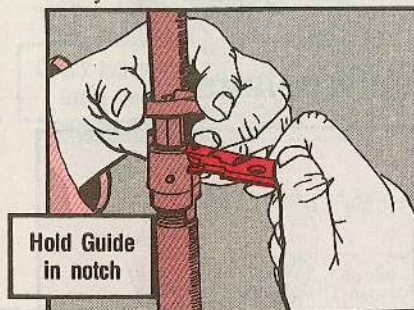
Your M2 cleaning kit parts are listed on Page 102 of TM 9-1005-213-10. You can't get the entire kit, so you've got to go for parts only.

Need a cover for your M2 while it's mounted on M113-series vehicles? Get it with NSN 1005-00-487-4100.

M249 MG Tool Switch



(NORMAL position). Hold the guide firmly in the notch.

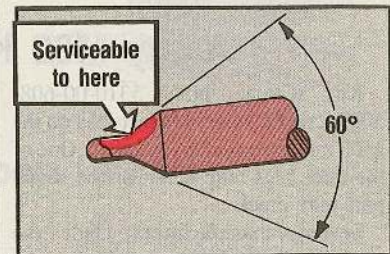


- Hold the scraper in position while you turn the collar back beyond the NORMAL position.
- Remove the collar.
- Remove the regulator from the gas block.

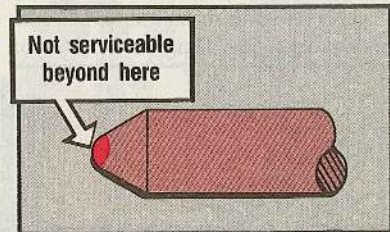
If you don't have a scraper handy and have to use the guide rod tip, follow instructions on Pages 2-6 and 2-7.

Remember this: If you do break a tip, the guide rod probably is still serviceable. Turn it in to your armorer. DEC 85

He can remove the sharp edges or corners by filing and stoning. The weapon will function with a missing tip.



Armorer's can smooth the tip down to its base... or to the angled portion. If it's broken beyond the angled base, armorer's must replace the guide rod.



If you've got a scraper, NSN 1005-01-131-1914, use it to remove the gas regulator of your M249 machine gun.

If you use your weapon's spring guide rod for the chore—like Page 2-6 of TM 9-1005-201-10 tells you—chances are the tip will break. Spring guide rods are in short supply because of broken tips.

The scraper on Page C-4 of your -10 TM will do the job as well as or better

than the rod tip.

So, C2 to the TM will substitute the scraper for the rod tip on Pages 2-6 and 2-7.

Here's how to remove the gas regulator with the scraper:

- Remove the barrel.
- Set the regulator between NORMAL and MAX.
- Put the tip of the scraper in the notch in the front left of the gas block

"Wet" Buffer Ring Is OK

A LITTLE FLUID ON TOP IS OK AS LONG AS MY PLUNGER DEPRESSES AND RELEASES OK!

Next time you spot hydraulic fluid on and near the wiper (brass) ring of your M60 machine gun's buffer, stifle the urge to replace the buffer.

The ring, which surrounds the plunger rod, picks up a little fluid each time the plunger is depressed. The fluid cleans the plunger rod.

If the plunger releases quickly when you depress it, it's serviceable.

If you've got dribblets of fluid leaking—or if the plunger has little or no resistance when you depress it—that's the time to replace it.

Normal operation leaves a light film of fluid on the wiper ring or plunger. Wipe it off before and after firing with a cleaning patch. Same goes for testing in the arms room.

Faulty M60 Key Washers

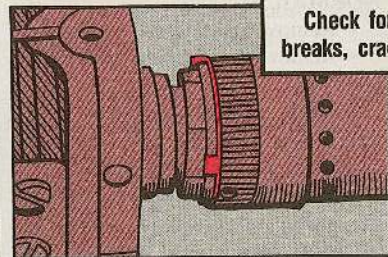
Key washer, NSN 5310-00-608-5009, can fail when it's installed on the M60 machine gun gas cylinder. One of the three legs may break or the round part may crack.

Several manufacturers made the washers too hard, causing the tangs to break off. Report faulty washers on an SF 368 Quality Deficiency Report. (Appendix F, DA Pam 738-750, fills you in). Info in Blocks 7, 8, 9 and 10 helps the headshed peg the manufacturer and take corrective action. Send the SF 368 to:

**Commander
US Army Troop Support Command
ATTN: AMSTR-QPT
4300 Goodfellow Blvd
St Louis, MO 63120-1798**



Tangs Ok?



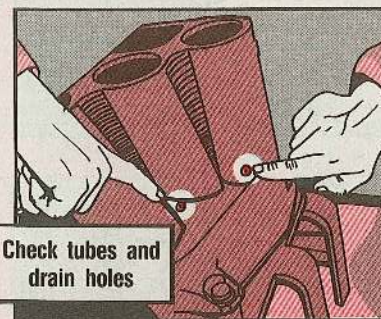
Check for breaks, cracks

Making Smoke Grenades Smoke

Eyeball the discharger tubes of your M257 smoke grenade launchers before you mount the dischargers. Look at the drain holes, too.

You can tell if sealant seepage is deposited at the bases of the tubes. Tar-like sealant residue may keep your grenades from seating and firing. If you see any, clean the gook with isopropyl alcohol, NSN 6810-00-201-0906.

Clean out drain holes with the alcohol, too.



Check tubes and drain holes

M134, M197...

Rotary Weapon Dry Fire

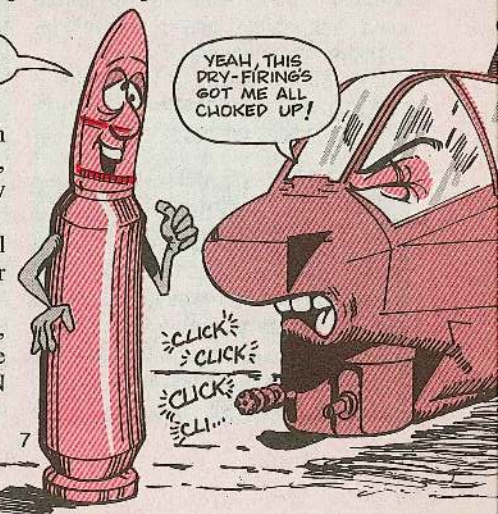
LOOKS LIKE YOU COULD USE SOME DUMMY AMMO!

When you pull a system checkout on your M134 minigun or M197 cannon, use dummy ammo instead of empty chambers!

Dry-firing on an empty chamber will damage firing pins, bolt faces and other moving parts.

Use the M172 dummy cartridge, NSN 1305-00-926-4009, with the M134 and use M51A2 dummies, NSN 1305-00-157-4616, with the M197.

DEC 85

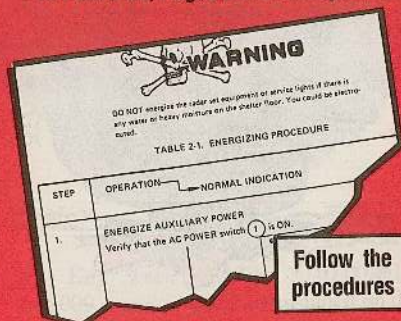


FAAR Energizing

Energizing and de-energizing your Forward Area Alerting Radar System (FAAR) are planned, step-by-step routines designed to prevent damage to expensive components.

Shortcuts, even one or two, will cause damage. The most common victim is the K6 relay in the power distribution unit (PDU).

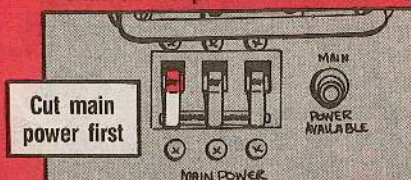
The point is, follow step-by-step energizing procedures in Table 2-1 of TM 9-1430-588-10, and de-energizing steps in Para 2-20, Pages 2-113 through 2-115.



Follow the procedures

You can also damage components by shutting down the generator set before you cut all systems power. It should be systems down, generator down.

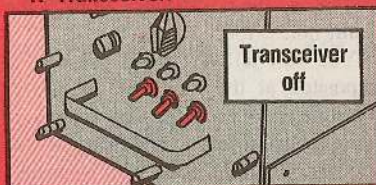
Shut off DC power to the Auxiliary



Power Panel before the generator stops. Vehicle battery power cuts in automatically when generator power is lost. You have vehicle power for shelter lights and the transceiver.

Shut down in this order:

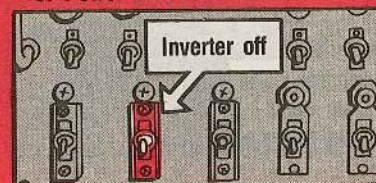
1. Transceiver.



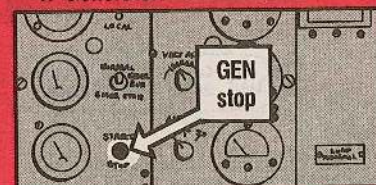
2. Auxiliary Power Panel.



3. Power inverter.



4. Generator.



That stops surge damage to the transceiver.

After de-energizing, operators should shut off DC power at the Auxiliary Power Panel to prevent complete battery discharge.

TM 9-1430-588-10's de-energizing procedures will be revised to include the above.

TOW Locks & Storage

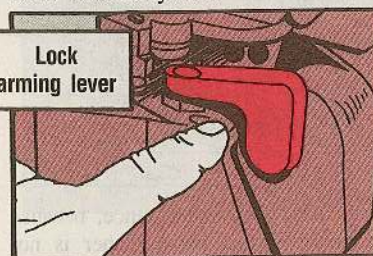
YEEHAWW!
THE CONNECTOR
BROKE!



Go slow when you lock the arming lever on the traversing unit (TU) of your TOW missile system.

Protect the coil cord after use. Stash the connector end on the holder under the TU.

Lock
arming lever



If the lever resists before it locks—won't seat even with a good push—have support check it out. If you force it, the 2W2P2 connector will get damaged.

Store coil
cord like this



That way it won't dangle, and cord and connector won't be snagged ... which saves an expensive cord.

To turn the eye cup on your sights, press in on the knurled plastic ring ... and turn the ring.

Don't try to turn it by twisting the rubber. The rubber will tear.

Keep AZ
lock up

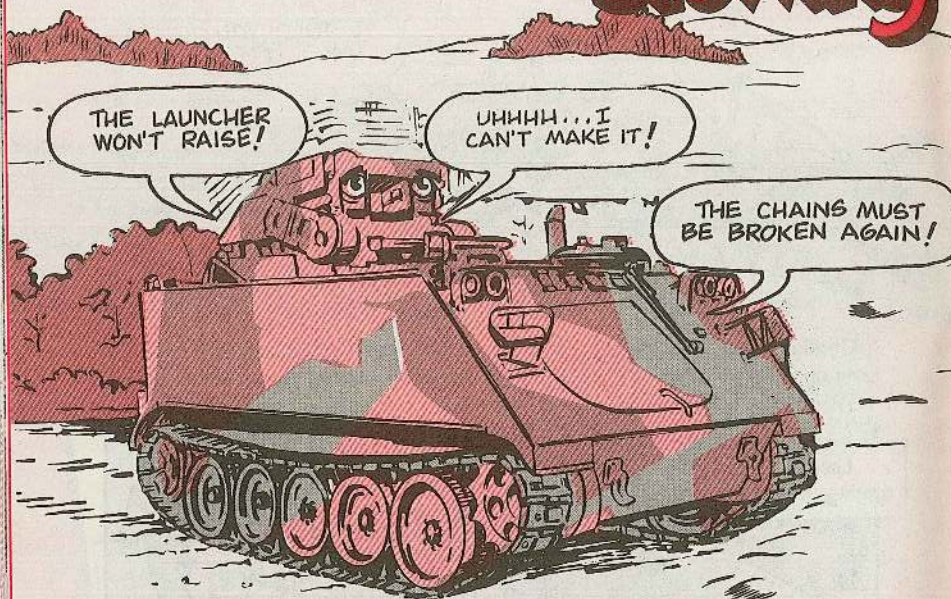


When you set the TU down, protect the AZ lock from damage. Easiest way is to position it with the lock facing up.

Be careful
with the eyecup



Stowing and Painting



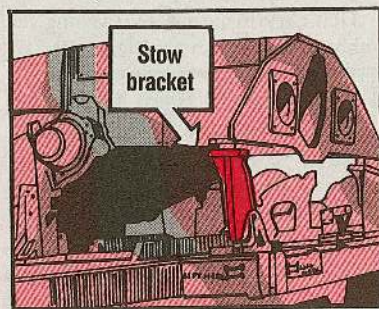
You can break the chains of your M901-series ITV's erector system if you move the ITV when the launcher's not on its supports.

When you lower the launcher, be sure it rests fully on its stow brackets. If the launcher's not full down on the brackets, don't move the vehicle. Get

help from your maintenance, because moving it when the launcher is not resting on the supports can snap the chains.

Careful with Paint

Paint is bad news for some components of your ITV, so be extra careful when you spot-paint near them. If you spill or drip on them, wipe it up quick-like.



• Keep it off the missile rails or the missiles won't slide home.

• If you're touching up the ground mount tripod, be careful you don't get paint on the two level bubbles. It's tough

to get a level reading by trying to see through paint.

• Keep the stuff off the machine gun rail, too. It can prevent the mount from turning.

