



**THE
PREVENTIVE
MAINTENANCE
MONTHLY**

TB 43-PS-580, 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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Keep Material Safety Data Where You Can Get To It!

YEEOW!
THAT CHEMICAL
I SPILLED ON MY
HANDS REALLY
STINGS!

WHERE ARE
OUR SAFETY
SHEETS?

SAFETY
SHEETS?
Duhhh...



THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-580

Approved for
Public
Release;
Distribution is
Unlimited



see PM TALK,
page 27



TICK, TICK, TICK.

That's the sound of time moving steadily on. Each tick of the clock is a moment that's precious and unrecoverable.

It's a chance to lube a roadwheel, check a tire's air pressure, or tighten a loose radio connector.

TICK, TICK, TICK.

Do you spend your time wisely? Or do you put off maintenance now in hopes there will be time to do it tomorrow?

The day may come when your life depends on just how much time you've spent maintaining your equipment. Will it be ready? Will you?

TICK, TICK, TICK.



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By order of the Secretary of the Army: ERIC K. SHINSEKI General, United States Army Chief of Staff Official:  JOEL B. HUDSON Administrative Assistant to the Secretary of the Army 0101810	High Security Lock Maintenance Army Award for Maintenance Excellence	PS, The Preventive Maintenance Monthly (ISSN 0475-2953) is published monthly by the Department of the Army, Redstone Arsenal, AL 35898-7466. Periodical Postage is paid at the Huntsville, AL post office and at additional mailing offices. Postmaster: Send address changes to PS, The Preventive Maintenance Monthly, LOGSA, Redstone Arsenal, AL 35898-7466	

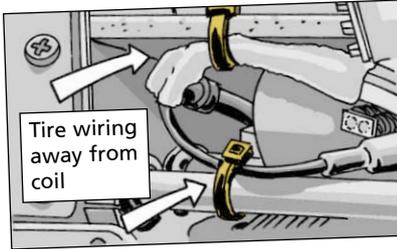
STOP EXPOSURE TO HEAT

Dear Editor,

During a routine training mission, one of our 2 1/2-ton FMTVs caught fire behind the instrument panel. Investigation and troubleshooting determined that the fire started at the heater fan switch.

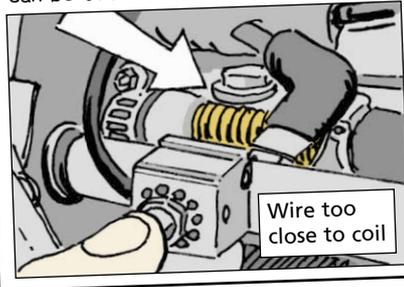
There are exposed coils on the rear of the switch, and they get very hot during use. Anything close enough to the coils is likely to burn. And there are many wires behind the panel that can be too close.

So we tied up the wires to get them as far away from the switch as possible.



A simple inspection of the area behind the instrument panel near the switch could save you a truck-and some lives.

WO1 Rodney W. Thomas
3/1st SFG(A)
Ft Lewis, WA



THINGS ARE GETTIN' TOO HOT!



Service the Air Dryer

IT'S ABOUT TIME YOU SERVICED MY AIR DRYER.

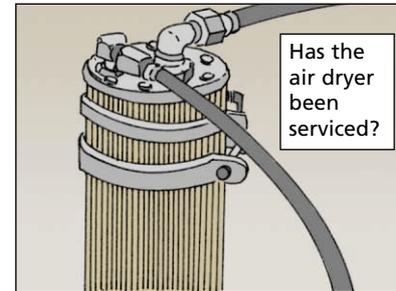


When was the last time the air dryer on your FMTV was serviced? Has it ever been serviced?

If the paint hasn't been disturbed on the line fittings and cannister hardware, chances are the air dryer isn't drying much anymore. That means that water is in your air lines and tanks. Rust, and ice in winter, follow.

To find the service requirement, look in the lubrication order. That's not a misprint, mechanics. It's in the lube order, Appendix H of TM 9-2320-365-20-5 and TM 9-2320-366-20-5. You'll be referred to Para 23-6 in the -365-20-5 TM or Para 23-11 in the -366-20-5 where the air dryer removal and installation instructions are found.

There you'll see how to remove and replace the desiccant cartridge and check the heating element that removes moisture from the air before it goes to the primary and secondary air tanks.

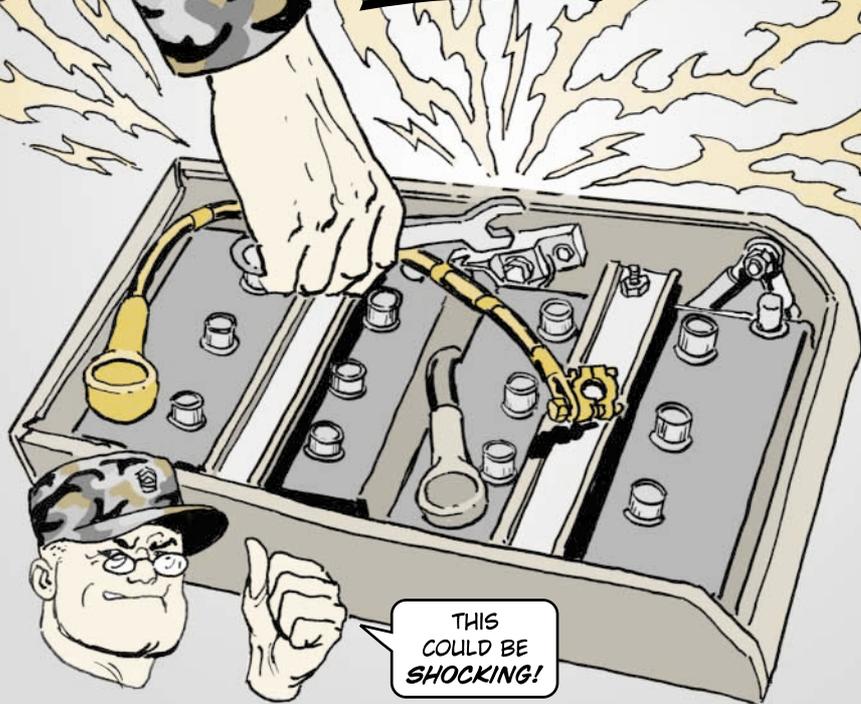


Did you know the air dryer carries a 12-month or 12,000-mile service requirement, whichever comes first?



HMMWV...

Disconnect Both Neg Cables



Mechanics, before you start work on the electrical system of M998A2-series HMMWVs and the M1113/M1114/ M1123 vehicles in the family, completely disconnect the batteries.

These vehicles have a dual voltage system. That means disconnecting **both** negative battery cables, not just one. If you attempt electrical system work with even one negative cable still connected, you risk component damage and severe shock.

So disconnect the system using the info found in Para 4-73b, TM 9-2320-280-20-2, for the M998A2-series and M1123 trucks, and in Para 4-68b, TM 9-2320-387-24-2, for the M1113/M1114 vehicles.

Full details are found in TACOM Maintenance Advisory Message (MAM)-00-012, *HMMWV 24-Volt Electrical System (Jun 00)*.

Keep Those Zippers Lubed



Some maintenance shops estimate that 90 percent of the repairs they make to HMMWV soft-top doors are for torn window zippers.

And how do those zippers get torn? Grit and sand gum up the works so that zippers don't slide easily, for one thing. For another, the thread used to install the zippers dry rots quickly.

So when a little extra muscle is used to budge a sticky zipper, the whole thing often rips loose from the door.

Here's the best thing to do to prevent damage:

- ✱ Remove grit and sand caught in the zipper teeth with an old toothbrush. Then lube the teeth with zipper lube. NSN 9150-00-999-7548 gets you a box of 24 lube sticks. The lube is Item 29 in the Expendable/Durable Supplies and Materials List in TM 9-2320-280-10.

- ✱ Run a little zipper lube over the threads that hold the zipper in the door, too. That'll help keep the threads from drying out and rotting so fast.

How often you have to clean the zippers and lube them depends on where your HMMWVs are located. If there's lots of sand around, it may be more often than the monthly check and lube shown as Item 75 in the -10's PMCS. Just make sure the lube's used before strong-arm tactics.



HMMWV...

KEEP SPRAYS AWAY!

STEP AWAY FROM THE VEHICLE, PLEASE.



Keep bug sprays, spray solvents and spray glass cleaners away from ballistic glass and plastic windows on HMMWVs.

The charge that puts the spray in spray can cleaners and bug sprays cracks ballistic glass. Liquid solvents can do the same thing to glass, but they're really murder on plastic windows, causing fogging.

So when you apply bug spray to your body, move away from the truck. And when you need to clean your truck's windows, do this:

Plastic Windows

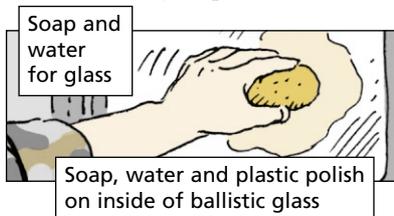
- ▶ Wash the windshield with detergent and water, using a soft, clean cloth.
- ▶ Apply hand cleaner, NSN 8520-00-782-3509, with a clean soft cloth or sponge.
- ▶ Wipe off the cleaner immediately with a dry cloth.



Ballistic Windows

- ▶ Clean the outside of ballistic windows the same way you clean plain glass. The inside surface is a plastic laminate that takes special care. Wash only when the glass is cool.
- ▶ Add detergent, NSN 7930-00-282-9699, to a gallon of water using the directions on the bottle.
- ▶ Saturate a soft cloth with the solution and lightly rub the window surface.

- ▶ Lightly rinse off the cleaner with water and dry with a soft cloth. Do not scrub.
- ▶ Apply polish, NSN 7930-00-634-5340, and let dry. Wipe clean.



M939-Series Trucks...

Safe Operating Speeds

The maximum safe operating speeds for all M939-series 5-ton trucks have changed.

The information listed in Table 1-9A of TM 9-2320-272-10 is only for M939-series trucks that have not had the antilock brake system (ABS) added by MWO. Make sure that's noted in the table's title.

