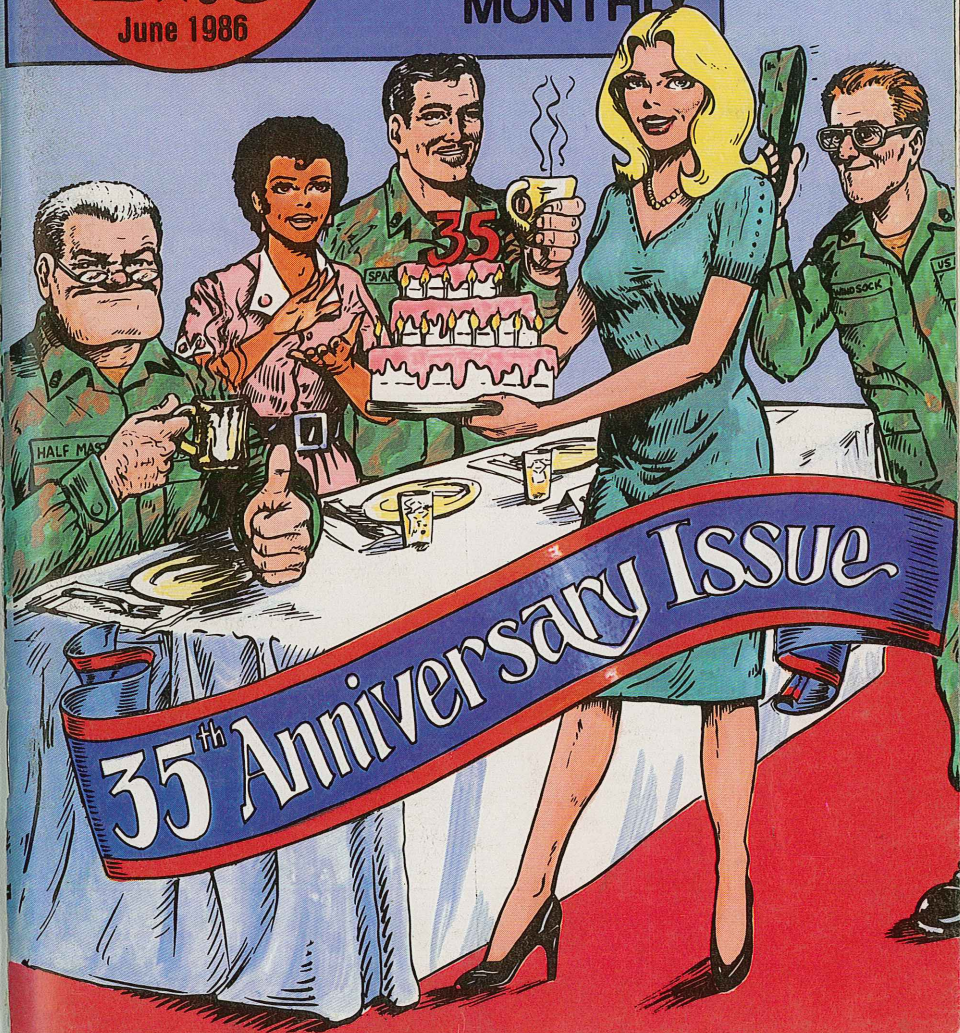


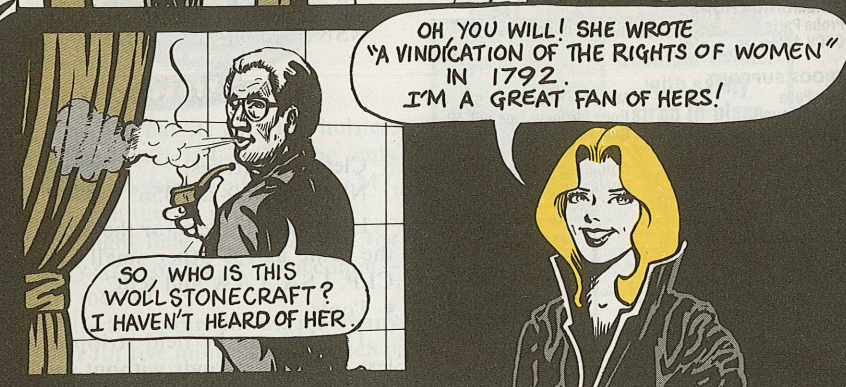
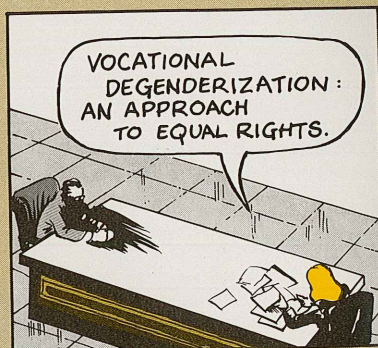
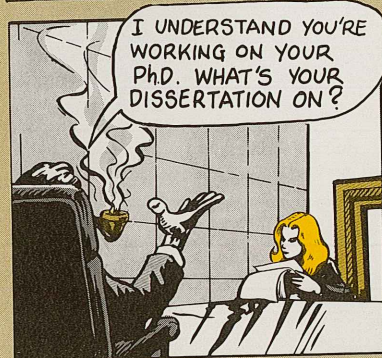
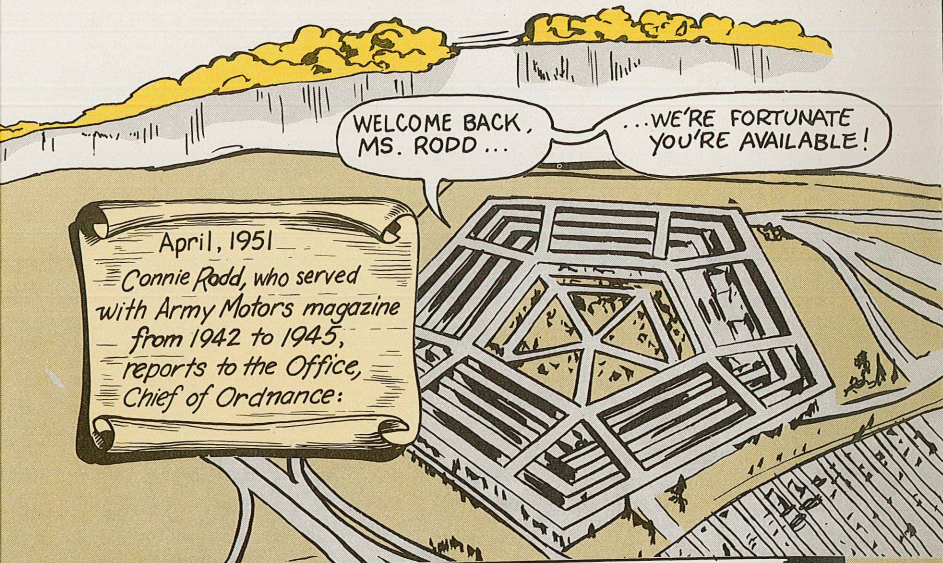
Issue 403

PS

June 1986

THE
PREVENTIVE
MAINTENANCE
MONTHLY





So, 35 yrs. ago, Connie rejoined Half-Mast at Aberdeen Proving Ground, MD. to launch the new magazine. The first issue of PS hit the field army in June, 1951 - and the rest is legend!

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

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

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M9 on the Line . . .

NEW PISTOL,

When you get your new M9 9-MM pistol, hang onto some of the support items you use for your .38 and .45 cal handguns.

You'll need racks, holsters, tools and cleaning equipment that you used with the older weapons. Some you'll use as is. Some you'll have to modify.

The point is, keep them. No new items will replace them at this time.

Here's what you'll need for the M9:

- Cleaning equipment-
M4 cleaning rod,
NSN 1005-00-556-4102



.38-cal bore brush,
NSN 1005-00-716-2132



Cleaning patches,
NSN 1005-00-288-3565

Lube and cleaners for the M9 are the same as for other small arms: CLP, LSA, LAW and RBC.

- Tools-

The M9 can be field stripped in less than ten seconds without tools. No special tools are required. . . for any purpose.

Every tool you need is in the Small Arms Repairman Tool Kit.

- Maintenance-
Armorer repair is simple. The only

OLD SUPPORT GEAR

organizational repair parts are the four grip screws and washers and both grips.

- Pistol Rack-

No rack is planned for the M9. Existing M1920 racks will be used to store it. Information on rack modifications will be available later.



- Holsters-

The M9 has its own hip holster, NSN 1095-01-194-3343. The only shoulder holster available is the M7, used with the .45 pistol.

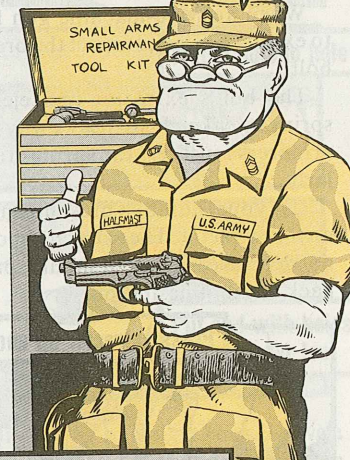
A slight field fix can stretch the safety strap on the M7 to accommodate the M9.

Dip the strap in warm, soapy water for five minutes and stretch it 3/8 to 1/2 inch.

Put the M9 in the holster and snap the safety strap in place. Let the strap dry overnight with the pistol in the holster.

After it dries, seal the strap with Neat's-foot oil so it'll stay elastic.

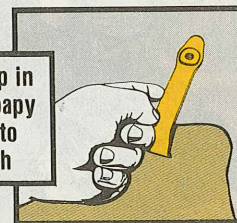
FOR REPAIRS, THIS IS ALL YOU NEED!



Shoulder holster with safety strap in place



Dip strap in warm soapy water to stretch



KEEP IT ON TARGET

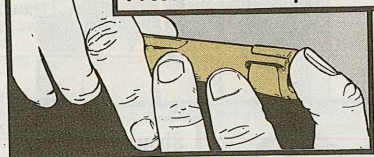
Head Off Bolt Problems

When an M60 machine gun fails to extract or eject, suspect the breech bolt.

The bolt's extractor and ejector springs weaken fast. That's why you armorers must test the springs regularly.

Use your thumb to press up and in on the extractor. The extractor should not depress easily and it should spring back without hesitation.

Press extractor up and in



With a punch or any tool with a flat point, press the ejector in. The ejector should also depress with effort and spring back without hesitation.

Press ejector in



If either spring is weak, replace it. One final step: Eyeball the breech bolt face. An out-of-round firing pin hole or one with pitted edges causes misfires and other firing problems.

YOUR M60 PM
IS A BULLSEYE!



Hole to Hole

The gas piston fits either way, but the wrong way means your gun shoots once and quits talkin'.

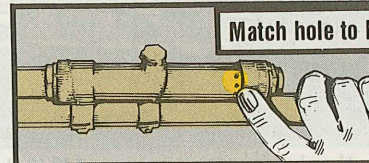
To put the piston in right, just remember that holes go with holes. The holes of the piston match those of the gas cylinder. The end with holes goes in the cylinder last.

When you check out an M60, make sure the gas piston's right by holding the gun muzzle-up to the light. If the piston's right, you'll see the light through the holes.

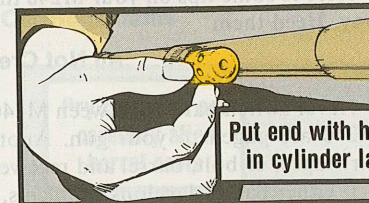
The cleaning rule for the gas piston is: If it won't slide, clean it. A clean piston will slide easily in the gas cylinder when you tilt the gun.

Clean the piston with CLP. Wipe

Match hole to hole



Put end with holes in cylinder last



it dry before putting it back. Leave a light coat of CLP on the piston when you're going to store the gun.

Bipod Pivots OK?

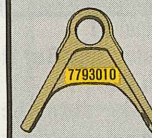
There're three different types of M60 MG bipod pivots floating around. Two types are OK; one is not.

The older of the two, NSN 1005-00-020-8684, P/N 7793010, is shown as Item 6 in Fig C-4 of TM 9-1005-224-24. The part that goes over the barrel has bevelled edges.

The newest bipod pivot has the same NSN and part number.

It has a 3/16-in lip that fits against the flash suppressor. There are no bevels.

The older pivot has bevelled edges

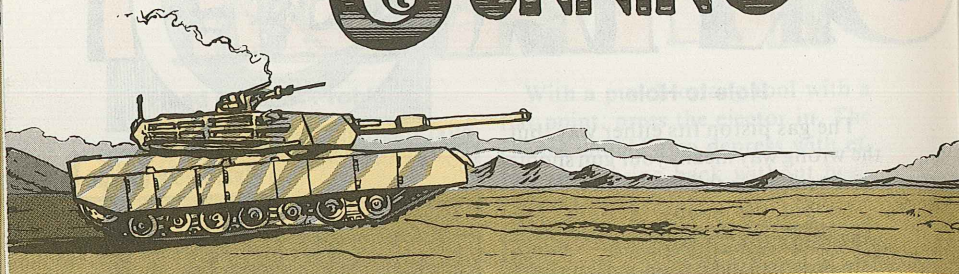


The new pivot has no bevelled edges

Both acceptable pivots are one-piece, forged metal.

The pivot you should not use is the early one, which has no part number stamped on it. Replace it.

GUNNING

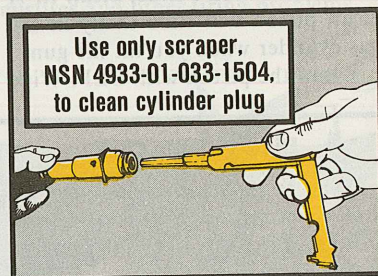
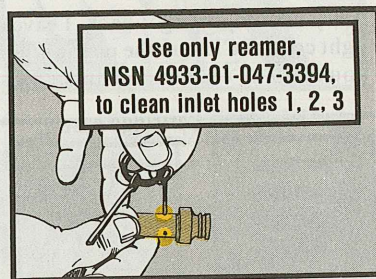


Here're some tips on your M240 that other gunners had to learn the hard way. Heed them.

All Not Created Equal

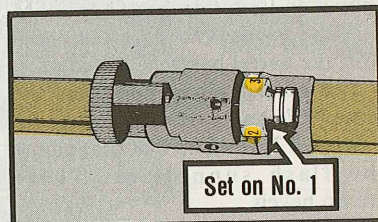
Never switch barrels between M240's. The two barrels you get with your M240 are gaged to your gun. Another gun's barrel can cause ruptured cartridges, or bolt, barrel and receiver damage—and injury to you.

If either barrel develops problems, turn both in along with the gun.

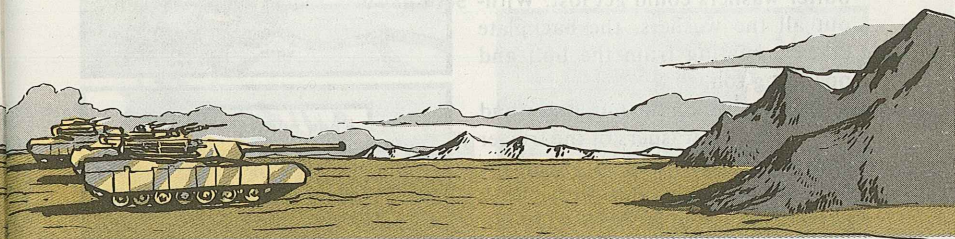


Set It Right

Armorerers must make sure the M240's regulator plug inlet settings are on No. 1. Settings No. 2 and 3 are meant only for countering carbon buildup or while firing when it's cold or dusty. The two settings maintain the rate of fire, not increase it. These settings put an extra load on the gun.



DOWN PROBLEMS



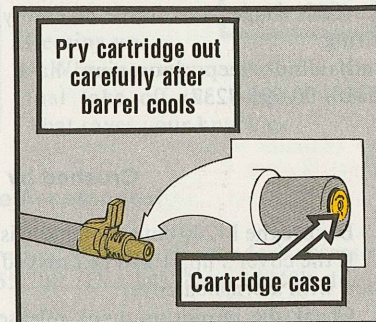
Getting Out of Cartridge Jams

Try this next time you have a stuck round in your M240.

Instead of pulling the trigger as Step 3 on Page 2-18 of TM 9-1005-313-10 says, pull the charging handle to the rear and hold it there.

Squeeze the trigger and e-a-s-e the bolt forward.

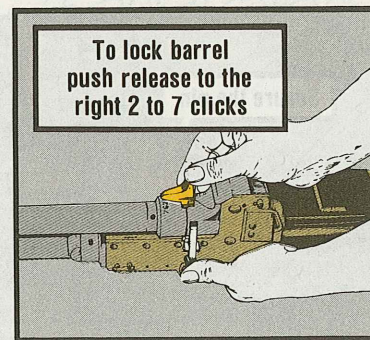
Wait 15 minutes until the barrel is cool. Remove the barrel. Lift or pry the cartridge carefully out of the chamber.



Lock It In

When you put a barrel on your M240, make sure it's seated and locked before firing. If you don't, the barrel may fly off.

Slide the barrel fully into the receiver with the barrel release straight up. Then push the barrel release right to lock the barrel in place. Two to seven clicks of the release should do it. If it takes less than two or more than seven clicks, let your armorer know, like now!