Reminders...

• Keep the coolant cartridge on the night sight at all times to prevent cryostat contamination. Use the sight only when the battery is attached.

• Secure the latch assembly the way pages 2-134.1 thru 2-136 of C2 to TM 9-2350-259-10, tell you... or the sight will spin.



ITV Cable Slack

The 8W1 cable needs lots of slack to allow you to remove the TOW 2 AN/TAS-4A from your M901A1 ITV without breaking anything.

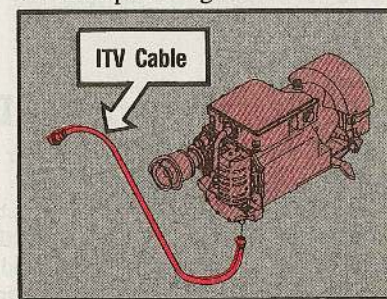
The cable has to be long enough to let you dismount the night sight, set it down, and disconnect the 8W1 from the J1 connector. Without enough slack, you'll crack or break the connector. The excess cable is wrapped around the upper image transfer assembly (ITA).

Cut the plastic tie that's holding the 8W1 to the three-power sight of the ITA and feed enough loose cable to get the job done. To prevent cable damage, re-tie it to the sight.

Re-fasten the looped cable on the

upper ITA to the three-power sight. Use a new plastic tie.

If somebody has shuffled the cable ties around, remove the tie, get your slack, and retie it to the gooseneck on the three-power sight.



Air Defense Needs Clean Air



If you want the missile of your M48A2 Chaparral system to fly true, remember to change the desiccant cartridge in your APU (air purification unit) on schedule.

The APU feeds pure air for missile effectiveness. Impure air affects missile flight through reduction of infrared capability.

The desiccant cartridge of the APU must be changed after each 28 hours of operation. The same goes for the IR receiver desiccant. Page 2-17 of TM 9-1440-2585-20-1 has the word.

Para 3-18, Page 3-74, TM 9-1425-2586-10, tells you how to replace air purifier cartridges for the APU and IR receiver.



Keep the Dust Down

Don't make dust when you repair or otherwise maintain the ablative coating on the deck of your Chaparral launch station.

The coating contains asbestos and asbestos can cause cancer when breathed.

Interim Changes to the TM's delete the repair procedure, prohibit any repair which makes dust from the coating, and direct that dust-making repairs be done at depot level under controlled conditions.

Wanted: Clean Air



The air induction system for your M1's engine works like an oversized vacuum cleaner. Anything that gets close to the intake grilles gets sucked in.

The precleaner and filter packs remove the dirt particles and trash from the air that is pulled in, and everything hums along smoothly—except when the air cleaner system is clogged.

The system will clog up fast if those rubber strips between the fender skirts and the hull are missing or torn up.

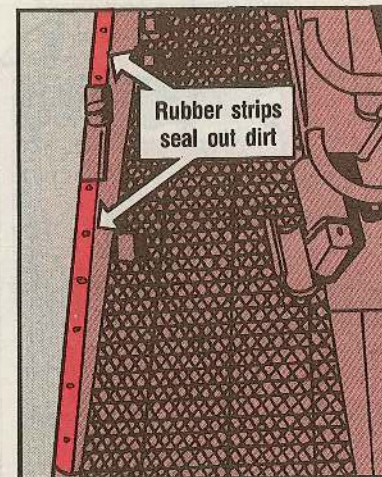
Why are the strips so important? Because an M1 tank tends to pull dust up the inside of its fender skirts. If that dust gets near the vacuum-like opening of the air intake system, the filters clog up real fast.

So the rubber strips are used to seal the area between the skirts and hull.

Check out Figs 196 thru 199 and Fig 201 in TM 9-2350-255-20P-1 if you need replacement strips.

The TM is short of info.

Here are the NSN's you need.



This is especially critical for the three strips at skirts 4, 5 and 6 on the left side (nearest the air intake grilles).

Fig	Item	NSN
196	20	5330-01-199-2404
	35	5330-01-142-8293
	37	9320-01-142-8297
	46	5330-01-198-8885
197	12	5330-01-142-8293
	26	5330-01-197-5537
	32	5330-01-203-5732
	33	5330-01-197-5536
198	13	5340-01-161-5337
	24	5330-01-198-8884
	37	5330-01-198-8883
199	13	5330-01-200-6163
	25	5330-01-208-7052
	41	5330-01-199-2403
201	2	5330-01-100-0484

Doing It in the Mud

Mud and the M1's air intake do not mix.

What you end up with is poor air circulation, leading to an overheated or ruined engine.

Since you can't call off your mission just because of the weather, you've got to do your best to reduce the mud build-up.

Make sure the rear skirts and mud guards are in place when you go mudding. Otherwise, mud gets thrown up on the deck, clogging the air intake.



Clean out the mud build-up around the skirts and final drives at halts.

Follow the good word on driving in mud. Eyeball Pages 2-370 thru 2-372 of TM 9-2350-255-10-2.

Backrest Turnaround

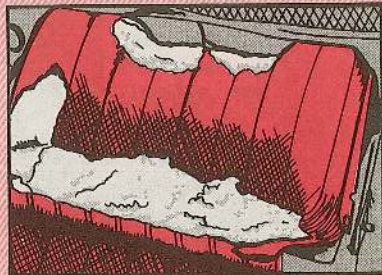
Dear Editor,

The driver's backrest in an M1 tank takes quite a beating when drivers use it as a step between the turret and their compartment.

Instead of replacing the backrest every time it starts coming apart, we turn it from top to bottom. That saves money and weeks of backaches for the driver, who must operate the tank without it until a new one comes in.

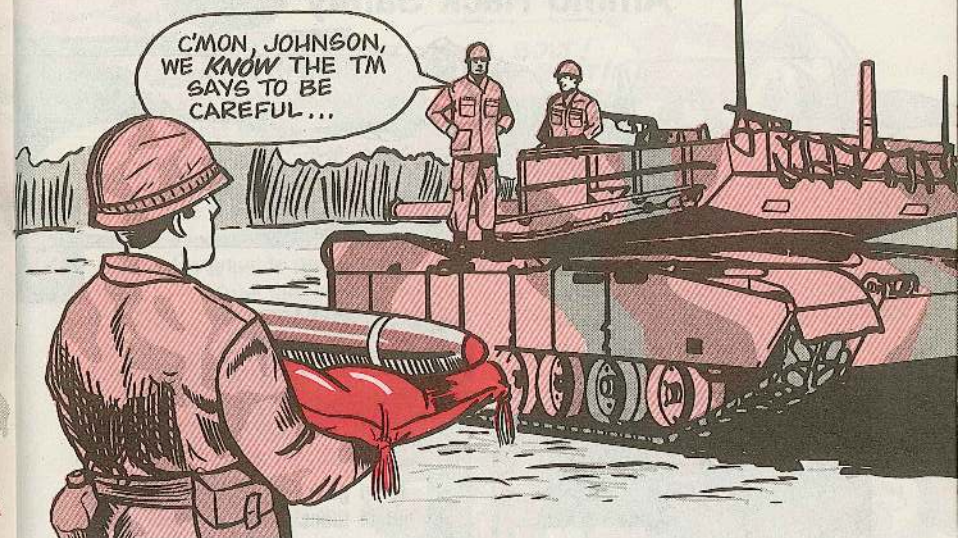
The backrest's mounting holes align either way, so all it takes is the turnaround.

(Editor's note—Thanks for the backsaving tip! If the backrest's mounting holes won't align, trim the rounded edge to fit.)



Sam Vuleta &
John Guyton
Ft Knox

Ammo: Handle with Care

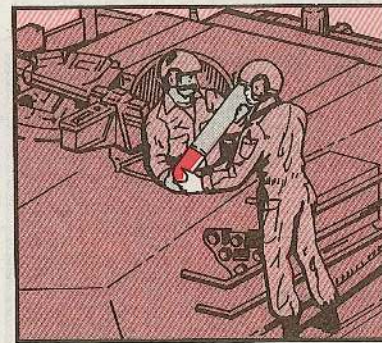
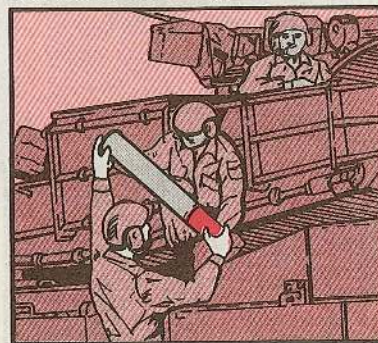


Sloppy handling of 105-MM ammo can be deadly.

Because primers and fuses are sensitive to shock, one good hit could set them off. Never load a dented round.

A dented cartridge case could jam in the chamber. If it's too hard to remove, your tank's out of commission until higher maintenance can remove it.

What's the right way to load ammo? Hand a round from person-to-person. Lower it projectile-end first through the loader's hatch and place it projectile-end first in the swing racks.



For more info, see Pages 5-3 and 5-4 of TM 9-2350-255-10-3.

Never drop, drag or throw ammo around. Your first mistake could be your last.

Ammo Rack Safety



It's simple enough...

Your tank is NMC when there are three or more damaged ammo tubes or broken or bent ammo rack locking handles.



You can save your hide and stay battlefield ready by keeping this in mind:

— Never rotate the turret when an ammo rack locking handle is opened. It leads to broken or bent handles or damaged tubes.



— Keep gear out of the ammo tubes. The combination of a turning turret and

gear sticking out of a tube leads to damage.



— Never use a tube or handle to get in or out of the turret. It's a sure ladder to damage.

— Tape or wire the handles closed if you aren't carrying ammo.

— If your tank still has the long-style handles, have your mechs replace them. They'll need 15 handles, NSN 5340-01-039-8593, for the left rack, and 11 handles, NSN 5340-01-039-8594, for the right rack.

The short handles will help prevent damage, but only you can stop it dead!

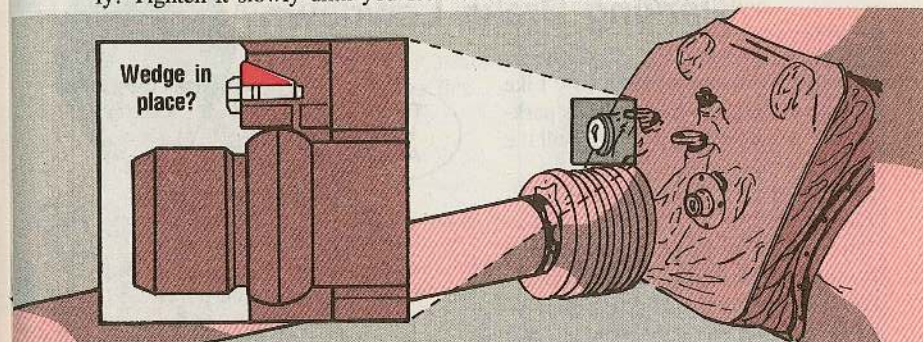
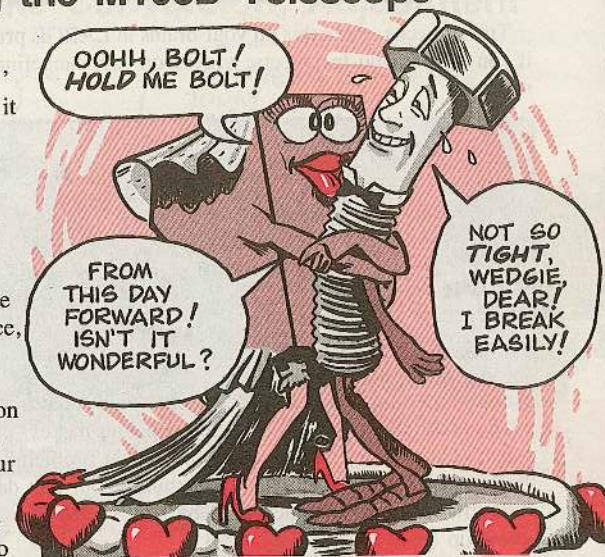


Wedging the M105D Telescope

"To have and to hold" are the key words when it comes to the wedge assembly on your tank's articulated telescope.

For one thing, you've got to **have** the wedge assembly. It holds the front end of the telescope steady. If it's not in place, the rough-and-tough operation of the tank in firing or in just getting on down the road can mess up the telescope and your boresight adjustments.

For another thing, the wedge assembly needs to **hold** firmly—but not too tight. Never over tighten the bolt. The bolt breaks easily. Tighten it slowly until you feel resistance and then **STOP**.



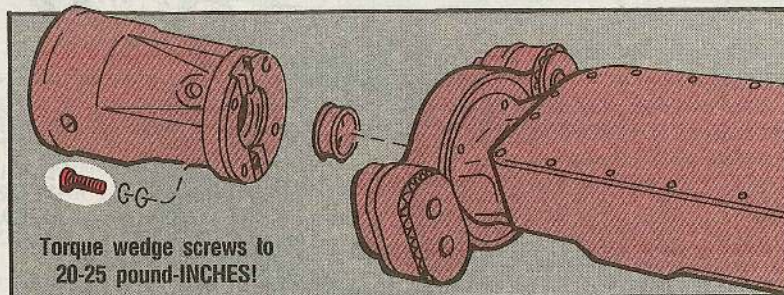
The assembly must be tight enough to prevent up-and-down play that would damage the telescope. But, it's got to be loose enough to let the telescope slide out easily.