Then add a Table 1-9B for all M939-series trucks that have ABS installed by MWO—

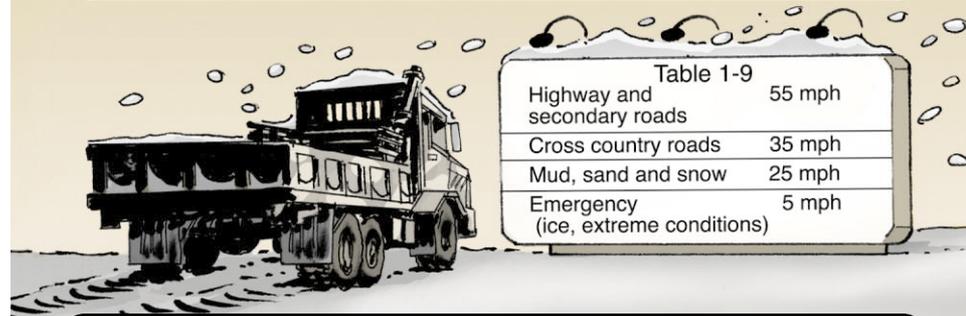


Table 1-9	
Highway and secondary roads	55 mph
Cross country roads	35 mph
Mud, sand and snow	25 mph
Emergency (ice, extreme conditions)	5 mph

TIRE PRESSURE CHANGES

The tire inflation data table in TM 9-2320-272-10 has changed.

For all basic model M939-series trucks except the M945, inflation pressure is:

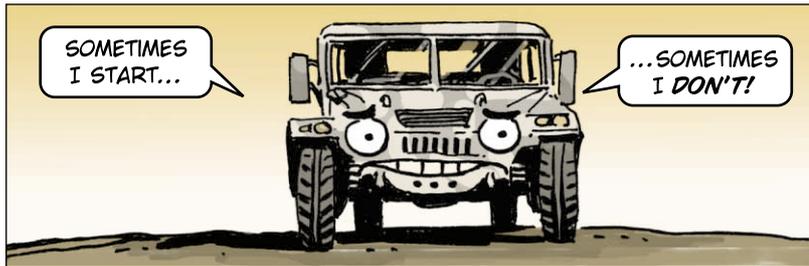
Condition, Location	Pressure
Highway, front tires.....	65 psi
Highway, rear tires.....	50 psi
Cross-country, front tires.....	45 psi
Cross-country, rear tires.....	35 psi
Mud, sand and snow, front tires.....	40 psi
Mud, sand and snow, rear tires.....	30 psi
Emergency, front tires.....	30 psi
Emergency, rear tires.....	25 psi



The info on Page 1-25 in the -10 TM for M939A1-series and A2-series trucks is correct, but you need to add a column for the M945 and the M945A1.

Condition, Location	Pressure
Highway, front tires.....	75 psi
Highway, rear tires.....	30 psi
Cross-country, front tires.....	45 psi
Cross-country, rear tires.....	25 psi
Mud, snow and sand, front and rear tires.....	25 psi
Emergency, front and rear...	25 psi

“Grounded”



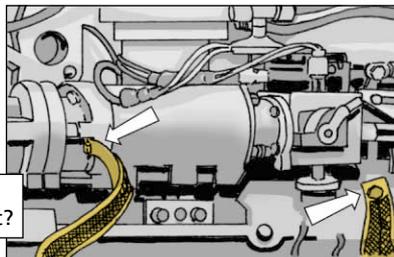
Sometimes the only thing wrong with a vehicle’s electrical system is a poor ground. Consider that before you go chasing an electrical problem all over the vehicle.

Poor or bad connections can cause the vehicle’s electrical system or components to malfunction or fail. That’s because all connections must go to a ground for the system to work properly.

That means electricity will not flow right unless all ground connectors are solidly connected. Remember, there may be more than one ground in some circuits.

Here are a few basic things to remember when checking grounds:

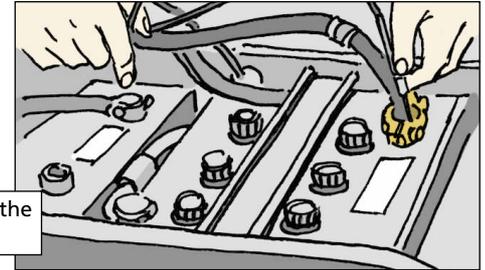
- Always make sure that exposed electrical connections are corrosion-free and tight. That includes vehicle body grounds, component ground points and battery terminals.



Ground connections corrosion-free and tight?

in the Real World

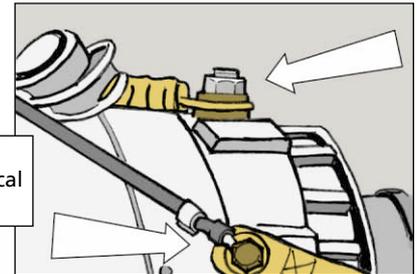
- Always check continuity to the battery negative terminal rather than to the vehicle body or the engine block. The battery terminal includes body and block connections in its circuitry.



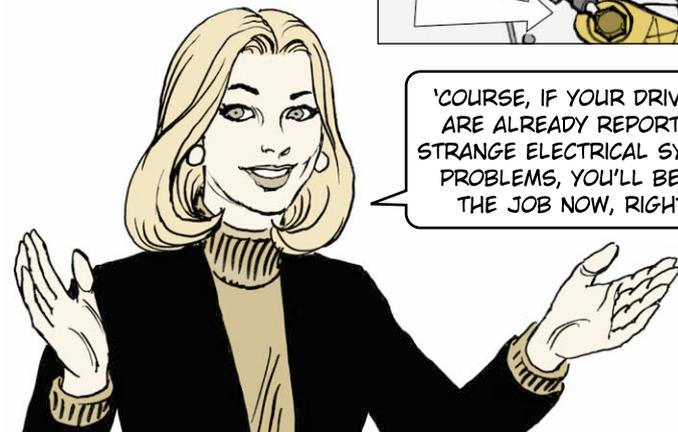
Make continuity check at the negative battery terminal

If the continuity reading exceeds the resistance limit noted in your vehicle’s -20-1 TM (for example, 0.5 ohm for HMMWVs), look for corroded or loose connections in the electrical system. Those corroded or loose connections will cause erratic operation in electrical components and eventual failure.

- Take the time at semiannual and annual PMCS to inspect and clean electrical connections. Repair or replace any that are damaged.



Inspect and clean electrical connections



'COURSE, IF YOUR DRIVERS ARE ALREADY REPORTING STRANGE ELECTRICAL SYSTEM PROBLEMS, YOU'LL BE ON THE JOB NOW, RIGHT?

Keep Transmission

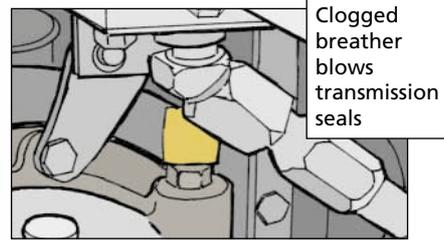
WELL, THAT TAKES CARE OF THAT SERVICE!

WAITAMINIT! I'VE GOT A CLOGGED TRANSMISSION BREATHER THAT NEEDS WORK!



Mechanics, sand, dirt and moisture collect on top of the PLS' transmission. Unfortunately, that's also where the transmission breather, NSN 2520-00-914-4680, is located.

When the breather clogs, the transmission can't vent. Instead, it overheats



Breathing Easy

and the pressure blows the transmission seals. That deadlines the vehicle.

Make sure you remove, clean, and inspect the breather annually or every 6,000 miles, whichever comes first. Here's how:

4. Apply sealing compound, NSN 8030-01-054-0740 or 8030-01-166-0675, to the reducer's threads and screw it back into the transmission.

5. Put some sealing compound on the threads of the breather and reinstall it in the reducer.

1. Unscrew the breather from the reducer, then remove the reducer.

2. Clean the breather and reducer with dry cleaning solvent. Let the parts air-dry thoroughly.

3. Eyeball the breather and reducer for cracks, dents and stripped threads. Replace the parts if damaged. A new reducer comes with NSN 4730-01-188-3183.

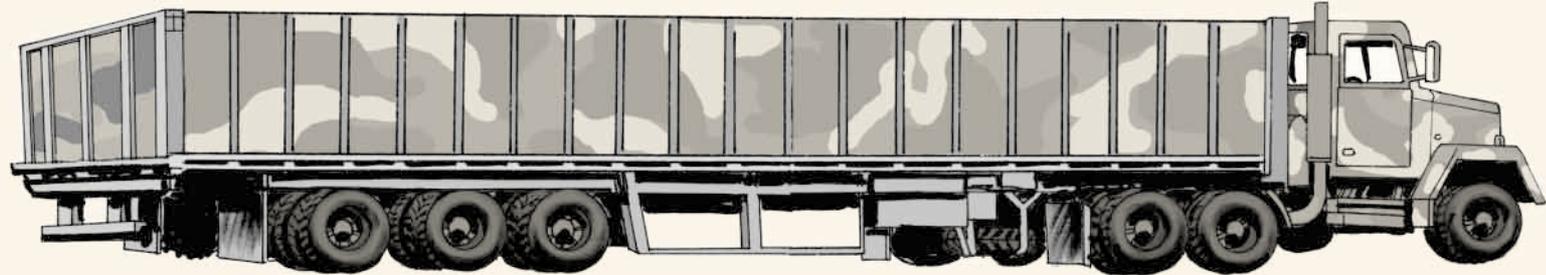
NOW I CAN BREATHE A LITTLE EASIER, TOO.



M872-Series Semitrailers...

Only One Can

Run Radials



Only one of the M872 family of semitrailers can use radial tires and tubes—the M872A2. It's the only one that's been tested and approved for radials.

The M872, M872A1 and M872A3 trailers use only **bias** tire, NSN 2610-00-060-9960, and **bias** tube, NSN 2610-00 -051-9450. The tire is 10.00-20, load range G.