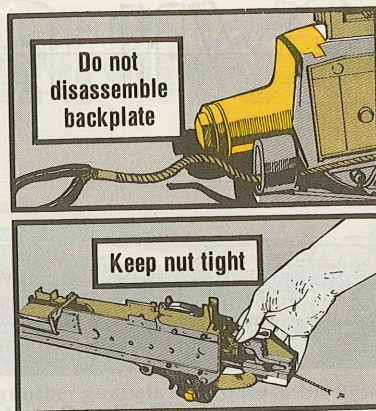
Nuts and Bolts

Never take the M240 backplate apart for cleaning—some of the 11 buffer washers could get lost. Without all the washers, the backplate takes a beating from the bolt and operating rod.

Keep an eye on the nut, screw and spring tension washers of the trigger and frame assembly. Tighten the nuts before and after firing with adjustable wrench, NSN 5120-00-264-3796. It's part of your vehicle BII.

If the washers lose tension or the serrated sides wear smooth, nuts back off and the trigger and frame assembly starts to come apart—maybe during firing.

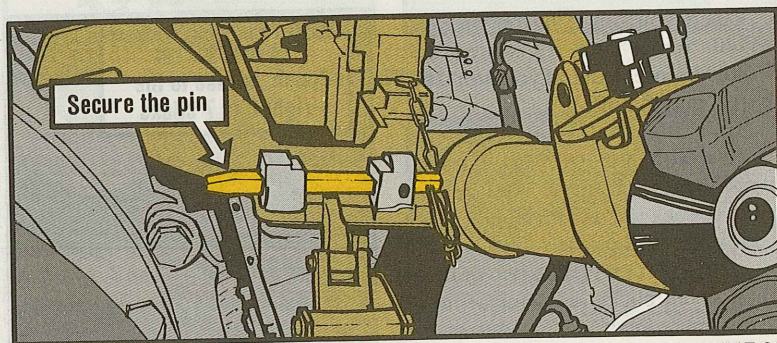
If a nut keeps loosening, have your armorer replace washer, NSN 5310-00-595-7237.



Crushed by Carelessness

Be sure the M240 cover assembly is down before lowering the M1 cannon. If the cover's up, it will be crushed against the turret ceiling. Never fire a gun with a crushed cover.

Check the mounting quick release pins before moving the M1 cannon. Make sure the pins are fully in the mount holes. A loose pin can snag on the gunner's auxiliary sight and break the pin or sight.

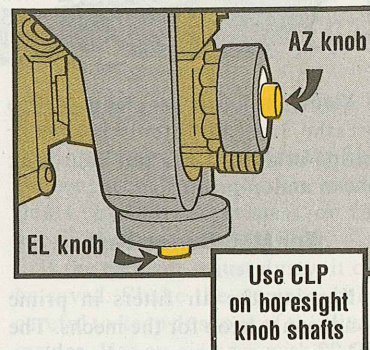


Steady's the Word

Your M240 charges best by a steady pull to the rear. If you do a yank-and-jerk number, you can wipe out the charger cable.



When you remove your M240C for cleaning, put a few drops of CLP on the mount's AZ and EL boresight knob shafts to keep the knobs from




freezing up.


When you remove the buffer plate, first take off the trigger housing. That saves your knuckles.


Keep Those Accessories!


When you turn in the M240, remove and hold onto the loader's accessory assembly, Fig 105 of TM 9-2350-255-20P (Dec 84). New M240's do not come with the assembly.



NO AIR**NO TANK**

 WHAT'S WITH THE BLACK EXHAUST?


 I CAN BARELY MOVE!


 I CAN'T BREATHE!

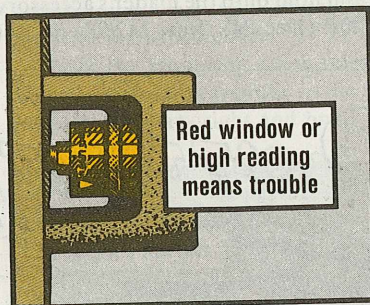

 CLEAN MY FILTER, QUICK!

Your tank needs clean air to breathe. If the air filter is clogged or letting in dust, it can put your tank out of action pronto.

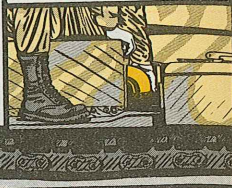
For M60-Series Tanks

Keeping the air filters in prime condition is a job for the mechs. The **only** time you crew members clean the air filters is when you're in the field far from the motor pool and any of the following happens:

- Exhaust smoke becomes very black.
- Air restriction indicator shows a red window or high reading.



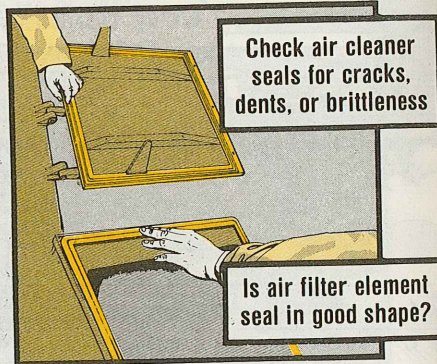
- The engine loses a great deal of power.
- The blower motor discharge elbows blow little or no air, except the new M60A3's which have no blower motors.



Little or no air from blower motor elbows? Time to call a mechanic

If any of those conditions occur, immediately stop your tank and use the emergency procedures listed in the -10 TM's for cleaning the air filters.


Avoid being caught out in the field with a bad air cleaner system by keeping the area around the air cleaner housing clean, watching for cracks in the housing, and feeling for exhaust at all four blower motor elbows. Cracks or no exhaust mean it's time for an air cleaner check.



You organizational mechs need to watch for a number of "choking" signs when pulling maintenance on the air filter.

Are the air filter door and element seals in good shape? If there are cracks, dents or signs of brittleness, replace the seals.

Carefully eyeball the intake and outlet hoses. Make sure the nuts, clamps and gaskets are tight and holding. Look over the elbows and hoses for cracks and weak spots.



Hole in hoses? Nuts, clamps, and gaskets tight?



Check inside the outlet hose for dust

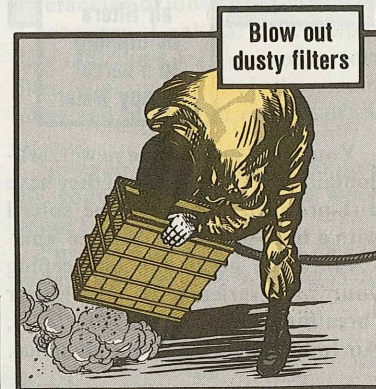
With the engine running, the blowers should emit a strong exhaust. If no air is flowing, shut the engine off **immediately** and keep it off until you find what's blocking air flow.

Reach up into the outlet elbows to feel for dust trails. Dust trails are

often signs of damaged seals or damaged filter elements

Most important, examine the filter element itself. If you see holes, cracks, dents, excessive hardness or fuel spots, it's time for a new filter.

If the element is just dusty, it can be saved. Shake the element, being careful to keep dust out of the filter's insides. Use an air hose with 90 PSI or less to blow the rest of the dirt away from the inside out of the filter.



To get the new 90 PSI V-pack cleaner, use NSN 2540-01-194-3218. When you use it, always wear goggles and gloves to protect your eyes and hands.

Never hit the element against something to remove dirt. That ruins it.

With more stubborn problems, like heavy dirt, carbon or oil deposits, the older, accordion-style filter elements can be washed and used again. Note on the elements the date of the washing. Four scrubs is the limit before replacement.



You can also wash the newer, self-contained filter elements. If they have dirt problems that can't be solved with a hose or a wash, replace 'em.

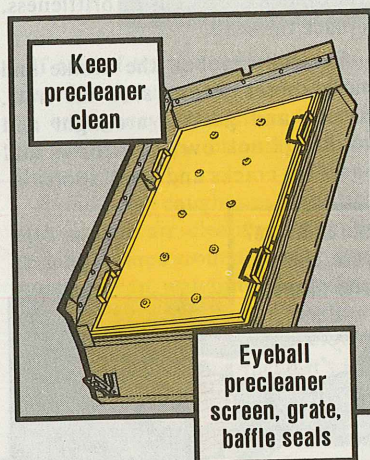
For more good info on keeping your M60-series tank air cleaner "breathing," see TB 9-2300-378-14, Air Induction System Maintenance.

For M1 Tanks

Your M1's air filter system is a different animal from the M60. Clean air is critical to the M1's turbine. However, the M1 gives you advance warning when the air filter system is clogged. Under power demand, the

air cleaner clogged filter light may flash on and off. You may also notice a power loss or stall. This is the engine's way of protecting itself, too.

You drivers need to keep an eye on the air intake cleaner clogged filter light—it's the only warning you'll get. If it glows yellow, shut down as soon as possible and clear the pre-cleaner. If the light still glows when you restart the engine, reset the master caution light and do a power stall check. If you get the light again, shut down and call the mechs.

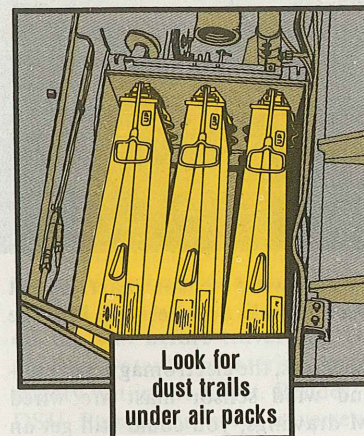


You fix the air cleaner yourself only when you're too far in the field to get help from the motor pool. Then follow the emergency procedures on Pages 2-426 thru 2-430 of TM 9-2350-255-10-2.

You can help keep the filter system clean by daily wiping the pre-cleaner free of dirt.

You organizational mechs need to watch for tears, dents, holes and dust

in the wrong places when inspecting the M1 air filter system. Like with the M60, those are signs it's time to replace parts.



The pre-cleaner must be able to do its job for air to even get to the air cleaner. Eyeball its screen, grate and two baffle seals for cracks, breaks and bends. If dirt's the only problem, blow the pre-cleaner out with 90 PSI or less of air, wash it with soapy water, and rinse and blow it clean and dry. Before reinstalling, eyeball it again for cracks, breaks and bends.

The air filter pack assemblies must be handled with care. Never stand them on end or bang them to remove dirt. If any part of a pack—slides, ends, beads—dented or torn, replace the pack.

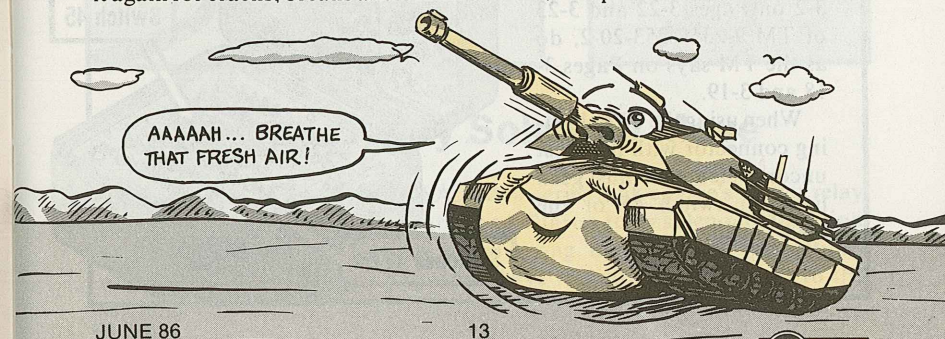
To clean the pack assemblies, shake them first to knock out any loose dirt. Blow away from the inside out any remaining dirt, using 90 PSI or less of air. Wipe the pack out with a clean rag.

Never wash the M1 pack assemblies.

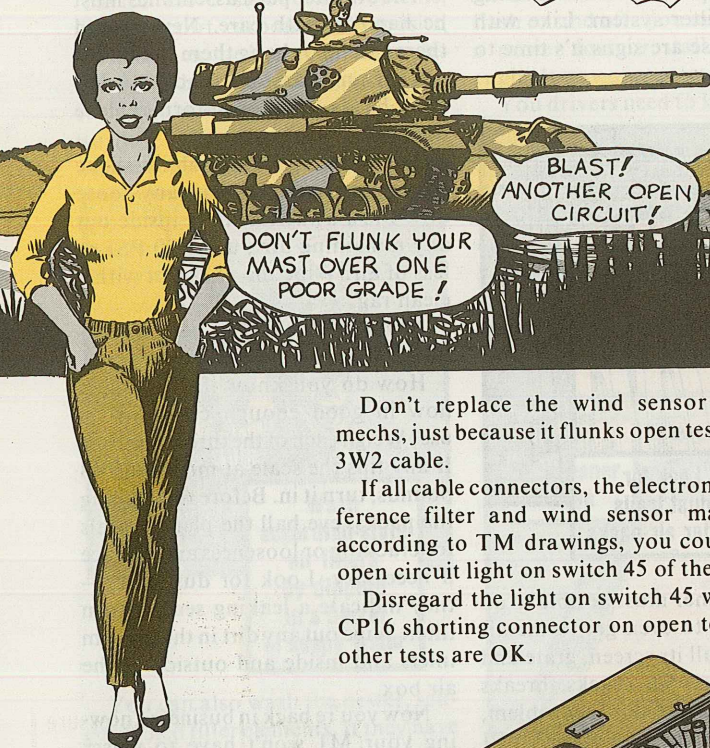
How do you know if the pack is now in good enough condition to use? Weigh each of the three elements. If any tips the scale at more than 43 pounds, turn it in. Before reinstalling the packs, eye ball the plenum seals for cracking or looseness and replace if necessary. Look for dust trails—they indicate a leaking seal or torn filter. Wipe out any dirt in the plenum inlets and inside and outside of the air box.

Now you're back in business knowing your M1 won't have to worry about fresh air.

For more info on M1 air cleaner system PM, see TM 9-2350-255-20-1-3-2, Chap 3.



Mast Test Is Questionable



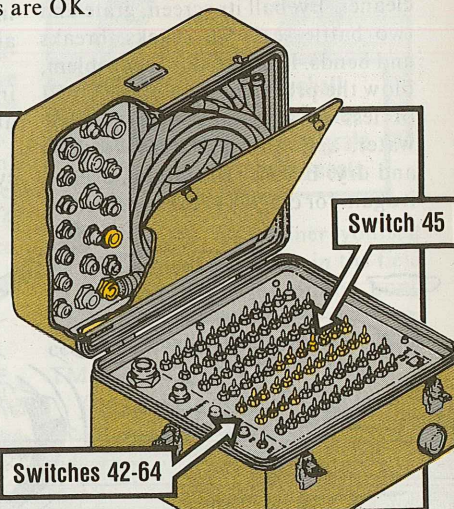
Don't replace the wind sensor mast, turret mechs, just because it flunks open test No. 1 for the 3W2 cable.

If all cable connectors, the electromagnetic interference filter and wind sensor mast are wired according to TM drawings, you could still get an open circuit light on switch 45 of the cable test set.

Disregard the light on switch 45 when using the CP16 shorting connector on open test No. 1 if all other tests are OK.

If switch 42 thru 64 test results don't jibe with Table 3-2 on Pages 3-22 and 3-23 of TM 9-2350-253-20-2, do as the TM says on Pages 3-18 and 3-19.

When using the CP6 shorting connector with the mast disconnected, you must get a light on switch 45 or the mast is bad.



Switches 42-64

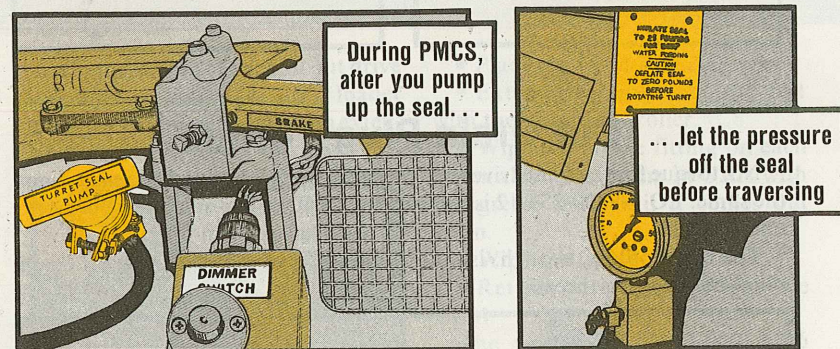
Switch 45

No Profit from Inflation



You crewmen need to inflate your level of PMCS to keep from deflating the turret seal on your tanks.

After you pump up the seal during your monthly PMCS, let the pressure off the seal **before** traversing. Otherwise, you'll ruin the seal. The seal prevents water from entering the turret during fording. If it's shot, it will get mighty wet in the turret. Besides, a busted seal has to be replaced by your DSU. Remember, never traverse when the turret seal is inflated.

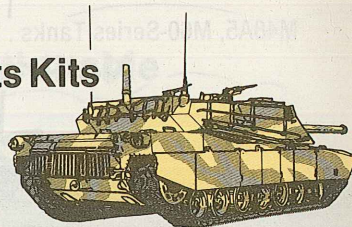


Starter Relay Solenoid Move

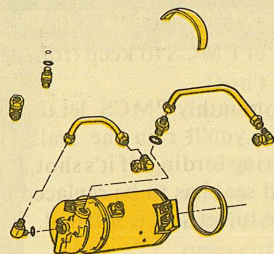
You mechs can move the M48A5/ M60-series tank engine's starter relay solenoid up on top so it's easier to get to. Starter relay solenoid relocation kit, NSN 2920-01-073-4321, has all the wiring, hardware and instructions needed. Install the kit and you won't have to pull the pack to get to the solenoid.

