

Issue 553

TB 43-PS-553

PS

December
1998

THE PREVENTIVE MAINTENANCE MONTHLY

DADDY, MASTER
SERGEANT HALF-MAST
SAYS THAT EVERY TIME PM
IS DONE, EQUIPMENT AND
LIVES ARE SAVED.

THAT'S
RIGHT, HONEY.
THAT'S RIGHT! PM
MAKES FOR A
WONDERFUL
LIFE!

See
Page
27

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Public Release;
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To Protect and Serve

What is your equipment's worst enemy?

Good guess.

But we're betting on dirt.

Dirt kills equipment. It gets inside, on and around everything and goes about its murderous business. The amount of dirt you can hold in the palm of your hand can bring a truck to a halt, stop a tank in its tracks and silence a radio signal.

What is your equipment's best friend?

That's right. Filters.

The filter is the cop-on-the-beat that protects you from dirt.

Air filters remove dirt from the air that cools things like engines and electronic equipment.

Fuel filters keep dirt, water and other glop out of delicate engine parts.

Oil filters trap dirt that gets in engine oils and hydraulic fluids.

Who is your filter's best friend?

You are.

A filter can't work alone. It needs a partner. That's you. Clean them or change them just like your TM says. Know what makes up **un-usual** operating conditions. It could be something as simple as operating in an area with a lot of loose dirt. It means your filters need more attention.

Filters serve you well by protecting your equipment. Make sure you do your part, so they can do theirs.





THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-553, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user. Masculine pronouns may refer to both genders.

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You are invited to send PS your ideas for improving maintenance procedures, questions on maintenance and supply problems, and questions or comments on material published in PS. Just write to:

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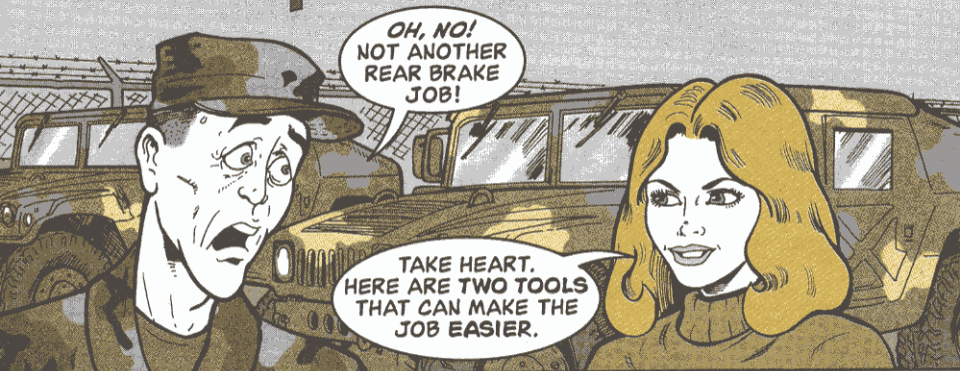
JOEL B. HUDSON

Administrative Assistant to the Secretary of the Army
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Caliper Piston Tool Plans

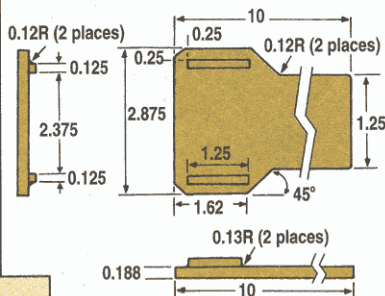


Those of you HMMWV mechanics who get frustrated by rear brake caliper pistons that must be rotated as they're resealed during a brake pad replacement, take heart.

Either of two fabricated tools will allow you to turn the piston while pressure is applied to reseal it.

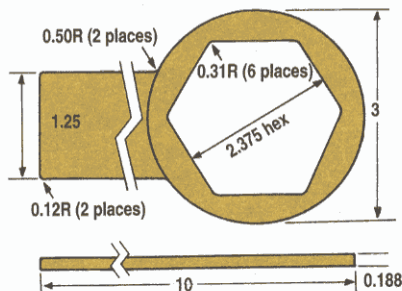
One tool, a box wrench, can be made at unit level; the other, an open-end wrench, must be made at DS.

Tool made at DS level



All dimensions in inches

Tool made at unit level



Once you have the caliper secured so it won't fall, use either wrench to rotate the piston clockwise while applying force on the piston until it is seated in the caliper bore.

Plans for the tools are found on Pages 3-35 through 3-38 of TB 43-0001-39-6 (Sep 95). See your local TACOM logistics assistance representative for a copy of this EIR Digest.

Get Belt Tension Just Right

There's no room for guesswork, mechanics, when you adjust belt tension on HMMWV alternators.

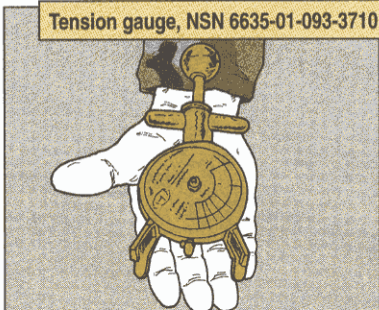
If you guess too loose, the belts vibrate and loosen the bolts holding the alternator mounting and support brackets.

If you guess too tight, that puts pressure on bolts and alternator and power steering shafts and breaks them off.

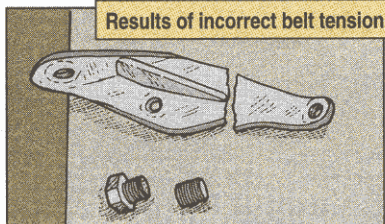
Once a bolt is loose or broken, the drive belts pull unevenly and twist other bolts and brackets. The brackets crack and bolts snap off in the engine.

To get the tension just right, use tension gauge, NSN 6635-01-093-3710. It's Item 1, Fig 430, in the special tools list of TM 9-2320-280-24P-2.

Tension gauge, NSN 6635-01-093-3710

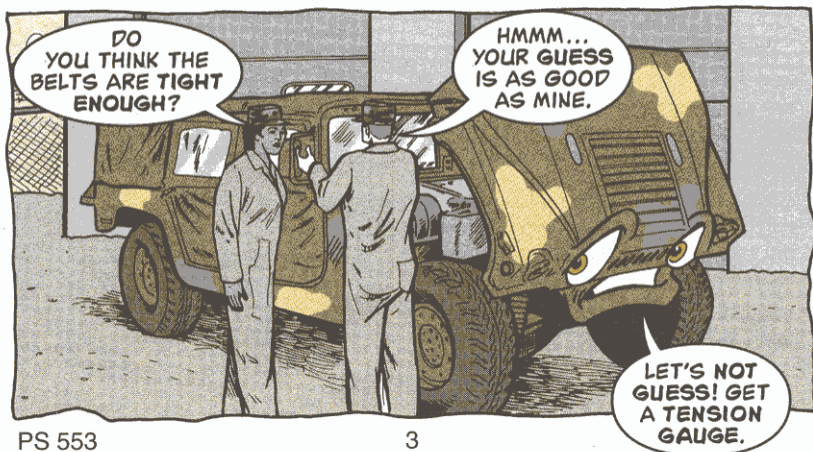


Results of incorrect belt tension

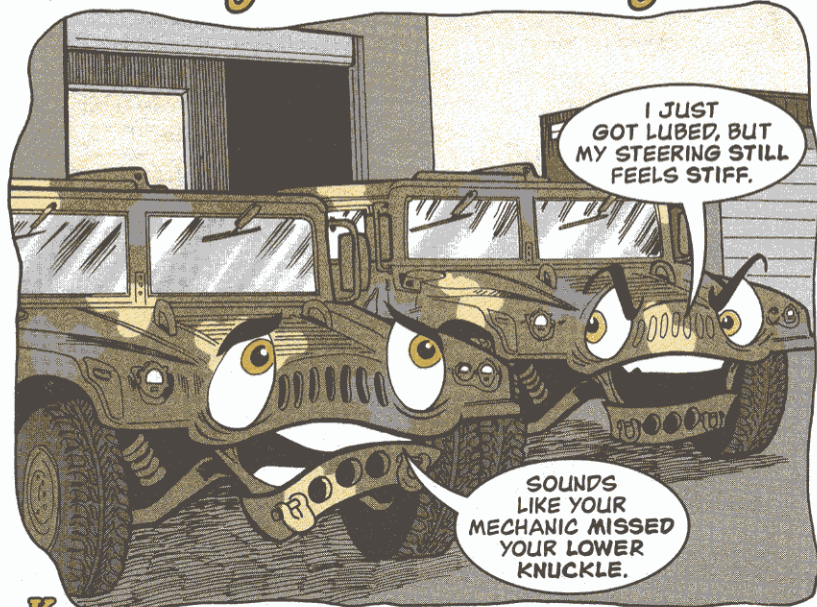


New and used belts require different tensions. Follow—don't guess—the belt tension chart in Table 3-2 on Page 3-141 of the -20-2 TM.

HMMWVs with serpentine belts do not require manual tension adjustments. They have an automatic belt tensioner.



Go Straight with Steering Lube

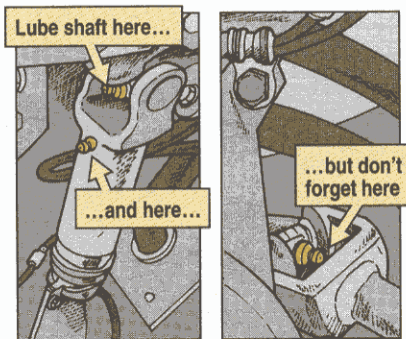


Kep the HMMWV steering shaft greased right by paying attention to both the lube order in TM 9-2320-280-10 **and** to abnormal operating conditions.

Following the lube order is important because there's at least one fitting that often gets overlooked.

In normal operations, you're supposed to hit all three grease fittings on the shaft every 3,000 miles or semi-annually. The one often overlooked is on the lower knuckle, which is blocked from above by the alternator. Get under the truck and have someone turn the steering wheel until you can get a good shot at the fitting.

When driving isn't normal—high or low temperatures, high speeds or long distances—more frequent lubing is needed. To save the U-joints, grease the fittings every 1,000 miles.



Shifting That Balky Transfer

If your HMMWV's transfer grinds when you try to shift it with the engine running, this information is for you.

For Drivers

- When a transfer range change is necessary during operation or while the engine is running, stop the truck and shift the transmission to neutral.

Shift the transfer shifter forcefully through neutral to the desired range. Some gear clash may occur and is normal, but you should be able to make the shift easily.

- If you can't, turn the engine off and then shift the transfer. Restart the engine and continue the mission.

- When your mission is complete, let your mechanic know that you had to stop the engine to shift the transfer.

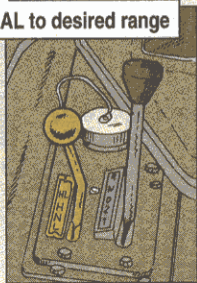
For Mechanics

When transfer shifting problems are reported, check the engine idle rpm before troubleshooting.

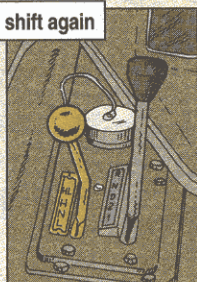
The amount of gear clash can be related to engine speed and to the length of time the transfer is left in neutral with the engine running.

Engine idling adjustment procedures are on Page 3-83 of TM 9-2320-280-20-2. Once the idle is adjusted, shift the transfer to see if it made any difference. If not, troubleshoot the transfer.

With engine running,
shift through NEUTRAL to desired range

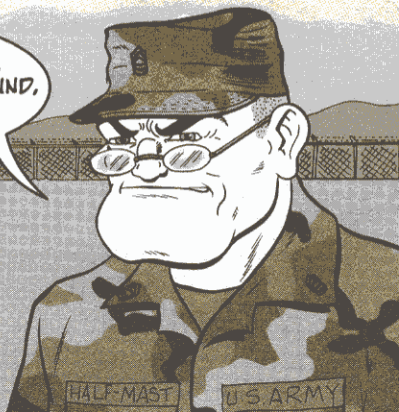


No transfer shift?
Turn engine off, then shift again



G-NASH

IF, AFTER
TROUBLESHOOTING,
NO PROBLEMS ARE FOUND,
RETURN THE TRUCK
TO SERVICE.



HOW TO FIX A

FLAT RUNFLAT

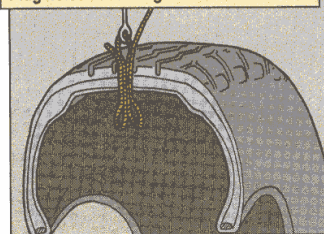


Just because there's a small hole in a HMMWV runflat tire is no excuse to turn it in, drivers. Plug and patch the hole and put the tire back to work.

Plugging

In the field, plug holes up to 1/4 inch in diameter like you would a hole in any other tire. Follow the general plugging and patching procedures in Paragraphs 2-22 and 2-23 of TM 9-2610-200-14, Care, Maintenance, Repair and

Plug holes according to TM 9-2610-200-14



Inspection of Pneumatic Tires and Inner Tubes.

If the hole is larger than 1/4 inch, or if the sidewall is damaged, turn in the tire.