In addition to that bias tire and tube, the M872A2 can also use **radial** tire, NSN 2610-01-281-0675, and **radial** tube, NSN 2610-00-029-0563. The tire is

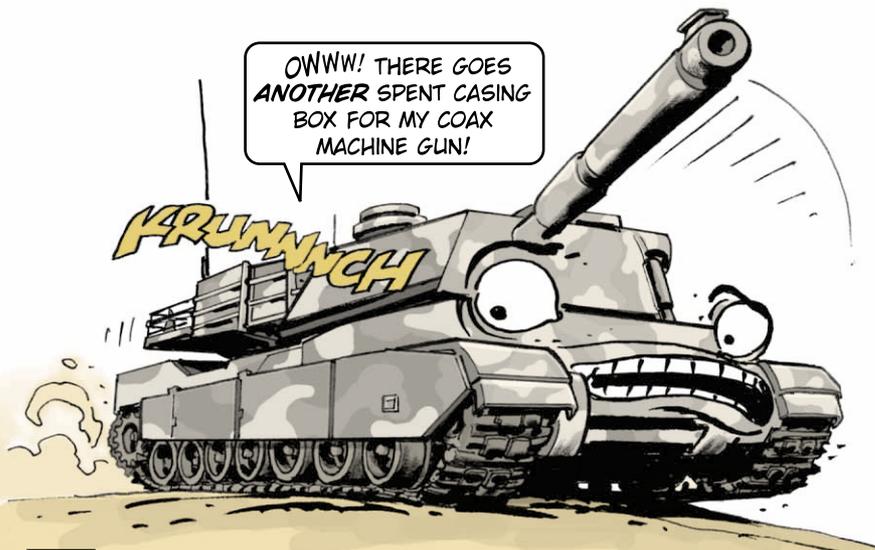
11.00R-20, load range H.

Although this tire is not shown in the parts TM, it has been available for the A2 model since 1995.

All models of M872 semitrailer use tire flap, NSN 2640-00-158-5617.

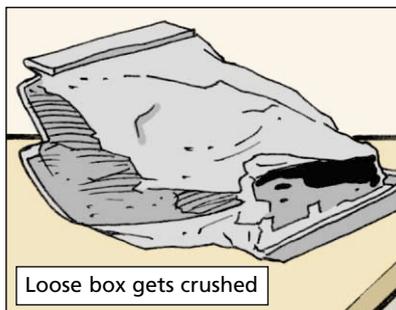
Never mix bias and radial tires on the same trailer axle. Doing that will cause tire and component damage. It's OK to mix radial and bias tires on different axles of the same trailer.

Keep Yer



The 7.62mm coax machine gun's spent casing box does its job well—if it's around to do it. That's your job.

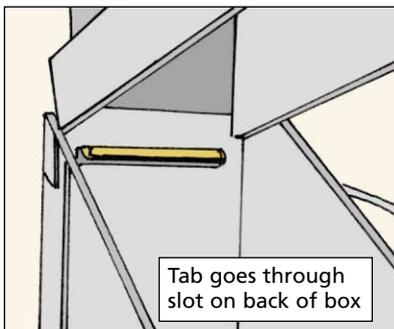
You have to attach the box to its lid properly. If you don't, the box wobbles enough to get caught and crushed when the main gun is raised.



Loose box gets crushed

Mount the spent casing box like this:

1. Slip the tab on the lid through the slot on the back end of the box.



Tab goes through slot on back of box

2. Swing the front of the box forward and up. Maintain enough pressure to keep the box locked in the slot.

Lid On!

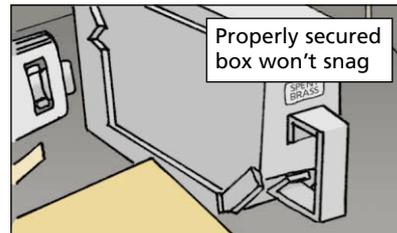
3. Clip the adjustable lock in place on the lid.



Clip lock in place

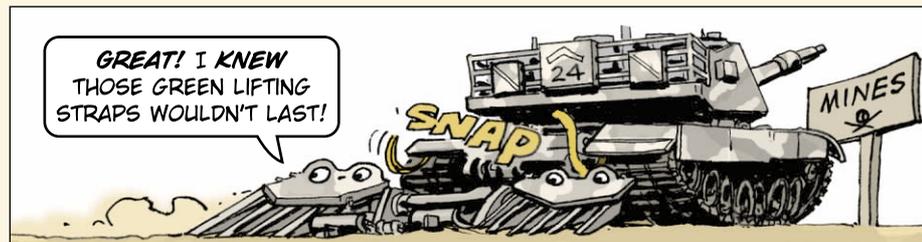
4. Wiggle the box. If it moves, the lock is too loose. Tighten it up and try again.

Once the box is locked firmly in place, there's just enough clearance to raise and lower the main gun without damage.



Properly secured box won't snag

ACCEPT NO SUBSTITUTES

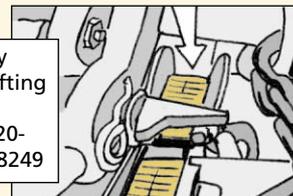


Crewmen, you've got enough to think about when pulling PM on your tank's mine clearing blade. Who needs to worry about whether the blade's lifting straps will snap?

You do if you're using something other than the white strap called out in your TMs. Some units have been seen using a substitute olive drab strap. There is no guarantee that this strap will support the blade's 15,000 pounds. So using a sub makes pulling PMCS on a raised blade an exercise in survival.

The only strap to use is NSN 4020-01-289-8249. It's bright white in color and designed to support up to 36,000 pounds.

Use only white lifting straps, NSN 4020-01-289-8249



So check your mine clearing blade right now. If its straps are **any** color other than white, replace 'em.

Shut It Down Now!

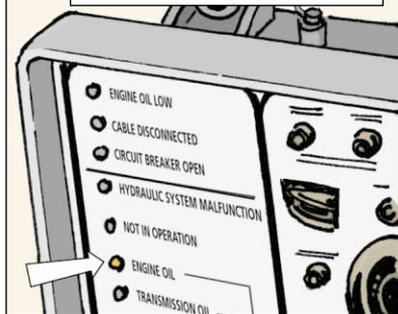
KOFF KOFF KOFF
KOFF

SHUT ME DOWN! YOU'RE KILLIN' MY ENGINE!



Drivers, if the ENGINE OIL CLOGGED FILTER light comes on, shut down your tank's engine now! If you don't, the dirt, sand and other gunk that's in the oil will shut down the engine for you!

ENGINE OIL CLOGGED FILTER light on? Shut down engine

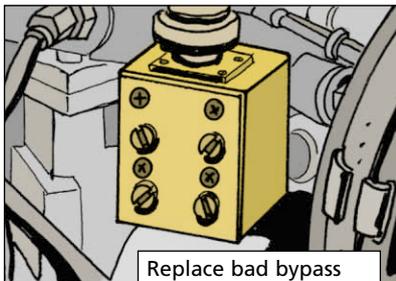


When the filter is clogged, oil bypasses the filter, carrying dirt into the engine.

This bypass feature keeps the engine from seizing up on the spot. But the dirty oil gets in engine parts.

The longer you run with a clogged filter, the more damage grit and dirt can cause.

Mechanics, if the light stays on **after** changing the filter element, the problem could be a bad bypass pressure switch on the engine oil pump assembly.

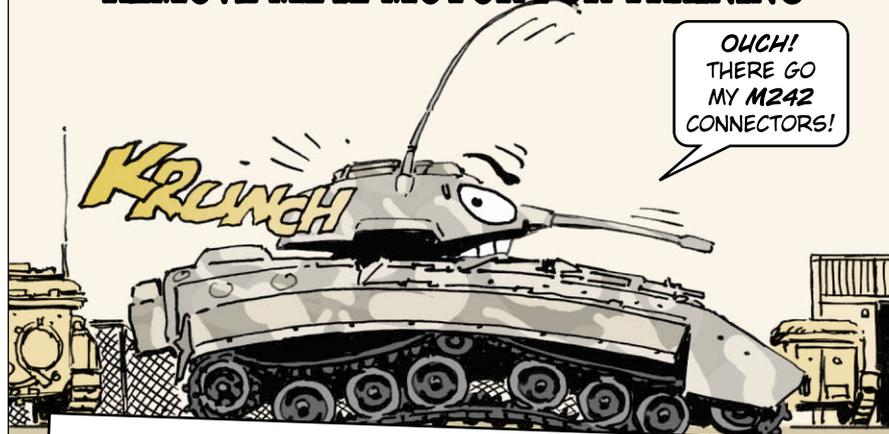


Replace bad bypass pressure switch with NSN 5930-01-089-9142

REMOVE M242 MOTOR FOR TRAINING

KRUNCH

OUCH! THERE GO MY M242 CONNECTORS!



Dear Editor,

Every Bradley unit quickly finds out that the most troublesome parts of the M242 gun are the 14-pin connectors on the feeder and receiver. If the feeder and receiver aren't aligned just right, connectors get bent when the locking handle is pushed down. If the connectors can't be straightened, the M242 is down until the connectors are replaced.

We saved our connectors by removing the gun drive motor from

the receiver before training and skills testing, since the M242 isn't fired then anyway. Without the motor in place, the connectors can't be bent.

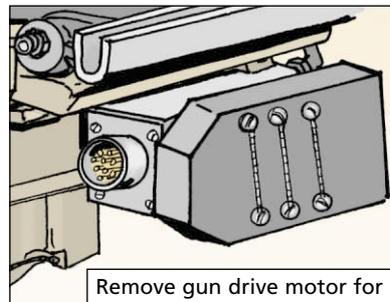
The master gunner or unit repairman can take off the motor in 5-10 minutes. When you're ready for actual firing, the drive motor can be reinstalled just as quickly.

SSG John Hughes
B Btry, 2/6 ADA
Ft Bliss, TX

From the desk of the Editor



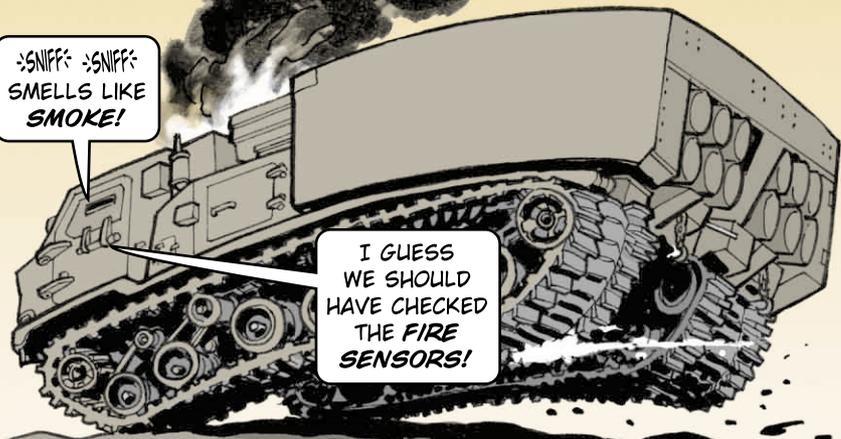
Good idea. Be careful taking off or putting on the motor so you don't damage it. And gunners should be cautioned not to force the locking handle down when the motor's in place. If the connections are aligned, the handle should push down easily.