Missing a wedge assembly for your M105D telescope? Get your DS unit to replace it. It's their job.

If the bolt does break in the retaining ring, don't try to repair it yourself. Send your tank to direct support. They'll get with the AMCCOM LAR for a new repair procedure that will have your tank back pronto.

Pound-Inches, Not Pound-Feet!

Turret mechs, mark this on your brains in LARGE print: Something will break if you use a pound-foot torque wrench on your rangefinder's end housing wedge screws.



Torque wedge screws to 20-25 pound-INCHES!

Those screws are torqued to 20-25 pound-inches, not pound-feet.

If it's just a screw that breaks, you've got problems removing the pieces. If the housing breaks—well, let's not think about that damage.

Follow the info on Page 60-52 of TM 9-2350-257-20-2-3-4 and you won't screw up the works.

M48A5, M60-Series Tanks...

Parking Brake Lowdown

So how come so many of you mechs are still doing things the hard way? Like disconnecting that old one-piece parking brake cable every time you pull the pack?

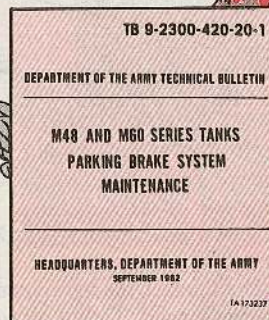
Did you miss out on TB 9-2300-420-20-1?

It includes instructions on replacing one-piece cables with the easier to use two-piece cable; disconnecting the two-piece cable for pack replacement; and adjusting the controls and brake pawls for safe operation.

If your shop doesn't have the TB, lean on your pubs people to submit a DA Form 4569 to get your unit at least one copy.

You'll save time and a lot of hard work.

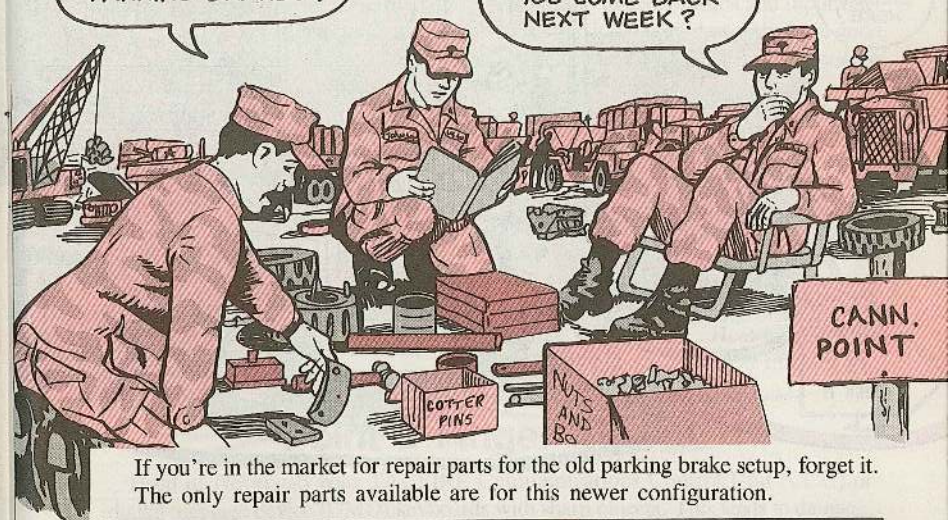
THIS PUB
HAS THE
ANSWERS!



Parking Brake Conversion, Adjustment

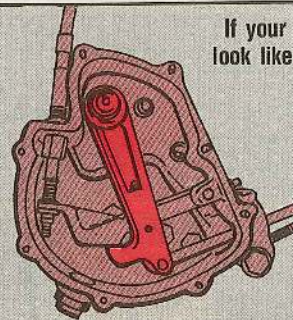
YOU GOT ANY
OLD M60 OR M48
PARKING BRAKES?

I'M FRESH OUT
TODAY... CAN
YOU COME BACK
NEXT WEEK?

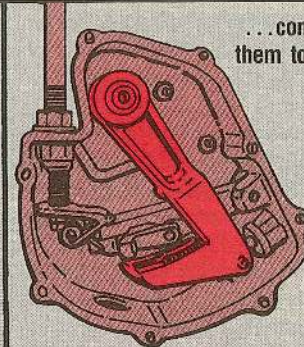


If you're in the market for repair parts for the old parking brake setup, forget it. The only repair parts available are for this newer configuration.

If your brakes
look like this...

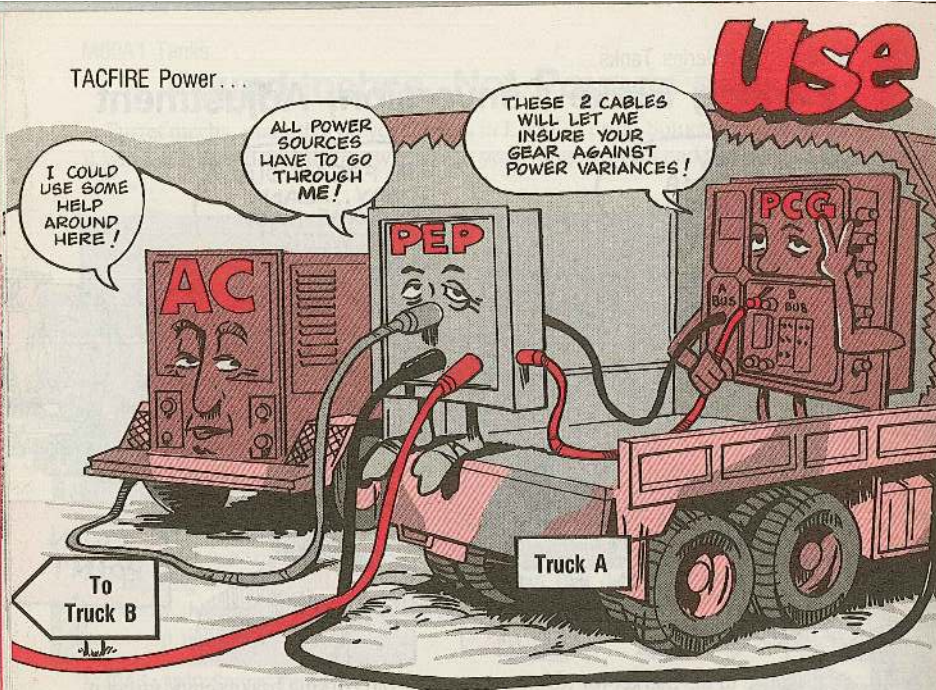


...convert
them to this



The solution to your problem is to convert to the newer setup. Everything you need to know is in Para 2-5L of TB 43-0001-39-6 (Jul 85). All the parts are listed with instructions on how to install them. There's also info on how to adjust the brakes.

If you don't have a copy of the TB, see your local TACOM Logistic Assistance Representative.



Power problems with your fire direction center's AN/MJQ-15 power plant can knock the data right out of your computer.

You can save that fire mission info by cabling your TACFIRE's 5-ton trucks into the power system.

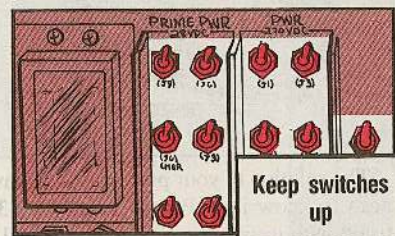
Cabled correctly into your Power Converter Group (PCG), the DC from your truck batteries will kick in when the generator's AC kicks out too much or too little power.

Each shelter is fed by two trucks. The cables you need are in TM 11-7440-242-23P's interconnecting kits.

From truck A to the Power Entry Panel (PEP) you need cable NSN 5995-01-070-3929. From the PEP to the PCG, it's NSN 5995-01-063-4510.

From truck B to the PEP, it's cable NSN 5995-01-076-9957. To the PCG, it's 5995-01-075-2807.

To make sure your insurance is in effect, keep the PRIME POWER and DC main switches on (in the UP position).



Remember, tho, that the PCG puts a trickle drain on your truck batteries. Run each vehicle for 30 minutes every

Use The Bus

four hours to recharge the batteries. Fast idle the truck at 1,150 RPM to keep from loading up with unburned fuel.

If your AC fails, and your trucks are not running, you have about five minutes to start them. That's all the time



it usually takes to drain the batteries so low they won't power your TACFIRE.

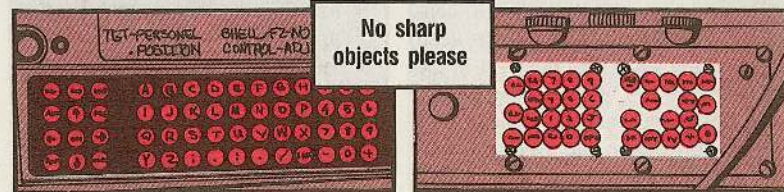
If you know you're going to have a failure, you can start the trucks. Shut down the internal radios and input/output unit (IOU) until the trucks have gone on line. Otherwise, a spike can damage the equipment.

Of course, the best bet is to stick with AC. Your MJQ-15's backup generator should be synchronized and paralleled with the operating one before you transfer the load.

Why AC? Because your air conditioning doesn't work on DC. Without that cooling air, the temp builds up quickly inside your shelter. Heat can lock up your computer within 30 minutes.

Point a Finger for PM

Hold it! Never jab your TACFIRE Communications Control Unit (CCU) or digital message device (DMD) keyboards with sharp objects. This leads to damage.



Pen and pencil points and fingernails poked against the keyboard of your CCU or DMD will dig holes in the membrane-like cover.

These holes make way for moisture and dirt damage.

To avoid this, use the tip of your finger on the keys.

And, when your DMD is idle, put it in its canvas carrying case. The case'll protect your handy computer from dirt, dust and dents.

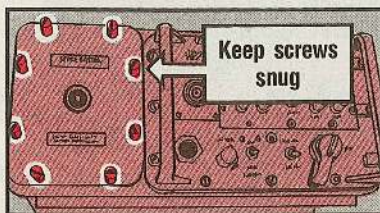


Keep Your Power Dry

You can blow your cover, break your case and maybe damage yourself if you mix water with your OD-144 Gun Display unit's lithium batteries.

Water and lithium don't mix. The battery can rupture—violently—if water shorts it out.

Keep the battery cover fasteners snug. That goes double when the GDU's control case is flat on its back, like when it's installed on a ground stand. That open cover is an open invite to water.



You should cover the case when you can. Water can get inside the case through the alarm/grill.

Store your spare battery with the connector receptacle up. That helps keep it out of any water that does get in the case.

Remove the batteries when your GDU's going to be idle. Keep the connector and compartment clean.

Give your GDU an earth ground. The hardware you need is PN 5975-X07-8007. The FSCM is 81349 and the RIC is B16.



Make sure all your field wire feeding the GDU has good insulation. If bare wires touch, you can short out your power connection.

If bare wires from your quadrant and deflection posts cross, you'll get bad data displays.

Head off misconnected wires by coding both ends.



HERE'S A LIST OF COLORFUL MEMORY JOGGERS...

	Tags	Tape
Red	9905-00-537-8954	7510-00-634-2790
White	9905-00-537-8957	7510-00-634-2791
Yellow	9905-00-537-8955	7510-00-634-2788
Green	9905-00-537-8956	7510-00-634-1341

The tags and tape are OK'd by Appendix A of CTA 50-970.

Helix Calls for Alcohol



Cleaner, Lubricant, Preservative (CLP) and freon are no-go's for cleaning the helix on your TACFIRE system's electronic line printer (ELP).

The best cleaner is still the simplest. Use the isopropyl alcohol NSN 6810-00-201-0906 and the cotton swab called for in your pubs.

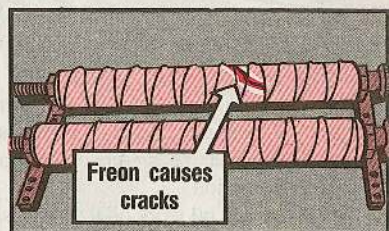


If you've started to use CLP as suggested on Page 22 of PS 383, hold one. CLP is a good cleaner, but it needs time—like overnight—to dry after you apply it.

You might not have that kind of time during a mission. All that dry carbon dust your ELP kicks out will mix with all that wet CLP you put on the helix and you've gummed up the works.

Freon is another good cleaner in its place. That place isn't your ELP. When the cold aerosol hits the red-hot helix, the helix can crack.

When you clean your ELP, the first—and last—call should be for alcohol.

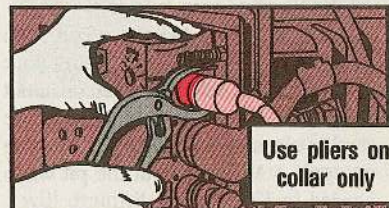


Use Padded Pliers

Use only the padded pliers, NSN 5120-00-624-8065, in your TK-225 tool kit when you connect or disconnect TACFIRE component cables.

If you use your hands, or regular pliers, you can ruin a cable.

Use the pliers' padded jaws only on the connector's collar.