Generator Parts Kits

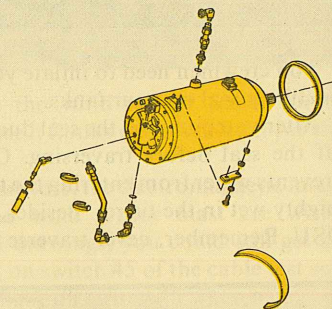
Avoid the confusion in TM 9-2350-255-20P-1 over generators and their mounting kits by using these new numbers.



For the generator shown in Fig 61 and its special hardware, use NSN 2920-01-200-6134.



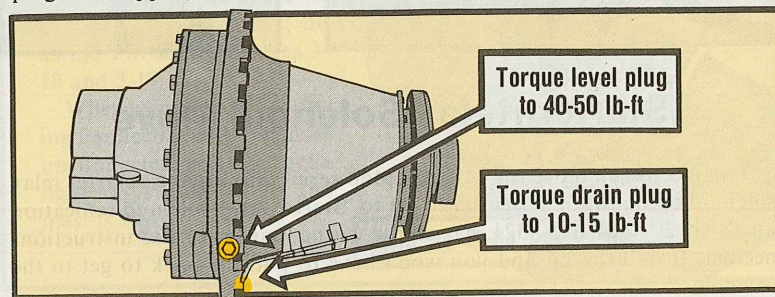
For the generator and hardware shown in Fig 62, use NSN 2920-01-200-6135. Turn in all old mounting parts when you replace a generator.



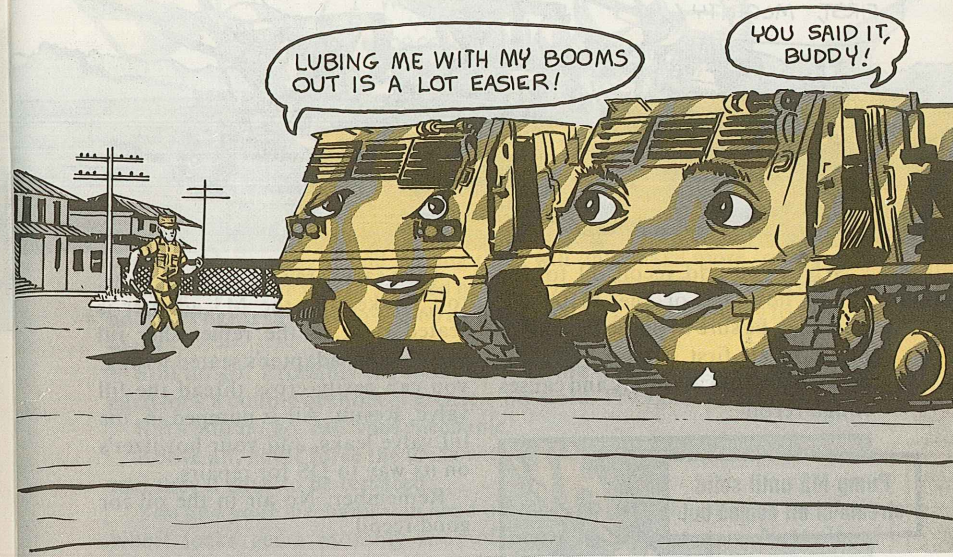
Cut Drain Plug Torque

No, torque for the final drive level plug and the final drive drain plug is not the same. LO 9-2350-255-12 is wrong with 35-40 lb-ft—one plug gets more, one gets less.

The big problem, though, is that too much torque is breaking off drain plugs or stripping threads.



LLM Greasing Made Easy



Annual lubing of the ball nut drive assembly of your MLRS's loader launcher module (LLM) boom extension actuator is easier this way.

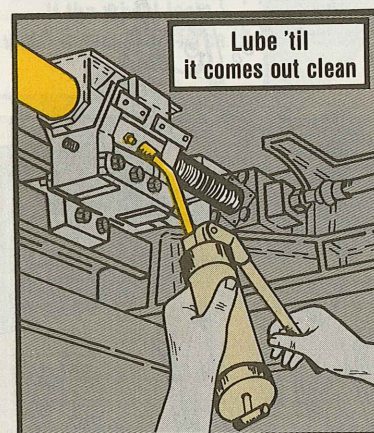
- Place the LLM at 3,200 mils.
- Extend the booms about 3 feet with the boom controller.
- Wipe the grease fitting on each boom clean and pump in GAA with the grease gun until it comes out clean.

- Wipe the fitting clean.
- Retract the booms and stow the LLM.

The word's in TB 43-0001-52-6 (Jul 85), but the caution in the TB on excess grease applies only to those assemblies which were not modified by the manufacturer.

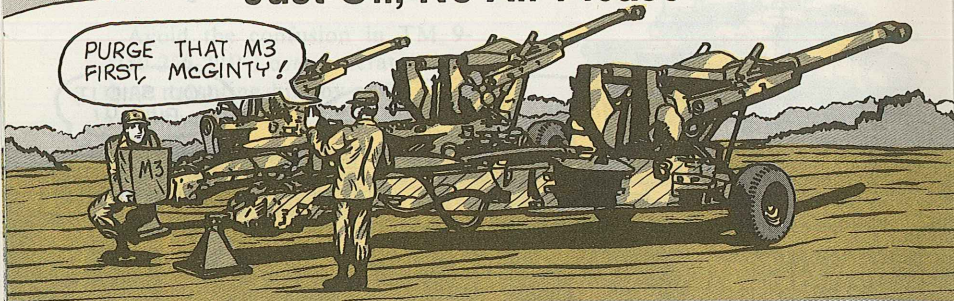
The tube catches and holds excess grease.

The mod removed the seals to prevent damage that was caused when excess grease popped the seals.



Towed Howitzers, M109 SP Howitzer ... **Just Oil, No Air Please**

PURGE THAT M3
FIRST, MCGINTY!



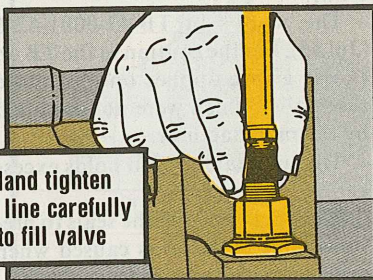
When you add recoil oil to any towed howitzer or the M109 SP howitzer, be sure to purge the M3 oil pump of air first. If you don't, air gets in the recoil assembly and causes rough recoil.

**Pump M3 until solid
stream of oil comes out**



After hand tightening the fill line to the howitzer fill valve, again pump the M3 until no bubbles appear in the oil.

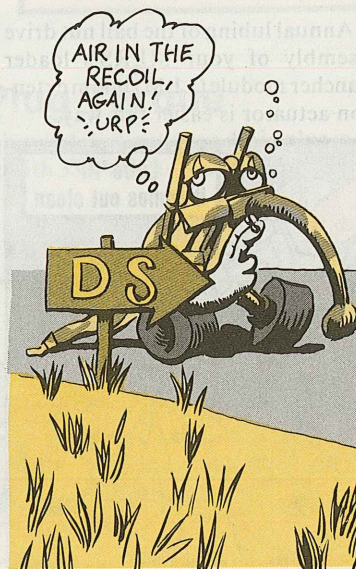
**Hand tighten
fill line carefully
to fill valve**



Take care screwing in the fill line, too. Make sure the M3 adapter is seated right in the replenisher fill valve. If the adapter's seated wrong, you can easily cross thread the fill valve. Result: Air is pumped in, the fill valve leaks, and your howitzer's on its way to DS for repairs.

Remember: No air in the oil for good recoil.

AIR IN THE
RECOIL,
AGAIN!
-URP-



M198 Howitzer ...

Stubborn Wheel Locks?

I WON'T BUDGE,
AND YOU CAN'T
FORCE ME!



If the wheel locks on your M198 howitzer won't turn easily by hand, something's wrong . . . and forcing them will only make more trouble.

First, make sure you've relieved pressure on the locks. Pump the hydraulic adapters like it says on Page 2-60 of TM 9-1025-211-10. Then try to turn the locks.

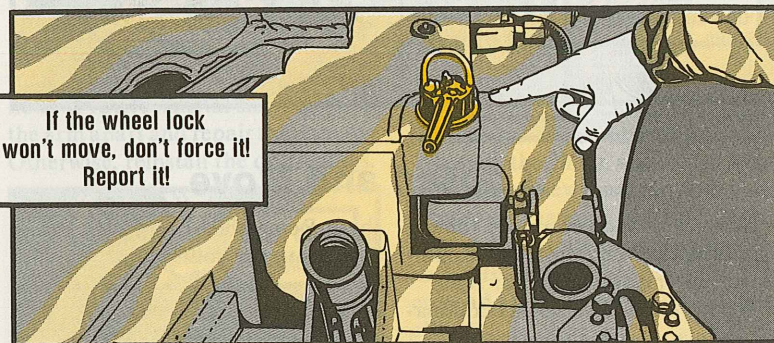
Still no go? Probably the locks need lubing or cleaning—or both. Give each lock a couple of shots of grease—no more. Try again to turn the locks.

If it's still no go, call your mechanic.

Above all, never force the locks with a cheater bar. You'll bend the locks and they'll have to be replaced.

You and your mechanic can head off lock problems by making sure both wheel locks get a monthly shot of grease, like it says in Note 25 of LO 9-1025-211-13.

**If the wheel lock
won't move, don't force it!
Report it!**



Trail Spade Caution

Training indoors with your M198 towed howitzer? Don't use the spades! Since the spades can't be dug in, there's nothing to support them when the trails are lifted. They'll fall and you could be injured. It's already happened once, so don't let it happen again—to you.

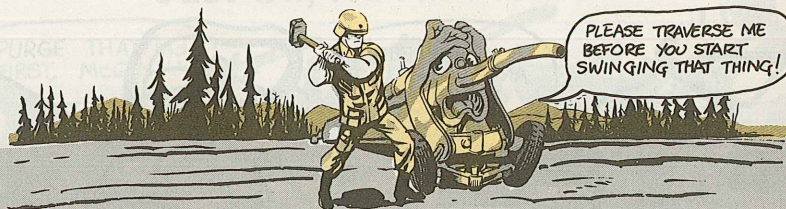
JUNE 86

19

18

JUNE 86

Move It or Lose It

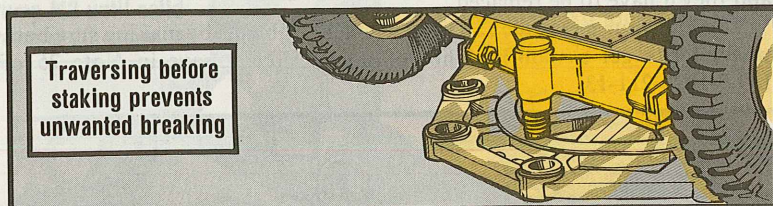


Move and stake, move and stake. That's the way to stake down your M102 towed howitzer.

If you drive stakes in the ground without traversing the M102, you're swinging a sledge hammer dangerously close to the lower elevating gear housing, fire control instruments, and other vulnerable parts. One misplaced swing can damage the howitzer.

When you pull the stakes, traverse and then go after the stakes with a carriage staff and sledge. Otherwise, you don't leave yourself prying room.

Remove the stakes *before* you lower the wheels. Pulling stakes with the wheel actuator system may seem like a good sweat-saver, but all you do is break the actuator crank.



M1A1 Collimator ...

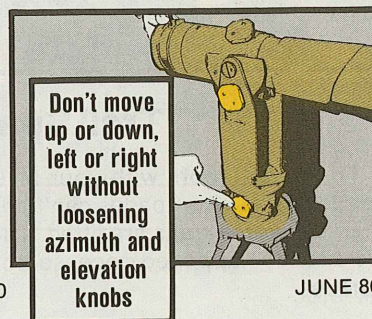
Loosen and Move

Some careless operators are ruining clamping knobs by yanking the collimator up or down or left or right.

When you lock the M1A1 collimator in place with the azimuth and elevation clamping knobs, the only things keeping the knobs locked are plastic washers.

If you move the collimator without first loosening the clamping knobs, you'll strip those washers. That's a DS repair job to replace

them. Remember: Loosen the knobs, then move the collimator.



PM Added for Roadwheel, Idler Arms



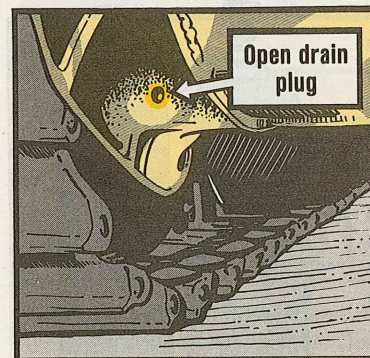
Arm troubles can deadline an M110A2 or M578 just the way they put pitchers on the bench.

What gets to roadwheels and idler arms? Water or dirt in the bearing cavities, seals installed wrong and lack of lube.

You mechs can prevent many of the vehicle's arm troubles by adding a few steps to your next scheduled semiannual and annual maintenance.

Semiannual Maintenance Additions

For the trailing idler arm only—remove the drain plug on both idlers. Let any water drain out. Run your finger around the inside of the drain hole. If you feel metal shavings, take the arm apart and repair the damage. Otherwise, reinstall the drain plugs.



Annual Maintenance Additions

For both idler and road wheel arms—pull all the arms and remove the inner and outer bearings. Discard all old seals and gaskets.

Eyeball the arm housings. If any are out of round or elongated, report it to your DS unit.

Clean the bearings with solvent P-D-680 and dry completely. Look for damaged bearings. Replace any that are bad. Repack bearings with GAA.

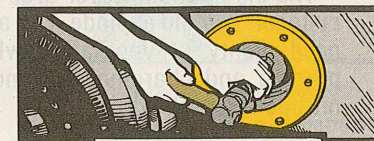
Make sure the inboard seal lip faces inward...



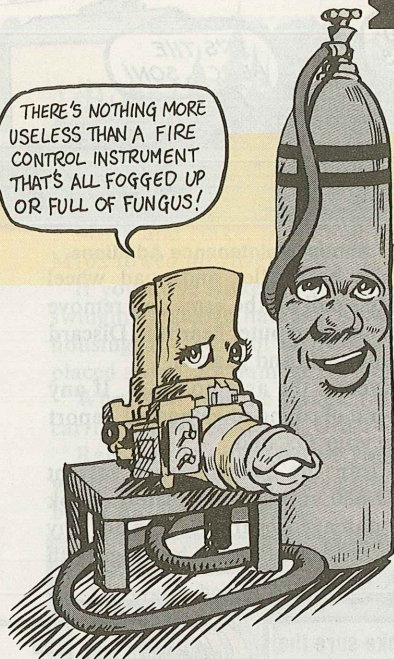
...and outboard seal lip faces outward

Install the inner and outer bearings, using new gaskets and seals. Make sure the inner seal lip faces the hull and the outer seal lip faces the arm. Otherwise, the lube you and the crew add later won't do any good at all.

Finish up by reinstalling the roadwheel and idler arms.



You Can't Hit What You Can't See!



If you don't keep your instruments free of moist air, the moisture builds up and ruins a lot of expensive—and vital—equipment.

THAT'S WHY YOUR TM'S TELL YOU TO PURGE AND CHARGE EVERY 90 DAYS—MORE OFTEN IF NEEDED!

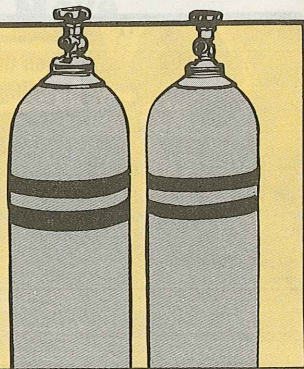
What You Need

To purge and charge the right way, you need the right stuff:

- SC 4931-95-CL-J54 lists equipment needed to purge and charge.
- TM 750-116 and your instrument's TM's tell you how to purge and charge most fire control instruments.
- Purging kit, NSN 4931-00-065-1110.
- Check out your -10, -20 and -20P TM's. Some TM's have info on purging and charging equipment and how to use it.

Nitrogen cylinders are gray with two black bands—don't use any other kind. Before accepting a cylinder for purging, make sure it has a CGA 580-series valve. It has right-hand internal threads.

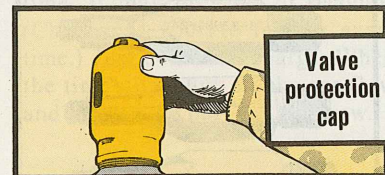
The big caution: Never drop the cylinder. It could explode. You also need plenty of ventilation when purging and charging. Too much nitrogen can kill you.



Make Sure It Works

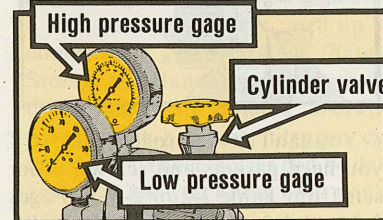
Line up your stuff and check it out before you start purging.

- Take the valve protection cap off the cylinder and quickly open and close the valve. This gets rid of dust or water in the valve seat.