Remove gun drive motor for training and skills testing

Sensor-tivity Training

↳SNIFF!↳SNIFF! SMELLS LIKE SMOKE!



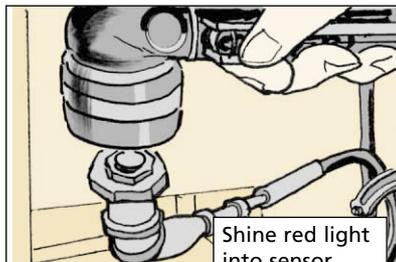
I GUESS WE SHOULD HAVE CHECKED THE FIRE SENSORS!

The sensors on your MLRS' fire suppression system are supposed to trigger the FIRE WARNING light when a fire starts. Properly warned, you can trigger the fire extinguishers and keep damage to a minimum.

If the sensors don't work, it may be too late—for you and your vehicle—by the time you discover the fire.

Keep those sensors in top form by checking them weekly like this:

1. Raise the cab.
2. Set the MASTER POWER switch to ENGINE ON.
3. Using a red filter, shine your flashlight directly into the sensor. The FIRE WARNING light should come on.

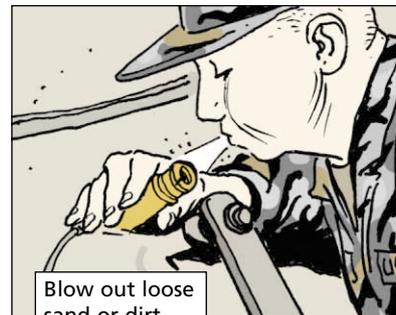


Shine red light into sensor...



...and look for the FIRE WARNING light

4. Do the same thing with the second sensor on the other side of the cab. No warning light? The problem could be a dirty connector. Unhook the connector on the faulty sensor and blow out any loose sand or dirt.



Blow out loose sand or dirt

Then clean the connector with isopropyl alcohol, NSN 6810-00-753-4993, and foam wipes, NSN 7290-00-184-9014.

Don't use cotton swabs for cleaning. They leave behind cotton fibers that cause the same problems as dirt.

Test the sensor again. If the FIRE WARNING light still won't come on, call in your mechanic. He'll repair or replace the sensors.

M113A3 FOV...

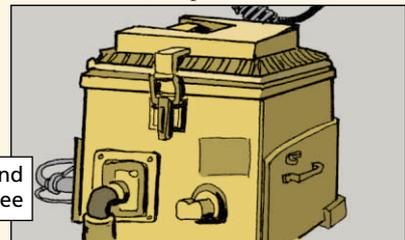
Deal of the Century?



FREE HEATERS

Who says you can't get something for nothing?

For a limited time, if you buy an MRE heater installation kit for your M113A3 carrier, you'll get the MRE heater itself absolutely free. That saves your unit more than \$1,100 per heater!



Buy installation kit and get MRE heater for free

Just order the installation kit, NSN 2590-01-455-4043. Then e-mail the requisition's document number along with your name, phone number and mailing address to TACOM and they'll send you the heater, NSN 7310-01-387-1305.

E-mail your document number to sopkoP@tacom.army.mil or Rybickis@tacom.army.mil.

Remember, the deal is only good until the stock of free heaters is exhausted.

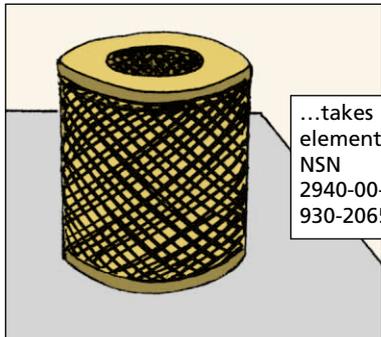
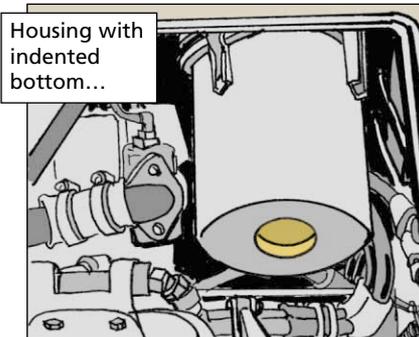
CLEAR UP CLEAN



Mechanics, when it's time to change the air cleaner element or housing in an M113A2 carrier, don't let your confusion keep the engine from getting the air it needs.

There are two different air cleaner elements and housings available. If you match the wrong element to the wrong housing—or vice versa—the carrier's engine will spit, sputter and die because it can't get enough air.

A housing with one circle indented on the bottom is NSN 2940-00-999-2119. The only filter element that works with that housing is NSN 2940-00-930-2065. It has no fins and both ends are open.



AIR CONFUSION

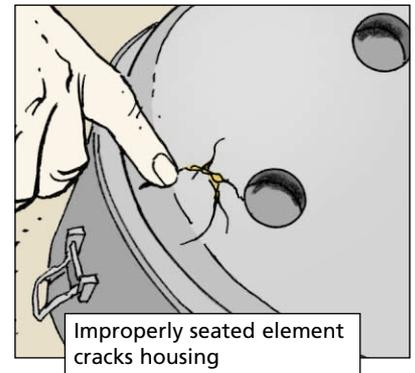
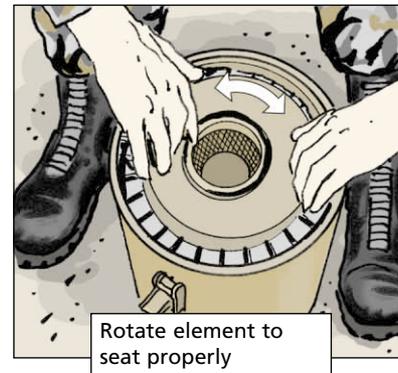
If you've got a housing with three small circles indented on the bottom, it's NSN 2940-00-103-5797. The element for it is NSN 2940-00-168-2337. It has fins at the top and is closed at the bottom.



These elements are not interchangeable. They won't work right unless they're used with their matching housings.

When installing the finned filter element, rotate the element to the left or right after dropping it into the housing. That lets the element drop snugly over the three indented circles at the bottom of the housing.

If you forget, the filter element won't fit right. When you close the clamps, the pressure cracks the housing. That lets dirty air get through—a sure engine killer.



No matter which housing you have, make sure you install it with the drain hole at the lowest point so that water will drain out. No hole? Drill one with a 3/16-in bit.



M88A1 Recovery Vehicle . . .

DON'T BE A GLASS CRACKER

Mechanics, easy does it with the auxiliary power unit (APU) when you service your M88A1 recovery vehicle.

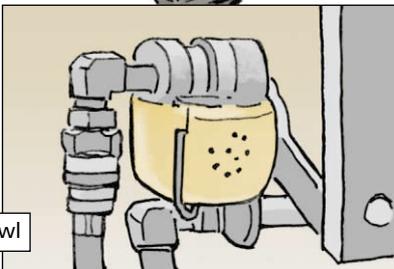
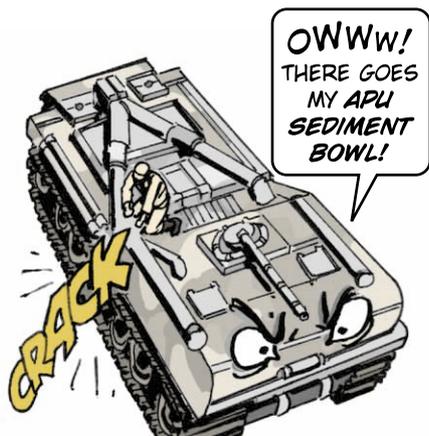
You don't have much room to work on the APU, so it's easy to slip and hit the fuel sediment bowl, especially while you're draining or replacing the fuel filters. Since the sediment bowl, NSN 2910-00-571-5883, is made of glass, it breaks easily.

A cracked or broken sediment bowl causes more headaches than you might realize. The bowl can only be replaced by direct support.

A new sediment bowl is only \$20. But the costs are much higher when you consider your vehicle will be deadlined until the bowl is replaced.

So save yourself the time and money. Use kid gloves when working on the APU.

Watch out for sediment bowl



M88A1 Recovery Vehicle...

Put Your Best Tow Forward



Towing a 70-ton M1-series tank requires some serious attention to detail on your part. Since the tank weighs more than your M88A1 recovery vehicle, it can generate some real problems.

Follow these safety tips or the tank you're towing can push your M88A1 sideways, run up over its rear end, ruin its transmission or brakes, or even flip it over:

- ✦ Always use a third vehicle as a hold-back vehicle—even when using a tow bar. Another tank works best.
- ✦ Allow no one to ride in or on a tank that's being towed.
- ✦ Use tow cables, not a tow bar, when towing cross-country or over rough ground. A tow bar will snap. The maximum speed when using a tow bar is 5 mph.
- ✦ Tow no faster than 2 mph when using tow cables.
- ✦ Never make sharp turns or sudden stops. Make wide, gradual turns in first gear.

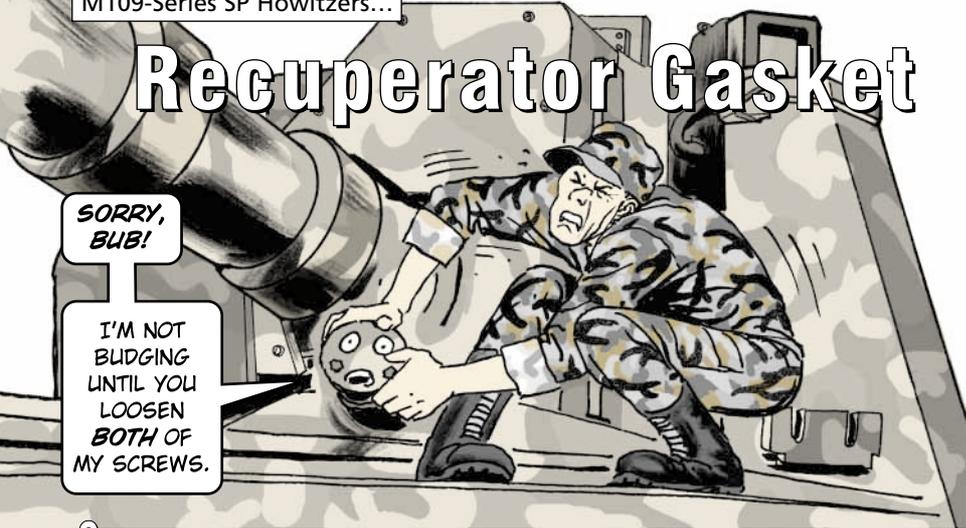
Towbar snaps easily over rough terrain



Recuperator Gasket

SORRY, BUB!