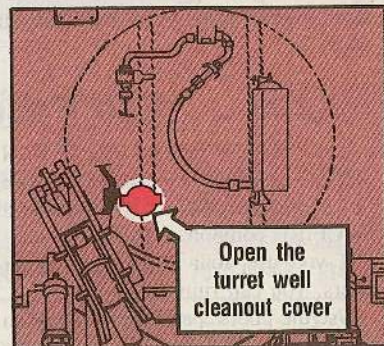
"Pit" Spit and Polish



If you let your M110A2's "pit" turn into the pits, you can end up with no commo. Water, dirt, debris and oil can collect and turn the pit into a grungy mess. Besides making for a bad place to work, the mess can knock commo cables out of commission.

The water and oil work on the cable's cover, eventually cracking it and causing a short. That means no communications between the driver and gunner—a losing situation in battle.

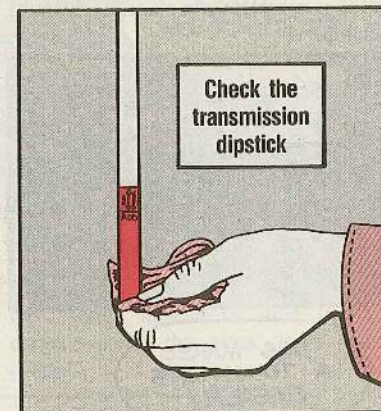
But it's no sweat to keep the pit from becoming the pits. When you park your M110A2, open the turret well cleanout cover so that water won't collect. (Be sure to close the cover before starting up again.) And swab out the pit when needed to KO oil and dirt.



Hot and Cold Transmission Checks

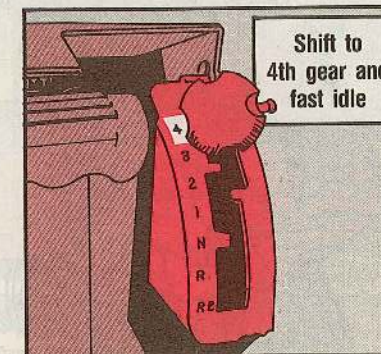
Here's how the headshed wants you to check the transmission oil on the M578 recovery vehicle and M110A2 SP howitzer.

Before you start up, pull the transmission dipstick. If the oil's in the

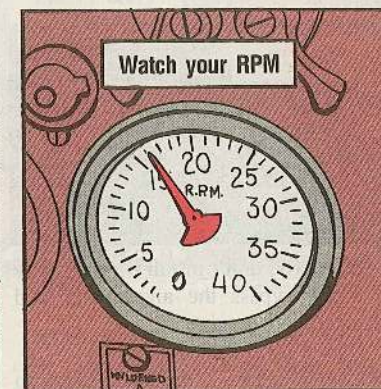


OPERATING RANGE, it's OK to start the engine. If the level's low, add oil. If the level's high, report it. Your mech will drain some oil.

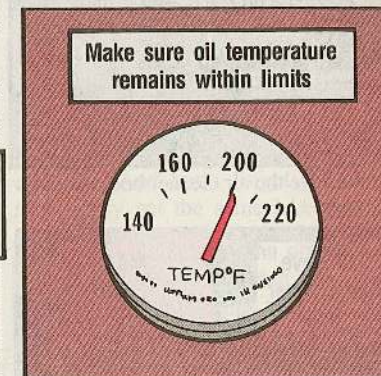
Next, do a hot check. Start the engine, apply the brakes, shift to fourth,



and fast idle at 1,600-1,900 RPM until the oil temperature gage reads 180°F. Shift to neutral and idle at 1,200-1,600 RPM for one to three minutes. Make



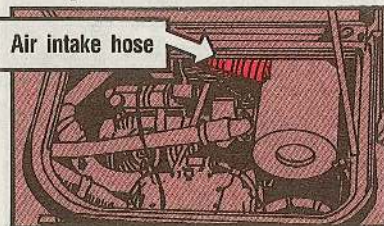
sure the oil temperature gage reads between 180° and 220°F. Stop the engine, wait three to five minutes, and check the oil level with the engine off.



If the oil level is in the OPERATING RANGE, you're ready to go. If it's low, add oil. If it's high, report it. Your mech will drain some oil.

Air Intake Hose Woes

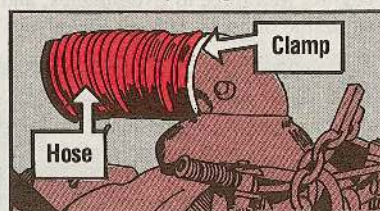
The air intake hose from the air cleaner to the engine air horn is hard to install. It's stiff, and there's little room to get your hands on it for leverage.



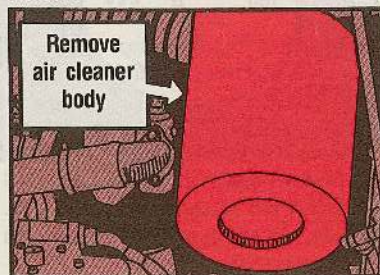
But if you don't install it right, dirty air will bypass the air cleaner and damage your engine.

Here's a tip that works:

● Install the hose to the engine air horn while you have the pack on the ground. Make sure the hose is seated all around the horn before you tighten the clamp.



● Remove the air cleaner body from its mount.



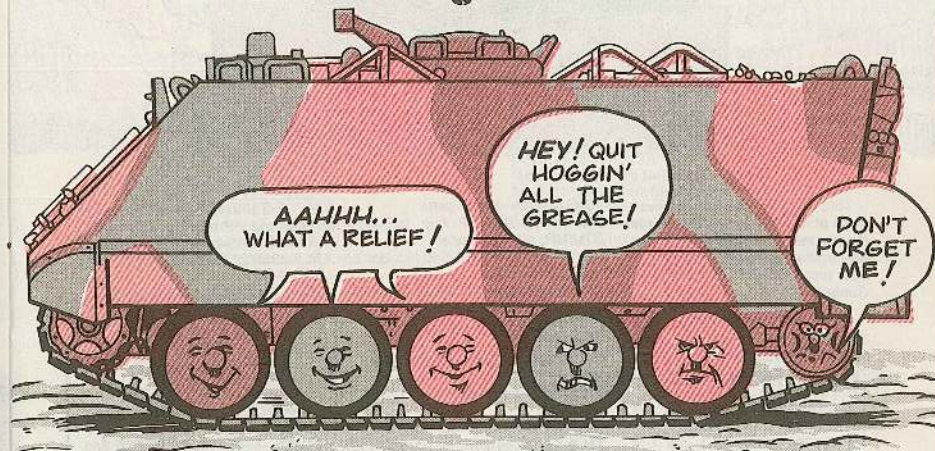
● After the pack is installed and as the top deck is being lowered onto the hull, make your next move. Just before the deck touches, stick your hand through the air cleaner opening and line up the hose. Seat the hose firmly before the deck is completely in place. Tighten the clamp.



THIS MAKES
A TOUGH JOB
EASIER!



Fitting Relief



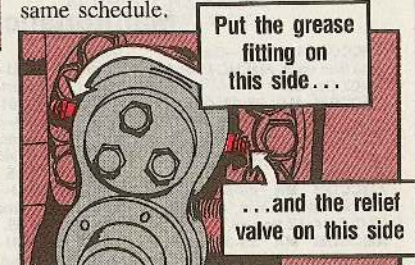
Just because roadwheel arms 4 and 5 have plugs instead of lube fittings doesn't mean the arms don't need grease.

NSN 4730-00-050-4208 gets you the right lubrication fitting and NSN 4820-00-845-0067 the relief valve.

Add grease fittings and relief valve when you lube.

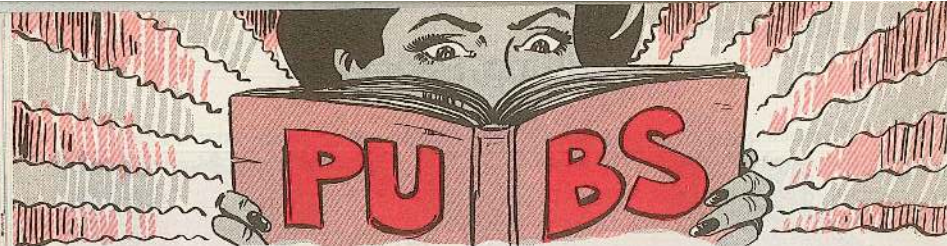


Lubricate the roadwheel arms every six months or as often as your unit SOP calls for. And don't forget the idler arms—they get the same lube on the same schedule.



Come lube time, you've got to pull the plugs and install lube fittings and relief valves. Some old-style arms from A1's are used on the A2's and they need special adapters, NSN 4730-00-186-3024, to make the fittings stick up far enough to be lubed.

When you're done, replace the plugs.



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TM 5-3805-248-14&P-1 Aug Cat 621B scraper
TM 5-3805-248-14&P-4 Aug Cat 621B scraper
TM 5-3805-261-14&P-1 Jul Cat 130G grader—operation
TM 5-3805-261-14&P-2 Jul Cat 130G grader—maintenance
TM 5-3805-261-14&P-3 Jul Cat 130G grader—maintenance
TM 5-3805-261-14&P-4 Jul Cat

130G grader—repair parts
TM 5-4120-384-24P Aug 18,000 BTU/HR, air conditioner
TM 5-6635-386-12&P Sep Nuclear soil density tester
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TM 9-1005-231-24&P Jul M85 machine gun
TM 9-1005-317-10 Jul Pistol, 9-MM, M9
TM 9-1010-221-24&P Aug M203 launcher
TM 9-1410-530-24P Jul HAWK
TM 9-1425-485-24P Jul LANCE
TM 9-1430-485-20P Jul LANCE monitor-programmer
TM 9-1430-588-20-1 Aug AN/MPQ-49 FAAR
TM 9-2320-282-10-HR Sep M.A.N. Trucks

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043-441-5419-F Prepare the ROR for Travel by Helicopter
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SMART Msg #63—Share locally devised computer logistical applications, DALO-PLR 251512Z Sep 85.

SMART Msg #64—Apply rubber coating to the fuel port of the OH-58 helicopter, DALO-PLR 251913Z Sep 85.

M88A1 Fuel System
475-091-1414-A Replace M88A1 Engine Starter
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AMCCOM MA 85-38—Gas particulate filter units, AMSMC-MAR-C 271640Z Sep 85.
AMCCOM MA 85-37—M3A3 smoke generator, NSN 1040-00-587-3618; M2 mount, NSN 1040-00-347-2434, AMSMC-MAR-C 171830Z Sep 85.
AMCCOM MA 85-38—M17 series protective masks, AMSMC-MAR-C 241415Z Sep 85.
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TACOM SOU—HAWK system loader/transporter XM501E3, AMSTA-MCB 301800Z Aug 85.
TACOM SOU—Non-tactical vehicle semi-trailer van, personnel, NSN 2330-01-090-7846, AMSTA-MVA 181800Z Sep 85.
TACOM SOU—M578, M110A2, brake system hazard, AMSTA-MCC 171930Z Sep 85.
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TACOM SOU—Smoke generator fuel system fire hazard on Abrams tanks, M1, M1IP, M1A1, AMSTA-MCD 171300Z Sep 85.
TACOM SOU—Heavy Expanded Mobility Tactical Truck (HEMTT), NATO slave receptacle fire hazard, AMSTA-MTC 272100Z Sep 85.

MICOM SIL 3-85—Supply information letter—Missile material of supply and maintenance matters, AMSM-LC-PR-PA, Oct 85.

Your Direct Support or Logistic Assistance Office (LAO) can provide you with this information.

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Torx® Screwdriver NSN's

Torx® fasteners are showing up on more and more equipment, such as the CUCV. Here are individual screwdrivers for a range of sizes.

Size	NSN 5120-01-
T10	177-0816
T15	168-1131
T20	168-1132
T25	168-9569
T27	168-1133
T30	168-1134

These screwdrivers are authorized by Appendix A of CTA 50-970.

There's also a set of Torx® bits that fit a socket wrench in the CUCV special tools list in TM 9-2320-289-20P.

CUCV Mirror Not Needed

Don't sweat it if the inside mirror on your CUCV breaks or is missing. It's no longer required. Make sure both outside mirrors are OK, tho. This info's in TACOM Msg AMSTA-MTA 080800Z Aug 85.

CUCV Blackout Wires

Rear blackout marker light wiring on some CUCV's hangs below the bumper. It snags and gets ripped off as you drive over rough terrain. If the wiring's hanging, report it. Your mech can tie the wiring to the bumper bar brace with an electrical tie-down strap, NSN 5975-00-570-9598.