To plug holes, you'll be using string repair kit, NSN 2640-00-922-6921, or plug repair kit, NSN 2640-00-404-0754. These are found in the No. 1 Common Shop sets. Remember, these field fixes are only temporary. Once the vehicle's back in the shop, your mechanics will break down the plugged tire and reinforce the plug with patch, NSN 2640-01-018-1955.

Patching

Patch pinholes with one of the small patches in repair kit, NSN 2640-00-052-6724.

The key to patching a runflat tire is a clean surface. Since runflats work because of grease packs and adhesives,

clean off the area to be patched with cleaner, NSN 2640-00-138-8324.

Clean area to be patched



Buff the puncture area on the tire's inner liner until it's smooth. Tires have ridges inside the casing which must be buffed down if the hole is on or near

Use liquid buffer, NSN 2640-00-138-8324, to smooth surface



one. Buff a ridge down to the surface area so a patch will hold.

Clean the area again with cleaner. Wipe dry and then apply vulcanizing fluid and the patch.

If you need replacement items for the string repair kit, here are the NSNs. Note that if you need to replace much of the kit's contents, the kit is cheaper than its parts:

Item	NSN
Repair material, string	2640-00-922-6915
Metal box	2640-00-922-6916
Bonding compound	2640-00-922-6917
Applicator	2640-00-922-6918
Leak detector	2640-00-922-6919
Injector needle	2640-00-922-6920
Injector tool	2640-00-922-6922
Knife	5110-00-595-8402
Hand reamer	5110-01-101-8355

M998A2-series HMMWV . . .

Brake Hose Replacements

The two flexible brake hoses shown in TM 9-2320-280-24P-1 are not the right ones to use on A2-series HMMWVs.

Until the TM is updated, note these four different NSNs as replacements for Item 14, Fig 134, and Item 21, Fig 135:

Fig 134 (front brakes)

NSN 4720-01-443-3033 (left-hand)
NSN 4720-01-442-9875 (right-hand)

Fig 135 (rear brakes)

NSN 4720-01-443-3481 (left-hand)
NSN 4720-01-443-8487 (right-hand)

FMTV...

Seat Handle Pushes "Out"

Drivers, to adjust your seat in an FMTV, you've got only one handle to use. And when it breaks off, there will be no more adjusting until it's replaced.

The handle breaks off because some of you try to pull **up** on it instead of pushing **out** on it until the seat's where you want it.

Pulling the handle up just bends and breaks it.



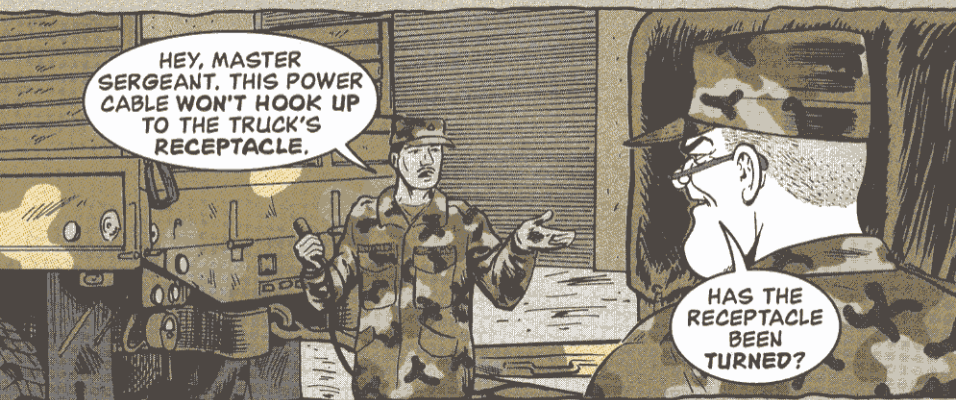
Tire Chains for FMTV

Use NSN 2540-00-933-9033 to get one set of tire chains for your FMTV. The NSN for the chains, shown in the additional authorization lists, is wrong. Note this new NSN on Page C-2 of both TM 9-2320-366-10 (5-ton) and TM 9-2320-365-10 (2 1/2-ton).

FMTV Alternator Bracket

To get a bracket for the 100-amp alternator used on FMTVs, use NSN 5340-01-444-2639. NSN 2920-01-362-5734, shown in the parts TMs as Item 52 in Fig 46, gets the 200-amp alternator bracket, which won't work on the 100-amp alternator.

ELECTRICAL RECEPTACLE FIX

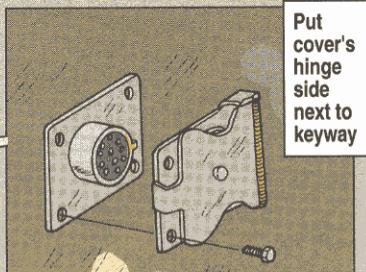
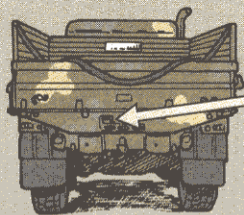


If the electrical receptacle on your M35A3 2 1/2-ton truck is not oriented correctly, you won't be able to install a trailer power cable for towing.

Take a look at your truck's receptacle now. If the keyway for the cable is on the right side of the receptacle, next to the cover hinge, it's good to go. That way, the receptacle cover opens enough to let you hook up the cable.

If your truck's receptacle is oriented any other way, the cable connector won't fit.

You can fix that problem by removing the four mounting

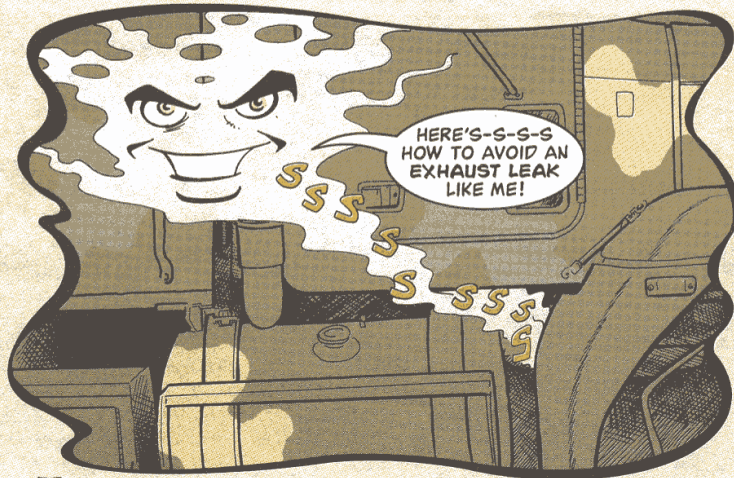


screws, removing the hinged cover, and turning the receptacle so the keyway is to the right. Replace the cover so the hinged side is next to the keyway, replace the screws and you're good to go.

M915 Circuit Breaker

NSN 5925-01-190-4632 gets the circuit breaker shown as Item 7 in Fig 39 of TM 9-2320-273-24P. The parts info in the TM is no good.

EXHAUST LEAKS CAN BE STOPPED



Your M915-series and M915A1 heavy haulers aren't doomed to leaking exhaust flex pipes. It's just tough to do the right thing by them.

Here are your problems:

Problem 1: The flex pipes don't fit over or inside the exhaust pipes. They butt up against them, held in place by couplers.

Once the flex pipe and exhaust pipe separate, you get leaks at the couplers. But tightening the coupler won't help. All that does is make the leak worse.

Solution: Make sure the exhaust pipe and flex pipe are in good condition and fit against each other evenly. If they don't, replace them. Always use a new coupler when you put things back together.



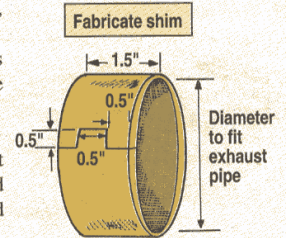
Couplers connect flex pipe to exhaust pipe

Problem 2: You may notice when you check out the pipes that the diameter of the flex pipe looks larger than the diameter of the exhaust pipe. This screws up the fit between the flex pipe and the exhaust pipe, and the coupler won't seal the joint.

Solution: If you have a flex pipe in use that's too big, you can fabricate a metal shim to use until the right size pipe comes in.

Make the shim from 1/16-in thick metal.

Wrap the shim around the end of the exhaust pipe and butt the flex pipe up to the shim and secure the pipes with new couplers. That should stop the leak.



M939A1/A2-Series Trucks, HEMTT...

Going My Way?



Mechanics, tires used on HEMTTs and M939A1/A2-series 5-ton trucks are non-directional.

It may look like the tread needs to point one way or the other to get the best traction and mileage—not so!

Tests show the tires last just as long and give equal mileage and performance any way you put 'em on the wheels.

The HEMTT operator's manual already notes that tires are non-directional (Page 3-49, TM 9-2320-279-10-1). A similar note will be added to the 5-tonner's TMs and the HEMTT's -20 TM.

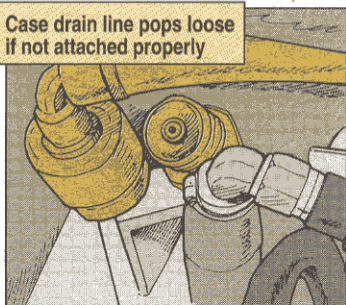
So, save all that time and effort (and damage to the tires that might be done when changing them). Leave the tires alone. They're going your way.

Quick Disconnect Not So Quick

Mechanics, reinstalling the tank's powerpack means reconnecting the main hydraulic pump. An easy job, right? After all, the supply, return and case drain lines all have quick-disconnects that make the job simple and easy.

W-e-e-ll, it's a bit more complicated than that.

Case drain line pops loose if not attached properly



The case drain line sits back in a corner, so its quick-disconnect is hard to attach. Yet a loose connection will cause an increase in hydraulic pressure and temperature that could ruin the hydraulic pump.

So make sure the quick-disconnect is firmly connected. Here's how:

After you attach the case drain line, grab the elbow portion and give it a good upward pull. If the quick-disconnect is not attached properly, it'll pop free when you

pull it up. If it pops free, try again. Keep repeating the procedure until the quick-disconnect is properly connected.

WHAT'S WRONG?

URP!
MY CASE DRAIN LINE CAME LOOSE AND MY HYDRAULIC PUMP IS ALL BACKED UP!

The Real Seal Deal



Mechanics, before you change the upper spindle seal on a tank's idler arm, there's something you should know.

The parts pubs tell you to use NSN 5330-00-978-7353. But that gets a plastic-encased seal that fits loosely in the arm retainer plate.

The next time the idler arm is lubed, grease pushes the seal out of the retainer. With nothing to hold the grease in, you'll soon be replacing a burned out idler arm.

The right seal to use is NSN 5330-01-407-9045. It is metal-encased, so you'll have no trouble distinguishing it from the bad seal.

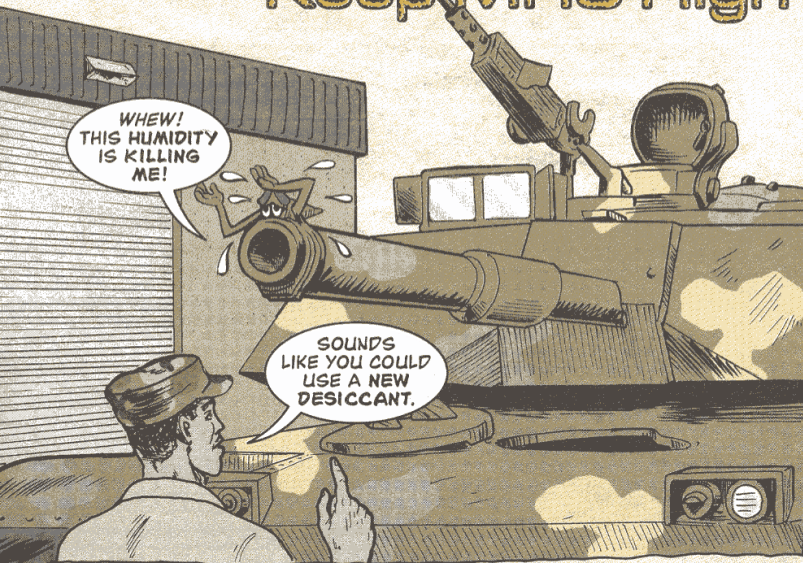
Until the parts TMs are updated, pencil in the correct NSN. The seal is Item 24 in Fig 230 of the -255-24P-1 TM, Item 24 in Fig 226 of the -264-24P-1 TM, and Item 24 in Fig 215 of the -288-24P-1 TM.

The bad seal is also included in the tank's steering parts kit, NSN 2530-01-270-7500. If you have any of these kits on hand, remove the bad seal and order the right one.

Correct seal is metal-encased, not plastic



Keep MRS High and Dry



Mechanics, the desiccant inside the tank's muzzle reference sensor (MRS) is great at soaking up moisture, but it's only good for about six months.

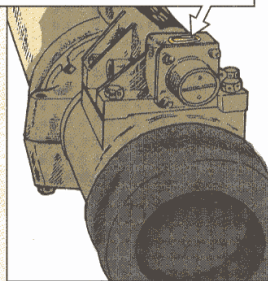
That's why you should always change the desiccant during semiannual maintenance.

Before you start, take a look at the MRS window. If you see any moisture, notify your support.