I'M NOT BLUDGING UNTIL YOU LOOSEN BOTH OF MY SCREWS.



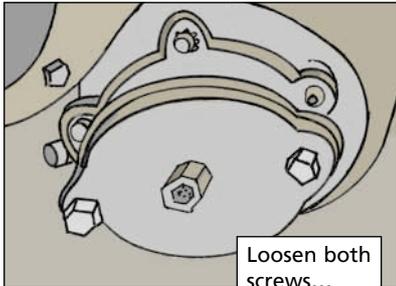
Crewmen, the length of the indicator pins on your howitzer's recuperator have to be measured before firing and after every 100 rounds of sustained fire.

If the pins extend less than 1/4 inch or more than 3/4 inch, the hydraulic fluid level in the recuperator has to be adjusted.

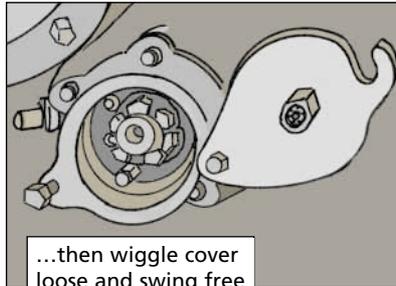
It's easy to do more harm than good when checking the pins, though. That's because each time you check the pins you have to open the recuperator cover. That gives you a lot of chances to damage the recuperator gasket.

A damaged or missing gasket lets corrosion and dirt inside the recuperator. When the howitzer is fired, those contaminants fall into the inner cylinder and chew up the piston head seals. Damaged seals let nitrogen escape from the recuperator.

To measure the pins, you don't have to remove either of the two screws holding the recuperator cover closed. Just loosen **both** screws to their stop pins and **gently** pry the cover away from the recuperator with your fingers.



Loosen both screws...



...then wiggle cover loose and swing free

Care is a Must

If you loosen just the top screw and twist the cover open, the gasket tears.

If the gasket is cut or torn, tell your mechanic. He'll eyeball Page 5-42 of TM 9-2350-311-20-2 (M109A2-A5) or Page 4-86 of TM 9-2350-314-20-2-1 (M109A6) for replacement info. NSN 5330-00-034-4448 gets a new gasket.

Once the cover is completely free of the recuperator, turn it so you can get to the pins and fluid valve.

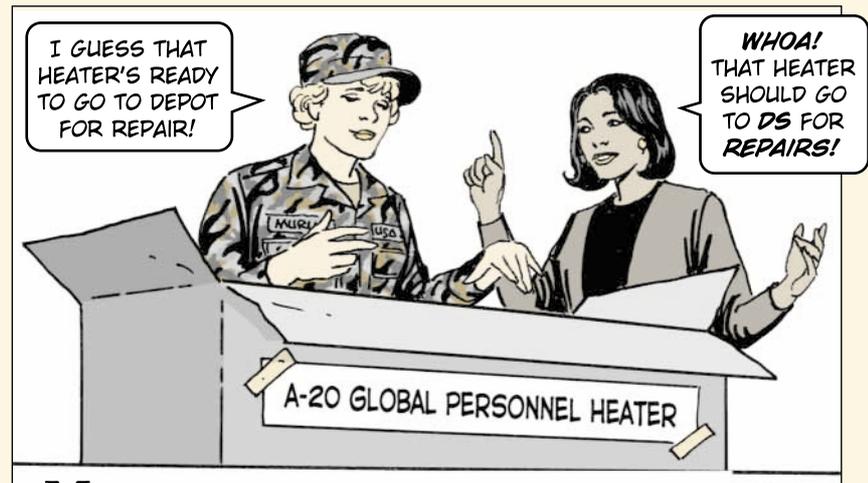
Never leave the cover loose to save time on checking the pins next time, either. That's an open invitation to dirt and corrosion.

Personnel Heaters...

REMOVE BUT DON'T REPAIR

I GUESS THAT HEATER'S READY TO GO TO DEPOT FOR REPAIR!

WHOA! THAT HEATER SHOULD GO TO DS FOR REPAIRS!



Mechanics, when one of those new A-20 Global personnel heaters breaks down in a combat vehicle, **you** can't replace it with a new or repaired heater, but DS takes care of repairs.

replace it with a new or repaired heater, but DS takes care of repairs. If DS can't repair it, they're authorized to send the heater to depot. But **you** can't repair it or send it off to depot. That's direct support's job.

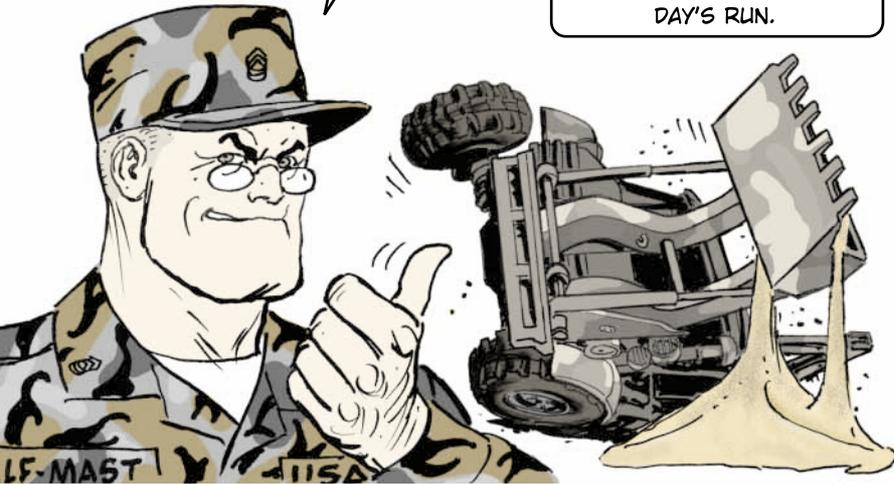
The heater, NSN 2540-01-396-2826, has an SMR code of PAOFD. That means you can remove it and replace it with a new or repaired heater, but DS takes care of repairs. If DS can't repair it, they're authorized to send the heater to depot. But **you** should never bypass DS to send the heater directly to depot for repair like you do with the old Hupp and Stewart-Warner heaters.

SEE . . .

FRONT BUCKET REMINDERS

OPERATORS... GOOD PM AND SAFE OPERATION GO HAND-IN-HAND.

TO KEEP YOUR EXCAVATOR MISSION-READY, HERE ARE SOME TIPS TO KEEP IN MIND BEFORE AND AFTER THE DAY'S RUN.



Travel Low

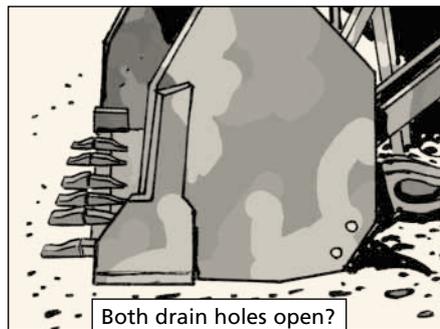
On the job, run your vehicle low and balanced, especially when going over bumps, gullies and slopes.

Never run the SEE with a full bucket carried overhead. It makes the excavator top-heavy and could cause a rollover.

Bucket Drain Holes

After the day's run, park the SEE with the bucket resting on the ground. It saves wear and tear on the hydraulic cylinders. Also make sure the bucket's drain holes are open, so water will drain out.

Water that sits in the bucket causes rust. In cold weather, that water can freeze and split the bucket's welds.



The Forgotten Five

Operators, five grease fittings on the small emplacement excavator get overlooked because they're out of sight in back of the vehicle.

Backhoe Pedal Fittings

Without lube, the backhoe's swing-foot pedals can seize up. Then you can't move the backhoe left or right during construction operations.

So keep the left and right pedals lubed with 4 to 5 pumps of grease at scheduled services.

THIS PEDAL IS HARD TO PUSH DOWN!



Pintle

If you don't lube the pintle's fitting like LO 5-2420-224-12 says, rust freezes the pintle into position. Then it won't turn. If that happens, a towed trailer can tip over.

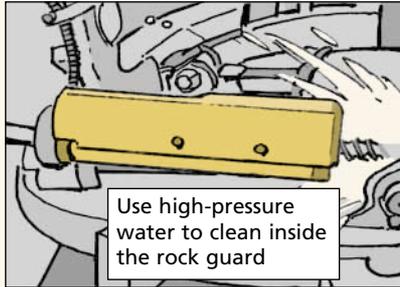
Put PRESSURE on Rock Guard

The rock guard on your DEUCE's blade tilt cylinder is a haven for mud, small rocks, dirt and sand.

All that crud breaks down the hydraulic hoses inside the rock guard.

When hydraulic hoses start to rot, they spring leaks. Without hydraulic oil, the blade won't retract, elevate or push dirt forward. Then your earthmover's blade is out of commission.

So, after the day's run, use a high-pressure water hose on the tilt cylinder's rock guard. You may have to get your mechanic to remove the rock guard so you can get out all that hard-packed crud.



Use high-pressure water to clean inside the rock guard

4K RTFL Gasket

A rubber gasket that fits inside the filler cap on the MHE 270/271 forklift's fuel tank is now available. The cap is Item 8 in Fig 24 of TM 10-3930-664-24P. Order the gasket on a DD 1348-6 with CAGE code 97576 and part number 1303-8 from RIC S91.

M10A O-ring

NSN 5330-01-195-8879 gets the O-ring for the hydraulic oil filter on the M10A rough terrain forklift. The NSN shown as Item 9 in Fig 198 of TM 10-3930-643-24P is wrong.

6K VRRT Boot

A rubber boot is now available separately for the forklift's transmission disconnect cylinder assembly. The assembly is Item 15 in Fig 79 of TM 10-3930-660-24P. Order the boot with NSN 2530-01-314-9265.



HI! YOU'RE LISTENING TO TRICK AND TRACK, THE RACKET BROTHERS.