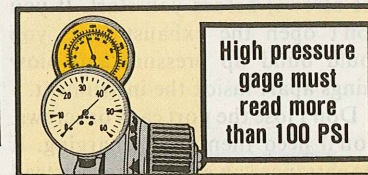
If nothing happens, either the cylinder's empty or the valve stem is stuck closed. If you smell something, you've got the wrong cylinder, 'cause nitrogen has no odor. Either way, get a new cylinder.

- Mount the regulator on the cylinder and the hose on the regulator. You'll need 9/16- and 1 1/8-in wrenches, but don't play gorilla with them. The brass threads can't take it. Both gages on the regulator should read zero.



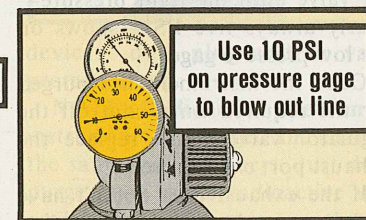
- Close the regulator valve by turning it counter-clockwise. Open

the cylinder valve slowly until the high-pressure gage needle stops moving and the valve is wide open. Where the needle stops tells you the PSI of the gas inside the cylinder. The number should be equal to or near the service pressure stamped on the cylinder (1,800-2,015 or 2,265).



If the pressure is 100 PSI or less, get another cylinder from supply. You can't do a good job at low pressure. Never drain the cylinder below 100 PSI either. The pressure helps keep dirt and water out of the cylinder.

- If you've got good high pressure, slowly open the regulator valve until the low pressure gage reads 10 PSI. Then close the valve quickly. This blows water, dust, spiders, etc., out of the hose, so they don't get pushed into your instrument.



Are You Sure You're Ready?

Need an adapter? Got port caps or

screws? Read on before you mess something up.

Look up the particular instrument you're purging in TM 750-116 or the instrument TM. It'll tell you what adapter to use (if any) and show where the entrance and exhaust ports are.

Entrance ports are usually circled in gray paint and exhaust ports in yellow paint.

Take off the port caps (or unscrew the screws) before you start. If you don't open the exhaust port, you could build up pressure and blow things apart inside the instrument.

Don't lose the port caps or screws. You'll need them after charging. If the entrance valve has a screw instead of a cap, you'll need one of the adapters in the purging kit. Use either 8-32UNC-2A, 10-24UNC-2A or 10-32UNF-2A.

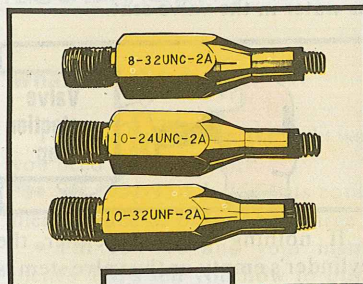
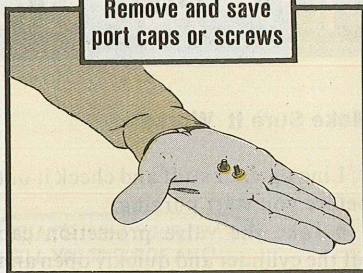
The Big Purge

TM 750-116 or the vehicle or instrument TM has the purging formula (that's how much pressure for how long a time) for the instrument you're working on. Open the regulator valve until the right pressure—nearly always five PSI—shows on the low pressure gage.

Once the instrument has purged for the required time, shut off the regulator valve. Then replace the exhaust port cap or screw.

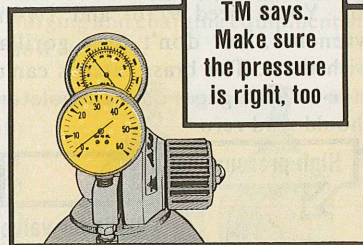
If the exhaust port doesn't have gaskets or seals, put a little sealing compound, NSN 8030-00-275-8110, on the screw and reinstall it.

**Remove and save
port caps or screws**



Adapters

**Purge for
only as
long as your
TM says.
Make sure
the pressure
is right, too**



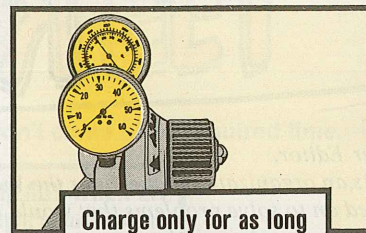
You can't have nitrogen leaks, so if you need gaskets and screws, order sets from Table 2-2 or 2-3 on Pages 2-2 and 2-3 of TM 750-116. If you need replacement caps, see Table 2-4 on Page 2-4 of the TM.

Chaaarrggge!

If you don't build up pressure inside the instrument after purging, you've wasted your time. Dust, mist, water, etc., will get inside just as sure as ice melts in Panama.

Charging is done with the same stuff you used for purging—nitrogen. Set the regulator valve to the prescribed pressure—nearly always one PSI—and charge for the required time. It may only be 20 seconds. (Check TM 750-116 for the exact time.) Just don't overcharge. When the time's up, shut off the gas flow and replace the port cap or screw.

**Charge only for as long
as prescribed in your
TM. Seals will blow if
you charge too much**



You're Not Done Yet!

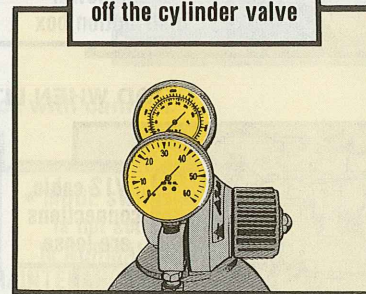
Nope. Not until you shut off the nitrogen. Completely close the valve on the cylinder. Open the valve on the low-pressure side of the regulator just a little to bleed off pressure and then close it.

If you don't bleed off the pressure, the rubber diaphragm in the regulator stays under strain. That could cause a leak and you'll need a new regulator.

For your own safety, read up on compressed gasses in AR 700-68, Storage and Handling of Compressed Gases and Gas Cylinders. Working with a high-pressure nitrogen cylinder and its accessories can be dangerous unless you know what you're doing.

Make sure the cylinder is correctly marked and has the right safety

**Relieve the
pressure in the
regulator valve
after shutting
off the cylinder valve**



devices—dust plug and/or valve protection cap.

NOTE: Radioactive fire control instruments are purged and charged the same way as others. Just don't purge them if the radioactive vials are broken. In that case, turn them in the way it tells you in the weapon or instrument TM.

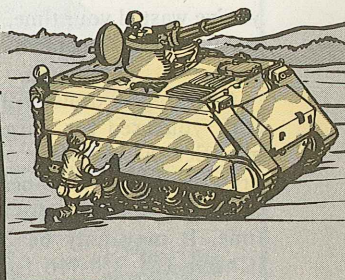
KEEPING YOUR

VULCAN ON ITS FEET

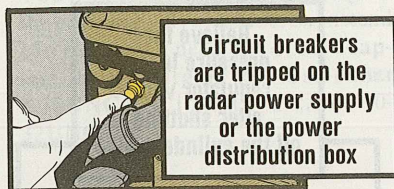
Dear Editor,

As an organizational mech for the Vulcan, I'm called on to solve problems that would be simple for crews to solve—if they knew what to look for.

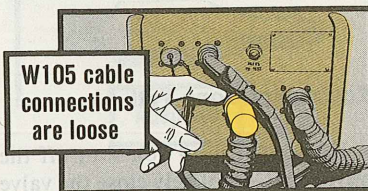
Any time something won't work, the troubleshooting steps in the -10 manual will usually solve the problem. But here are a few other checks that could save a call for a mechanic. Crews can do the checks—and correct the faults themselves—in minutes.



MIDRANGE CALIBRATION test light won't light.

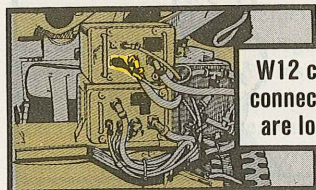


Circuit breakers are tripped on the radar power supply or the power distribution box

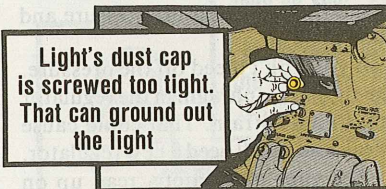


W105 cable connections are loose

GOOD WHEN LIT light won't light.

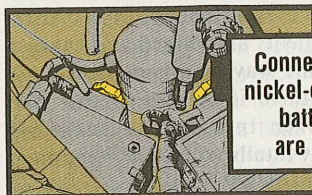


W12 cable connections are loose



Light's dust cap is screwed too tight. That can ground out the light

NO POWER



Connectors to nickel-cadmium batteries are loose



W1 and W5 cable connectors are loose

READY WHEN LIT light won't come on in required time.

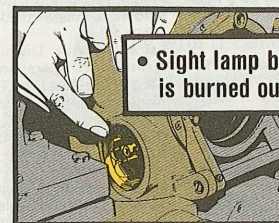


• Radar receiver-transmitter cover is not fully screwed down

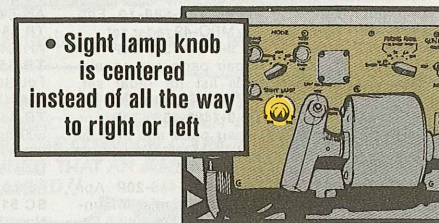
• READY WHEN LIT light's dust cover is too tight

• Either overload light or the receiver-transmitter is lit. Hit the overload reset button

Sight reticle light fails to come ON.

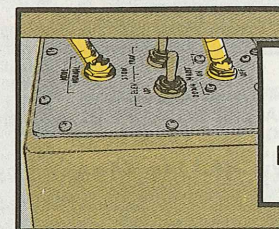


• Sight lamp bulb is burned out



• Sight lamp knob is centered instead of all the way to right or left

Radar won't track with cannon.



• MODE switch is not set to NORMAL. MAINTENANCE switch is not set to ON

Running these simple checks can put a dent in downtime for a Vulcan.

SSG Fredrick Hardy

Ft Campbell, KY

(Editor's note: Thanks! Your tips will shoot down a lot of problems.)



This is a selected list of recent pubs of interest to organizational maintenance personnel. This list was made from a computer printout provided by the Adjutant General.

TM 3-4230-214-12&P Mar M13 decontaminating apparatus

TM 5-1940-272-10 Apr 7-person inflatable boat

TM 5-1940-273-10 Apr 15-person inflatable boat

TM 5-3805-254-10 Jan IHC F5070 dump truck

TM 5-3805-254-10-HR Jan IHC F5070 dump truck

TM 5-4320-301-13&P Jan Water point supply system

TM 5-5420-202-10-HR Apr M60A1 AVLB chassis

TM 5-6115-323-14, C4 Mar 1.5 KW GED generator set

TM 5-6675-323-24P Dec 85 Topographic support system

TM 9-1005-309-10 Apr M231 submarine gun

TM 9-1005-316-12&P Mar Blank firing attachment (BFA) M21

TM 9-1090-206-20-2 Mar 20-MM automatic gun, M97A1

TM 9-1265-209-10 Oct 85 Multiple integrated laser engagement system (MILES) for Stinger

TM 9-1410-387-24P Apr Repair parts and special tools list for radar section, guidance section, propulsion section (second stage), and first stage, 11502314-009, Pershing II field artillery missile system.

TM 9-1425-422-24P-1 Jan Guided missile target MOM-107B/C

TM 9-1430-588-10 Feb AN/MPQ-49 radar set

TM 9-1430-1528-24P Mar Repair parts and special tools list for radar set, AN/MPQ-55, HAWK

TM 9-1430-1536-24P Apr Repair parts and special tools list for OD-179/TVY and HAWK

TM 9-1440-485-20P Apr M752 guided missile launcher, M234 mobility kit, and M1 firing device,

LANCE

TM 9-1450-485-10 Feb M667 Lance carrier

TM 9-1450-485-20 Mar M667 Lance carrier

TM 9-2320-272-10-HR Oct 85 M939/M939A1 series 5-ton trucks

TM 9-2350-253-10-HR Apr M60A3 tank

TB 43-0118 Jun Painting and preserving communications-electronics equipment

TB 55-1520-217-20-29 Feb CH-54A

TB 55-1520-237-23-1 Mar UH-60A

TB 55-1520-238-20-6 Feb AH-64A

TB 55-1520-238-20-7 Mar AH-64A

TB 55-1520-242-20-19 Feb SOF, UH-1D/H/V and EH-1

TB 55-1925-202-12 Apr 600-hp, 65-ft., tug

SC 4940-95-CL-B04-HR Dec 5 Contact maintenance truck, M887

SC 5180-95-CL-B29-HR Nov 85 Electronic system maintenance tool kit

LO 5-5420-210-12 Apr Floating assault bridge-ferry

LO 9-1450-485-12 Mar M667 carrier

LO 9-1450-646-12 Feb M993 MLRS

LO 9-2320-272-12 Feb M939 and M939A1 series 5-ton trucks

LO 9-2350-252-12 Feb M2/M3 Bradley

LO 9-2350-264-12 Dec 85 M1A1 tank

FM 5-25 Mar Explosives and demolitions

FM 23-1 Mar Bradley fighting vehicle gunnery

FM 23-14 Dec 85 Squad automatic weapon (SAW), M249

FM 43-12 Apr Division maintenance operations

AR 37-100-86 Jan The Army maintenance management structure

MCRL-1 Apr Master cross reference list, number to NSN

SB 700-20 Mar Army adopted/other items selected for authorization/list of reportable items

TEC Lessons

010-113-6708-F Use Firing Tables (FT 4.2-H-2, 4.2-inch mortar)

011-331-4348-F Maintain M19 60MM Mortar and M4 Sight

043-441-5503-F Prepare the Loader-Transporter for Travel by Helicopter, Part II

104-441-6354-F PMCS on Mechanical Components of HAWK System (Part I)

104-441-6355-F PMCS on Mechanical Components of HAWK System (Part II)

104-441-6367-F Troubleshooting with the Logic Probe

221-301-7207-A AN/PPS-5/-5A/-5B: Installation and Orientation

221-301-7215-A AN/PPS-15A, Part I: Introduction and Applications

Maintenance & Safety-of-Use Messages

AMCCOM SOU—Target Holding Mechanism, Tank Gunnery (THM,TG), 12V battery, AMSMC-MAT-D 202200Z Mar 86.

AMCCOM 86-2—Modification kit, NSN 4240-01-092-7897, AMSMC-MAR-C 311715Z Jan 86.

AMCCOM 86-7—M33/M33A1 RCA disperser test set, AMSMC-MAR-C 311525Z Mar 86.

TACOM 86-11—Line construction maintenance truck, NSN 2320-00-463-4582, AMSTA-MVA 041730Z Mar 86.

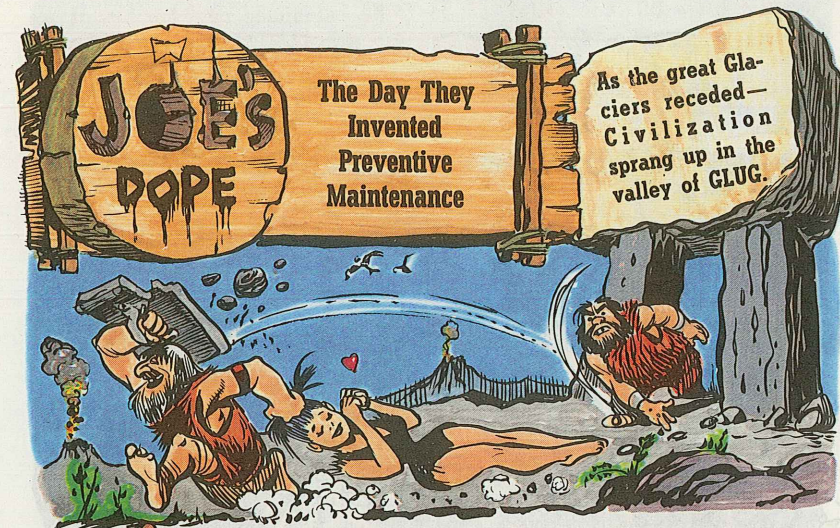
TACOM 86-13—International Harvester S-Series trucks and buses, AMSTA-MVA 071430Z Mar 86.

CECOM SOU—Lithium batteries, BA-5590/U, NSN 6135-01-036-3495 and BA-5598/U,

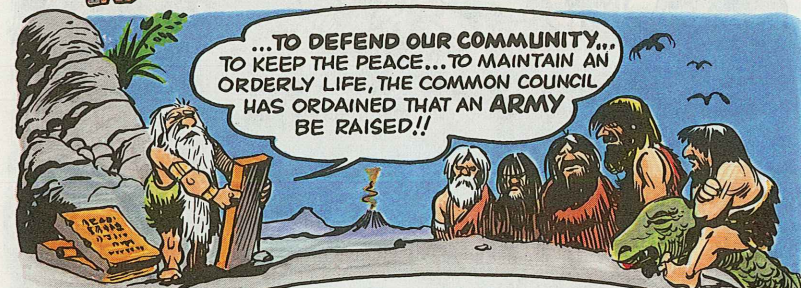
NSN 6135-01-034-2239, AMSEL-SF-ME 241400Z Mar 86.

MICOM SOU—Pershing 1A reciprocal air compressor, AMSMI-LC-ME-M 212258Z Mar 86.