Next, check the MRS for proper illumination. Cover the MRS's window. Look into the objective end for illumination from the tritium light source. If there is no glow, it could mean the tritium cell is leaking inside the MRS. Stop and call in your radiation protection officer (RPO) immediately.

Finally, always wear the latex gloves that come with the desiccant kit, NSN 1240-01-

Check MRS window for moisture

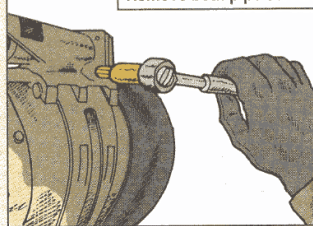


424-4628, to protect yourself against potential tritium leaks.

If there's no excess moisture and the MRS is illuminated, you're ready to replace the desiccant. Here's how:

1. Use a 3/8-in socket-head screw key to remove both pipe screws on the barrel of the MRS.

Remove both pipe screws



2. Remove the old O-rings and put them in a plastic bag.

3. Unwrap a new desiccant, NSN 6850-01-081-4193, and check its color.

4. Push the old desiccant out of the barrel hole by sliding in the new desiccant. Put the old desiccant in the plastic bag with the O-rings.

5. Install two new O-rings, NSN 5331-00-724-7902, from the desiccant kit. Install the screws and torque 'em between 240-250 lb-in.

6. Put the latex gloves in the plastic bag and seal it. Place the bundle into a second plastic bag and seal it.

7. Turn the bag in to your RPO for disposal as radioactive waste.

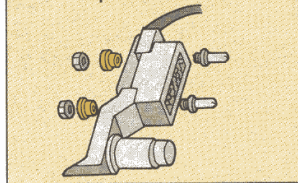
Food for Feeder Thought

Dear Editor,

Broken 14-pin connectors put down lots of feeders on the Bradley's M242 automatic gun. But a little PM keeps the feeder hungry for more ammo.

So, check the 14-pin connector bracket for missing spacers. Without spacers, the connector can be in the wrong position when the handle is pushed down to lock on the feeder. Then the connector gets crushed.

Check for spacers on bracket

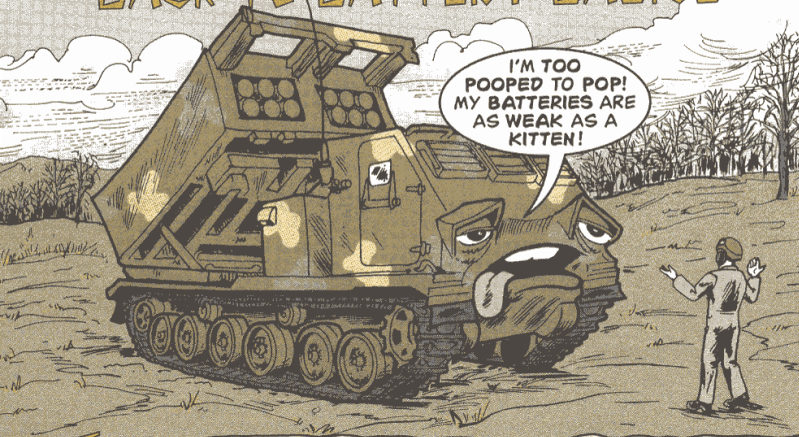


If the spacers are missing, your support needs to order and install two guide pins, NSN 5315-01-370-7212, two nuts, NSN 5310-00-811-6419, and two spacers, NSN 5365-01-089-7735.

CW2 Robert M. Owens
B Co, 115th MSB
Ft Hood, TX



BACK TO BATTERY BASICS



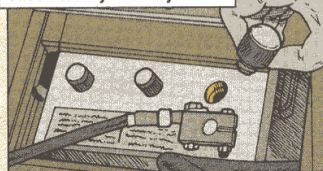
The MLRS launcher/loader module (LLM) demands huge jolts of juice. If even one of its 10 batteries is weak, you get bad prompts or the fire control panel shuts down. Batteries in worse shape can leave the MLRS suddenly dead in the field.

Get back to battery basics to keep batteries juiced.

In the Motor Pool

Crewmen, check the electrolyte level in each battery. It should cover at least

Check battery electrolyte level



the plates. If it's low, add distilled water, NSN 6810-00-107-1510, not tap water. Tap water actually weakens the electrolyte.

Just because the level is right, though, doesn't guarantee the batteries are OK.

Get your repairmen to test the batteries for a specific gravity of 1.275 to 1.285. Any battery that registers below 1.25 should be replaced. Charge batteries registering between 1.25 and 1.275. Your repairman can get a battery hydrometer with NSN 6630-00-171-

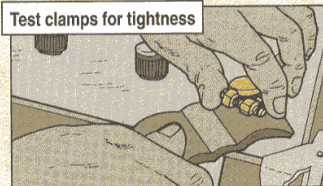


Specific gravity should be 1.28

4467 or use the battery tester, NSN 6630-00-105-1418, from the Common shop sets.

Crew, feel the terminal connections for tightness. A loose clamp can cause faults. Get clamps tightened if necessary.

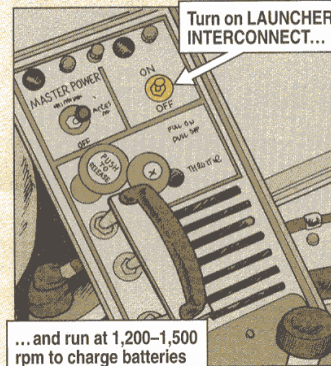
Test clamps for tightness



Check that the cables from the electronics box to the batteries are tight. If a cable works loose, it can short out the box.

PMCS Power

Before doing system PMCS, turn on the system power and make sure the BATT-GEN gauge registers in the upper yellow. If it doesn't, run the engine at high idle—1,200 to 1,500 rpm—with the LAUNCHER INTERCONNECT



Turn on LAUNCHER INTERCONNECT...

...and run at 1,200–1,500 rpm to charge batteries

switch on until the gauge registers in the green—usually 15 to 20 minutes.

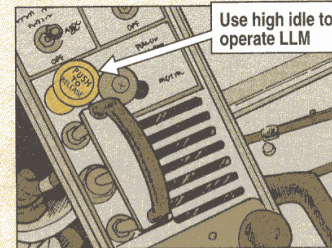
Unless you run the engine at high idle, you're wasting your time. Low idle actually drains batteries. The batteries charge faster if you turn off **all** electrical systems.

After the batteries are recharged, turn off the engine and do the power check procedures on Pages 3-3 and 3-4 in TM 9-1425-646-10-1. Tell your repairman if you're not getting good voltage readings on both the vehicle and system batteries. You may have generator problems.

When PMCS is done, turn on the LAUNCHER INTERCONNECT again to see if the BATT-GEN gauge is still in the upper yellow. If it's not, charge the batteries again.

In the Field

Whenever possible, operate the LLM with the engine at high idle to keep the batteries charged.



Use high idle to operate LLM

If you must operate on battery power, recharge them after every LLM cycle for at least 15 minutes at high idle until the BATT-GEN gauge is in the upper yellow. Remember, you can operate the LLM on battery power alone for 20 minutes max.

GOT A SCREW LOOSE?

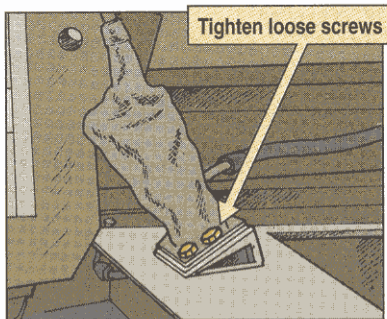


Crewmen, vibration loosens the screws that hold the parking brake control lever in place. You get more and more play at the lever base, which leads to metal fatigue and a broken base.

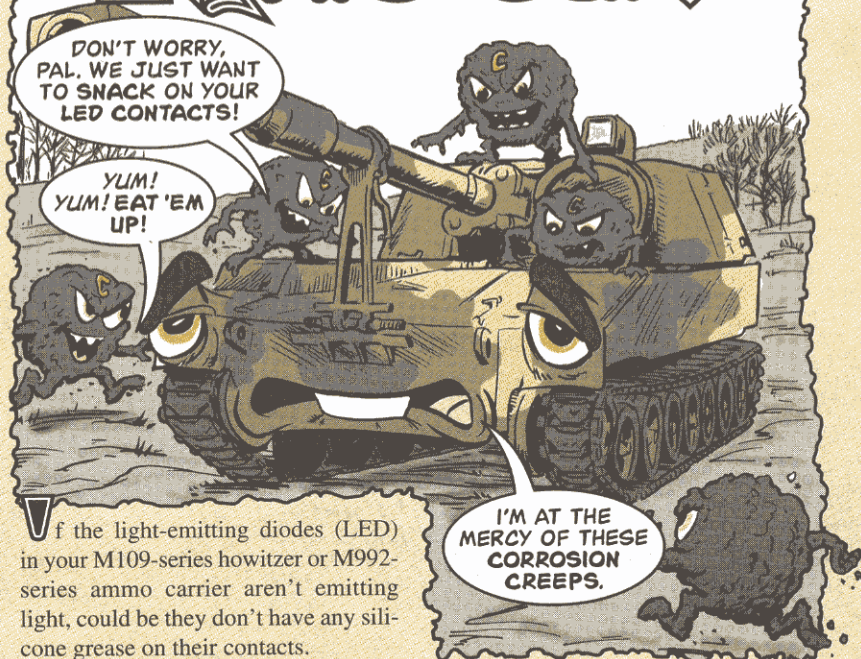
Loose screws also keep the brake mechanism from holding the brakes as tightly as needed. You wouldn't want to be in the way if your vehicle starts rolling.

So, every time you've got the cab up, eyeball the brake lever screws. If they're loose, tighten 'em.

One more thing. Tight screws won't do any good if you disengage the brake while the cab is up. The brake lever gets crushed when the cab is lowered.



Lights Out?

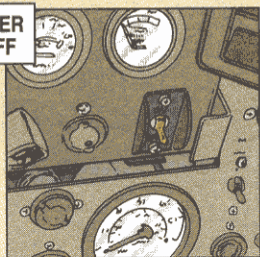


If the light-emitting diodes (LED) in your M109-series howitzer or M992-series ammo carrier aren't emitting light, could be they don't have any silicone grease on their contacts.

The silicone keeps moisture away from the contacts. Without it, corrosion forms and it's lights out!

If an LED fails to light, throw it away only if it is damaged or badly corroded. Otherwise, try to fix it like this:

1. Flip MASTER SWITCH to OFF



2. Remove the LED.
3. Clean the contact on the LED and in the socket with isopropyl alcohol, NSN 6810-00-753-4993, and a clean rag.
4. Apply a light coat of silicone compound, NSN 6850-00-177-5094, to the socket and LED contacts.
5. Reinstall the LED.

Put light coat of silicone on contact



If it still doesn't work, get your mechanic to troubleshoot the system.

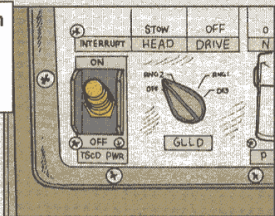
KEEP HYDRAULIC FLUID ON THE LEVEL

Operators, getting the right level of hydraulic fluid in your FISTV is critical. Too much fluid overpressurizes the system and blows lines. Too little fluid won't lube the hydraulic motor and leads to burnout.

Get the fluid level just right like this:

1. Check the level on the hydraulic reservoir. If it's below the ADD mark, add fluid until the level is between the ADD and FULL marks.

2. Turn TSCD PWR switch to ON

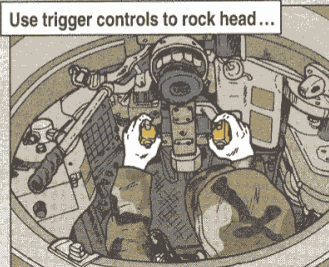


3. Raise the TSCD and use the trigger control handles to gently rock the head

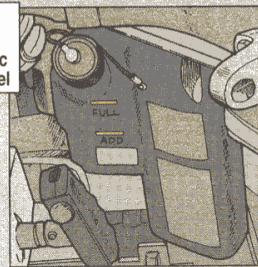
back and forth a few times. That bleeds the fluid down and gives a true measurement in the reservoir.

4. Add or drain hydraulic fluid according to the new reading in the hydraulic reservoir.

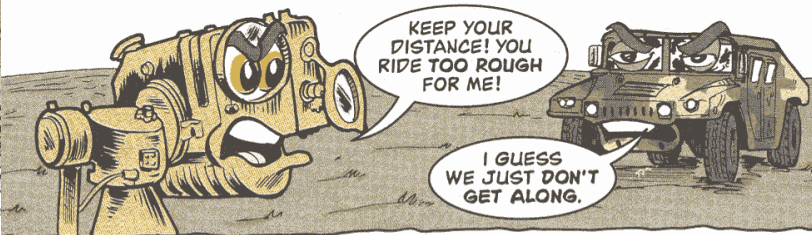
Use trigger controls to rock head ...