ON TODAY'S SPECIAL EDITION OF PM TALK, WE WELCOME MASTER-SERGEANT... UH... ER...
...HALF MAST!

HALF MAST! HE WILL HELP US ANSWER QUESTIONS FROM SOLDIERS IN THE FIELD

IS THAT A DESIGNER TIE YOU'RE WEARING, TRACK... OR HAVE YOU BEEN EATING SPAGHETTI AGAIN?

WELL, ENOUGH CHATTER. HERE'S OUR FIRST CALLER.

PM TALK... YOU'RE ON THE AIR.

YUK-YUK. THAT'S ABOUT AS FUNNY AS A TRAIN WRECK.

OH, YEAH... SPEAKIN' OF TRAIN WRECKS, DO YOU STILL HAVE THAT '66 FAIRLANE?

This is Private Sledd at Fort Riley, Kansas.

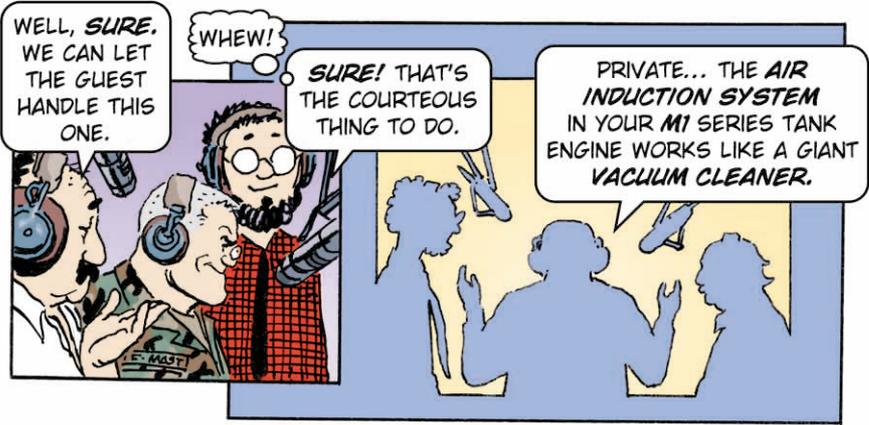
It's my M1 Tank. It's overheating.

What can I do?

YOUR CAR DRIVES LIKE A TANK, TRACK! YOU TAKE THIS ONE.

UHM... YOU MIGHT TRY... UHM... WHAT COLOR IS YOUR TANK?

MIGHT I OFFER A SUGGESTION?

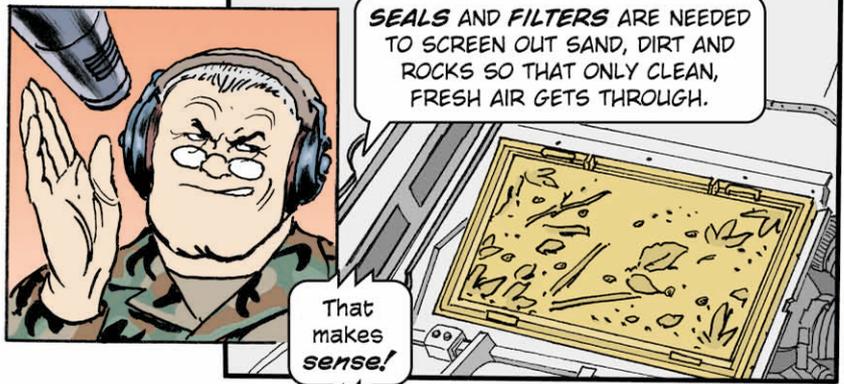


WELL, *SURE*. WE CAN LET THE GUEST HANDLE THIS ONE.

WHEW!

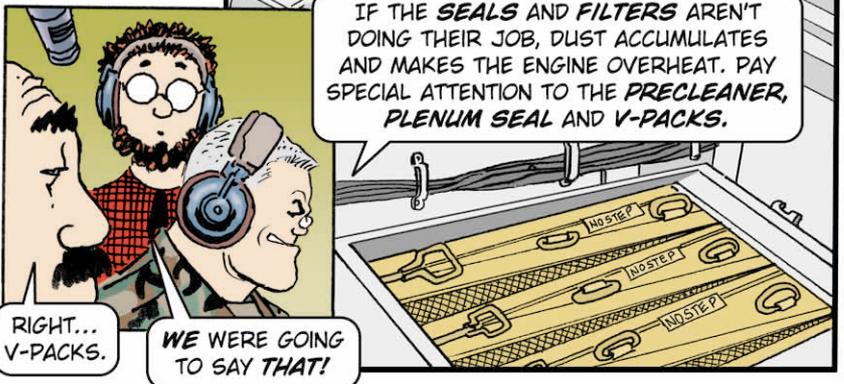
SURE! THAT'S THE COURTEOUS THING TO DO.

PRIVATE... THE AIR INDUCTION SYSTEM IN YOUR M1 SERIES TANK ENGINE WORKS LIKE A GIANT VACUUM CLEANER.



SEALS AND FILTERS ARE NEEDED TO SCREEN OUT SAND, DIRT AND ROCKS SO THAT ONLY CLEAN, FRESH AIR GETS THROUGH.

That makes sense!



IF THE *SEALS* AND *FILTERS* AREN'T DOING THEIR JOB, DUST ACCUMULATES AND MAKES THE ENGINE OVERHEAT. PAY SPECIAL ATTENTION TO THE *PRECLEANER*, *PLENUM SEAL* AND *V-PACKS*.

RIGHT... V-PACKS.

WE WERE GOING TO SAY THAT!

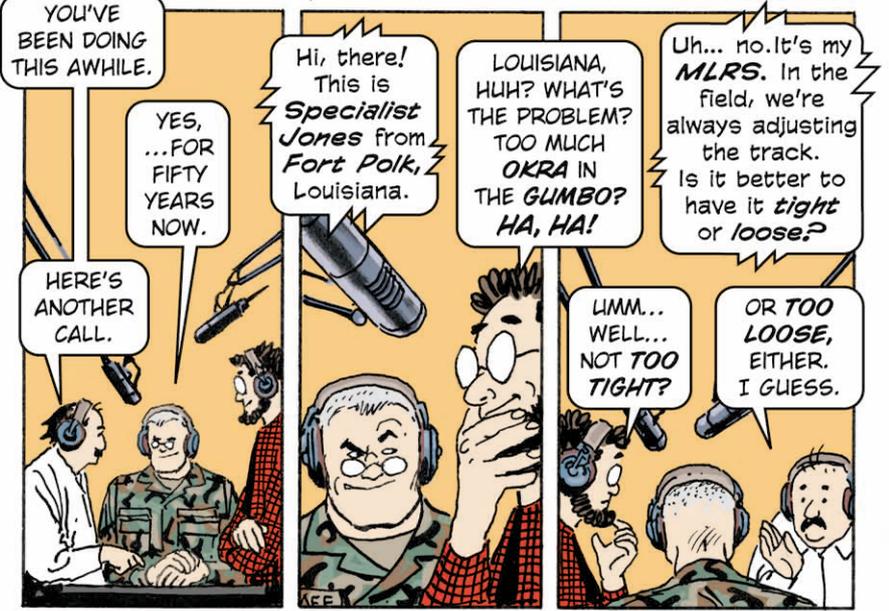


LOOK CLOSELY FOR DAMAGE TO THE *PRE-CLEANER BAFFLE SEALS*, TOO.

CROOKED, TORN OR MISSING SEALS ALLOW DIRT TO BYPASS THE PRE-CLEANER AND CLOG THE *V-PACKS*.

GOOD PM WILL KEEP YOUR VEHICLES RUNNING AND STOP THAT OVER-HEATING PROBLEM.

Gee, thanks. I'll do that.



YOU'VE BEEN DOING THIS AWHILE.

YES, ...FOR FIFTY YEARS NOW.

Hi, there! This is *Specialist Jones* from *Fort Polk*, Louisiana.

LOUISIANA, HUH? WHAT'S THE PROBLEM? TOO MUCH *OKRA* IN THE *GUMBO*? HA, HA!

Uh... no. It's my *MLRS*. In the field, we're always adjusting the track. Is it better to have it *tight* or *loose*?

HERE'S ANOTHER CALL.

LIHM... WELL... NOT TOO TIGHT?

OR TOO LOOSE, EITHER. I GUESS.



IF YOU GENTLEMEN DON'T MIND... I HAVE A SUGGESTION.



PLEASE GO AHEAD.

AHEM, BE OUR GUEST

PROPER TENSION IS THE KEY TO A LONG, HEALTHY LIFE FOR YOUR MLRS TRACK.

IF IT'S TOO LOOSE, YOU END UP WITH A THROWN TRACK.



SEE? THAT'S WHAT I SAID. TIGHTEN IT.

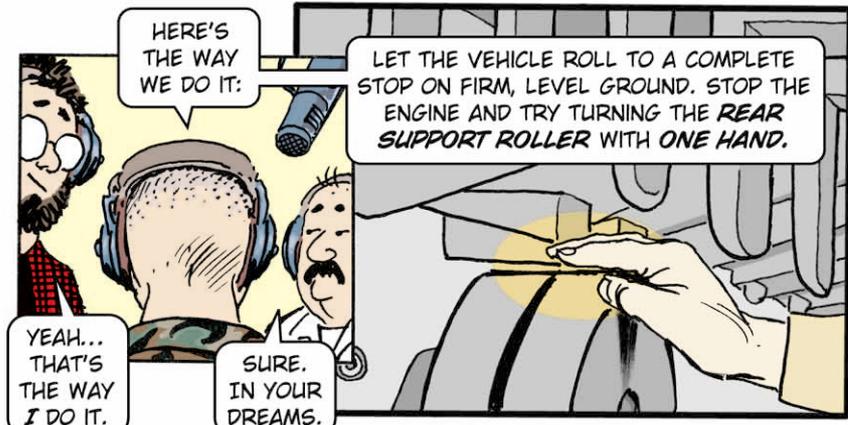
BUT TRACK THAT'S TOO TIGHT WEARS OUT SPROCKETS BEFORE THEIR TIME.

OUCH! BETTER LOOSEN IT.



Uh... so how do I know which one to do?

ALL IT TAKES IS A PENCIL AND A LITTLE KNOW-HOW.