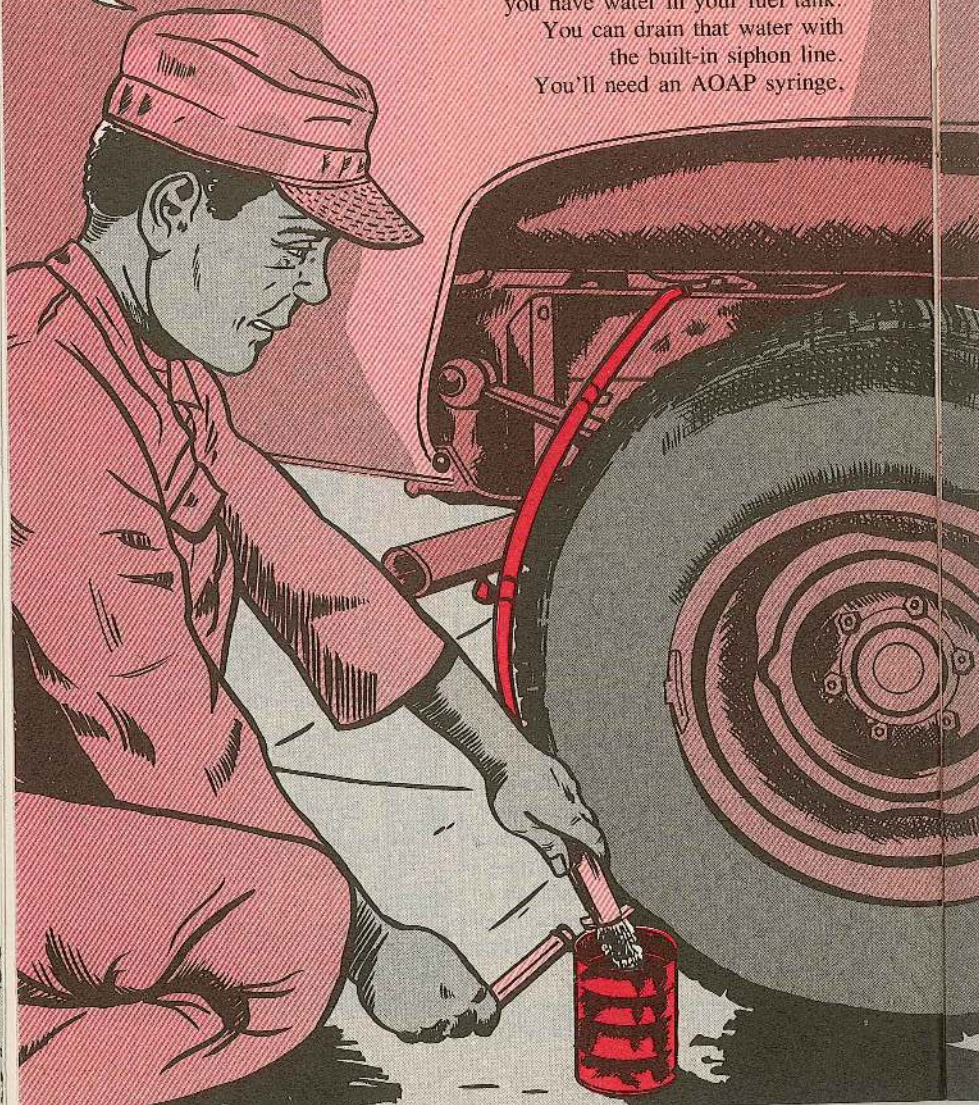


Relief is Just

I SPELL
RELIEF,
D-R-A-I-N

If you have to drain water from the fuel-water separator on your CUCV often, you can bet you have water in your fuel tank.

You can drain that water with the built-in siphon line. You'll need an AOAP syringe.



a Drain Away

NSN 6515-00-727-0008, and about 4 feet of 5/16-in plastic tubing, NSN 4720-00-410-4290.

The siphon tube on an M1009 is at the top of the frame just behind the right rear wheel. For all other models, the tube is above the inside edge of the left frame rail under the cargo body just behind the cab.

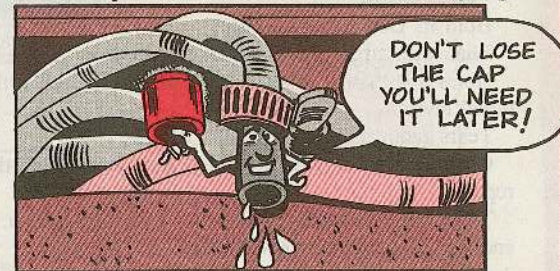
To start, remove the fuel tank cap. Then remove the protective cap on the siphon tube. Don't lose it—you'll need it later!

Push the plastic tubing over the siphon tube and attach the AOAP syringe to the other end of the hose.

Hold the syringe over a pail or bucket on the ground. Pull the syringe's plunger out in one swift, smooth move.

Keep the syringe below the level of the line and let fuel drain until you get clear fuel.

To stop draining, put the plunger back in. Take the tubing off the siphon tube, replace the protective cap and the fuel tank cap.



Fuel Filter Fix Free

Some CUCV fuel filters leak. On these leakers, the filter base, O-ring, seal and vacuum switch leak. The good news! Fuel filter parts are under warranty, no matter how old your vehicle is or how many miles are on it—for now.

If you've already repaired a leaky filter, file a warranty claim. Para 5 of TB 9-2300-295-15/24 (Sep 85) tells you how. You'll find this spelled out in TACOM Safety-of-Use Msg AMSTA-MTA 061600Z May 85.

Hold one! NSN's for the fuel filters shown as Items 1&2 in Fig. 18 of TM 9-2320-289-20P are wrong. Use NSN 4930-01-156-0045 to get Item 1 and NSN 2910-01-156-8361 to get Item 2.



Cargo Cover Care



Hold it! Don't trashcan it. That torn cargo cover can be repaired. Holes less than 4 3/4-in across can be repaired without stitching at organizational level.

Tears requiring stitching are DS jobs. Chap 10 of FM 10-16, General Fabric Repair, has the info needed to do minor repairs.

To do the job, order a yard of vinyl coated cloth, NSN 8305-00-616-0022, and a pint of adhesive, NSN 8040-00-262-9028.

Tire Repair Kits

Need repair kits for steel-belted radial tires like the ones on M880-series trucks or the CUCV? Here's a list of kits that haven't yet made it into TM 9-2610-200-24.

You get 12 4-ply rectangular patches in each kit.

FOR CROWN REPAIR...

NSN Size (inches)

2640-01-018-1955	6×5
2640-01-018-1954	7×6
2640-01-016-5916	8×6

NSN Size (inches)

2640-01-013-0677	10×3
2640-01-016-5917	10×5
2640-01-013-0676	12×3
2640-01-013-0675	15×5

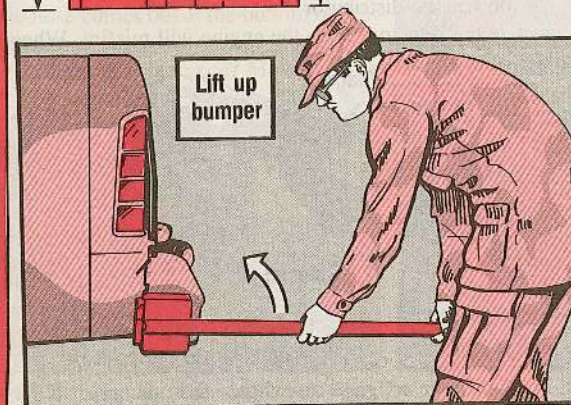
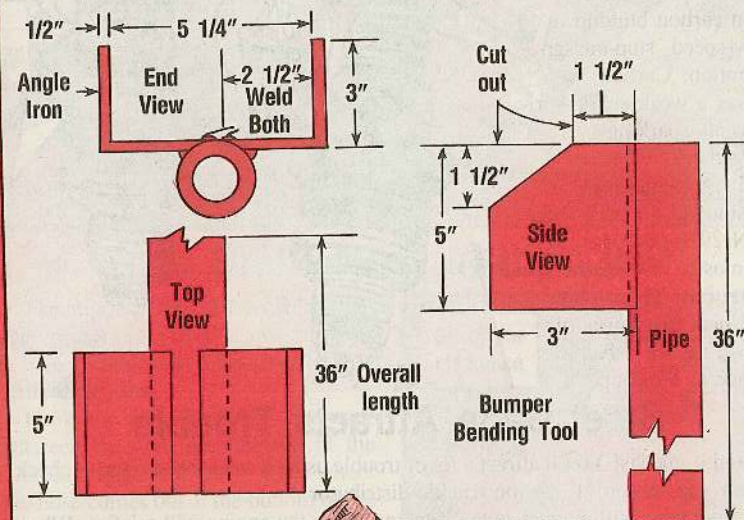
...FOR SIDEWALL REPAIR!

Bumper Bending Tool

Dear Editor,

The rear bumpers on our M880-series trucks get bent up or down on the ends. This makes our trucks look rather junky. It's expensive to order new bumpers and it takes a lot of time to send the trucks to support for repair.

Our solution—a tool that's cheap and simple to make. All it takes is a piece of angle iron, some thick-wall pipe and a bit of welding.



The tool is easy to use and it works well on all original M880-series rear bumpers.

SFC William H. Ward
New Mexico
ARNG

(Editor's note—Thanks for the handy-dandy tip!)

Hotter Plugs Fight Fouling

Getting poor engine performance and a lot of spark plug fouling? Chances are you need a hotter plug.

Standard plugs, NSN 2920-00-234-2338, are intended for high-speed, continuous engine operation.

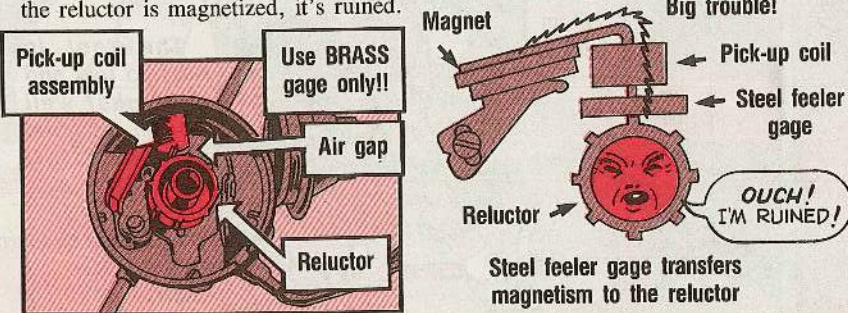
These plugs suffer from carbon buildup in slow-speed, stop-and-go operation. Carbon causes a weak spark—or prevents sparking altogether.

Match plugs to the mission. Use hotter plugs, NSN 2920-00-904-1297, for mostly low engine speed operations. These plugs hold heat that burns off carbon before it has a chance to build up.

Steel Gage Attracts Trouble

Hold it, mechs! You'll attract a lot of trouble using a steel feeler gage to check the air gap in your 1 1/4-ton truck's distributor.

A steel gage will magnetize the reluctor. Then the engine will misfire. When the reluctor is magnetized, it's ruined.



Always use a non-magnetic feeler gage to check the air gap. NSN 5210-01-026-9571 is for the brass gage listed as a special tool in TM 9-2320-266-20P.

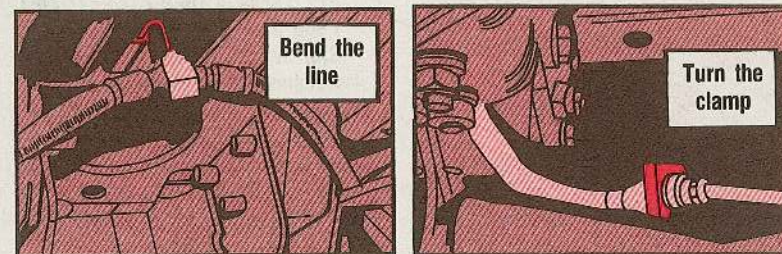


Keep Brake Hose in the Clear

The improved rear differential mounting bracket on 1/4-ton trucks can wear a hole in the brake line—leaving you with no brakes.

Look for at least 1/8-in clearance between the hose and the top of the bracket and at least 1/2-in space where the hose comes out at the bottom of the bracket.

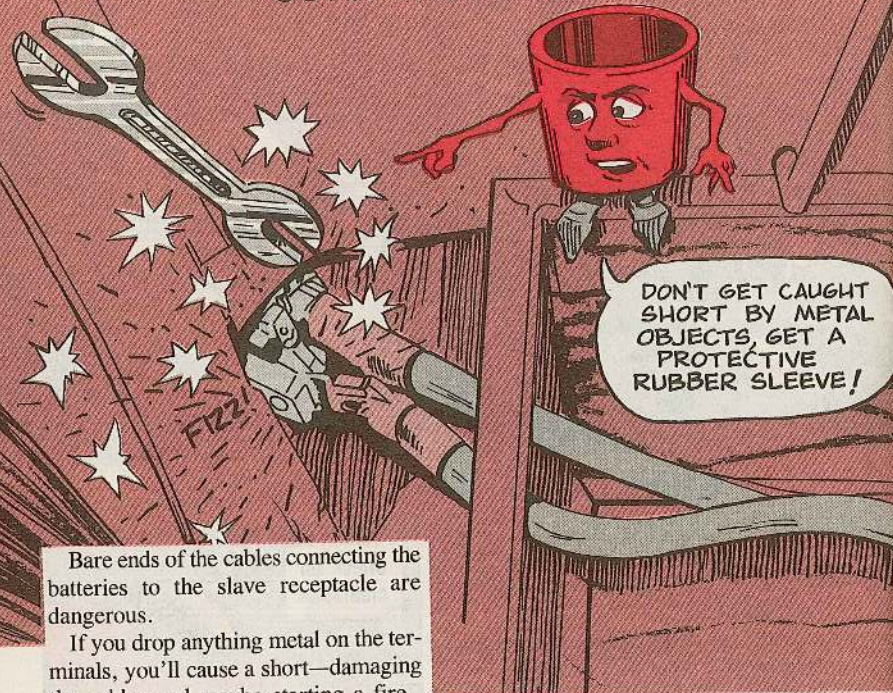
Not enough clearance? Move the hose by gently bending the brake line at the "T" and by turning the hose clamp on the top of the rear suspension arm. Careful,



tho! Don't move them any more than you need to.