... then recheck hydraulic fluid level



HMMWV and G/VLLD Don't Mix



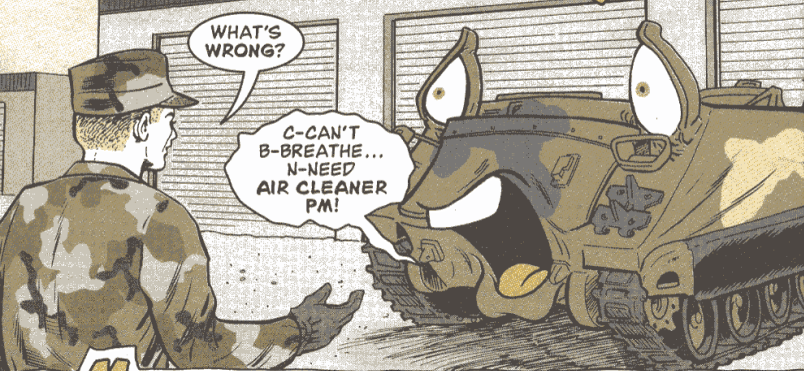
Some units are mounting their G/VLLDs to HMMWVs with the old M113A1 APC adapter kit. That mounting idea amounts to big problems for the G/VLLD.

The adapter kit provides no shock protection for the G/VLLD. Result: The G/VLLD mounting bracket gets broken by the first hard bump. Then the G/VLLD can't be used.

If that's not enough reason to keep the G/VLLD off a HMMWV, the combined force of wind and engine vibration ruins G/VLLD accuracy.

The Army is working on a way to safely mount the G/VLLD on the HMMWV. In the meantime, use the G/VLLD like it's supposed to be used: on the FISTV or on the ground.

Breathe Easy with



Mechanics, keeping the M113A3 FOV gulping clean, fresh air is your job. Without good air cleaner PM, that vehicle will be left gasping and choking.

Gaskets

The gaskets on the air cleaner door and element are the first line of defense. If the gaskets are torn, loose or missing, dirty air gets to the engine and damages it.

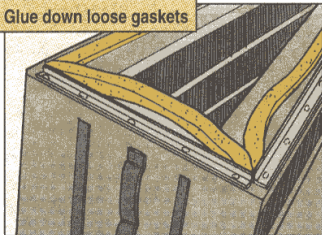
First, eyeball the air cleaner door gasket for cuts or tears. If you see any, replace the gasket, NSN 5330-01-205-6016, like this:

1. Remove the old gasket.
2. Clean the door with dry cleaning solvent to remove all the old adhesive.
3. Apply new adhesive, NSN 8040-00-664-4318, to the gasket. Keep the coating light. Excess adhesive oozes

out from around the gasket and can stick to the air cleaner element.

4. Let the adhesive cure until it is tacky. Then, place the gasket on the air cleaner door.
5. Next, check out the gaskets on the side of the air cleaner element. If they're loose, use the adhesive to glue them back in place.

Glue down loose gaskets



If the gaskets are damaged or missing, replace the element, NSN 2940-01-205-6038.

Air Cleaner PM

Cleaning

If the air cleaner element is just dusty, shake it gently, then tap the sides with

Gently tap element to loosen dirt



your hands to remove sand and dirt. Never hit the element against a hard surface. That dents the element and lets even more dirt through to the engine.

Next, use an air gun to blow dirt out of the element. Never use more than 30 psi and always blow from the inside to the outside of the element. When you use the air gun, wear goggles and gloves for protection.

For more stubborn problems like heavy dirt, carbon or oil deposits, wash

Wash element in detergent solution



the filter element and use it again. Here's how:

1. Mix one cup of dry detergent, NSN 7930-00-531-9715, with five gallons of water in a container large enough to completely submerge the filter element. Hot water works best, but it should be under 190°F. Boiling is 212°F.

If the element is extremely dirty, increase the concentration of detergent slightly, but no more than two cups of detergent per five gallons of water.

2. Immerse the element completely in the washing solution. Holding the element handle, swish the element in a circular motion for about two minutes. Wear gloves to protect your hands from the hot water.

3. Let the element soak in the solution for at least 15 minutes. Agitate it again for another three to five minutes.

4. Remove the element and let the detergent solution drain as much as possible.

5. Rinse the element with cold water from a hose. Rinse from the inside out with a maximum of 45 psi until the water runs clear and all soap residue is removed.

6. Air dry the element thoroughly.

7. Wipe out the inside of the bell housing and air cleaner housing before reinstalling the element.

If the filter element is torn, worn or too dirty to clean, replace it.

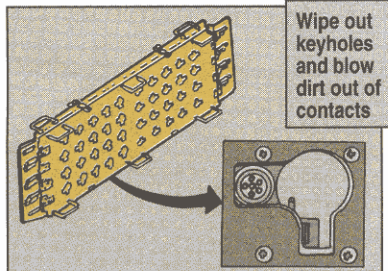
LIVE VOLCANOES

Dear Editor,

We've come up with a few ways units can keep their Volcanoes operating.

When you return from the field, remove all the canisters. Perform a built-in test (BIT) to spot any faults BEFORE the Volcano goes to storage. Report problems.

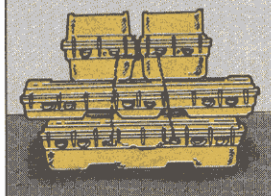
Do the AFTER PMCS IAW TM 9-1095-208-10-1. If everything checks out, wipe out all the keyholes in the racks with a clean lint-free cloth. If the electrical connectors in the keyholes are dirty, clean them with compressed air.



If everything's OK and the Volcano won't be going to the field

in the near future, disassemble it and store the components in their containers to protect them from the elements and rough travel.

Store in containers



If you must leave the Volcano mounted (but for no more than a couple of days), cover the racks with their protective covers.

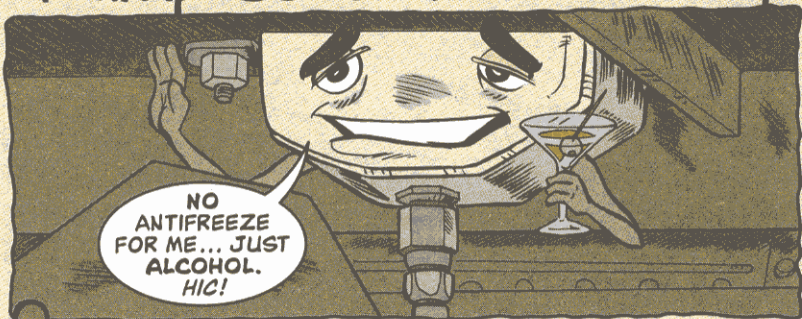


Use rack covers

1LT Paul J. Kremer
C Co, 168th Engr Bn
Ft Lewis, WA



Pump Uses Alcohol Only



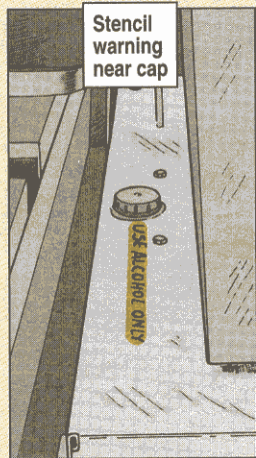
Operators, there are still some SEEs out there with ANTIFREEZE stenciled on the side of the reservoir tank for the compressed air system's antifreeze unit. That's contrary to what TM 5-2420-224-10 says.

Ethylene glycol monomethyl ether—antifreeze—should **never** be used in the reservoir tank. It plugs up hoses and corrodes lines.

Paint over any antifreeze stencils on the SEE's reservoir. If the reservoir is already filled with antifreeze, drain it and refill it with alcohol. No flushing is necessary.

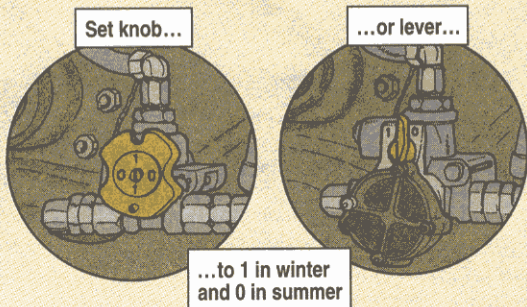
To prevent future problems, stencil **USE ALCOHOL ONLY** near the filler cap.

Remember that the pump has two settings—one for winter and one for summer.

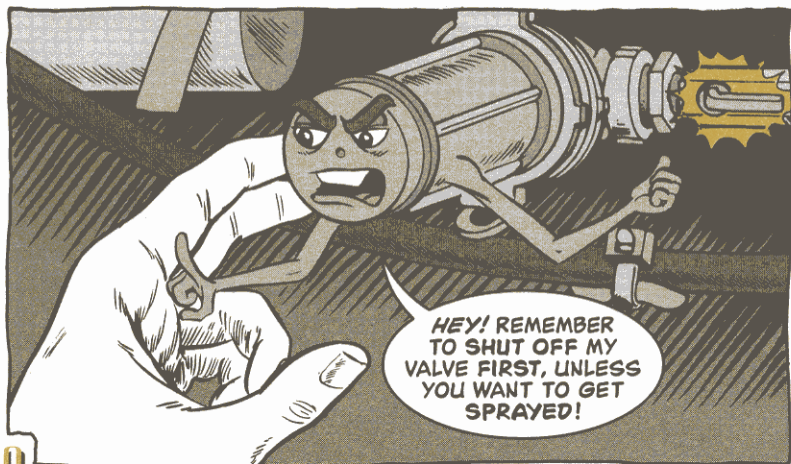


The setting can be a little confusing, so here's the straight scoop: Turn the knob or handle to 1 in winter and to 0 in summer.

Keep the reservoir filled in the summer, too. That keeps dirt and dust out.



KEEP SEDIMENT FILTERS CLEAN



Operators, your CB-534B vibratory roller can't do a good compacting job with asphalt clinging to its drum.

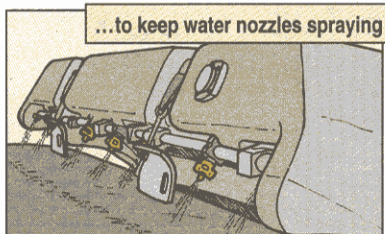
But asphalt buildup is just what happens if you don't clean the sediment filters on both water tanks. The filters catch debris that can clog the spray nozzles.

Clogged spray nozzles stop the water spray that stops asphalt build-up on the drum.

So, remove the sediment filters and clean the strainer element weekly. Make sure the shut-off valve is closed before removing the filter's housing. If you forget, you'll be the one getting sprayed.



Clean sediment filter weekly...

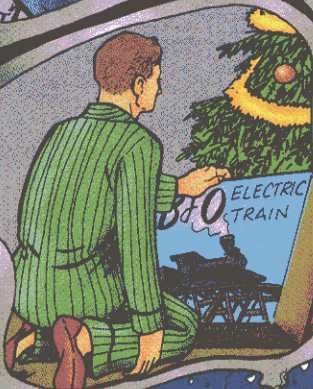
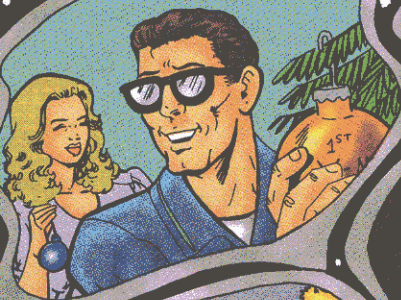
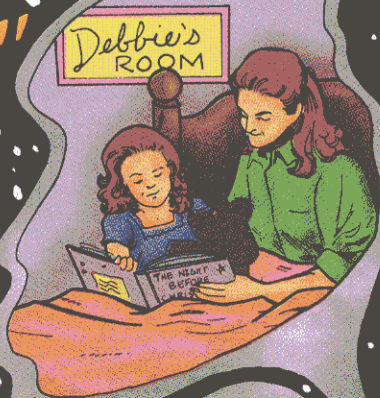


...to keep water nozzles spraying

Pull out the strainer element and flush it with clean water. Clean out the filter housing, too. Once the strainer's back in the filter housing and the filter is back in place, open the shut-off valve.

Do the same thing for the roller's other water tank.

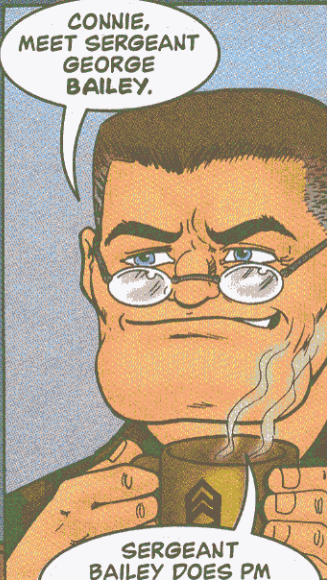
"It's a Wonderful PM Life"





YOU SENT FOR ME?

A SOLDIER AT FORT BEDFORD FALLS NEEDS YOUR HELP, CONNIE.



CONNIE, MEET SERGEANT GEORGE BAILEY.

SERGEANT BAILEY DOES PM FAITHFULLY, BUT HE'S DISCOURAGED.



EVERY NIGHT I'M HERE LATE PULLING PM. WHO CARES? WHAT GOOD DOES IT DO? WHAT DIFFERENCE DOES IT MAKE? WHEN I THINK OF ALL THE TIME I'VE WASTED, I WISH I HAD NEVER DONE ANY PM!

SINCE PM PREVENTS PROBLEMS, IT'S HARD FOR HIM TO SEE THE RESULTS OF HIS LABOR.