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



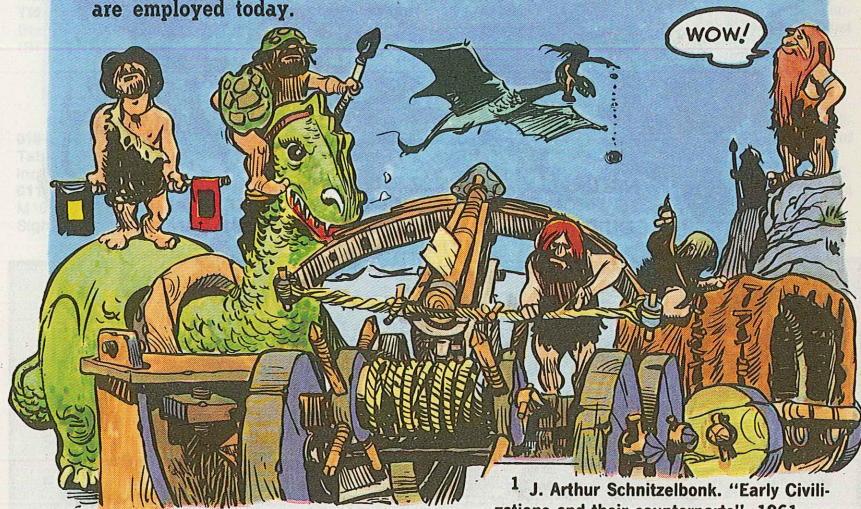
And with it came the beginnings of society as we know it . . .



And so, the Valley of GLUG hummed with activity. Almost as if by magic the most advanced concepts were grappled with—and used.

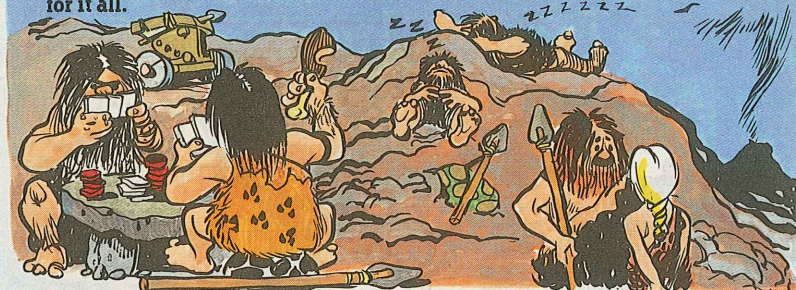


Indeed, each service, working in perfect harmony with the other, produced marvels of engineering and manufacture', the principles of which are employed today.



1 J. Arthur Schnitzelbonk. "Early Civilizations and their counterparts". 1961.

It was not long before the ARMY of the Valley of GLUG stood fully equipped, probably to the great relief of the GLUGNIKS whose taxes paid for it all.



The troops thus in garrison, settled down for a few years' while the Valley Folk tilled the rich glacial silt' and prospered.

Rainy seasons came and went.

And after each the snows...and winds.



It was not until the hot sun of a dry summer began to wane that the first sign of trouble appeared.



2 Wolfgang Von Smirk in his "Glug Revisited" claims the enemies were in awe of their weapons and hesitated to attack.

3 Siegfried Aardvark: "Peacetime Activities of Early Armies."

Joe's Dope Sheet



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.



OKAY, MEN...GIVE 'EM A TASTE OF OUR SUPERIOR ARMAMENT...**ATTACK!**

BOM! the battle simply resulted in a disaster for GLUG. In fact, this defeat by a poorly-equipped army against one so advanced has been studied by military men thruout history...



@@@ WOOD AXLES WARPED...SHE WON'T MOVE!!



LEATHER'S CRUMBLING LIKE DRY LEAVES!



THONGS LOOSENEED!



WEDGES DRIED AND SHRUNK!



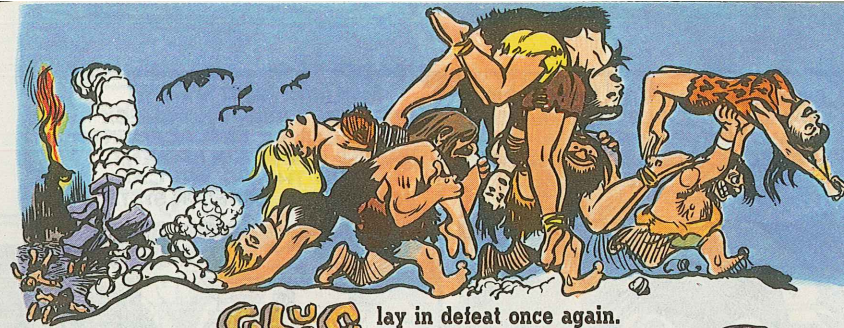
GIDDYAP YOU @*#!?!

WHEN'S THE LAST TIME WE FED AND WATERED HIM?!



BONK!

"Goof-offs in History"



GLUG lay in defeat once again.

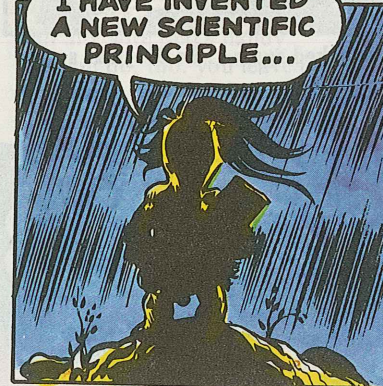
BOY, WHAT A SHELLACKIN' WE TOOK!

I CAN'T UNDERSTAND IT. WE HAD BETTER WEAPONS THAN THEY...

EXCEPT!! OURS DIDN'T WORK WHEN WE NEEDED 'EM MOST!



I HAVE INVENTED A NEW SCIENTIFIC PRINCIPLE...



5 Oscar Spelunker: Col. IV "Cavemen I Have Known." See also "Letters of Hans Leedercaenz".



GOOD EQUIPMENT PROPERLY CARED FOR, WILL WORK WHEN NEEDED!

At this moment (as it happened so often in history) a great leader arose among the Glugnicks. This man, able to simplify a complex idea, descended from his cave in the hills and spoke.

PRACTICALLY APPLIED, THE PRINCIPLE WORKS THUS: 1. A LITTLE BEAR GREASE ON ALL LEATHER PARTS REGULARLY APPLIED. 2. A PROGRAM OF TIGHTENING JOINTS FROM TIME TO TIME...

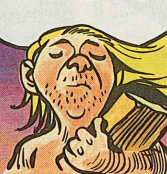


REQUIRE EACH MAN TO TIGHTEN, LUBE, AND CHECK FOR WEAR OR REPLACEMENT ON HIS OWN EQUIPMENT... ON BIG THINGS WE CAN DEVELOP AN ECHELON SYSTEM.



WE DON'T HAVE ENOUGH MANPOWER FOR THAT!

YOU DON'T NEED MORE MEN...USE THE TIME OF EACH MAN MORE EFFICIENTLY



EACH MAN DOES HIS OWN? ...EVEN IN PEACE TIME?

ESPECIALLY IN PEACE TIME!



The following Spring, when the Cliffmen attacked again... the Glugnicks scored a smashing victory!

WE OWE OUR VICTORY TO GLUGGO'S NEW SCIENTIFIC PRINCIPLE... LET'S GIVE IT A POPULAR NAME!

HOW ABOUT "KEEP 'EM READY, FREDDY" ?

HOW ABOUT PREVENTIVE MAINTENANCE ?

DOESN'T SOUND VERY CATCHY TO ME, BUT IT SURE DESCRIBES IT!



CUCV Fusible Links

I THOUGHT YOU REPLACED THE LINK?

I DID--
PUFF! PUFF!
-- I USED A COAT HANGER!



When a fusible link burns out on a CUCV, it's tempting to replace it with any wire that's handy.

If you do, tho, you leave the electrical system open to damaging surges of current.

Replacement fusible links and the repair procedure are not covered in TM 9-2320-289-20 and -20P.

Use these NSN's to get 50-ft rolls of fusible link wire:

Wire Size (AWG)	Color	NSN 5920-01-
20	orange	218-3759
18	green	218-3760
16	black	218-3761
14	brown	218-3762
12	blue	219-0793

There's no NSN for the red 10-AWG fusible link used on the M1010 ambulance. Order it on a DD Form 1348-6 from S9C using FSCM 11862 PN 12044638.

To replace a burned-out link, disconnect the negative cable from the batteries.

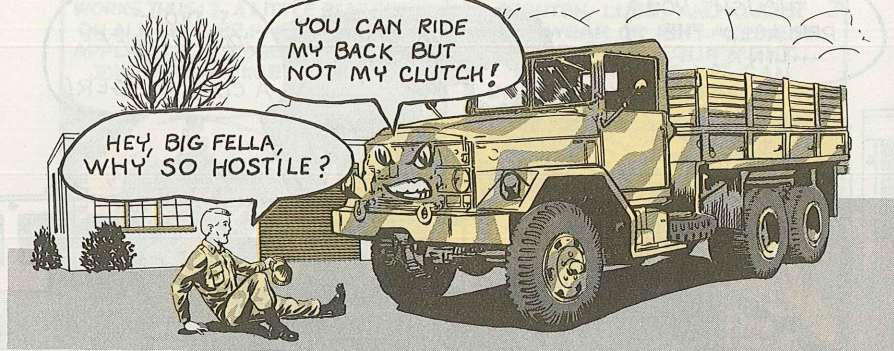
Cut away all the burned link and strip back the insulation about 1/2-in.

Cut a 10-in piece of fusible wire 4 gages smaller than the circuit wire. (For example, put 20 AWG wire in a circuit using 16 AWG wire.)

Use rosin core solder and solder the replacement link in place.

Finish up by wrapping the soldered ends with electrical tape and reconnect the batteries.

There's No Free Ride



Come on, drivers, keep your big foot off the clutch pedal—except when you want to shift gears.

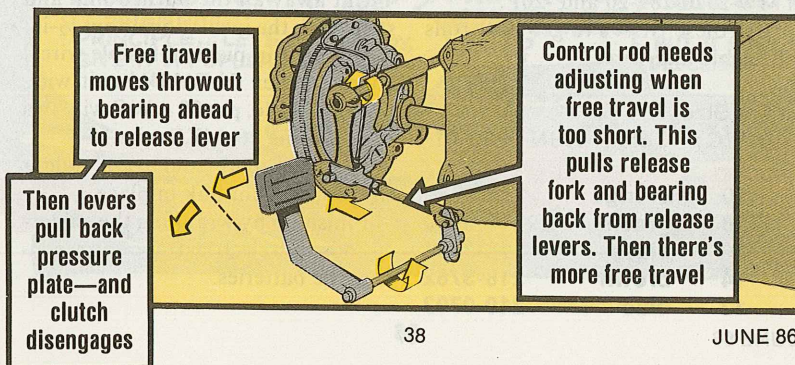
It's easy to ride the clutch pedal. It makes a good place to rest your foot during a long run, or when you do a lot of cross-country driving.

But there are no free rides. If you use your clutch pedal for a foot rest, you're going to wear out the clutch.

That's because when you rest your foot on the clutch pedal, the clutch begins to disengage. That starts the throwout bearing spinning. The bearing's not made to spin all the time, tho, and it can't take it. It fails. And your truck goes to DS for repair.

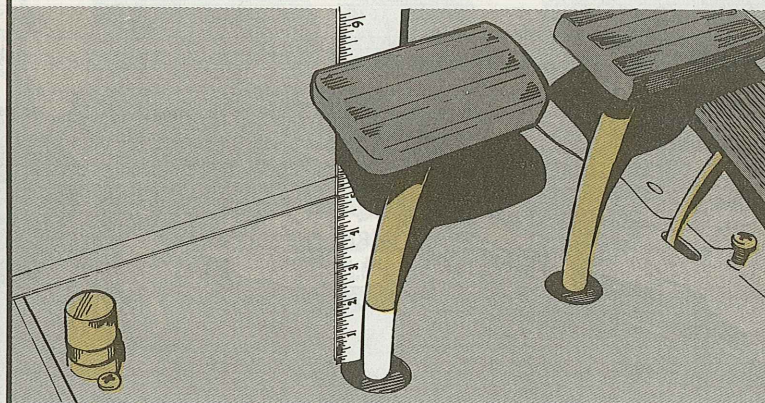
Free Travel

Constant use of the clutch grinds bits and pieces off the clutch lining. This lets the clutch pedal go down further before the clutch begins to disengage. This "free" pedal movement—that's the easy part when you first push down on the pedal—is called free travel. And the free travel has to be just so or your clutch won't work right.



You need to check free travel often. Here's how :

Mechs: Make an auto sight gage for drivers to check free travel. Measure up from the floor the maximum amount allowed by the TM 'n' paint it white.



Drivers: Press down the pedal until you feel resistance. If the white paint's out of sight, have your mech. adjust the free travel.

Here's a list of clutch pedal free travel measurements—and where you'll find 'em in the TM's:

M151A2 ¼-ton—1⅞ to 1½ inches
Para 4-12f, Pg 4-51, TM 9-2320-218-20-1-1; other M151-series ¼-ton—1⅞ to 1½ inches, Para 2-41b, Pg 30, C5 to TM 9-2320-218-20.

M561/M792 1¼-ton (Gama Goat)—¾ to 1⅞ inches, Para 3-3f, Pg 3-15, TM 9-2320-242-20-3-1.

M44A1 & A2-series 2½-ton (multi-fuel)—1½ to 2 inches, Para 3-3e,

Pg 3-15, TM 9-2320-209-20-3-1.

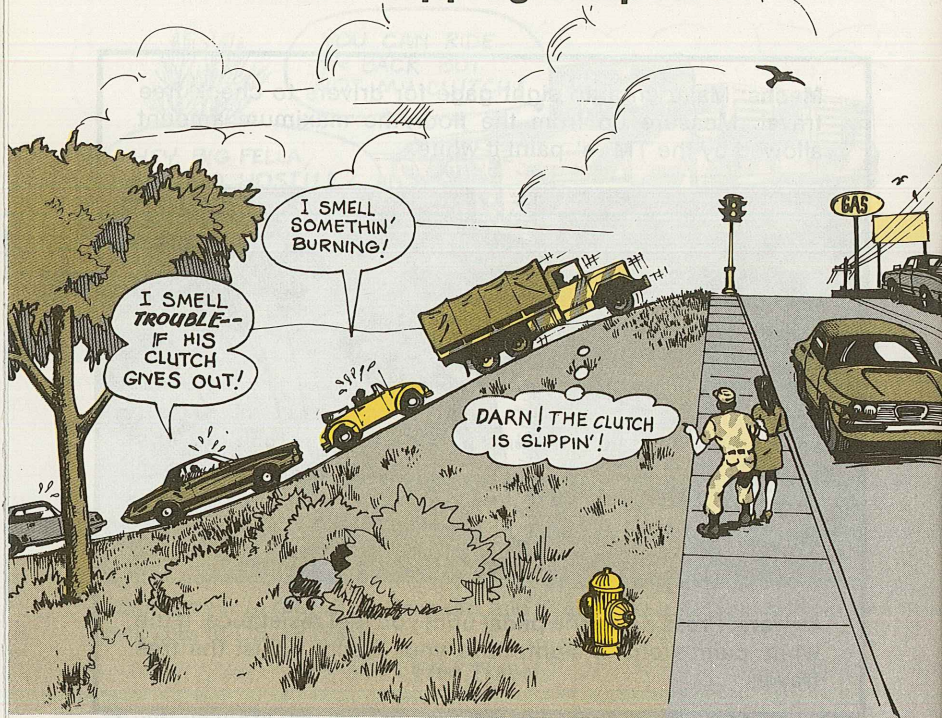
M44-series 2½-ton truck (all others)—1½ inches to 2 inches, Para 150a, Pg 261, TM 9-2320-209-20.

M39A2-series 5-ton (multifuel)—2 to 2½ inches, Para 3-3a, Pg 3-2, TM 9-2320-211-20-3-1.

M39-series 5-ton (all others)—2 to 2½ inches, Para 2-49, Pg 2-80, TM 9-2320-211-20.

M809-series 5-ton—2 to 2½ inches, Para 3-6a, Pg 3-9, TM 9-2320-260-20-3-1.

Clutch Slipping? Report It!



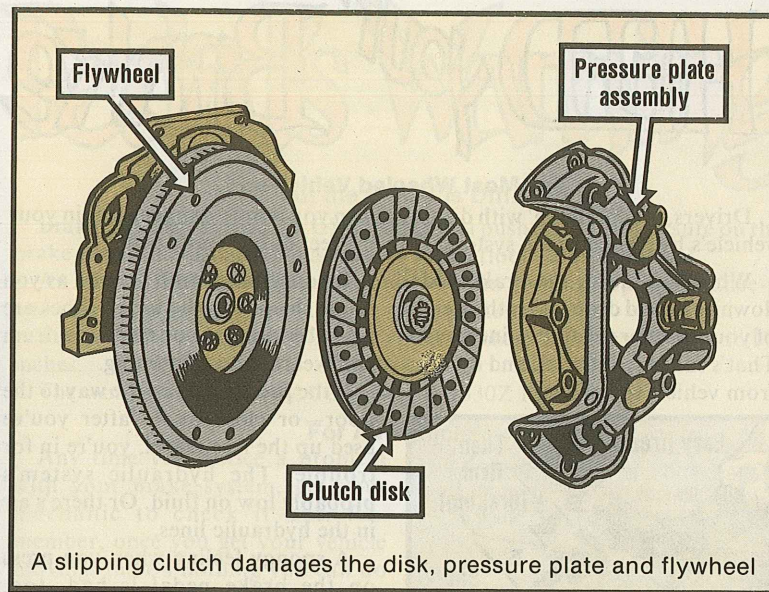
A slipping clutch can go only one way—from bad to worse.