When you get the line in the clear, have a buddy apply the brakes while you check for any leaks caused by moving the line.

Cover Bare Ends

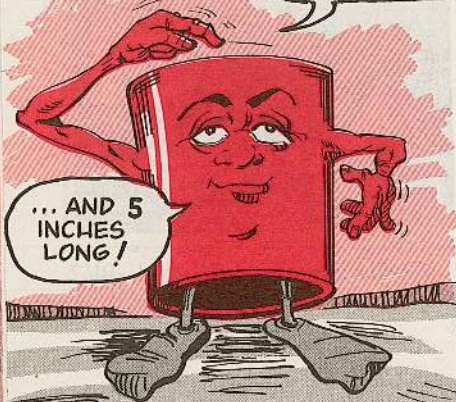


Bare ends of the cables connecting the batteries to the slave receptacle are dangerous.

If you drop anything metal on the terminals, you'll cause a short—damaging the cables and maybe starting a fire.

You mechs can fix it, tho. Cover the terminals with a rubber sleeve, NSN 4720-01-195-7604.

I'M 2 INCHES ACROSS...



To do this:

- Disconnect the battery ground cable.
- Remove the slave receptacle leads like it says in TM 9-2320-272-20-1, Page 5-68, Para 5-31A.
- Slip the cover over both cables.
- Reconnect the cables.
- Slide the sleeve down over the exposed metal.
- Reconnect the battery ground cable.

Until the ordered sleeve comes in, cover the metal end of the positive receptacle cable with a piece of hose. Slice the hose up one side, slip it over the metal cable end and wrap it with tape to hold it in place.

Tool Box Trick

Dear Editor,

I've found a way to keep our tools really secure.

Before, the padlock on the tool box could be moved enough so it would slip over the latch arm.

Here's the fix we used:

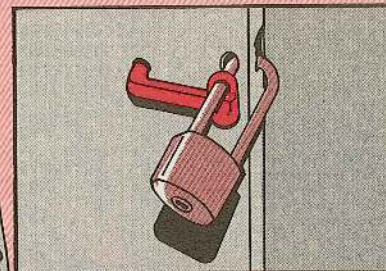
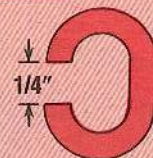
Cut a 1/4-in section out of a link of 5/16-in or 3/8-in welded chain.

Weld the link to the end of the latch arm.

Put the lock through the chain and the hole in the door. No more missing tools!

CW3 George H. Audette
Poughkeepsie, NY

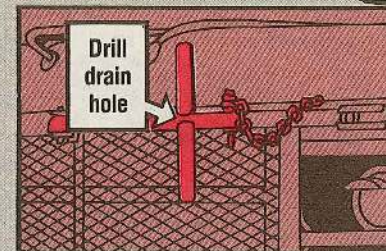
(Editor's note—Sounds good to me. Another fix is to weld a 1-in extension to the latch arm. It works on the 5-ton truck cab tool boxes too!)



M939-Series Hood Support Drain

Dear Editor,

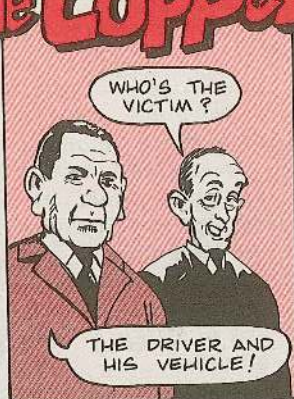
The hood support on M939-series 5-ton trucks is hollow and fills up with water. When the temperature drops, it freezes and splits the tubing. You can let the water drain by drilling an 1/8-in hole in the bottom of the handhold.



SSG Larry C. Nickell
Ada, OK

(Editor's note: Thanks for the SMART idea.)

The Copper Caper



Tank and Pump Units...

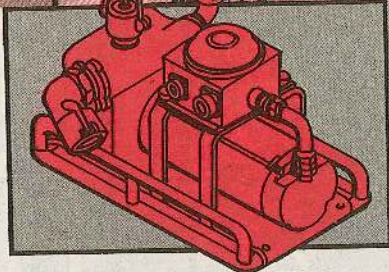
Pumping Assemblies Go Electric



If the gasoline engine driven (GED) pumping assembly in your TPU is beyond repair, here's good news.

You can get a 24-V electric motor driven (EMD) pumping assembly. There are two different models.

Order pump kit, NSN 4930-01-187-1592, to replace GED pumping assemblies in TPU's with



NSN 4930-00-

078-4938 926-3692

078-4939 926-3581

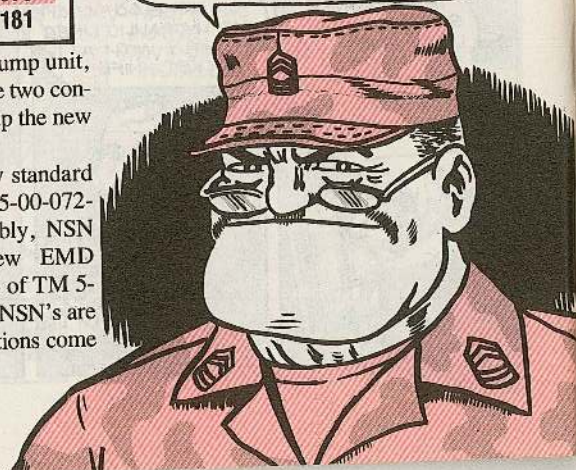
542-2800 877-8678

987-8576 070-1181

NSN'S FOR THE EMD'S
WILL BE ADDED TO TPU
TM'S AS THEY'RE UPDATED.

The kit contains a motor, pump unit, installation instructions and the two connector hoses needed to hook up the new pumping assembly.

If your TPU has a military standard gasoline engine, NSN 2805-00-072-4871, order pumping assembly, NSN 4320-01-047-1927. The new EMD assembly is shown in Fig 1-3 of TM 5-4930-230-13 (Jul 85), but the NSN's are not listed. Installation instructions come with this assembly, too.



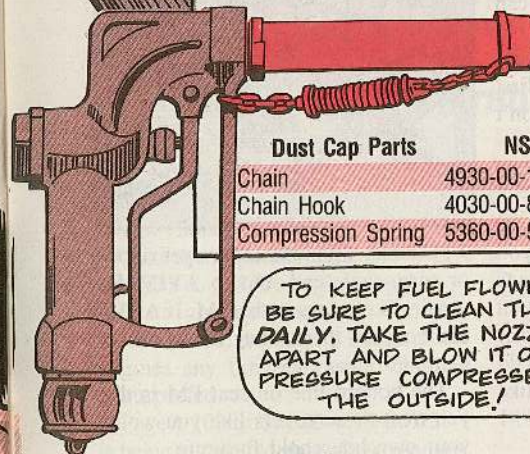
Fuel Nozzle PM

STRAINERS AND DUST CAPS ON YOUR FUEL NOZZLES HELP KEEP VEHICLE FUEL SUPPLIES CLEAN. REPLACE MISSING OR DAMAGED HARDWARE WITH THESE NSN'S...

Strainers	Size	NSN
M131A4C, M131A5C	1 1/2-in	4930-00-954-1317
Semitrailers	2 1/2-in	2910-01-104-8967
M969, M970 Semitrailers, M49-Series Trucks	1 1/2-in	4930-01-115-6741
M559 Goer	1 1/2-in	4930-01-115-6741
	2-in	4730-01-083-1160
	2 1/2-in	2910-01-104-8967
Mil Design Tank and Pump Units	1 1/2-in	2940-00-989-3260

PICK DUST CAP ASSEMBLIES
BY THE SIZE OF THE NOZZLE
ON YOUR TANKER!...

Nozzle Size	Dust Cap NSN
1-in	5340-00-832-7796
1 1/2-in	5340-00-115-3060
2-in	4930-01-094-6548
2 1/2-in	5340-00-720-8866



Dust Cap Parts	NSN
Chain	4930-00-120-9602
Chain Hook	4030-00-803-0272
Compression Spring	5360-00-522-2247

TO KEEP FUEL FLOWING SMOOTHLY,
BE SURE TO CLEAN THE STRAINERS
DAILY. TAKE THE NOZZLE ASSEMBLY
APART AND BLOW IT OUT WITH LOW
PRESSURE COMPRESSED AIR FROM
THE OUTSIDE!





Black Hawk...

FEATHER DUSTER?

I'M JUST TRYING TO KEEP THESE SEATS AS CLEAN AS MY OWN HOUSEHOLD FURNITURE!

Keep Troop Seat Covers Clean

You don't stand on your bird's troop seats to pull overhead maintenance in the cabin area, do you? Some Black Hawk mechs do.

They also use those seats as a handy resting place for their tools, lube containers, oily rags, and all kinds of odds and ends. That's why they have to replace so many seat cover assemblies at \$68 a whack. Troop seat abuse can be an expensive proposition.

But you're a top flight mechanic, right? You do your job right the first time, on time, every time. You don't lose tools and you don't tear up equipment while you're fixing other equipment.

When you have to pull overhead maintenance in the cabin area, you remove the seats and carefully place them where they won't get stepped on or accumulate dirt, grease, grime, etc.

And when those troop seat covers do get dirty or greasy, you clean 'em like it says in Para 3-318 of TM 55-1500-204-25/1.



Keep tools off seats!

'Course, when the covers get ripped or torn, you send 'em to AVIM for repair, like it says in the TM. If AVIM can't repair them, they'll dispose of them.

The bottom line on seat PM is that you treat those covers like you would your own household furniture.



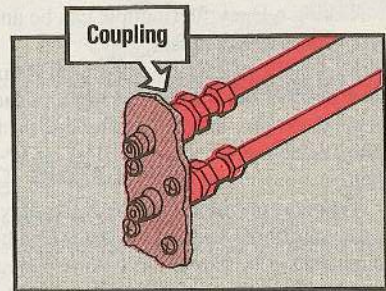
Repair Hydraulic Couplings

Good news. You Black Hawk mechs can now repair hydraulic male coupling quick disconnects, NSN 4730-01-095-6973. Use preformed packing, NSN 5330-01-047-0435, and packing retainer, NSN 5330-00-582-1548. Here's how:

Remove the old Teflon packing retainer and O-ring, taking care not to scratch the machined surfaces of the coupling.

Install the new packing retainer, being sure the diagonal cuts of the retainer butt together. Install the new preformed packing. Lube the new packing and retainer with hydraulic fluid. If these parts don't stop the leaks, replace the coupling.

CH-47B/C...



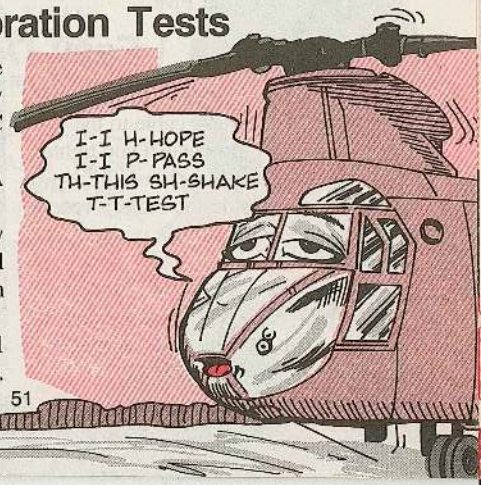
Engine Vibration Tests

Engine drive shaft vibration tests are required for some, but not all, newly installed engines on your B and C model Chinooks.

Tests are required for the T55-L-11A and T55-L-11ASA engines only.

Tests are not required, but may be conducted, for other B and C model engines any time excessive vibration is suspected.

Page 1-103 of TM 55-1520-227-23-1 is being updated to show these changes.



Hueys...

HEY! I'VE
GOT A MISSION
TO FLY!

HOLD ON!
WE DON'T
HAVE A GOOD
SAMPLE YET!

Patience Pays in Fuel Sampling

Taking a Huey fuel sample can be an unsettling experience, crew chiefs.

Para 2-10c of FM 10-68, Aircraft Refueling, requires fuel samples before the first flight of each day. To get a good sample, let the fuel in your bird's tanks settle after refueling. If you use JP-4 or JP-5, wait 2 1/2 hours.

Taking a preflight sample is the only way to make sure your bird's fuel has no water or other visible contaminants in it. If you don't allow enough time for the fuel to settle after refueling, you won't be able to tell if the fuel's contaminated.

There are no requirements for fuel settling time before sampling for other Army helicopters. But fuel samples are required for all Army aircraft, like it says in Para 2-10c of the FM.

Contaminants
won't be
visible if
fuel hasn't
settled

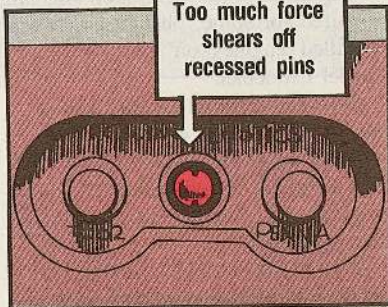


Easy Does It

Spare the muscle, Huey mechs, when connecting the battery cable to the battery. Too much force when you tighten the connector knob can shear off the two recessed pins inside the battery receptacle. You'll have to replace the connector.

So take it easy when you connect battery cables. Use just enough force to turn the knob past the first resistance—and stop. Enough is enough.