SO HE NEEDS TO KNOW THAT HIS PM IS REWARDED IN THE BEST POSSIBLE WAY- LIVES AND EQUIPMENT SAVED. AND I THINK I KNOW JUST HOW TO DO THAT.

CONNIE RODD!
WHAT ARE YOU DOING HERE?

I'M HERE TO GRANT YOUR WISH. YOU NEVER DID ANY PM.

YOU HEARD ME. YOU'RE GOING TO SEE WHAT LIFE WOULD BE LIKE IF YOU HADN'T DONE ANY PM. LET'S SEE IF IT MADE ANY DIFFERENCE.

WHAT?

JUST TAKE MY HAND.

A TWINKLING LATER...

I KNEW THE DRIVER. SHE HAD THE SWEETEST LITTLE GIRL NAMED DEBBIE.

IT'S A REAL SHAME. IT LOOKS LIKE THE BRAKES FAILED. MY GUESS IS THE ROTOR BOLTS WERE PROBABLY LOOSE.

NO WAY!
I FOUND THOSE LOOSE BOLTS THIS MORNING AND MADE SURE THEY WERE TIGHT!

SORRY, GEORGE, YOU DIDN'T DO PM TODAY, REMEMBER? THE LOOSE BOLTS WERE NEVER FOUND—UNTIL NOW.



I STARTED IT
AND IT LUNGED FORWARD.
WITHOUT THINKING, I STARTED
IT IN DRIVE. I KNOW THAT'S WRONG,
BUT SHOULDN'T THE NEUTRAL
START SWITCH HAVE KEPT
IT FROM STARTING?

CONNIE, I
KNOW I CHECKED
THAT SWITCH! IT WASN'T
WORKING SO I GOT IT
REPLACED.

GEORGE,
NO ONE CHECKED
THAT SWITCH. IT WASN'T
REPLACED BECAUSE YOU
DID NOT DO THE PM
THAT DISCOVERED
THE PROBLEM.

I SAW
DAN AT THE
PX, BUYING THIS
FOR HIS
SON.

WHAT
HAPPENED,
CONNIE?

HIS
STEERING LINKAGE
BROKE.

GULP! WE'VE BEEN
OPERATING IN A LOT OF
MUD AND THE LINKAGE
NEEDED EXTRA LUBE, SO I
GAVE IT SOME THIS
MORNING.

NO, YOU
DIDN'T. EXTRA LUBE
MIGHT HAVE BEEN JUST WHAT
IT NEEDED, BUT IT NEVER
GOT ANY.

I HATE
TO THINK WHAT
ELSE WE'RE GOING
TO FIND.

NO WAY
ANYONE COULD
HAVE SURVIVED
THAT.

CONNIE,
THAT'S SERGEANT
WILLIAMS' HUSBAND, MARV,
AND THEIR BABY. BUT
WHERE'S STACY?


SORRY,
GEORGE, SHE'S
HERE, TOO!

OH, MY. I KNOW.
DON'T TELL ME. SOMETHING
I DID OR, I GUESS,
DIDN'T DO.


I CAN REALLY
SEE THE IMPORTANCE
OF PM! THE JOB I DO TODAY
SAVES EQUIPMENT AND LIVES
TOMORROW. NOW I KNOW
WHAT DIFFERENCE
IT MAKES!

SOMETIMES NOT
DOING PM LEADS TO DEATH
OR INJURY. SOMETIMES THE COST
IS ONLY MONEY. BUT THERE'S
ALWAYS A COST.

CONNIE!
PLEASE HELP
ME! I TAKE
BACK MY
WISH!

A woman with blonde hair, wearing a blue dress with a white collar, stands in an office. She is pointing her right hand towards a small Christmas tree on a desk. The tree is decorated with colorful ornaments and a yellow star on top. The office contains a filing cabinet, a window with blinds, and stacks of papers. A man is sitting at a desk in the foreground, looking towards the woman.

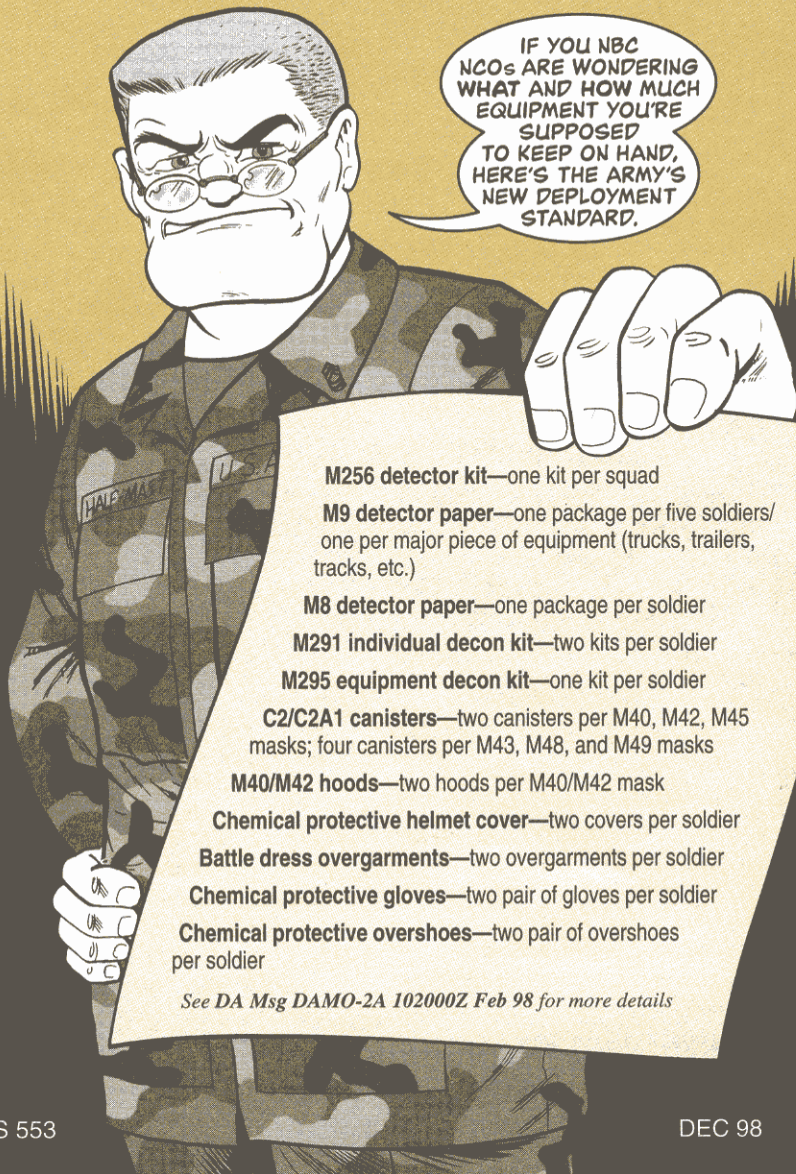
**WHEW! I'M
BACK. THANKS, CONNIE.
THE WORLD WITHOUT PM
IS A SCARY PLACE.**

A circular inset showing a close-up of the woman's face. She has blonde hair and is smiling slightly. The inset is framed with a red border.

**ONCE PM'S
DONE, IT'S VALUE
CAN NEVER BE TAKEN
AWAY. BUT WHEN IT'S NOT
DONE, IT LEAVES A
MIGHTY BIG HOLE.**

**REMEMBER,
NO PERSON IS A
FAILURE WHO
DOES PM.**

What Every NBC Room Needs



IF YOU NBC NCOs ARE WONDERING WHAT AND HOW MUCH EQUIPMENT YOU'RE SUPPOSED TO KEEP ON HAND, HERE'S THE ARMY'S NEW DEPLOYMENT STANDARD.

M256 detector kit—one kit per squad

M9 detector paper—one package per five soldiers/
one per major piece of equipment (trucks, trailers,
tracks, etc.)

M8 detector paper—one package per soldier

M291 individual decon kit—two kits per soldier

M295 equipment decon kit—one kit per soldier

C2/C2A1 canisters—two canisters per M40, M42, M45
masks; four canisters per M43, M48, and M49 masks

M40/M42 hoods—two hoods per M40/M42 mask

Chemical protective helmet cover—two covers per soldier

Battle dress overgarments—two overgarments per soldier

Chemical protective gloves—two pair of gloves per soldier

Chemical protective overshoes—two pair of overshoes
per soldier

See DA Msg DAMO-2A 102000Z Feb 98 for more details

Radiation Reminders

A RADIATION SYMBOL ON YOUR EQUIPMENT MEANS THAT IT CONTAINS RADIOACTIVE MATERIAL. ALTHOUGH IT'S USUALLY JUST A TINY BIT OF RADIOACTIVE MATERIAL, IT STILL REQUIRES CAUTION AND SPECIAL HANDLING TO KEEP YOU HEALTHY AND OUT OF TROUBLE.



Radioactive materials are covered by Nuclear Regulatory Commission (NRC) regulations. Very specific procedures must be followed for lost or stolen equipment with radioactive material or for equipment that leaks the stuff.

A good source of information is the item's TM. Look in the front of the TM for the radiation symbol.

But the expert for you will be the local radiation protection officer (RPO). Every post should have one. Make sure you know who he or she is. Check with the safety office.

Call the RPO ASAP if equipment with radioactive material goes missing or is leaking. Signs of leaks include white powder inside a M43A1 chemical detector, a fire control instrument or collimator that doesn't light up, or a broken level vial that smells like alcohol. Do not handle a leaking item with bare hands, wear rubber gloves.

Double-bag a leaking item in plastic and tag it with its name, NSN, and RADIOACTIVE: DO NOT OPEN. Call your RPO to come get the bag immediately.

Treat missing or leaking radioactive equipment as seriously as damaged or missing weapons or ammo.

RPOs offer training in safely handling radioactive material. Check it out. If you handle radioactive material or you work with equipment that contains any, you need safety training. The NRC says so.

RPOs can get information on radiological training from ACALA's Wayne Cook. Call him at (309) 782-2429, DSN 793-2429, or e-mail:

wcook@ria-emh2.army.mil

or write:

ACALA
ATTN: AMSTA-AC-NMFT
Rock Island, IL 61299

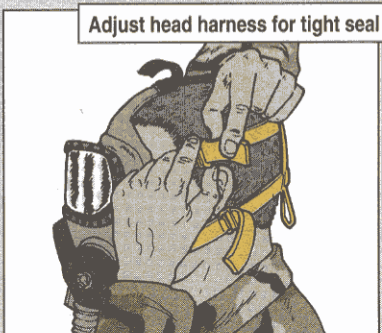
Hard-to-Fit Soldiers

If you NBC NCOs run into soldiers who are hard to fit with M40- or M42-series masks, try these solutions:

○ Use the M41 protection assessment test system (PATS), not banana oil, to test every mask. The M41 is much more sensitive and will give a truer test. Masks that pass the banana oil test may not pass the M41's. See Page 16 in the PATS's TC 3-41 for guidance on how to do the test.



○ If a SMALL mask is too large to create a good seal, readjust and tighten the headharness. Test again. Sometimes that does the trick.



○ If the mask still doesn't pass, replace the headharness with a skull-cap head harness, NSN 4240-01-390-3057. Re-test.

○ Still no luck? Order the EXTRA SMALL M17A2, NSN 4240-01-143-2017. If it doesn't pass, tell your commander in writing. The soldier may be non-deployable. Also, you can call the Soldier and Biological-Chemical Command (SBCCOM) for further assistance at DSN 584-6550, (410) 436-6550.

○ If the M40 or M42 LARGE mask is simply too small for a soldier, call SBCCOM for help.



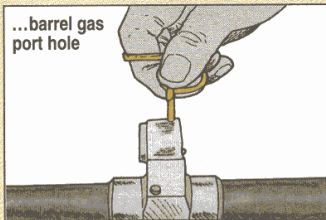
PM Relieves Gas Problems



Gunners, if the gas produced by firing your M240 machine gun can't go where it's supposed to go, rounds won't chamber and you won't fire.

Carbon causes gas problems. It builds up during firing and stops up the gas regulator and plug. If you don't attack that carbon ASAP, it becomes so hard it can snap your cleaning tools.

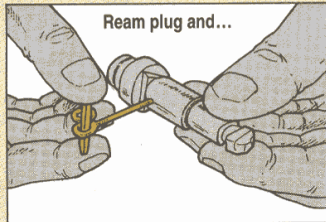
In the field, ream the plug holes and the barrel's gas port hole whenever



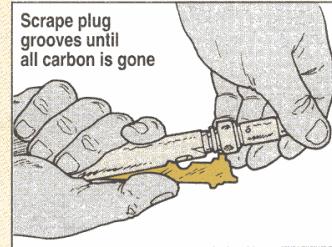
there's a break in firing. Use the small reamer on the three holes in the plug, but take it easy. If you twist the reamer hard, it can snap off. First work the reamer in and out of the plug holes. Then twist the reamer.

Use the large reamer to clear the barrel's gas port hole.

When you're done firing, give the gas system a total cleaning. Twist your

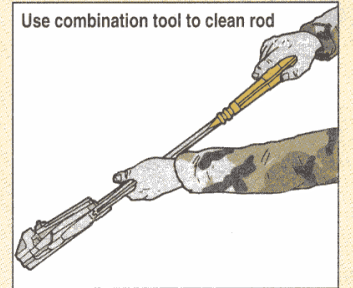


scraper in the plug until all the carbon's gone.