If you don't detect clutch slippage—and report it—you'll be the one to suffer. Like stranded out in the boonies. . .sitting at the bottom of a steep hill your truck can't climb. . .because your clutch finally burned out.

But your truck can suffer worse. When you're finally towed in, the shop may find that your clutch disk, engine flywheel and clutch pressure plate are ruined—cracked or warped by the heat that comes from clutch slippage.

You can tell when your clutch starts slipping. When you let up on the clutch pedal and give 'er the gas to move out, you don't get clutch engagement when you're supposed to. Or there's a chattering and shuddering when your clutch does start to engage. Chances are, your truck needs a new clutch disk or clutch adjustment—or both.

You may finally move out—and think everything's OK—because heat from the clutch disk rubbing on the flywheel causes the parts to expand and improve clutch to flywheel contact.



A slipping clutch damages the disk, pressure plate and flywheel

But all of this causes worse damage. Next time, clutch slippage will be worse!

Detect and Correct

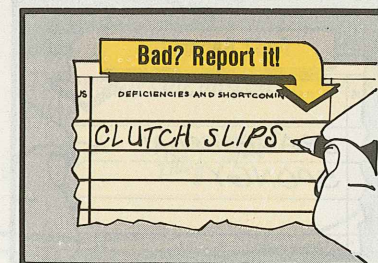
Now that you know the first signs of clutch slippage, here's how to make sure. . .so you can report it. . .and get it fixed:

Use the same procedure that you use for checking your truck's parking brake. **Make sure nobody or nothing is in front of your truck!** With the engine running and parking brake ON, shift your transmission into the highest forward gear. Let up on the clutch pedal—slow but steady. Don't let the clutch pedal pop up or you may cause damage to the clutch, transmission, prop shaft or differential.

The clutch should take hold well before the pedal reaches the bottom of the free travel specified for your truck. If your clutch works OK, put the pedal back down quick. Letting the clutch disk slip on the flywheel will burn up the disk facing.

If your clutch does not take hold when it's supposed to, you've got clutch trouble.

Report it—right now!

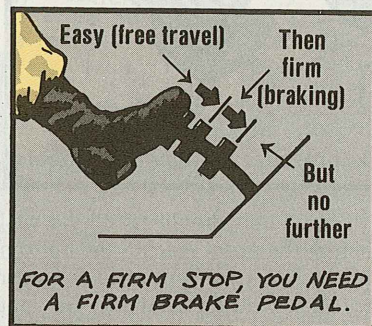


HEED your Brake

For Most Wheeled Vehicles . . .

Drivers, you're flirtin' with disaster when you ignore danger signs in your vehicle's hydraulic brake system—like the feel of the brake pedal.

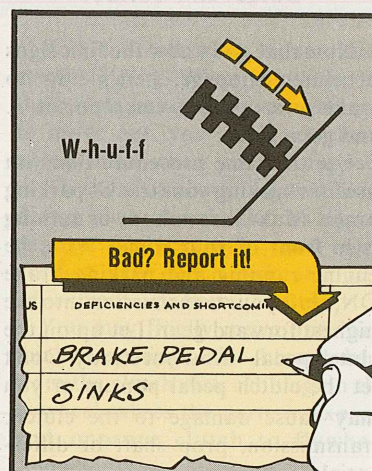
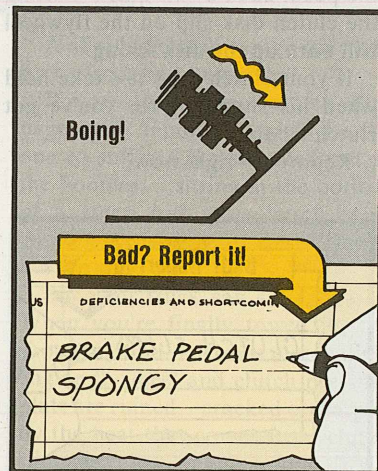
When you mash the brake pedal down, it should drop under the weight of your foot for the first ¼ inch or so. That's called free travel, and it varies from vehicle to vehicle.



If your brakes grab as soon as you touch the pedal, the brake shoes are probably dragging on the brake drum and wearing out the lining.

If the pedal sinks all the way to the floor—or close to it—after you've used up the free travel, you're in for trouble. The hydraulic system's probably low on fluid. Or there's air in the hydraulic lines.

A spongy feeling when you press on the brake pedal is bad, too. Chances are there's air trapped in the hydraulic system or a weak brake hose that's ballooning under hydraulic pressure.



Pedal's Warning!

. . . but the CUCV is Different

Brakes are different on CUCV's. When you push and hold pressure on the brake pedal, the pedal gradually sinks to the floor. This is normal.

As long as the brakes stop the vehicle within a safe stopping distance—and there's no grabbing or pulling—your brakes are OK.

The brakes should take hold after you push the pedal down about 1 to 1½ inches.

The word on this is in TACOM Msg 071330Z Mar 86.

For All Vehicles

Any time you notice a problem with your brake system, get your mechanic to check it out. Remember, once you get your vehicle moving, there's nothing you can do to stop—quickly and safely—if your brakes don't work. Don't take any chances! And don't delay! If you do, you're gambling with your life and the lives of others.

YOUR LIFE IS IN YOUR HANDS. REPORT BRAKE TROUBLE ON YOUR DA FORM 2404!



M809—Series 5-ton Trucks . . .

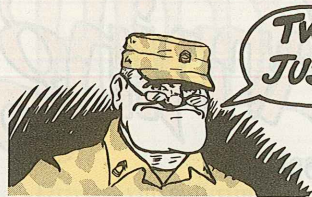
Keep Your Tires Up!

Dear-Half-Mast,
Table 1-4 of TM 2320-260-10 says the highway pressure for the front tires on my M813A1 5-ton truck is 80 PSI for the front and 50 PSI for the rear tires. The data plate in the trucks calls for 85 PSI. What's right?

SFC D.E.C.

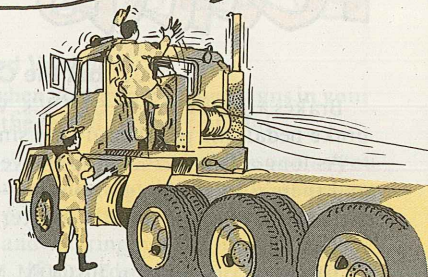
Dear Sergeant D.E.C.,
The pressures listed in the -10 TM—80 PSI rear—are correct. This updates the info on the data plate.

Half-Mast



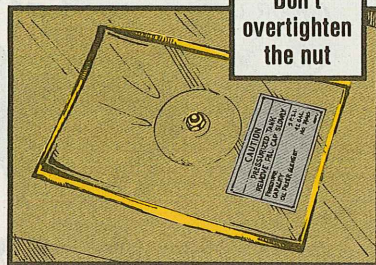
**TWO GASKETS...
JUST TIGHT!**

**OH, OH-
WINCH
TROUBLE!**



Water seeps into the winch hydraulic oil tank around the cover if the gaskets are bad or if the cover's tightened too much.

Both gaskets are needed to make a good seal between the lower and upper covers and the tank—one won't do the job.



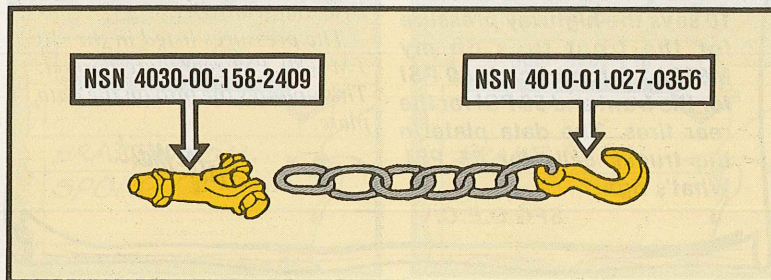
**Don't
overtighten
the nut**

Use new gaskets when you have the cover off. Old gaskets take a set and won't seal tight. Page 12-19 of TM 9-2320-273-20 shows how they go. Gaskets are Item 199 on Page 397 in the -20P.

When you put the cover back on, tighten the nut snug and then 1/4-turn more. Don't overtighten it. That pulls the center of the cover plate down and raises the edges. Then gaskets won't seal.

5-Ton Winch Replacement Parts

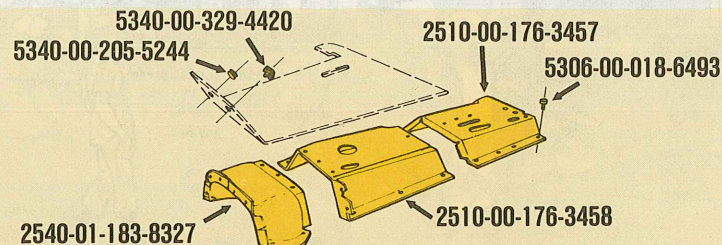
Front winches on all 5-ton trucks—M39-, M809-, M656- and M939-series—now use the same chain assembly, NSN 4010-01-027-0356, and wire rope socket, NSN 4030-00-158-2409. If this info's not already in your -20P TM, it will be.



Need Cab Tunnel Covers?

TM 9-2320-209-20P doesn't list the tunnel covers for your 2½-ton truck's cab floor.

Here's what you need:



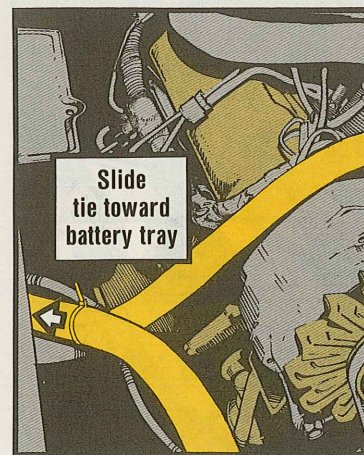
CUCV ...

Heater Hose Help

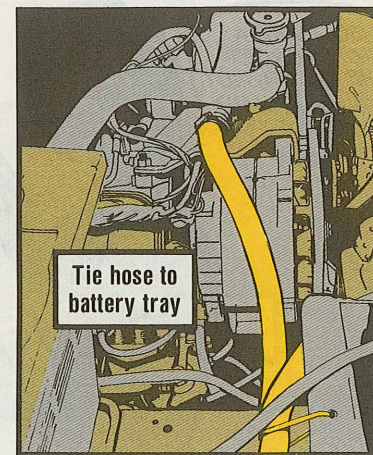
The heater inlet hose on the CUCV rubs against the alternator and wears through.

Prevent this by sliding the tie that holds the inlet and outlet hoses together toward the battery tray.

Lift the inlet hose and attach it to the side of the forward battery tray by threading the tie, NSN 5975-00-156-3253, around the hose and through the hole in the tray.



**Slide
tie toward
battery tray**



**Tie hose to
battery tray**

Latch That Door

KEEP TRYING!

I... I CAN'T LIFT MY BLADE!

I'M TOO ASHAMED TO TELL HIM THAT IT'S MY FAULT.

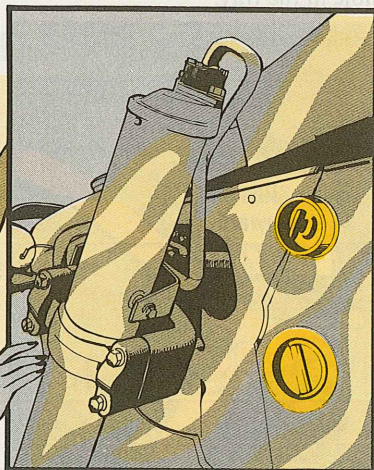
The spring-loaded T-latch at the top of the left hand engine guard assembly breaks easily.

Without that spring latch, vibration loosens the turn latch at the middle of the guard. The guard then bangs into the left hydraulic cylinder tube, denting it. The banging can crack the welds holding the line to the hydraulic manifold.

The spring latch is not called out in TM 5-2410-233-20P, but you can get it with NSN 2540-00-138-8220.

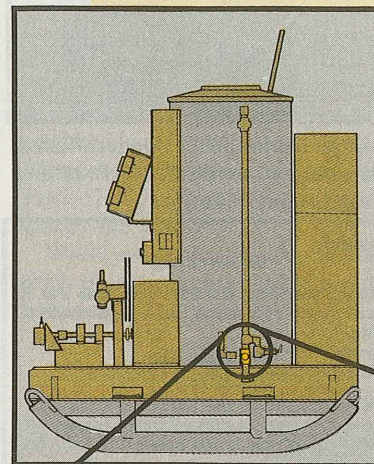
The NSN is not on the AMDF, so order on a DD Form 1348-6. The RIC is S9C and it costs \$41.60.

SO, MAKE A NOTE, ORDER THE LATCH, NOT A NEW GUARD ASSEMBLY.



Hose Hookup Made Easy

GOOD PM ON YOUR JENNY EXTENDS CLEANER'S LIFE, SAVES DOLLARS AND MAKES SENSE. BELIEVE ME!



When you complete 8 hours of operations with your Jenny, Model R12400, steam cleaner, you've got to disconnect the hose for blowdown maintenance or cleaning the coil.

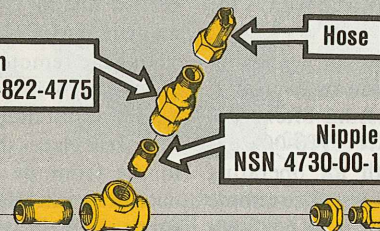
If the hose is left on, the particles that are released during blowdown will collect inside the hose.

Here are a couple of parts you can add to the outlet to make the hose easier to take off.

Union
NSN 4730-00-822-4775

Hose

Nipple
NSN 4730-00-188-1877



SOFT LIFE'S

You mechs have no control over most factors that contribute to the number one killer of tires—heat. But you *can* control the most significant factor, underinflation.

Tires lose pressure through valve leakage, punctures, bead-to-wheel seepage and even through the wheel structure and rubber.

Tread wear patterns show whether a tire is overinflated or underinflated. Excessive wear in the center of the tread means overinflation. Excessive wear on the outer tread and shoulders means underinflation.



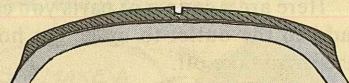
Typical tread-wear

OVERINFLATION



Continuous overinflation accelerates center tread wear. It reduces traction while making tread more susceptible to cutting.

UNDERINFLATION



Excessive tread shoulder wear results from chronic underinflation. It increases the chance of bruising sidewalls and shoulders and shortens tire life because of excessive flex heating.

In either case, adjust the pressure to meet requirements in your aircraft maintenance manual. Then, be sure to check it daily for a few days for leaks.

Even if you have no reason to suspect underinflation or overinflation, check tire pressure often. Use pressure gage, NSN 4910-00-204-3170, for tires with an operating pressure of 50 PSI or less. Use remote tire inflator assembly, NSN 6685-00-124-4336, for tires that take more than 50 PSI.

If a tire loses more than five percent of its minimum operating pressure in 24 hours, take the corrective action spelled out in Table 3-1 of the tire manual, TM 55-2620-200-24.

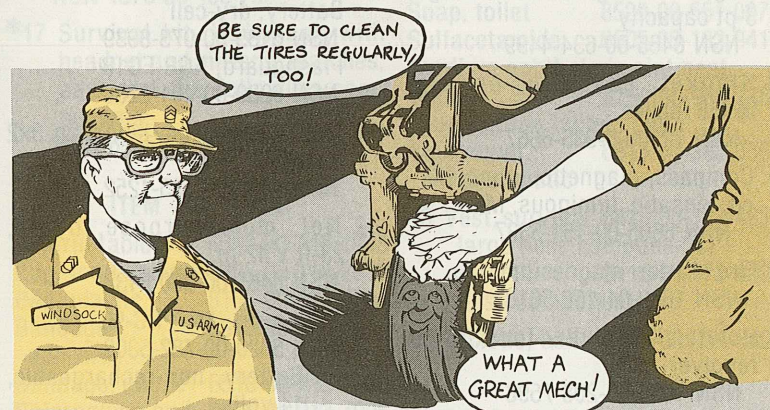
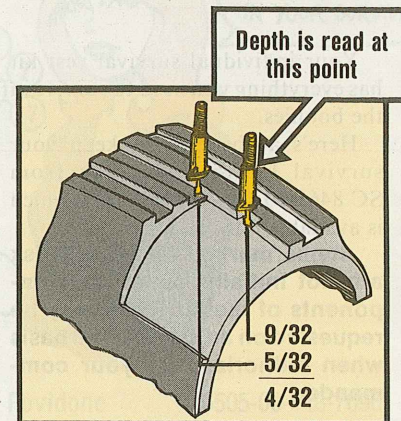
Use the remote tire inflator, NSN 6685-00-124-4336, with a 10-ft air hose to adjust the pressure of installed tires. It replaces the one listed. Stand to the front or rear of the tire—outside the wheel failure danger zone—particularly if you suspect tire or wheel damage. Tire inflation mishaps are more common than you think.

NOT for TIRES

Use compressed air in all Army aircraft tires except those on the UH-60A and AH-64A. Use only nitrogen in Black Hawk and Apache tires.