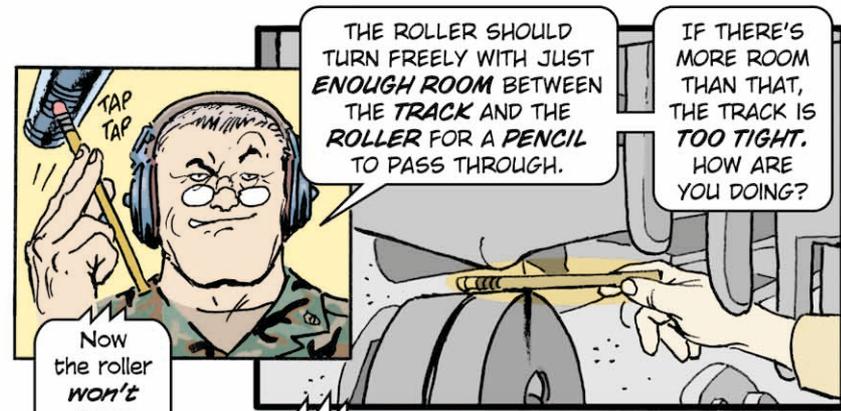


HERE'S THE WAY WE DO IT:

LET THE VEHICLE ROLL TO A COMPLETE STOP ON FIRM, LEVEL GROUND. STOP THE ENGINE AND TRY TURNING THE REAR SUPPORT ROLLER WITH ONE HAND.

YEAH... THAT'S THE WAY I DO IT.

SURE. IN YOUR DREAMS.



THE ROLLER SHOULD TURN FREELY WITH JUST ENOUGH ROOM BETWEEN THE TRACK AND THE ROLLER FOR A PENCIL TO PASS THROUGH.

IF THERE'S MORE ROOM THAN THAT, THE TRACK AND THE ROLLER FOR A PENCIL TO PASS THROUGH. HOW ARE YOU DOING?



Now the roller won't turn at all!

THAT MEANS THE TRACK IS TOO LOOSE. IT'S TIME TO TIGHTEN IT.

Okay, thanks. That's what I needed to know. I appreciate it, fellas.



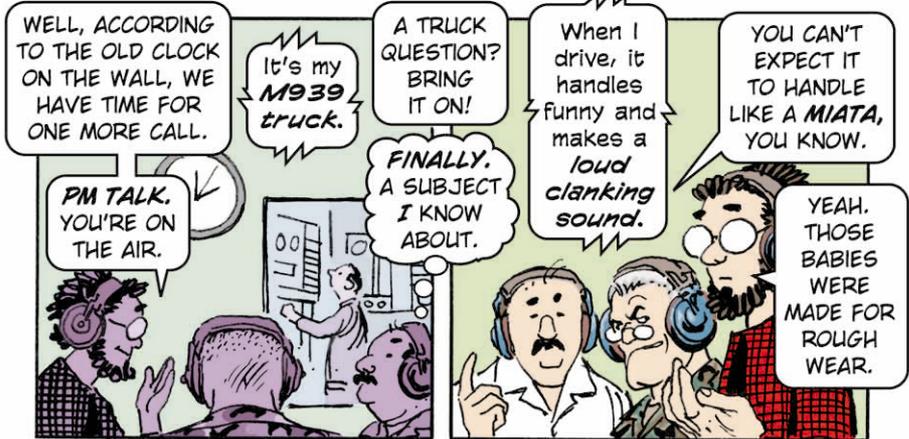
ANYTIME. THAT'S WHY WE'RE HERE.

NO PROBLEMO.



GLAD WE COULD HELP. JUST ONE MORE THING...

...AFTER YOU'VE MADE YOUR ADJUSTMENTS, DRIVE THE VEHICLE A HUNDRED FEET, COAST TO A STOP AND CHECK TRACK TENSION ONE MORE TIME. AND KEEP UP THE GOOD PM.



WELL, ACCORDING TO THE OLD CLOCK ON THE WALL, WE HAVE TIME FOR ONE MORE CALL.

It's my **M939 truck.**

A TRUCK QUESTION? BRING IT ON!

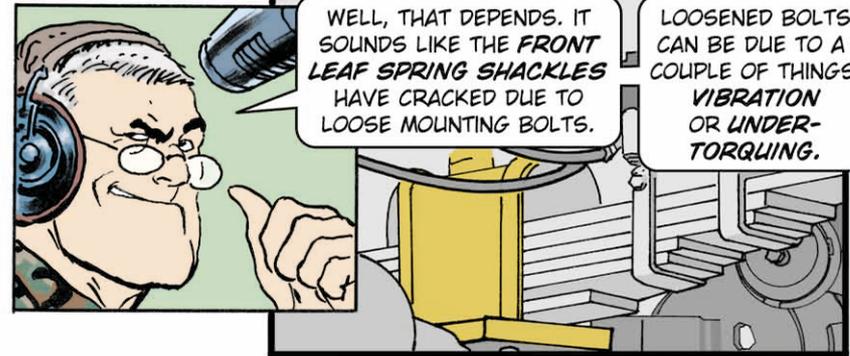
When I drive, it handles funny and makes a **low clanking sound.**

YOU CAN'T EXPECT IT TO HANDLE LIKE A **MIATA**, YOU KNOW.

YEAH. THOSE BABIES WERE MADE FOR ROUGH WEAR.

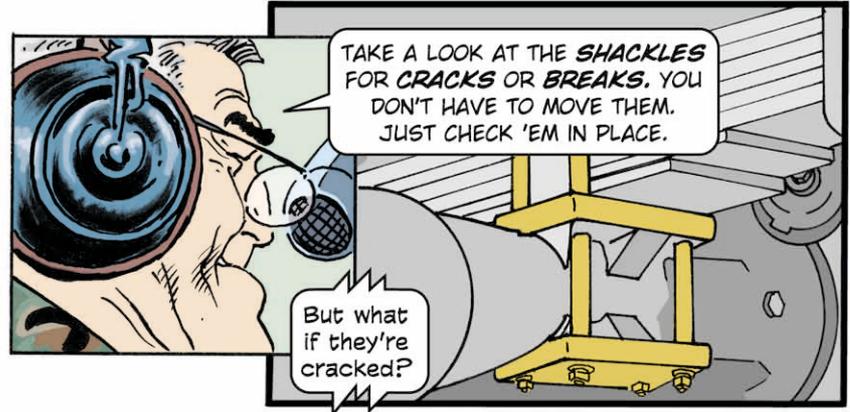
FINALLY. A SUBJECT I KNOW ABOUT.

PM TALK. YOU'RE ON THE AIR.



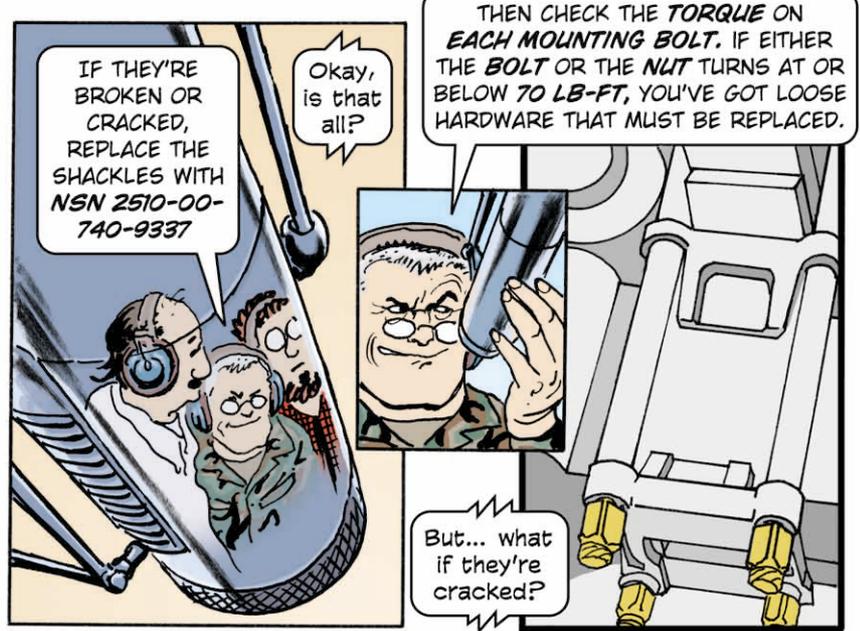
WELL, THAT DEPENDS. IT SOUNDS LIKE THE **FRONT LEAF SPRING SHACKLES** HAVE CRACKED DUE TO LOOSE MOUNTING BOLTS.

LOOSENED BOLTS CAN BE DUE TO A COUPLE OF THINGS: **VIBRATION** OR **UNDER-TORQUING.**



TAKE A LOOK AT THE **SHACKLES** FOR **CRACKS** OR **BREAKS**. YOU DON'T HAVE TO MOVE THEM. JUST CHECK 'EM IN PLACE.

But what if they're cracked?



IF THEY'RE BROKEN OR CRACKED, REPLACE THE SHACKLES WITH **NSN 2510-00-740-9337**

Okay, is that all?

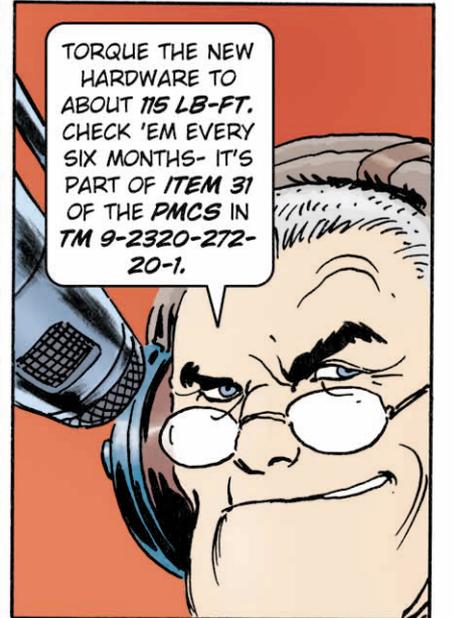
THEN CHECK THE **TORQUE** ON **EACH MOUNTING BOLT**. IF EITHER THE **BOLT** OR THE **NUT** TURNS AT OR BELOW **70 LB-FT**, YOU'VE GOT LOOSE HARDWARE THAT MUST BE REPLACED.

But... what if they're cracked?



YOU'LL NEED A **GRADE 8 BOLT**, **NSN 5305-00-725-0140**, AND A **SELF-LOCKING NUT**, **NSN 5310-00-241-6661.**

WE KNEW THAT!