Use the scraper's point on the plug grooves and all over the plug.

Clean carbon out of the operating rod and gas cylinder with the combination tool.



Ream the plug and gas port hole again.

One cleaning tool not to use on the gas system is CLP. That just turns into more carbon during firing. If you can't get off all carbon yourself, tell your armorer. He can use dry cleaning solvent to remove the rest of it.

M203 Grenade Launcher ...

Slow and Easy in Cold

Take it slow and easy with your M203 grenade launcher in extreme cold.


Sudden changes in temperature—like bringing your cold M203 into a heated tent—cause the handgrip to crack and break.

Prevent that by wrapping the weapon in a poncho or blanket before bringing it inside. That lets the handgrip warm up gradually.

It also reduces the condensation that forms on metal parts. That keeps corrosion from getting a foothold.



HELPING HAND FOR ARMORERS



NEED CLEANING
SUPPLIES FOR YOUR
SMALL ARMS? CHECK
ME OUT!

Dear Editor,

As a member of a direct support unit, I know first-hand that armorers and support units have trouble staying on top of the annual gauging requirements for rifles, machine guns, and mortars.

Many units wait until right before they leave for the field to turn their weapons in for gauging. That doesn't leave us time to get the job done.

So we worked out a system with our armorers that solves the gauging problem: We go to the arms rooms ourselves instead of having weapons brought to us. We make an appointment with the armorer, take the needed gauges, and do the job on the spot. This saves time for both support and armorers.

Every month we try to gauge at least 10 percent of the weapons we support. At that rate, within a year we've given ourselves a two-month cushion in case units go to the field.

So I suggest to armorers that they get with their support and work out a similar arrangement.

Here's another suggestion: We often find that arms rooms are short on cleaning supplies. We advise armorers to get a tool box and stock the drawers with pipe cleaners, patches, CLP, various brushes, and whatever else is needed. That stuff is cheap, so armorers should keep plenty on hand. The tool box makes it easy to organize the supplies. NSN 5140-00-319-5079 gets a tool box.

SSG Michael Leyden
B Co, 101st FSB
Ft Riley, KS



When to Gauge?



Dear Half-Mast,

When a unit gets new rifles, machine guns, or other small arms, should the weapons be gauged immediately? We checked the small arms TMs and they don't have the answer.

SGT R.H.

Dear Sergeant R.H.,

No, new weapons don't need to be gauged immediately. The only tasks a unit armorer **must** do are listed in the -20 TMs under **SERVICE UPON RECEIPT**. Gauging isn't required for one year after receipt of new or overhauled weapons. Of course, any time an armorer suspects problems with a weapon, or when the bolt or barrel is replaced, he should have it gauged immediately.

Future changes to the small arms TMs will spell out these gauging requirements more clearly.

Half-Mast

MK 19 Machine Gun ...

Sight Saver

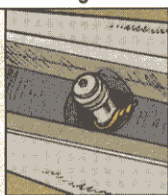
Dear Editor,

The mount for the MK 19's night sight comes with a retaining clip for the mounting screw. Once the screw disappears, you have no way to mount the sight until you get another screw.

We stopped mounting screws from disappearing by tying them on with lacing wire. The lacing wire doesn't interfere with the mounting screw, but does keep it from falling out.

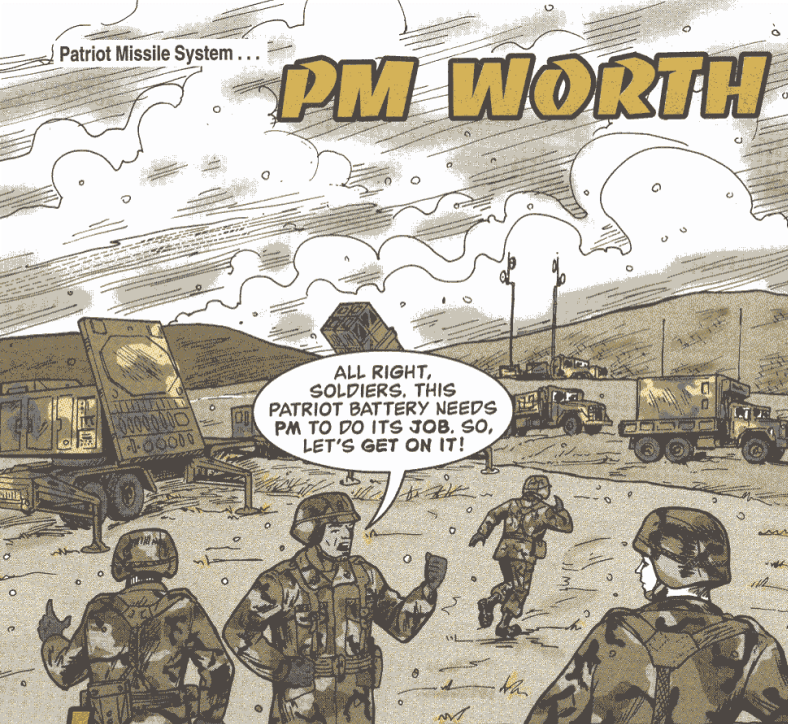
SGT Richard Pangborn
977th MP Co
Ft Riley, KS

Lacing wire retains mounting screw



PM WORTH

SALUTING



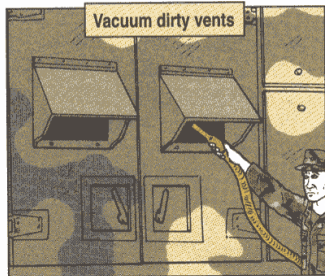
It's downright patriotic to do the PM your Patriot missile system needs.

Radar

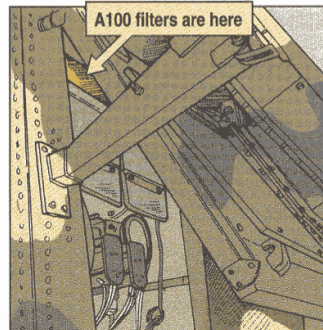
The vents are critical for the AN/MPQ-53 radar. If they're closed or clogged, the system will overheat, show test faults and waste your troubleshooting time.

So, before powering up, make sure all eight vents are open. At least monthly (more often in dusty areas), check all the vent screens for dirt. Usually, you can vacuum the screens clean.

If that fails to do the job, get the screen replaced.

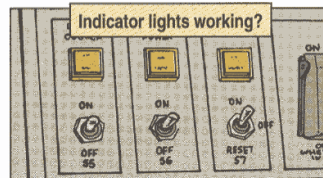


The radar's A100 power panel has two filters that almost everyone forgets. The result is that the filters clog and the radar overheats and shuts down. So, check the filters at least monthly. Clean or replace them if necessary.



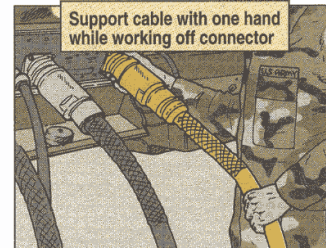
The IFF cabinet also becomes clogged with dirt and its circuit cards overheat. Weekly, wipe off the IFF with a clean cloth. At least semiannually, remove the IFF from the radar, pull out its circuit cards, and blow it out with low-pressure air.

When you turn on the switches that power up the radar, check that the indicator lights are lighting. If a light's



not working, a component's circuit breaker can trip and you won't know it. That could be a troubleshooting mess.

Careful with the J1, J2, and J3 cables. They are heavy. If you twist cables on or off one-handed, you rip the internal wiring. Then an expensive cable must be replaced. So, use one hand to support the cable and take the weight off the connector. Use the other hand to wiggle the connector until it disconnects. Pull it straight off.

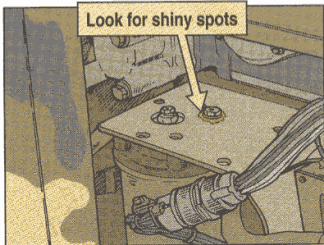


Cap the cables and the radar connectors when they're not connected. Otherwise, dirt clogs the connectors and causes poor connections and faults. If the caps have disappeared, tell your repairman. In the meantime, cover the connectors with plastic bags.

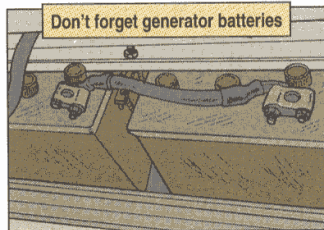


EPP

Vibration is the main problem with the electric power plant (EPP) generators. They shake like crazy and loosen fasteners. Components can be damaged or fall off. So, before you crank up the EPP, look for shiny spots around the nuts and bolts. Shiny spots mean a fastener is loose and needs tightening. Also feel the cable harnesses for looseness. If they're loose, tighten them.



Patriot crews often forget the generator batteries and the batteries end up dead. So, at least weekly, check the battery cells for electrolyte and the clamps for looseness and corrosion. Tell your repairman if you spot problems.



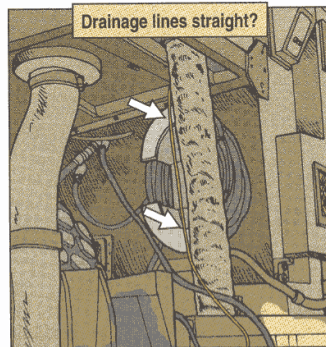
The generator door latches are also ignored and they rust shut. Often the whole door must be replaced. A

monthly squirt of a lightweight oil on the latches and door hinges prevents that.



Drainage

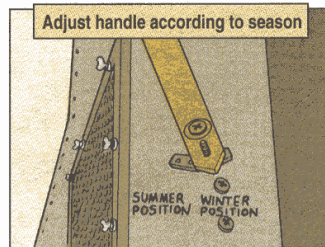
As part of your BEFORE OPERATIONS PMCS, make sure the air conditioning drainage lines for the engagement control station (ECS) and battery maintenance center are not kinked. If they are, water can drip onto the consoles and short them out.



'Tis the Season

On the vans for the ECS and ICC (information and coordination central), curbside and roadside handles control air flow. When the seasons change, you have to change the position of the handle or the electronics won't get

enough air. Below 32°F, put the handle on WINTER; above 32°, SUMMER.

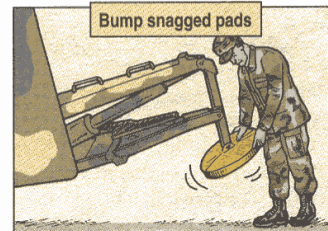


Outriggers

Outriggers need at least monthly exercise. If they sit longer, the actuator seals dry out and leak. Plus you should move the ball screws in and out of the ball nuts so they get lubed. If

they aren't greased, eventually, the outriggers freeze.

Watch the outriggers when they're raised or lowered. If a pad snags, it can break the strut weld. Usually, you can bump a pad with your hand and free it. If that doesn't work, reverse the outrigger's direction. No luck? Call your repairman.



Dipstick for Gearboxes

It's easy to put too much grease into Apache gearboxes. You can't see where it's going, so you have to fill it by feel. But overfill the gearbox and grease spills onto the ground before you know it—a real environmental no-no. It also can look like gearbox failure, which it is not.

Some mechanics check the grease level with their fingers. That's OK, but it's messy and not always accurate.

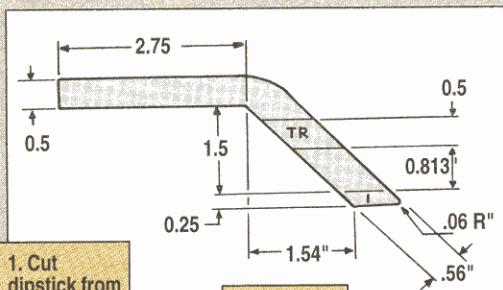
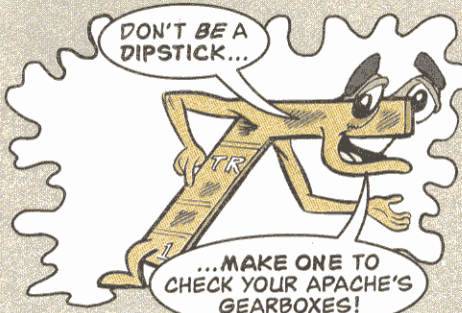
To make sure you don't overfill a gearbox, make a dipstick to measure the level of grease. Here's how:

Use aluminum 6061, T6, 0.063" thick. (Some mechanics think brass is better. There's no static electricity.) Round all sharp edges. Etch level lines and indicating letters on both sides of the stick.

Here's how to check the grease level:

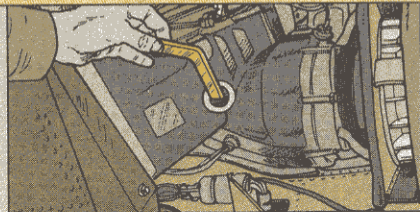
1. Make sure your aircraft is on a level surface and shut down for at least 10 minutes.
2. Remove the plug and packing from the gearbox filler holes. Put the dipstick into the filler hole, with the filler marks pointing down and the handle touching the bottom of the hole.
3. Add grease as necessary. The level should fall in the **I** range for the intermediate gearbox and the **TR** range for the tail rotor.
4. Install a new packing on plug.