Too much force
shears off
recessed pins



UH-1...

Get a Thermometer

Inspecting the overheat switch in your bird's heater system is a guessing game without a thermometer. You have to make sure the switch contacts open at $225^{\circ}\text{F} \pm 8^{\circ}$ and close at $260^{\circ}\text{F} \pm 6^{\circ}$, like it says in Para 13-110 of TM 55-1520-210-23-2.

A thermometer is being added to your special tools list, but until it's added, use self-indicating thermometer, NSN 6685-00-291-1003. It's not on the AMDF, so order on a DD Form 1348-6. The RIC is S9G and it costs \$29.03. Use TM 55-1520-210-23-2 as your authority.

YOU'RE
A BIT
WARM!

BUT, I DON'T
FEEL SICK!

AH-1S Series...

A Touching Situation

The split cones for your rotor hubs get equal treatment, Cobra mechs. When you install them—either on the main rotor hub or the tail rotor hub—make sure they have equal end-gap spacing.

But once you've installed them, forget about the split cone spacing. Even if they touch, there's no need to respace them.

IT'S SPELLED OUT
IN PARA 5-14e
OF TM 55-1520-
236-23-1 FOR THE
MAIN HUB ROTOR!

THE SAME THING
GOES FOR THE
TAIL HUB ROTOR!

Stick to the Schedule

WHEN YOU PULL AN OIL SAMPLE EARLIER OR LATER THAN THE SCHEDULED DATE, DO YOU HAVE TO RESCHEDULE ALL OTHER SAMPLE DATES?

NO! AS LONG AS THE SAMPLE WAS TAKEN WITHIN THE ALLOWABLE RANGE, YOU CAN STICK WITH YOUR ORIGINAL SCHEDULE!

**\$AMPLING
FOR DOLLARS**

Aviation Messages

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

C-12D/G-85-02, SOF, Operational, RC-12D and RC-12G Instrument Approach procedures, 292000Z Aug 85.

CH-47-85-09, SOF, Technical, CH-47D (ONLY) One Time Inspection of Combining Transmission Collector Gear Roller Bearing, 072100Z Aug 85.

CH-47-85-10, SOF, Maintenance Mandatory, Change to SOF Message CH-47-85-03 on the CH-47D Rotor Head Operating Time, 151930Z Aug 85.

CH-47-85-11, SOF, Operational or Adjustment of Pilot/Co-Pilot Directional (YAW) Control Pedals in CH-47A/B/C and D Helicopter, 221930Z Aug 85.

AH-64-85-04, SOF, Technical, AH-64A APACHE Aircraft One Time Inspection for Missing Cotter Pins at F.S. 275 Bell Crank, 081500Z Aug 85.

MIM-GEN-MEM-85-03, Multi-Aircraft Change in Flyable Storage Run-Up Requirements (Power Plants), 011530Z Aug 85.

MIM-UH-1-MEM-85-03, Tail Rotor Hub Assembly UH-1 Helicopter, 271435Z Aug 85.

MIM-UH-60A-MEM-85-04, Clevis, Rod End UH-60 Helicopter TB 55-1520-237-23-8, 271430Z Aug 85.

MIM-UH-60A-MEM-85-05, UH-60A Anti-Flag Assembly (P/N 70105-08100-043, NSN 1615-01-082-9252), 221935Z Aug 85.

MIM-CH-47-MEM-85-03, CH-47D Aft Pylon Landing Edge Clam Shell Door Latch Pin P/N 1048 81-1,

NSN 1560-01-208-6423 Wear Inspection 141500Z Aug 85.

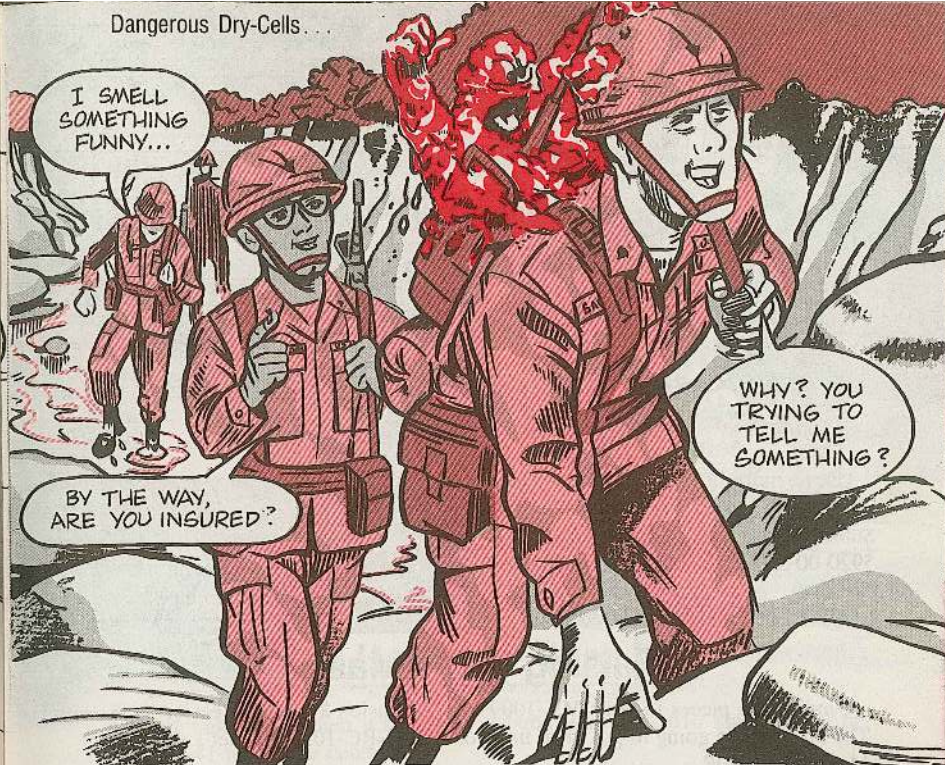
MIM-CH-47-MEM-85-04, Vertical Pin Thread Engagement on CH-47A/B/C/D, 052000Z Aug 85.

MIM-CH-47-MEM-85-06, Oil Sampling Interval, T55-L-712 Engine on the CH-47C, 222005Z Aug 85.

MIM-CH-54-MEM-85-02, CH-54A/B Cargo Hoist Cable Assembly Maintenance Procedures, 221940Z Aug 85.

MIM-T700-MEM-85-01, TB 55-2840-248-16 "Life Limits for Stages 1 and 2 Gas Generator Turbine Rotors, T700-GE-700 Engines," 6 April 1984, 052015Z Aug 85.

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



Last One Out's a Rotten Egg

Your eyes, ears, nose and throat will warn you when trouble's brewing inside your mercury or lithium battery-using equipment.

A nose-burning smell and the hissing of gas will warn you that toxic sulfur dioxide is in the air.

Bulging batteries and hot equipment will tell you that batteries are near rupture. If the rupture's violent enough, it can do **you** damage.

When you get either of these warnings, put your gear down and leave it. Stay within sight, tho, so you can warn others. Stay away 60 minutes.

When you go back to remove the bad battery, protect yourself. Wear gloves and roll your sleeves down. Protect your eyes.

Turn the bad battery in to your support for disposal. Don't bury it, chop it up or toss it away. That'll damage the environment.

Remove batteries from idle equipment. That'll cut corrosion damage down to size.

Remember, when those batteries are dead, they're dead. Trying to recharge them will lead to rupture or gassing.

4-AMP
REPORTING
FOR DUTY!

PU-724A/G Fuse Change



NO MORE
SLO/BLO?

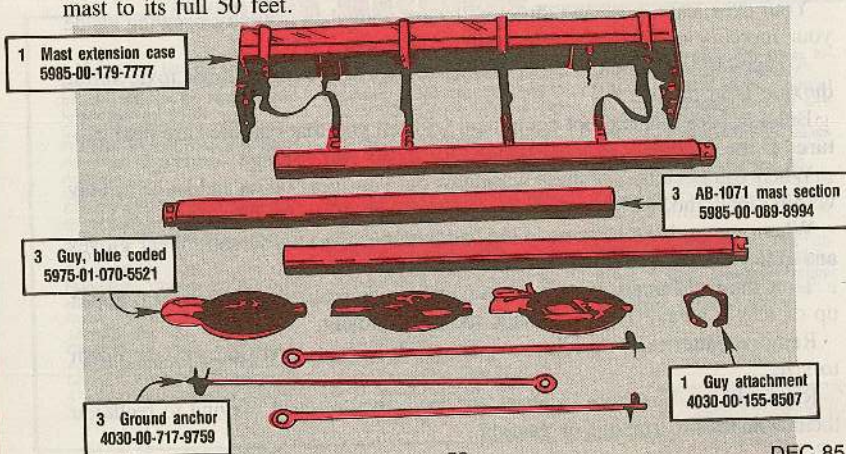
Use no more slow-blow fuses in your inverter. They won't protect the circuits. Substitute a normal 4-amp fuse, NSN 5920-00-557-2647. You should also remove or cover the words "SLO/BLO" under the fuseholder.



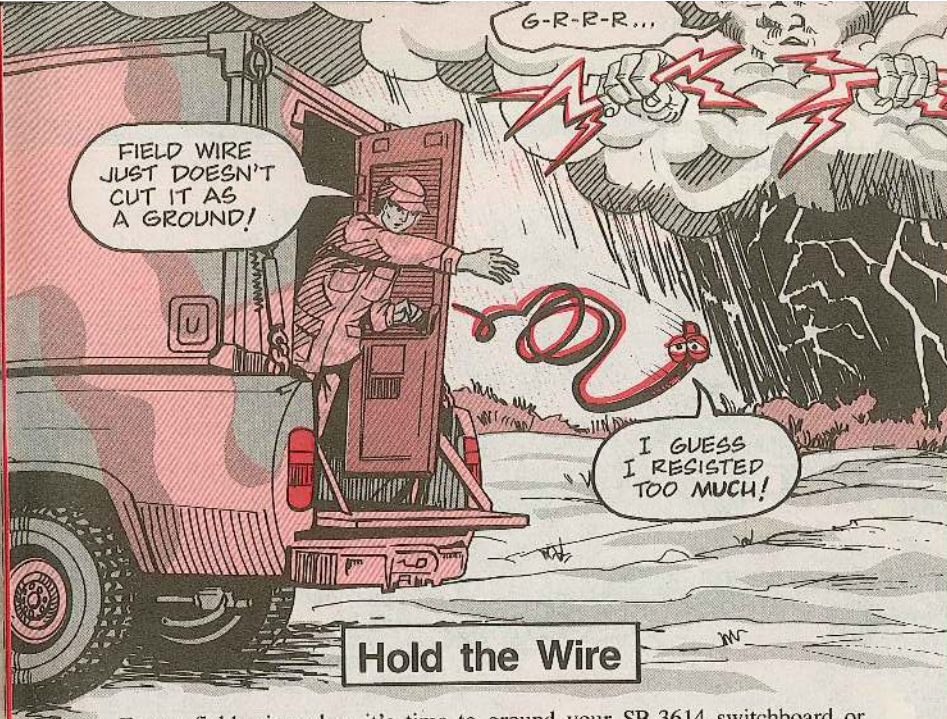
Raising Your Mast

Finding the pieces to your MK-1009 mast extension kit will be easier soon. The headshed is going to put them into your AN/GRC-103 radio set's new TM 11-5820-540-20P.

Until that pub hits the streets, tho, here's what you need to raise your AB-952 mast to its full 50 feet.



FIELD WIRE
JUST DOESN'T
CUT IT AS
A GROUND!



Hold the Wire

Forget field wire when it's time to ground your SB-3614 switchboard or AN/TTC-41 telephone central.

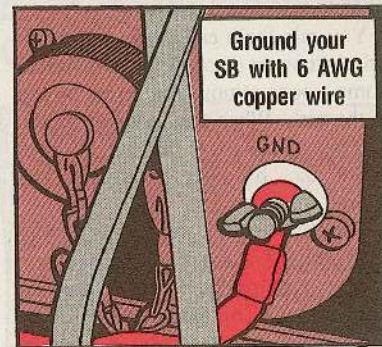
That high-resistance wire gives you and your equipment little protection. With up to 120 wire lines feeding your central, you both need all the protection you can get.

Small electrical surges from your gear's power source or big electrical surges from Mother Nature—read lightning—need an easy path to ground.

You get that path by using the 6 AWG copper wire provided with the equipment. For your central, that's NSN 6150-00-495-1214. Switchboards use NSN 5995-00-450-9710.

Remember, too, that each switchboard in a central must be grounded to the shelter.

A last bit of protection for your switchboards is to use a 4-amp fuse, NSN 5920-00-557-2647, instead of a 5-amp in the front panel. That's the word on Page 3-2 of C2 to TM 11-5805-695-12.



Prime the Pump

LISTEN UP!
I DON'T TAKE
NO GAS
UP HERE!

PRIME THE ENGINE
THROUGH THE
FUEL PUMP!

When you mix gasoline with your 0.5- thru 10-KW generator set's oil, you risk engine failure.

Wouldn't mix them, you say?