Inspect for tire damage often. Use a tread depth gage, NSN 5210-00-357-5951, to measure the depth of cuts. Table 3-3 of the tire manual tells how to evaluate cuts. Tires with cord body cuts or cord body damage of one inch or more must be replaced. Fig 3-12 shows how to measure cuts, cracks and holes.

While you're checking for tire damage, take time to remove rocks, nails or other objects stuck in the tire tread. A medium, cross-tip screwdriver does a good job.



Wipe off oil or grease with a cloth moistened with drycleaning solvent. Then wash off the solvent with mild soap and water.

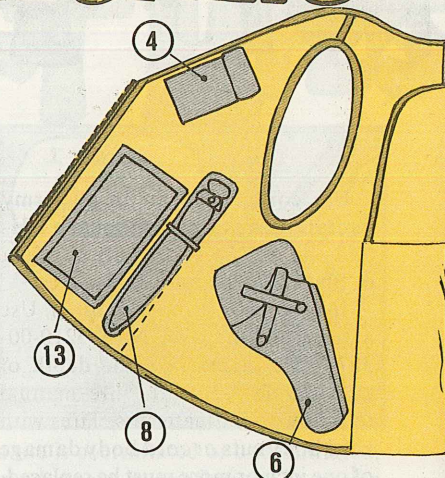
Remember, never take your tires for granted. They must be maintained and serviced just like other components of your aircraft.

CHECKLIST

Your individual survival vest kit has everything you need to survive in the boonies.

Here's a checklist to keep your survival kit in order. It's from SC 8465-90-CL-P02 (Mar 85), which is available only on microfiche.

Items marked by an asterisk are not initially issued as components of the kit. They may be requested on an as-required basis when authorized by your commander.



- 1 Survival kit, individual, vest type
Large NSN 8465-00-177-4819
Small NSN 8465-01-174-2355

- 2 Bag, drinking water storage,
3-pt capacity
NSN 8465-00-634-4499

- 3 Blanket, casualty, orange,
96x56 inches
NSN 7210-00-935-6667

- 4 Compass, magnetic, unmount-
ed, lensatic, luminous, M2
NSN 6605-00-151-5337

- 5 Fire starter, magnesium
NSN 1680-01-160-5618

- 6 Holster, revolver, for .38 cal
revolver
NSN 1095-00-208-7598

- *7 Insect repellent, 1-oz. cartridge
NSN 6840-00-142-8965

- *8 Knife, hunting, 5-in blade
NSN 7340-00-098-4327

- 9 Knife, pocket, multi-purpose
* NSN 5110-00-162-2205

- 10 Lightmarker, distress, plastic,
round
NSN 6230-00-938-1778

- Battery, dry-cell
NSN 6135-00-073-8939
Flashguard, AGR-FG1B
NSN 6230-00-401-2285

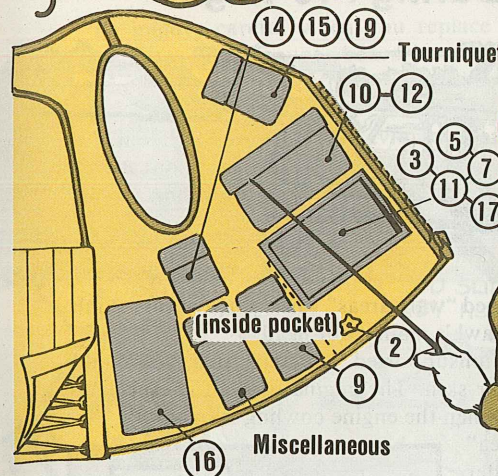
- 11 Mirror, emergency signaling, 3x2
inches
NSN 6350-00-105-1252

- 12 Net, multi-purpose, nylon,
23-ft x 42-in
NSN 8465-00-300-2138

- *13 Radio set, AN/PRC-90
NSN 5820-00-782-5308
*Battery, non-rechargeable,
14 volts
NSN 6135-00-838-0706

- *14 Cartridge, .38 cal special,
ball, M41
NSN 1305-00-322-6391

for SURVIVAL



Tourniquet

(inside pocket)

Miscellaneous

THIS IS AN
INVESTMENT
IN YOUR SURVIVAL!

- *15 Cartridge, .38 cal special, tracer,
M41

NSN 1305-00-301-1692

- 16 Signal kit, personnel distress,
7 flares, launcher
NSN 1370-00-490-7362

- *17 Survival kit, individual, with
headnet and mittens, matches,
saw and the following com-
ponents:
NSN 6545-01-120-2632

ITEM NSN

- | | |
|---|------------------|
| Aspirin tablets | 6505-00-118-1948 |
| Bag, food sample | 6695-00-118-2918 |
| Bag, plastic | 8105-00-837-7754 |
| Bandage, adhesive | 6510-00-913-7909 |
| Bandage, gauze | 6510-00-913-7906 |
| Chloroquine and primaquine phosphate tablets | 6505-00-913-7905 |
| Diphenoxylate hydrochloride and atropine sulphate tablets | 6505-00-118-1914 |

- | | |
|--|------------------|
| Povidone iodine ointment | 6505-00-148-7096 |
| Razor, surgical preparation | 6515-00-926-2089 |
| Skin closure, adhesive surgical | 6510-00-054-7255 |
| Soap, toilet | 8520-00-551-0375 |
| Sulfacetamide sodium ophthalmic ointment | 6505-00-183-9419 |
| Water purification tablets (50) | 6750-00-985-7166 |
| Tourniquet, nonpneumatic | 6515-00-383-0565 |

- 18 Vest, survival, 8415-00-177-4818
large (less components)
or small 8415-01-173-8098
(less components)
- 19 Whistle, ball 8465-00-254-8803

See Para 2-18 and Table 2-1 of TM 55-1680-317-23&P for the word on inspecting, servicing and repairing your individual survival vest.

Step Lightly During Pre-Flight

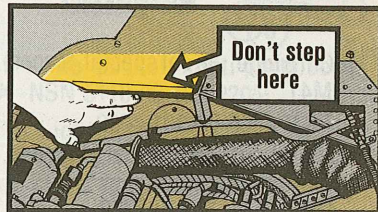


Step lightly and only in designated "walk areas" when you aviators climb up top to pre-flight your Black Hawk's main rotor head.

If you come down hard on an unsupported "no step" area, you could easily crack your bird's thin outer skin. The engine firewall is especially vulnerable to misplaced brogans when the engine cowlings are open.

If you don't know a "walk area" from a "no step" area, take a gander at Fig 1-5 of TM 55-1520-237-23-2 before you go top-side again. It shows steps, handholds and walkways as well as "no step" areas.

Watch your step and head off sheet metal repair.



Special Inspections ...

Plus or Minus 10 Percent

All recurring special inspections have a tolerance of plus or minus 10 percent from the scheduled inspection time, whether it's spelled out in your bird's maintenance manual or not.

If your bird is due a special inspection every 150 hours, for instance, the inspection must be performed between 135 and 165 hours. If it's not done during that period, the bird must be grounded with a red "X" until the inspection is completed.

The tolerance on recurring special inspections does not mean you're authorized to overfly the inspection due date. Inspections will not be exceeded except in MISSION ESSENTIAL or EMERGENCY situations.

One-time special inspections, such as torque checks that follow a specific maintenance action, have no tolerance. They must be performed when due or the bird gets grounded.

Para 2-3b of TM 55-1500-328-25, Aeronautical Equipment Maintenance Management Policies and Procedures, has all the info on special inspections.

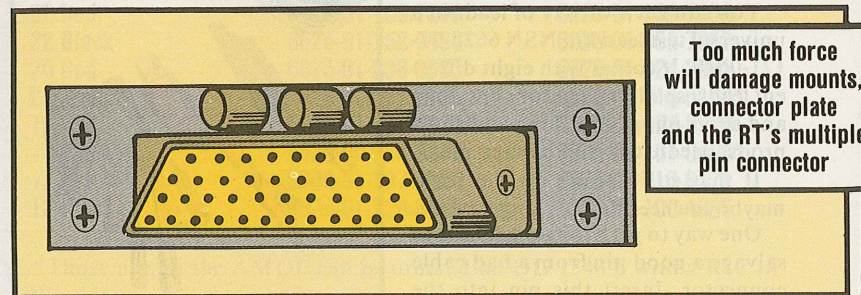
The RT Connection

Be mighty careful when you replace the RT-823/ARC-131 receiver-transmitter in its mount aboard your bird. Too much force can bend the pins, spacers and plates that connect the RT to the on-board radio control set.

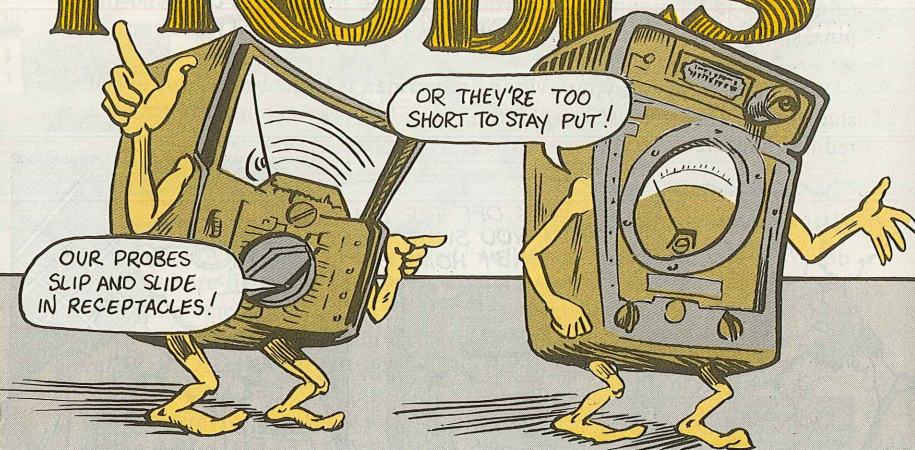
When that happens, your avionics repairman is liable to get bent out of shape, too. That's 'cause re-soldering wires to broken connector pins is a tedious and tiresome task.



Once the RT makes contact with the connector at the rear of the mount, just give it a small nudge to make a good connection.



PROBES



Too-short multimeter probes can turn cable troubleshooting into a nightmare.

Hand-held probes can slip in the receptacle, giving you bad readings. Trying to keep a probe connected to an out-of-the-way receptacle can make you wish you had an extra hand or two.

One answer to this slipping, sliding probe problem is having—and using—the right lead for the job.

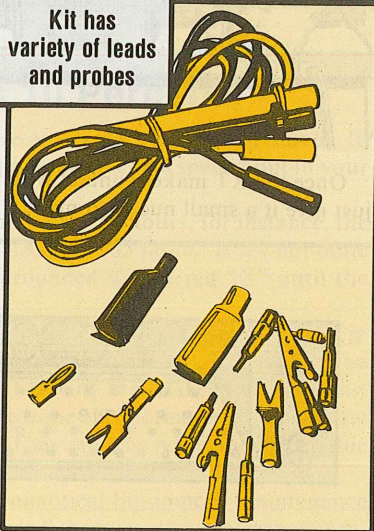
You can get a variety of leads in a universal test lead kit, NSN 6625-01-121-0510. It comes with eight different leads: spades, alligator clips, long and short phone tips, long and short prods, needle tips and banana plugs.

If that still doesn't do the trick, maybe you need an even longer probe.

One way to get a longer probe is to salvage a good pin from a bad cable connector. Insert this pin into the

cable receptacle to be tested. Then clamp your alligator clip lead to the pin.

Kit has variety of leads and probes



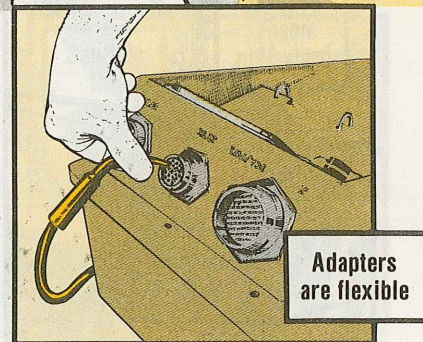
COME UP SHORT



A simpler—but more expensive—way to get longer leads is to order the following connector test adapters.

The advantage is that these adapters have flexible bodies. That helps you get into tight or “hidden,” spots. They are also fully insulated.

The adapters fit easily onto a banana plug lead. They come in four common contact sizes:



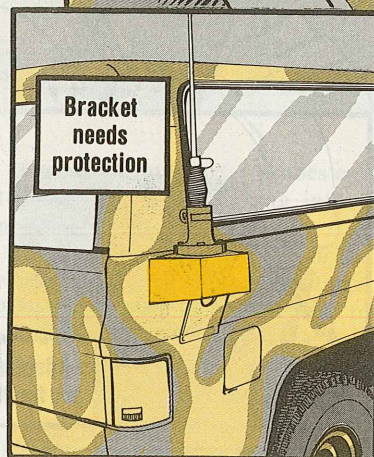
Contact Size	Male	Female
22 Red	6625-01-159-7690*	6625-01-159-7958*
22 Black	6625-01-159-7959*	6625-01-159-7957
20 Red	6625-01-038-0803	6625-01-024-2981
20 Black	6625-01-038-2105	6625-00-015-5188*
16 Red	5935-01-100-4834*	5935-01-098-8596
16 Black	6625-00-528-8019	5935-01-101-9495*
12 Red	5999-01-137-1360	6625-01-016-8171
12 Black	6625-01-128-6952	5935-01-100-4835

*Those not on the AMDF can be ordered on DD 1348-6 with a RIC of S9E.

Protect CUCV Antennas

THAT WAS FUN,
CAN WE HIT
ANOTHER ONE?

LET'S NOT!



Tired of coming back from the field with broken antenna brackets on your M1008 or M1009 trucks?

Protect those brackets with guards. NSN 5820-01-200-0178 brings the guard to protect your MX-6707 matching unit or AB-15 mast base.

NSN 5820-01-174-0290 protects the AN/GRC-106 radio's AB-652 mast base mounted on an M1009. Protect the base on an M1008 with NSN 5820-01-185-9065.

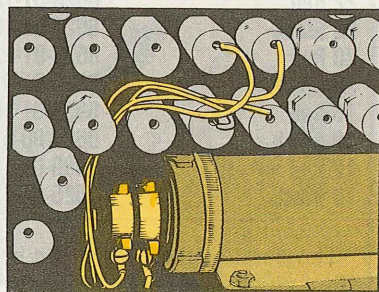
Communications-Electronics Command is adding the guards to radio installation kits. If yours didn't include a guard, order it.

A guard "rounds off" the bracket's sharp edges. That lets trees or other obstacles slide around the antenna, instead of trying to rip it off the truck.

SB-22 Spring Clips

The spring clips that provide electrical contact between your switchboard and its battery case are NSN 5999-00-643-7687.

Page 5-3 of TM 11-5805-262-12 shows you how to replace the clip.



Get Mask Sanitizer in Bulk

I'M TAKING
A DIP!

THINK I'LL
JOIN YA!



You can get calcium hypochlorite in bulk for sanitizing your M17-series protective masks.

AMCCOM Maintenance Advisory Message 85-42 says that in addition to the small, individual mask tube listed in TM 3-4240-279-20&P, three other sizes can be used for sanitizing the mask.

They are:
NSN 6810-00-
242-4770

Size
45-lb box
(12 each,
3¼-lb boxes)

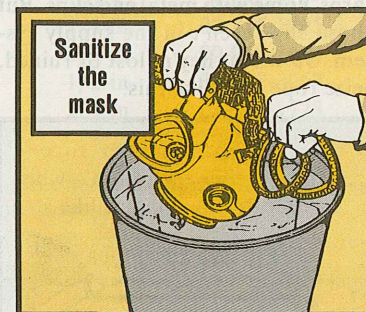
238-8115
255-0471

5-lb
6-oz

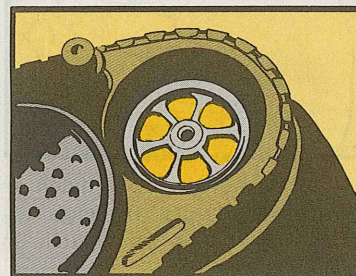
You need measuring spoon NSN 7330-00-875-6912 (1/2-tsp) for add-

ing a level spoon of calcium hypochlorite to a gallon of water.

Mix the solution for 30 seconds, fill your canteen and cap it, and use the rest for sanitizing mask facepieces. Use the canteen mix to sanitize the drinking tube, as explained in para 3-7 of TM 3-4230-279-10.