This will cure overfilling the gearbox and help keep your environmental control officer happy.



1. Cut dipstick from aluminum or brass, .063" thick
 2. Round all edges
 3. Mark "I" and "TR" on both sides
- All dimensions in inches

Dipstick keeps grease-check clean and accurate



KEEP AVIONICS DRY

When Apaches are washed, the AN/APR-39A radar signal detecting set's digital processor can get soaked.

On Page 49 of PS 544, we recommended removing the processor from the tail rotor shaft before washing.

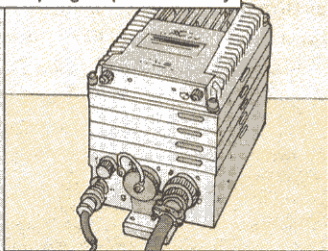
There's another option.

Airworthiness Release (AWR) 97-A6 lets you move the processor to the tail's storage compartment. That area is watertight.

If you need a copy of that AWR, try your CECOM logistics assistance representative (LAR), or contact Project Manager's Aviation Electronics Combat Field Assistance Support Team (FAST) at DSN 897-4441/4442, Commercial (256) 313-4441/4442.

Some units prefer to keep the processor in its original location. If that's the case, be sure and take it out before you wash the bird. Cover the cannon plugs with a plastic bag to keep water out of the connectors. Dry the processor mounting area thoroughly before putting it back.

Keep digital processor dry



LET'S
MOVE IN,
GUYS!

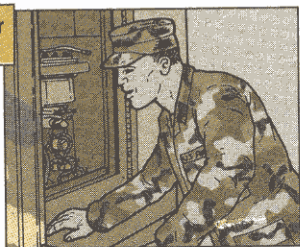
YOU DRIPS
ARE OUT OF LUCK!
THE CREW CHIEF REMOVED
THE PROCESSOR BEFORE
ITS BATH!

More Power to You!

Paying attention to these three points can give your generators real power in the field:

• **Listen when you start up the generator.** Open a side panel and listen for a grinding noise. That's an indication an engine bearing is wearing out. A bad bearing can be replaced. But if it's ignored, the generator engine will be ruined. That's expensive.

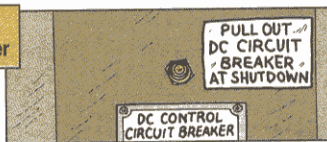
Listen for grinding



• **Pull out the DC circuit breaker at shutdown.** The breaker is often forgotten and then the generator batteries are drained. A good reminder is to make

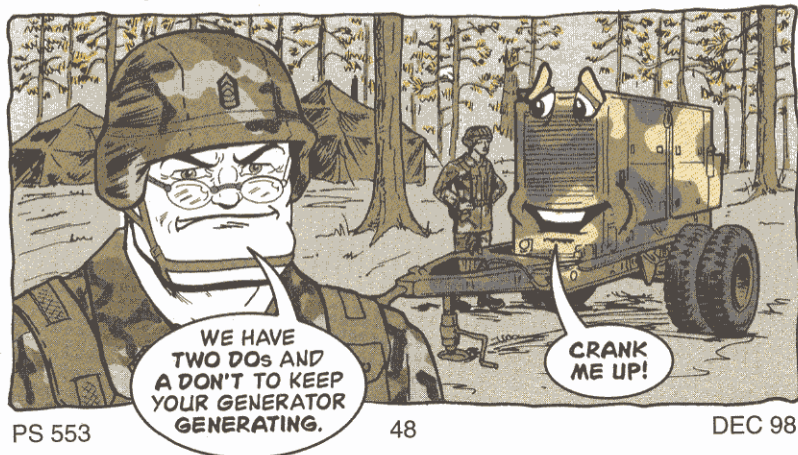
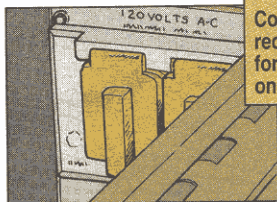
a sticker that says **PULL OUT DC CIRCUIT BREAKER AT SHUTDOWN** near the breaker.

Add sticker



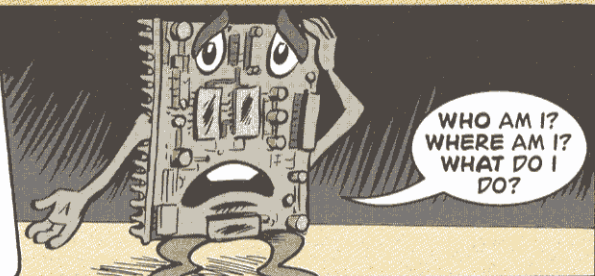
• **Don't** use the AC convenience receptacles for plugging in stuff like heaters or coffee pots. Those receptacles are strictly for your repairman's equipment. If too large a load is put on the receptacles, the generator circuit breakers trip.

Convenience receptacles are for repairmen only

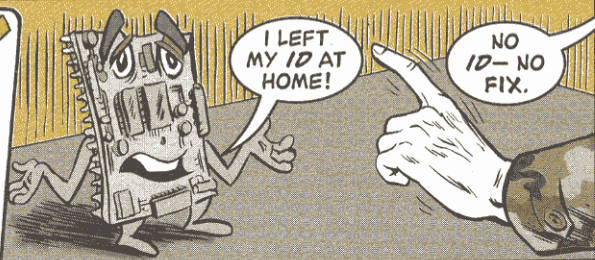


MARK THESE CARDS

Separating electronic circuit card assemblies from their end item causes amnesia in many card assemblies. They can't tell you where they go or what they do.



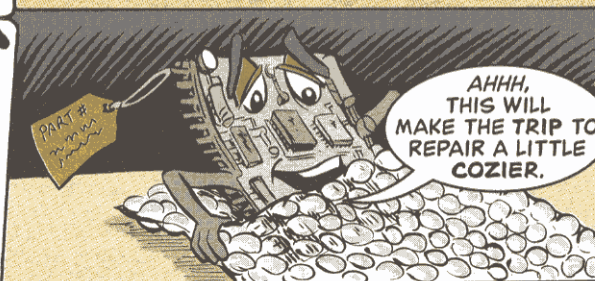
Many cards carry no identification. They're not marked with a part number or stock number. Once they're removed from their end item, there's no way to identify them.



So, unmarked reparable cards are ending up in salvage instead of in a repair facility. That's a waste of money.



The fix is easy. When you remove a reparable card, tag it with the name and NSN or part number of its end item. Then put it and the tag back in the replacement card's shipping bag.



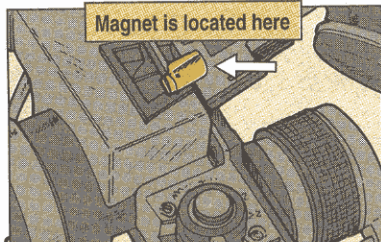
A Lost Attraction

If you forget to turn off the AN/PVS-7A night vision goggle assembly before you remove it from the facemask, the automatic shutoff should turn it off.

If it doesn't, turn your goggles in for repair.

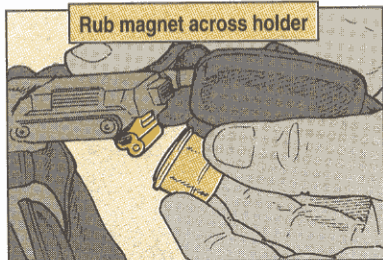
Repairmen, the TM says to replace the carriage. Could be you'll have to do just that, but try one thing first.

The automatic shutoff is triggered by a magnet in the carriage. The magnet is inside the tube that hangs just off of—and slightly below—the goggle attachment.

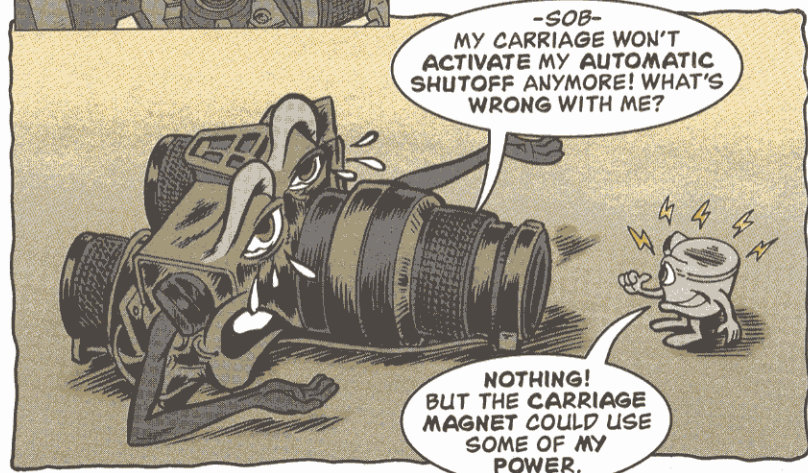


It could be that the magnet has lost its attraction, So, try to give it back.

Grab a small magnet from your toolbox or pick one up at the hardware store. Rub the magnet across the magnet holder on the carriage. If your problem was a weak magnet, chances are good you've just solved it.



Try the automatic shutoff. If it works, march on. If not, turn in your night vision goggles so that the carriage can be replaced.



SUPPRESS THE SURGE

THE LAST TIME I SAW SERGEANT JONES, HE WAS SCRATCHING HIS HEAD AND STARING AT HIS COMPUTER WITH A PERPLEXED LOOK ON HIS FACE.

WHAT'S WRONG, JONES?

MY COMPUTER GOT FRIED IN THE STORM LAST NIGHT AND I CAN'T FIGURE OUT WHY.

DO YOU USE SURGE PROTECTORS?

I GOT THE BEST ONE MONEY CAN BUY. NOTHING WAS SUPPOSED TO SLIP THROUGH THAT SUCKER.

WHAT ABOUT YOUR PHONE LINE?

WHAT ABOUT MY PHONE LINE?

DID YOU HAVE A SURGE SUPPRESSOR ON IT?

NO.

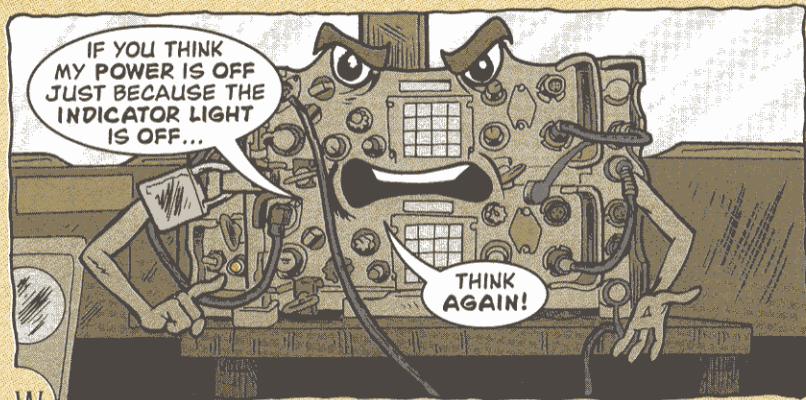
LIGHTNING-GENERATED ELECTRICITY WILL TRAVEL DOWN A PHONE LINE LIKE IT'S AN EIGHT-LANE HIGHWAY. NEXT EXIT, YOUR COMPUTER!

I GUESS I DIDN'T THINK ABOUT THAT. MOST FOLKS DON'T HAVE A SURGE SUPPRESSOR ON THEIR PHONE LINE.

I'D BETTER SPREAD THE WORD.

I'LL HELP YOU, ALTHOUGH THERE ARE POWER STRIP SURGE SUPPRESSORS IN THE ARMY'S SUPPLY SYSTEM, THERE IS NO SUPPRESSOR TO STOP PHONE LINE-CONDUCTED SURGES. YOU'LL NEED TO LOCAL PURCHASE THAT TYPE.

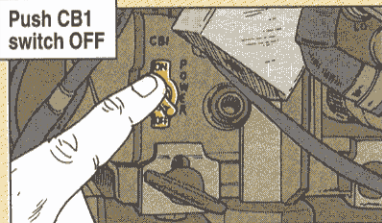
PULL A SWITCH ON BATTERY DRAIN



When you go to crank up your truck and all you get is the click-click-click that signals a dead battery, who you gonna blame?

The culprit may be your SINGGARS radio. But you're an accessory to the crime.

You must turn off the radio's CB1 switch when you shut off your truck's engine. If you don't, the radio keeps drawing power from your truck's batteries.

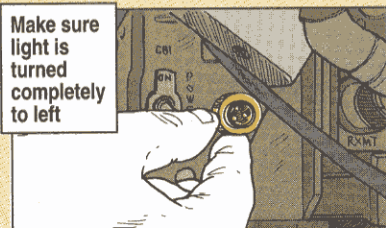


Too many drivers are just flipping the radio's function switch to OFF. But that won't stop the battery drain. Sometimes, when you do the crime,

you've got an accomplice. He's the last guy who drove the vehicle during blackout conditions and dimmed the CB1 indicator light.

The indicator light can be adjusted for brightness. All the way to the right and the light goes out. Your accomplice dimmed the light for blackout, but forgot to turn it back to bright when the mission was over. So the light looks off, but is still on.

Make it SOP—when you get in your truck, make sure the indicator light is turned all the way to the left. When you get out of your truck, make sure the CB1 switch is OFF.