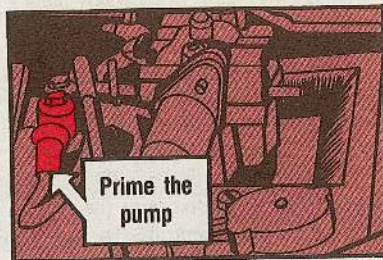
You mix them each time you try to prime your set through the carburetor. Some troops remove the screw on top of the carb. When they pour gas down that jet, tho, the raw fuel can go right down the breather line into the crankcase.

The diluted oil can't do its lubing and friction KO's moving parts.

It's double trouble if the gasoline you used is dirty. Crud plugs up the float's needle valve and gas keeps pouring in when the engine starts.

The right way to prime a bone-dry engine is through the fuel pump. Newer

fuel pumps have a lever to pump the fuel for priming.



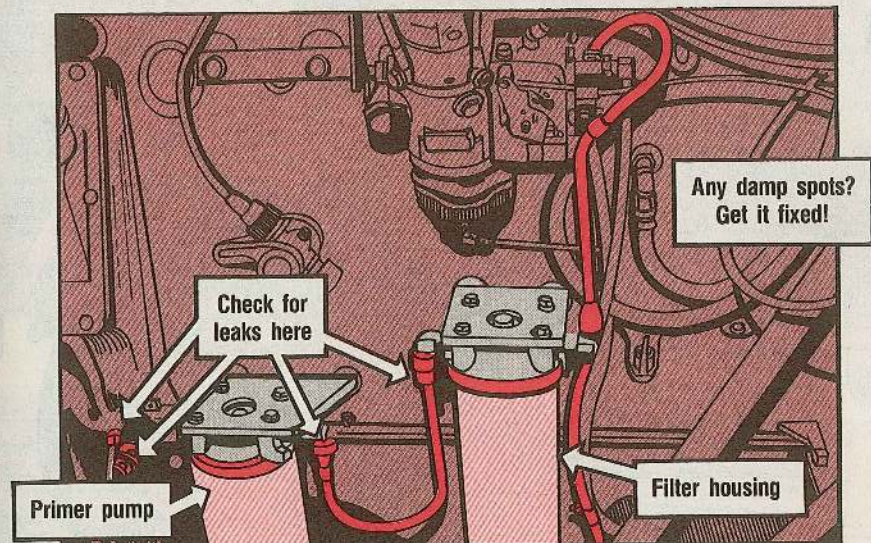
On the other hand, if you find gasoline in your engine's crankcase and you haven't primed it through the carb, have your org mech eyeball the fuel pump's rubber diaphragm. When it dries out and cracks, it lets fuel into the crankcase, too.

Leaks Make for Rough Running

If your diesel engine is running rough, check the hand primer pump for leaks. The fuel pump pulls air in thru leaks in the lines or primer pump. Air is injected with the fuel, and the engine misfires.

To spot a leak, give your fuel lines, primer pump and filter housings a careful look-see.

If you find any damp spots, you've likely found a leak. Get your mechanic on it.



No-Lead? Go Ahead!

Dear Half-Mast,
The TM's on our GED generators make no mention of the type of fuel we should use.

Can we use unleaded gasoline in these engines? They'll be running up to eight hours at a stretch.

SSG R.L.O.

Dear Sergeant R.L.O.,

Not to worry. Using unleaded gas in gas engines—even those designed to run on leaded fuel—does them no harm.

This word goes for tactical and combat vehicles, compressors, tractors, chainsaws and MHE, too.

In fact, Uncle Sam uses just about nothing but no-lead these days.

Half-Mast

Commo Generators...

Give 'em the Gas

IF THEY DON'T
FEED ME SOON, MY
CIRCUIT BREAKER'S
GOING TO TRIP!

I JUST HOPE
THEY PULL SOME
PM BEFORE I
GO ON LINE!

Wonder how much fuel is left in your strapped-down 5-gallon can? Unstrap it before you shake it or you'll get a bum "reading" on fuel level.

Be sure the gasket and hose on your auxiliary fuel line are in good shape. A leak not only loses fuel, it can cause a fire.

On the other hand, if you're using a bigger fuel source—say a 55-gallon drum, don't overrun your PM time. It doesn't take long for an engine to blow if it runs out of oil.



3-, 5-, and 10-KW Generators...

Drill for Water

I'LL DRILL
OUT THAT
WATER
BUILD-UP!

GURGLE!
I THINK I'M
DROWNING!

Water inside your GED generator's control box gives you a one-way ticket to corrosion and possible short circuits.

Your mech can cancel that ticket by drilling two 1/4-in diameter drain holes in the bottom of the box—one on each side.

If your set already has holes drilled in its control box, keep them clear of stuff that can plug them up.



When your generator set is out of gas, your commo gear is out of luck. A sputtering, surging or stopping power source will put your gear down for the count. It'll probably trip the circuit breaker. And, of course, you're off the air without power.

The solution is simple: keep an eye on your generator's fuel source.

Fuel consumption rates vary—a 3-KW GED set uses a gallon an hour, a 5-KW GED generator uses more than two—so read your TM and find out how much yours uses.

Divide your set's fuel tank capacity by that number. A 5-gallon can of gas will last about two hours on your 5-KW set. Get ready to check it in two hours.

If your power unit comes with two generators, use it that way. Have one generator PM'd and full of fuel ready to take over when the operating set is shut down.

When you put the second set on-line, PM the other.

USE THIS LIST TO FIND PUBLICATIONS AND NSN'S FOR REPLACEMENT LAMPS FOR YOUR MICROFICHE READERS...

Microfiche Reader Aids

Viewers/Printers

Make and Model	NSN 6730-00-	TM	Lamp NSN 6240-
Minnesota Mining & Mfg Co 390 (ADM) 480 Data Printer	044-3242	DGSC-6730-57	00-476-1228
Bell & Howell RP 550 Spacemaster	116-1620	DGSC-6730-7	00-409-8295
Bell & Howell ABR-610	116-1620	DGSC-6730-13	00-409-8295
Canon 370 T-D	116-1620	DGSC-6730-16	01-150-4890

Viewers

Make and Model	NSN 6730-	TM	Lamp NSN/FSCM and PN
Washington Scientific Ind 1114D	00-116-1618	DGSC-6730-3	6240-00-449-6003
Micro Design 1200	00-116-1618	DGSC-6730-6	6240-00-409-8295
Micro Design 990	00-116-1618	DGSC-6730-9	6240-01-084-3571
Northwest Microfilm Inc Northwest 14	00-116-1618	DGSC-6730-10	55426 5542
Opticon	00-116-1618	DGSC-6730-14	80204 EWJ
Electro-Optical Mechanisms Inc 416	00-074-2729	DGSC-6730-4	6240-00-409-8295
Micro Design 200	00-074-2729	None	6240-00-409-8295
Washington Scientific Ind Mini-Cat 114	00-074-2729	DGSC-6730-2	6240-00-449-6003
Wollensak 414-1	00-074-2729	None	6240-00-102-9648
Bell & Howell Commuter Model	01-080-7932	None	6240-00-389-4822
Bell & Howell Commuter Model with Battery Pack	01-080-7933	None	6240-00-389-4822
Bell & Howell Commuter Model 1379	01-055-5066	DGSC-6730-23	6240-01-016-4447
Micro Design 700	01-080-1188	DGSC-6730-12	6240-01-115-3067
Micro Design 750	01-080-1188	DGSC-6730-12	6240-01-115-3067
Topper Micrographics COM 75X	01-080-1188	DGSC-6730-19	80204 DJT

Lamp, NSN 6240-01-016-4447 isn't on the AMDF. Use RIC FPZ to order on a DD form 1348-6..

Viewers, NSN 6730-00-074-2729, are no longer stocked, but you can still get TM's and lamps for them. CTA 50-909 has your authorization to order viewers or viewer/printers.

GET THE
TM'S BY
WRITING
TO...

**Commander
DGSC
ATTN: DGSC-SDA
Richmond, VA 23297-5000**

TEC-nical Cartridge Problem

THERE'S
NO WAY
I CAN
WRECK
THE
MACHINE!

CARTRIDGES
DON'T WRECK
MACHINES!
PEOPLE
WRECK
MACHINES!
AND BE
SURE MY
ARROW IS
POINTED UP!

Before you start viewing that TEC lesson, take a look at the film cartridge.

Newer lessons have flat film cartridges. They'll fit if you accidentally put them in the projector upside down. But you can break the projector's reflector!

Be sure the arrow on the cartridge is pointing up. That way, the reflector fits into the opening on the left side of the cartridge. If the cartridge is installed wrong when you start the projector, the reflector hits a solid wall. That'll bend or break it.

Never use force to remove a jammed cartridge. Turn in the projector for repair.

Connie's ★ POST ★ SCRIPTS

IF YOU'VE CHECKED AND CHECKED THROUGH STACKS OF PS, AND YOU'RE STILL PERPLEXED, REMEMBER EACH DECEMBER THE WHOLE YEAR IS LISTED IN THE PS ANNUAL INDEX!

Use PN for Valve

The NSN is wrong for the valve assembly of the 55-gal potable water drum on Page C-11 of TM 10-8110-201-14&P (Feb 83). To get a valve assembly, use FSCM 89616 PN 5332-0918, RIC S9G, on DD Form 1348-6. In the Remarks column note that the NSN in the TM is incorrect.

Water Trailer Faucets

Get Faucets for your 400-gallon water trailer with NSN 4510-00-595-1785 or 4510-01-165-0072. The faucets are Item 49 in Fig 16 of TM 9-2330-267-14&P.

M931/M932 Tractor Trucks...

Fifth Wheel Overload

Table 1-2 in TM 9-2320-272-10 gives the highway maximum towed load of 55,000 pounds for M931/932 tractor trucks. That's wrong. TACOM Msg AMSTA—MTB 291900Z May 85 says the maximum highway trailer and payload weight is 37,500 pounds—same as for cross-country.

Maximum Towed Load (Fifth Wheel)

Vehicle	Highway		Cross-Country	
	Pound	Kilograms	Pounds	Kilograms
M931	37,500	17,025	37,500	17,025
M932	37,500	17,025	37,500	17,025

Graphite Lube

NSN 9150-00-735-1800 gets a 1-lb can of graphite grease. Use it on bakery oven chains and other sliding assemblies where the TM or LO calls for a graphite-base lube.

In Tank Vent...

Ice Is Not Nice

Keep the vent valve on your truck-mounted tank and pump unit free of ice or you could wind up with a caved-in tank.

A clogged vent can cause a vacuum when the pump is turned on. CRACK, CRUNCH!... the tank caves in.

To keep the valve open, make sure it's under the closing cam hinge where it is safe from moisture buildup.

Make sure the fill plug bolt and nut are snub. If not, get them tightened. When they're loose, the vent valve can wiggle out from under the hinge.

MW24C Tire Pressure

The tire pressure for the MW24C scoop loader is 40 PSI—not 60 as listed in the Commercial Operators Manual, 9-9660, and the Supplemental Operating Maintenance and Repair Parts Instructions (SOMARPI), 5-3805-262, (Nov 84).

Stencil "TP 40" in 1-in letters (the same color as the registration marking) on the dash and on each fender above the wheel.

M114-Series

Howitzer TM Changes

Change 18 (Jul 85) to TM 9-1025-200-12 goofed in Para 43c. It tells org maintenance mechs to do DS/GS-level boresight work. Don't try using check gages, shimmying the M25 mount or adjusting the level vial jack screws. Continue doing boresighting as before until Change 19 straightens everything out.

Order Fuel Tanker Pubs

If your unit is scheduled to get an M967A1, M969A1 or M970A1 5,000-gal fuel semitrailer, make sure to order pubs in advance (DA Form 12-39-R). TM's were not overpacked with these vehicles. TM 9-2330-356-12&P, with Change 1, covers operator and organizational maintenance. Your support will need TM 9-2330-356-34&P.

M919 NSN Correction

The NSN for the sight gage on the water tank for the M919 concrete mobile mixer shown in Fig 58 of TM 5-3895-372-20P is wrong. That NSN gets a 3-ft piece of angle iron. Use NSN 4710-01-119-5216 for the sight gage.

New Shroud NSN's

Need the upper shroud assemblies that keep your 10- and 20-HP Mil Std engines cool? Use NSN 2805-01-127-0090 for the 10-HP engine shroud and NSN 2805-01-160-1264 for the 20-HP engine shroud. These NSN's replace those listed in TM 5-2805-258-24P and TM 5-2805-259-24P.

M113 Breather NSN Change

The NSN shown in TM 9-2300-257-20P in several places for a ramp hydraulic tank breather valve is wrong. Use NSN 2940-00-773-8022 to get an air cleaner-intake, which is what you want, even if it does sound strange.

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

HEH!
HEH!

Cuts Battery Power!

Temp.	Specific gravity	Cranking power
80°F	1.280 (Full charge)	100%
32°F	1.280 (Full charge)	65%
32°F	1.225 (Half charge)	32%
32°F	1.180 (Nearly discharged)	16%
0°F	1.280 (Full charge)	40%
0°F	1.225 (Half charge)	21%
0°F	1.180 (Nearly discharged)	9%

I-I F-FEEL
D-DRAINED!

Freezes Weak Batteries!

I'M FROZEN
TO THE BONE!

Specific gravity
of electrolyte

Freezing
point (F)

1.280

-90°

1.250

-62°

1.200

-16°

1.150

+ 5°

1.100

+19°

**Keep Batteries
Fully Charged!**