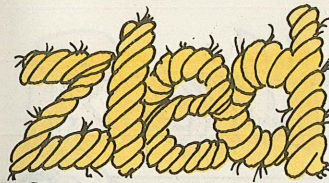
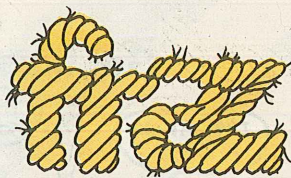
M17A1 Disk-Missed



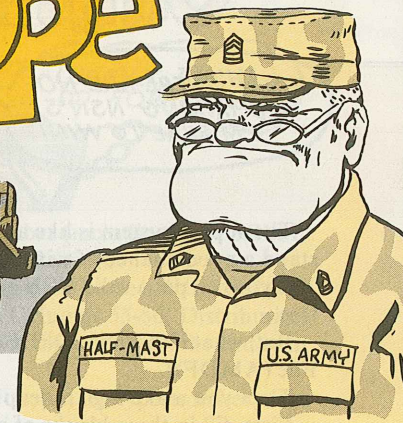
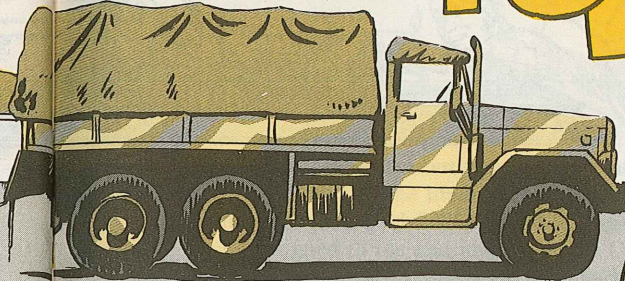
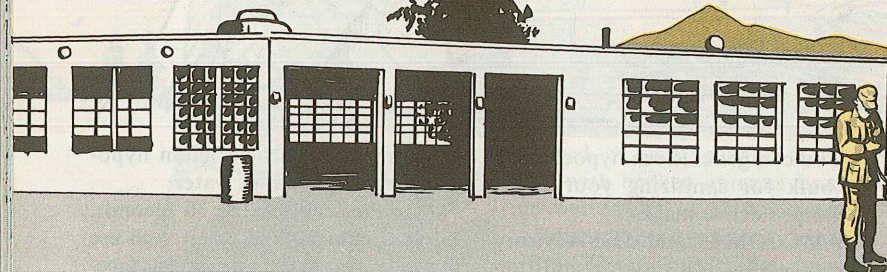
Your M17A1 protective mask may or may not have a second disk in the white plastic cup under the outlet valve. If it's there, leave it alone. If it's not there, don't sweat it.

Since mask-to-mouth resuscitation no longer is given, the disk is useless. So if the disk is missing, damaged or in any other way unusable, your mask is still serviceable.

Seize



rope



If unravelling rope ends are fraying your nerves, seize up the situation.

Some ropes, like those on vehicle tarps, come with metal end clips. But those clips aren't in the supply system. So when they're lost or ruined, seize rope ends like this:

Or wrap the ends with reinforced nylon tape:

Size	NSN 7510-00-
1/2-in	582-4771
3/4-in	802-8311
1-in	582-4772

HERE'RE WAYS TO
TIE UP THOSE LOOSE ENDS!

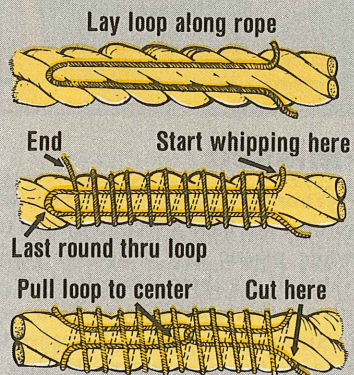
• Or use shrinkable insulation sleeving on either synthetic or natural fiber rope.

SIZE	NSN 5970-
1/4-in	00-815-1295
3/8-in	00-954-1624
1/2-in	00-812-2967
3/4-in	01-169-1723
1-in	00-815-1300

Remember, tubing will shrink to about one-half of its original size, so order a size that easily slips over the rope end. Get this tubing by the foot:

No matter which method you use, be sure the seized rope end will fit through the equipment's hardware.

• For natural fiber rope—manila, hemp or cotton—whip the rope ends with cord like so:



(The loops are opened to clarify the whipping procedure)

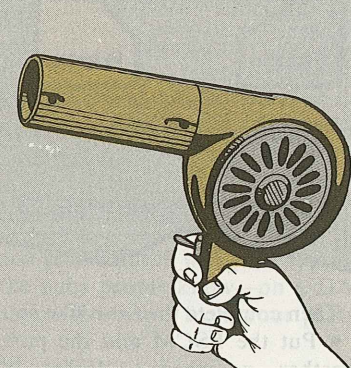


• For synthetic rope—nylon or polypropylene—melt the ends together with a heat gun, match or torch flame.

To apply shrink tubing—
—Cut a 1/4 to 1-in piece of tubing.

—Slip the tubing over the rope, leaving a little of the end showing

—Shrink the tubing with a heat gun or match until it's snug on the rope.



First, fill in these blocks of a DD Form 1348-6 as usual:

Unit of Issue																				Quantity										Document Number																									
MANUFACTURER'S CODE * AND PART NUMBER																				UNIT OF ISSUE										DOCUMENT NUMBER																									
DOCUMENT IDENTIFIER		ROUTING IDENTIFIER		M & S		FSCM										PART NUMBER										REQUISITIONER										DATE										SERIAL									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43													
864033829243																				EA00002WK4ABEJ3170922																																			
DEMAND		SERV. ADDRESS		SIGNAL		FUND CODE		DISTRIBUTION CODE		PROJECT CODE		PRIORITY		REQUIRED DEL. DATE		ADVICE CODE		BLANK		REJECT CODE (FOR USE BY SUPPLY SOURCE ONLY)																																			
44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85														
R								D8				13				2B																																							
IDENTIFICATION DATA																																																							
1. MANUFACTURER'S CODE & PART NO. (When they exist)																				2. MANUFACTURER'S NAME																																			
Demand																				Priority										Advice Code																									
5. CATALOG IDENT																				DATE										TECHNICAL ORDER NUMBER																									
5. TECHNICAL MANUAL NUMBER																				6. NAME OF ITEM REQUESTED																																			
7a. COLOR																																																							
7b. SIZE																																																							
8. END ITEM APPLICATION AND SOURCE OF SUPPLY																																																							
9a. MAKE																				9b. MODEL										9c. SERIES																									
10. SERIAL NUMBER																																																							

- Put the FSCM and the part number in Columns 8-22. Run them together—no spaces or dashes. When the part number (Columns 13-22)

Request Game

Then everybody wins!



It can take months for a requisition to be filled if the item you requested is in short supply.

That's the reason for the Automatic Return Item List (ARIL). It tells you how to put recoverability code D and L items, critical items, repair parts and assemblies back into the system in a hurry—so someone else won't have to wait when they need the gear.

But the system won't work without your help. If you have extra items, or gear your mechs can't repair, check the ARIL microfiche to see if the NSN's are listed.

Look at the code letter in the ARI column on the microfiche. A code of C, U, or M means you turn in the item if you have extra stock whether serviceable or unserviceable.

AUTOMATIC RETURN ITEMS LIST (ARIL)									
PART II COMPLETE ARIL NIN SEQUENCE									
ARI DES	A B I	NATIONAL STOCK NUMBER FSC NIN	AUTOMATIC RETURN ITEMS NOMENCLATURE	MAT CAT CODE	ROUTING IDENTIFIER CODE	EFF JULN DATE	JAN86 NIPC USE		
ARI	U	5850-00-460-3984	CONTROL-INDICATOR	G21SC	BY6 B56	6001	6CC36		
ARI	U	5850-00-460-3985	INDICATOR, CALIBRATI	G21SC	BY6 B56	6001	6CC36		
ARI	U	5850-00-460-3987	RECEIVER, INFRARED	G21SC	BY6 B56	6001	6CC36		
ARI	U	5841-00-460-4016	DETECTOR, RADIO FREQ	G21SH	BY6 B56	6001	6CC1F		
ARI	U	5841-00-460-4018	COMPARATOR, SIGNAL	G21SH	BY6 B56	6001	6CC1F		
ARI	U	6425-00-460-4022	CIRCUIT CARD ASSEMB	G21TD	BY6 B56	6001	6BB2K		
ARI	U	6425-00-460-4026	CIRCUIT CARD ASSEMB	G21TD	BY6 B56	6001	6BB2K		
ARI	U	6425-00-460-4029	CIRCUIT CARD ASSEMB	G21TD	BY6 B56	6001	6BB2K		
ARI	U	6425-00-460-4032	CIRCUIT CARD ASSEMB	G21TE	BY6 B56	6001	6BB2K		
ARI	U	6425-00-460-4033	CIRCUIT CARD ASSEMB	G21TE	BY6 B56	6001	6BB2K		
ARI	U	6425-00-460-4044	CIRCUIT CARD ASSEMB	G21TD	BY6 B56	6001	6BB2K		
ARI	U	6425-00-460-4045	CIRCUIT CARD ASSEMB	G21TD	BY6 B56	6001	6BB2K		
ARI	U	6425-00-460-4046	CIRCUIT CARD ASSEMB	G21TE	BY6 B56	6001	6BB2K		
ARI	U	5940-00-460-4055	SHIELD ASSEMBLY, EL	G21TT	BY6 B56	6001	6CC2E		
ARI	U	5915-00-460-9634	FILTER, BAND PASS	G21RE	BY6 B56	6001	4BB2L		
ARI	U	4931-00-460-5937	METER, FLOW RATE	LQ1FO	BA4	6001	HCE15		
ARI	U	4931-00-460-6024	METER, FLOW RATE	LQ1FO	BA4	6001	HCE15		
ARI	U	3610-00-460-6129		BP1UV		6001			
ARI	U	5850-00-460-7354	CONTROL, RECEIVER	G21SC	BY6 B56	6001	6CC36		
ARI	U	6660-00-460-7355	DETECTOR, WIND SPEED	G21TC	BY6 B56	6001	2CC64		
ARI	U	6405-00-460-8158	CONTROL, COMPASS	G510E	BY6	6001	6BB2E		
ARI	C	5220-00-460-8792	GAGE PROFILE AND AL	H21LL	BR4	6001	MSOG		
ARI	U	5805-00-460-8830	POWER SUPPLY	G21TP	BY6 B56	6001	6CC2P		
ARI	U	6425-00-461-0638	TEST SET, TRANSMITTE	GX1TD	BY6 B56	6001	6BB2G		
ARI	U	6425-00-461-0639	TEST SET, RECEIVER L	GX1TD	BY6 B56	6001	6BB2G		
ARI	U	6425-00-461-0641	TEST SET, PULSE SIGN	GX1TD	BY6 B56	6001	6BB2G		
ARI	U	5895-00-461-0658	RELAY, CENTRAL GROUP	GX1SB	BY6 B56	6001	6CD1F		
ARI	U	5895-00-461-0673	MONITOR-COMMAND GRO	GX1SB	BY6 B56	6001	6CD1F		
ARI	U	5895-00-461-0674	MONITOR-COMMAND GRO	GX1SB	BY6 B56	6001	6CD1F		
ARI	U	5895-00-461-0678	MONITOR-COMMAND GRO	GX1SB	BY6 B56	6001	6CD1F		

a HURRY

An ARI code of D means the item used to be on the ARIL for turn-in, but has been dropped. Turn the item in—or dispose of it—through normal channels.

Expensive repair parts or complicated “high-tech” assemblies are likely to make the ARIL. So grab a copy of the fiche and take a look, before you set items aside... or toss 'em in the scrap heap. Could be the gear—or parts of it—is on the ARIL and can be salvaged if you turn it in!

You get the ARIL on microfiche four times a year, with the AMDF. The instructions for turning in ARIL items are in Part I, Customer Return Instructions. Fill out a DD Form 1348-1 for turn-in, like in Fig 3-2 of DA Pam 710-2-1. But put ARI in card columns (cc) 57-59, and fill in the priority designator (PD) in cc 60-61. Use this system:

For ARI code: Use PD:
C or M 06
U 13

Your support will take care of the rest of the info the ARIL asks for on the DD 1348-1.

CDA Pam 18-1-5, Code Reference Guide for the Automatic Return Item List, explains the codes used on the ARIL. If you need a copy, call:

AUTOVON- 977-6741/6608
Commercial- 717-782-6741/6608
FTS- 589-6741/6608

HMMM-- DON'T NEED THIS FRAMMIS... AND IT'S ON THE AUTOMATIC RETURN ITEM LIST... SO I'LL GET IT BACK INTO THE SUPPLY SYSTEM!



Or write:

Commander
USAMC Catalog Data Activity
ATTN: AMXCA-BTM
New Cumberland Army Depot
New Cumberland, PA 17070-5010

Para 6-2 of DA Pam 710-4, Management of Excess Materiel and Materiel Returns, also contains info on ARI. If you don't have a copy, ask your pubs clerk to order one from the Baltimore Pubs Center.

Department of the Army
Pamphlet 710-4

Inventory Management

Management of Excess Materiel and Materiel Returns



THE WAY THEY'RE GOING,
THIS PM IDEA CAN
REALLY TAKE OFF!

Connie's
★ POST ★
SCRIPTS

UMO Improves Unit Maintenance

You'll be seeing more uniformity among unit maintenance operations, and this will result in higher efficiency and lower confusion for everybody as they transfer from one unit to another.

Standardized unit-level maintenance operations and procedures are being developed by the Unit Maintenance Office (UMO), activated last year at the US Army Ordnance Center & School, Aberdeen Proving Ground.

As central manager for unit-level maintenance in the US Army Training and Doctrine Command (TRADOC), the UMO is consolidating the efforts of the 13 TRADOC schools to integrate unit maintenance into TOE organizations and provide a single focal point for actions to improve unit maintenance operations across the Army's force structure.

The UMO has already developed a functional user's guide for unit-level motor pool operations (Published in Maintenance Management Update 8 as DA Pam 750-35.)

Got any ideas? Drop a line to:

Commander
USAOC&S
ATTN: ATSL-CD-UM
Aberdeen Proving Ground, MD
21005-5201
Or call AUTOVON 298-5419.

CAT 1 EIR Phone
AUTOVON 693-2066
(24 hours)

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

UH-1-86-01, SOF, Maintenance Mandatory, Collective lever assembly, P/N 204-011-438-1 and P/N 212-010-403-5, 061700Z Feb 86.

AVIATION MESSAGES

UH-1-86-02, SOF, Maintenance Mandatory, Correction to UH-1-86-01, 062200Z Feb 86.

UH-60A-86-01, SOF, Technical, Tail rotor drive shaft bearing P/N SB 1138-101, 220100Z Feb 86.

UH-60A-86-02, SOF, Technical, Tail rotor drive shaft nuts, 220101Z Feb 86.

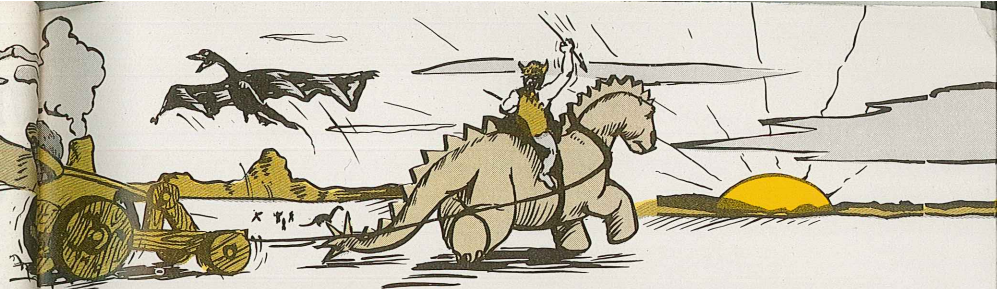
UH-60A-86-03, SOF, Technical, Re-

vision to tail rotor drive shaft nuts, 231740Z Feb 86.

AH-64-86-04, SOF, Technical, Un-grounding of AH-64A aircraft, 151600Z Feb 86.

OV-1-86-01, SOF, Operational, Restricted flight maneuvers, 080200Z Feb 86.

MIM-UH-1-ME-86-01, UH-1 steel tail rotor grips, 061730Z Feb 86.



Keep Cool

Let Connie remind you to keep your small Mil Std engines cool.

Order the decals from:

US Army Troop

Support Command

ATTN: AMSTR-MCFG

4300 Goodfellow Blvd.

St. Louis, MO 63120-1798



DO NOT INSTALL OR OPERATE IN LOCATION WHERE FREE FLOW OF AIR TO ENGINE IS OBSTRUCTED. DO NOT REMOVE ENGINE SHROUD WHILE OPERATING.

TPU Electric Pump Update

Hang loose if you've ordered or are about to order the pump kit (NSN 4930-01-187-1592) or the electric pumping assembly (NSN 4320-01-047-1927) listed on Page 48 of PS 397. TROSCOM says neither item is available for issue yet. For the time being, keep your gasoline-engine-driven (GED) pumping assembly on your Tank and Pump Unit pumping.

Supersession Superseded

The supersession notice on Page i of the new TM 11-5821-318-12 (Jan 86) is wrong. The new pub supersedes the Jan 81 version of this same TM instead of TM 11-5855-249-23 (Feb 80), which is current.

No MLRS Scramble


We got it wrong on Page 12 of PS 399 when we said that you'll scramble the memory of your MLRS's computer if you start the engine with the LAUNCHER INTERCONNECT switch ON. The computer's memory will not be harmed. But if you start the engine with the LAUNCHER INTERCONNECT switch ON, you may have to repeat the start-up procedures.

Armor Vest String

Get a yard of elastic cord with NSN 8305-01-068-0348 to repair side pull strings on the armor vest, NSN 8470-00-122-1299 through 1302.

Would You Stake Your Life ^{right now} on

the Condition of Your Equipment?



***If you cannot
eject the cartridge
when your M60's hot
and stops firing. . .***

- **Keep the cover down!**
- **Point the gun downrange!**
- **Clear out of the area!**
- **Keep cover closed for
at least 15 minutes!**