Water, Water Everywhere

To many people the terms “water-resistant” and “waterproof” mean the same thing. These are the same people who have their SINGGARS radios in the shop for repair.

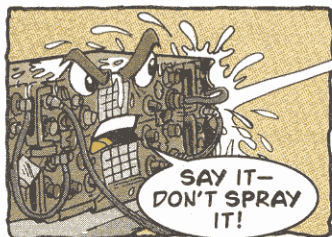
Your vehicle’s SINGGARS radio is water-resistant. **It is not** waterproof.

Water-resistant means it will withstand normal encounters with high humidity and light rain.

Since it is not waterproof, any blast from a high-pressure hose forces water into the radio. Corrosion and shorts will follow.

The only solution is to remove the radios when you use high-pressure hoses to wash your vehicles.

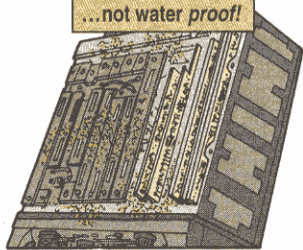
If you can’t take the radio out before you wash your vehicle, keep the high-pressure water away from the radio. It is better to have a little dirt inside the vehicle than to have a little water inside the radio.



Seal makes radio water resistant ...



...not water proof!



Loudspeaking Cables

NOW HEAR THIS!



Searching for different lengths of CX-13292 cable to connect your LS-671/U loudspeaker to the SINGGARS mounting base? Search no more!

Length (feet)	NSN 5995-01-
2	302-0059
3	219-7010
4	219-4703
5	300-9291
6	219-4704
8	259-9283
11	225-1657
13	259-9282
14	219-4705
18	219-4706
19	303-4950
21	219-1844
50	358-1078
100	382-6869

The Layered Look

The best defense against cold air is layers of . . . air?

That's right. Your extreme cold-weather protective clothing is designed to trap warm, dry air against your body. The idea is to keep you from losing body heat—to prevent cold injury—without making you too warm.

You'll stay snug if you remember a few pointers:

- ☀ Wear several layers of clothing. That way, if you get too warm, you can take off the extra layers. If the clothes next to your skin get wet from perspiration, they can't trap air. You'll chill in a hurry, especially if the wind's blowing.
- ☀ Shake off any snow, ice or water droplets that get on your outer clothing. Even though the gear's water-repellent, brush off snow and ice before you enter a warm shelter.
- ☀ Keep the clothing clean. Dirt and grease, like water, cut out air space and reduce insulation. Brushing your clothing while you wear it helps keep it clean.
- ☀ Make sure your clothing fits loosely. It's designed so you can leave some parts open—such as the neck and cuffs—to let cold air in if you get too warm.

Read up on your protective clothing in Section II of Chap 2 of FM 31-70, Basic Cold Weather Manual. Care and repair instructions for some of the gear, including the extreme cold-weather hood and parka, and the cold-weather coat, are in TM 10-8400-201-23, General Repair Procedures for Clothing and, TM 10-8400-203-23, General Repair Procedures for Individual Equipment.

HERE ARE
SOME TIPS TO
MAKE THE LAYERED
LOOK WORK
FOR YOU.



COME IN FROM THE RAIN



If your wet weather parka or trousers don't keep you dry, replace them. You won't find the NSNs in TM 10-8400-201-23, though. To get the size you need, use these:

Parka

Trousers

NSN 8405-00-001-	Size
1547	X-Small
1548	Small
1549	Medium
1550	Large
1551	X-Large

NSN 8405-00-001-	Size
8025	X-Small
8026	Small
8027	Medium
8028	Large
8029	X-Large

HAZMAT ...

POLLUTION PREVENTION GUIDES

Three pollution prevention guides have been developed by the US Army Environmental Center (USAEC) and the US Army Center for Health Promotion and Preventive Medicine (USACHPPM).

One guide is for tactical motor pools, one is for aviation unit maintenance and one is for unit-level weapons cleaning.

The guides show how to reduce pollution caused by maintenance. The guides address waste engine oil, batteries, engine coolant, cleaning solvent, hydraulic fluid and contaminated fuel among others.

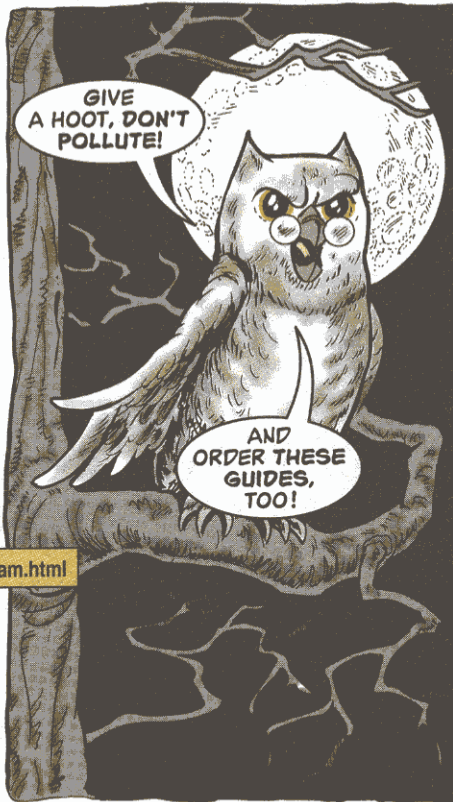
Download the guides from the USACHPPM web site at:

http://chppm-meis.apgea.army.mil/hmwp/p2_team.html

Or you can get copies by calling USAEC at DSN 584-1227 or (410) 436-1227.

Or you can write to:

USAEC
ATTN: SFIM-AEC-ETP (Eck)
Aberdeen Proving Ground, MD
21010-5401



Dim Those Lights

If you'd like a little less light from your light sets, NSN 6230-00-299-7077, you need a lampholder.

The lampholder is NSN 6250-00-371-9446 in SC 6230-97-E01, but it's not in every set. You need eight of them. It's called a lampholder, but it's really a dimmer. It lets you dim regular white bulbs for tactical lighting so you don't have to use the set's blue bulbs. You can also use the dimmer on blue bulbs of course.



If the stovepipe on your immersion heater is coming apart at the seams, get new pipe with NSN 4520-00-277-8339. That'll get you a 2-ft section of 4-in diameter pipe, so order as much as you need.

Don't worry if the newer pipe doesn't have rivets in it. The pipe joint locking seam provides a permanent lock without the need for rivets.

Loose or missing rivets in the old pipe are not a problem either, as long as the interlocking seam still holds the pipe together nice and tight. If it doesn't, the pipe joint is defective—order new pipe.

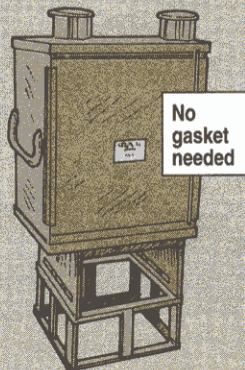
Field Oven . . .

Bake It Better

If you've been trying to get a gasket for the door of your field oven, NSN 7310-01-388-6606, forget it.

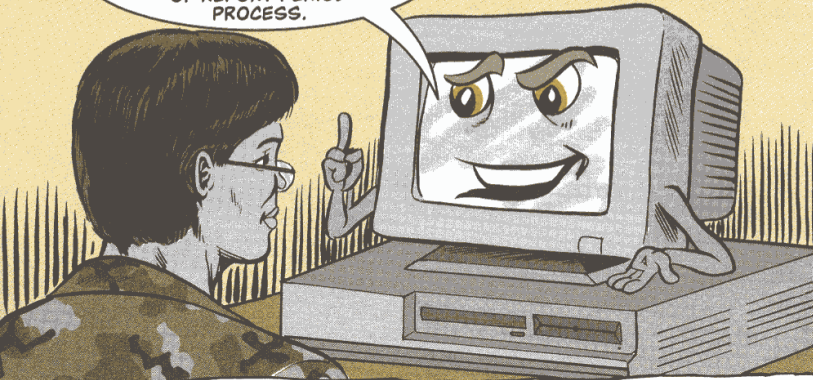
Although TM 10-7360-208-13&P calls for the gasket, Soldier Systems Command found out it wasn't necessary. In fact, they say the oven bakes better without it. They will drop the gasket next time the TM is changed or revised.

Here's some more hot news for you. If you get a new field oven, give it a trial run before you do any baking in it. Heat it up, in a well-ventilated area, to the cooking temperature (at least 400°F), leaving the door slightly open. This drives off any oils left from the manufacturing process.



AMSS END REPORT

HERE ARE A FEW THINGS TO REMEMBER ABOUT THE ULLS-G ARMY MATERIEL STATUS SYSTEM—OR AMSS—END OF REPORT PERIOD PROCESS.

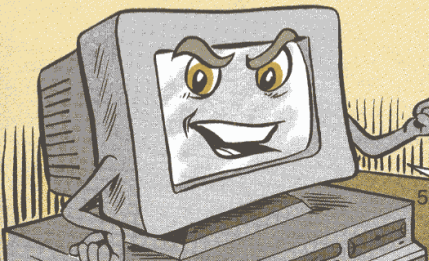


The End of Report Period report is processed once a month. The Report Period runs from the 16th of one month through the 15th of the next. If possible, do the report on the first working day after the 15th; do not run the report on the 15th or earlier. The same goes for the Send AMSS Transactions To Higher Level process being used for battalion-level End of Report Period processing.

If you do the report sooner, like on the 15th, ULLS-G has not processed all the maintenance and supply information it needs to. It needs to process through midnight of the 15th. It also needs time to process information from SAMS and SARSS that is current through the 15th.

19 DECEMBER 98						
	X	X	X	X	X	X
X	X	X	X	X	X	X
X	X	X	17	18	19	
20	21	22	23	24	25	26
27	28	29	30	31		

DON'T JUMP THE GUN ON YOUR END OF REPORT PERIOD REPORTING. WAIT 'TIL THE 16TH OF EACH MONTH TO PROCESS.



Back up your data base just before you start the End of Report Period process. You must be able to restore the End of Report Period information if necessary. Often, after reviewing the End of Report Period report, an error is found, like a wrong UIC, a missing date, or incomplete data.

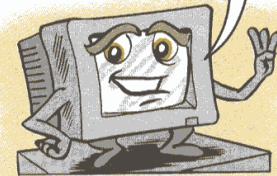
If the system has not moved to the next report period, the error can easily be corrected. If the system is in the next report, you must follow the procedure in Chap 5 of the user manual to restore the system to the correct report period. If you've backed up, you can restore, correct and run the End of Report Period process again.

Your unit's new End of Report Period process should not be started until the battalion End of Report Period report has been verified for accuracy, stored on diskette and sent to the appropriate SAMS site.

The battalion should let you know when you can start the End of Report process for your unit.

The Return from Dispatch process should be completed prior to running the End of Report Period process to make sure the current usage data is reported.

WHEN THE END OF REPORT PERIOD PROCESS IS COMPLETED, THREE THINGS HAPPEN AUTOMATICALLY.



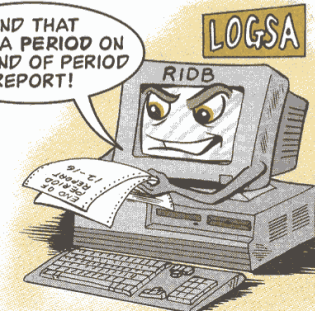
First, the AMSS Report Date in the DODAAC parameter file is automatically set to the new reporting period. This can be verified on any AMSS report header.

Second, the ULLS-G system posts the rollover status, time and date on the maintenance request register for each open reportable item. This starts NMC time for that item in the new reporting period.

Third, the ULLS-G system sets the AMSS purge switch in the DODAAC parameter file to YES. This lets the system purge closed faults and closed work orders from the data files at the next LOGON.

The End of the Report Period process goes from the battalion level ULLS-G to the appropriate SAMS site and, finally, to the Readiness Integrated Data Base (RIDB) at LOGSA.

AND THAT PUTS A PERIOD ON THIS END OF PERIOD REPORT!



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PS Index to Come

Yes, December is usually when we give you the PS index for the past year. And, no, it's not in this issue. Watch for it in the January issue.

Avenger Dummy Ammo

If you need dummy ammo for your Avenger missile system's M3P machine gun, order it with NSN 1305-00-028-6384. The rounds do not come linked, so you will need to order links, NSN 1305-00-096-3180, and belt the rounds at your unit.

Tanker Extinguisher Change

The fire extinguisher and bracket we had in PS 534 (May 97) for M900-series fuel tankers doesn't work on every tanker. To get one that will, use NSN 4210-00-808-4544.

M936 Wrecker Hotline

If you have questions about the operation or maintenance of your M936/A1/A2-series 5-ton wreckers, call the wreckers' 24-hour hotline at DSN 786-7549 or (810) 574-7549. Someone will take your call weekdays from 0800-1700 hours. An answering machine takes your call the rest of the time. Fax questions to DSN 786-8636 or (810) 574-8636.

Plastic Fuel Cans

Look no further for plastic fuel cans. Use NSN 7240-01-337-5268 for a sand color can and NSN 7240-01-337-5269 for olive green. Use NSN 7240-01-318-5222 to get a cradle to hook up cans to a space heater.

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