TORQUE THE NEW HARDWARE TO ABOUT **115 LB-FT**. CHECK 'EM EVERY SIX MONTHS- IT'S PART OF **ITEM 31** OF THE **PMCS** IN **TM 9-2320-272-20-1.**



TOO BAD THERE'S NOT A TM FOR TRACK'S OLD FAIR-LANE.

HEY, TRICK... WE'RE OUT OF TIME.

WE WANT TO THANK OUR GUEST, MASTER SERGEANT HALF-TRACK...



THE HANDLE IS HALF-MAST!

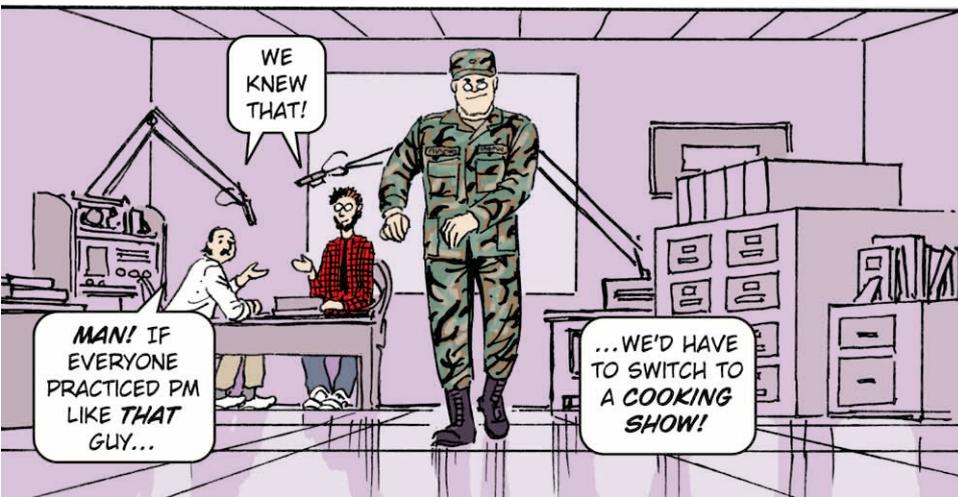
SURE... RIGHT. WELL, THANKS FOR JOINING US.

SORRY WE DIDN'T HAVE MORE TIME TO CHAT WITH YOU.

THAT'S OKAY. I THINK I MADE MY POINT.

WHICH WAS?

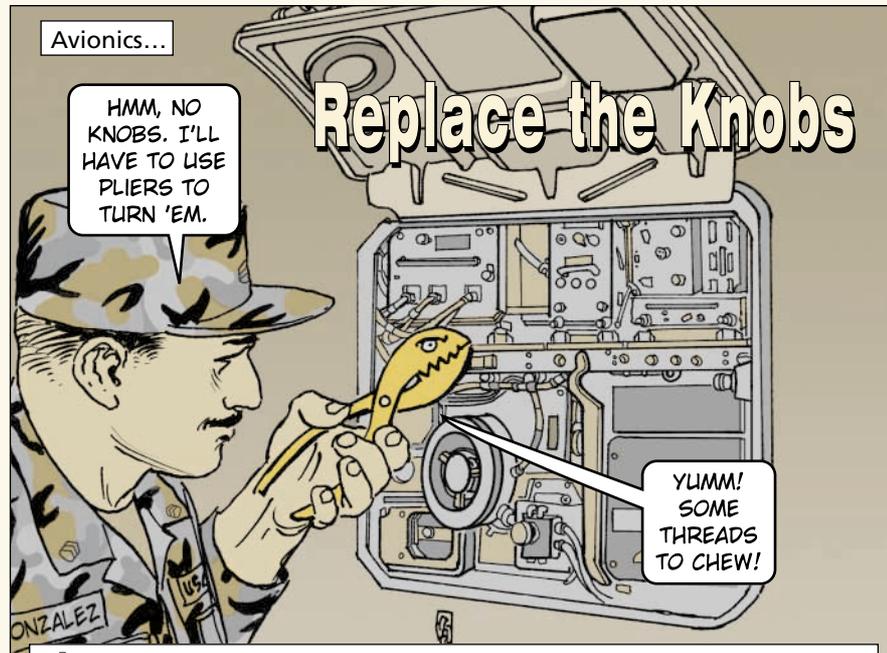
IT TAKES GOOD PM TO KEEP THINGS RUNNING.



WE KNEW THAT!

MAN! IF EVERYONE PRACTICED PM LIKE THAT GUY...

...WE'D HAVE TO SWITCH TO A COOKING SHOW!



Avionics...

Replace the Knobs

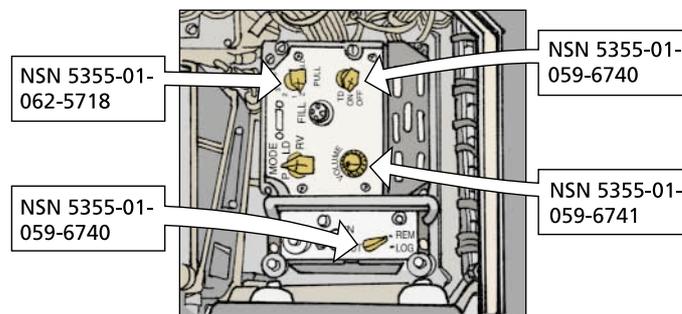
HMM, NO KNOBS. I'LL HAVE TO USE PLIERS TO TURN 'EM.

YUMM! SOME THREADS TO CHEW!

Aircraft repairmen, are you turning in KY-58 COMSEC equipment and Z-AHQ power interface adapters because you can't find NSNs to replace broken control knobs? **Stop!**

Your COMSEC equipment can't be operated properly without knobs. If you use pliers to turn the dials, you'll damage the threads and the knobs will never go on.

For your KY-58 and Z-AHQ power interface adapter, order these knobs.



Note these NSNs in TM 11-5810-262-23.

Shoo These Birds



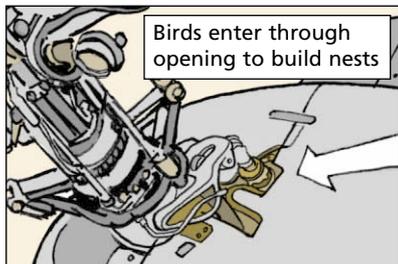
SORRY, MY FINE-FEATHERED FRIENDS... YOUR NEST HAS GOT TO GO!

Crew chiefs, if you notice nest-making material around your aircraft, you probably have stowaways.

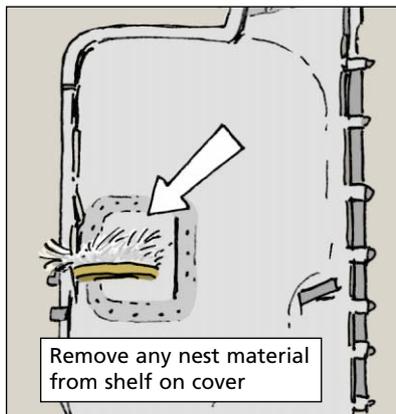
That's a FOD problem you need to pay more attention to. Bird nests hold moisture that can create corrosion. Dry grass creates potential fire problems when it dries and falls onto a hot gearbox.

While aircraft sit on the flight line, birds squeeze through openings in the tail section.

So inspect the tail rotor section for bird nests by removing the cover according to procedures in your -23 TM. If birds have targeted your aircraft, see your canvas shop about making a cover for the tail rotor section to keep 'em out.

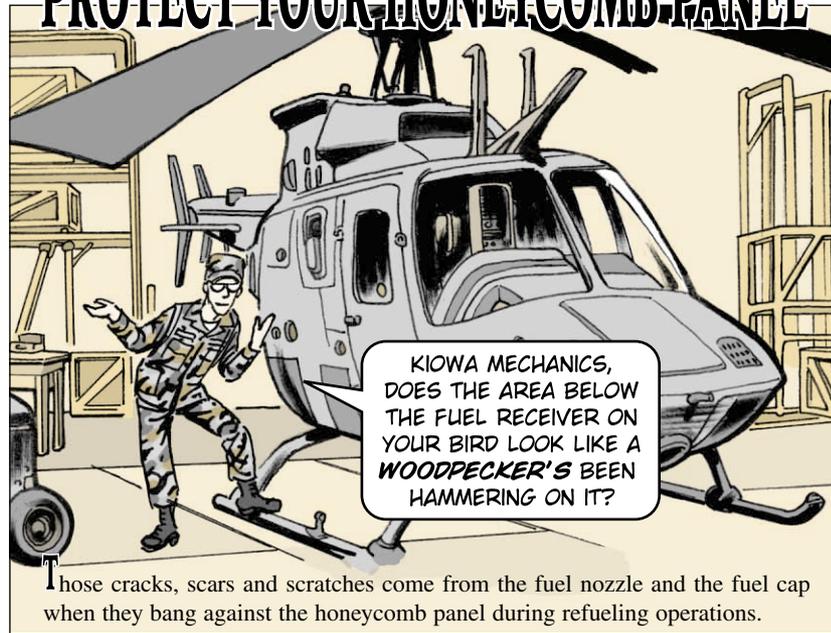


Birds enter through opening to build nests



Remove any nest material from shelf on cover

PROTECT YOUR HONEYCOMB PANEL



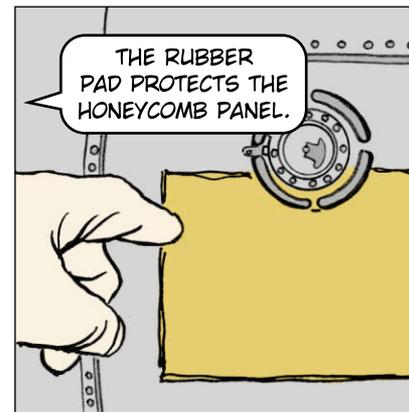
KIOWA MECHANICS, DOES THE AREA BELOW THE FUEL RECEIVER ON YOUR BIRD LOOK LIKE A WOODPECKER'S BEEN HAMMERING ON IT?

Those cracks, scars and scratches come from the fuel nozzle and the fuel cap when they bang against the honeycomb panel during refueling operations.

If the honeycomb panel is damaged, repair it per Para 2-1-62 of TM 1-1520-248-23. Then, protect the panel by adding a rubber pad like it says in Para 2-1-79 of TM 1-1520-248-23.



REPAIR CRACKS, SCARS AND SCRATCHES... THEN ADD A RUBBER PAD.



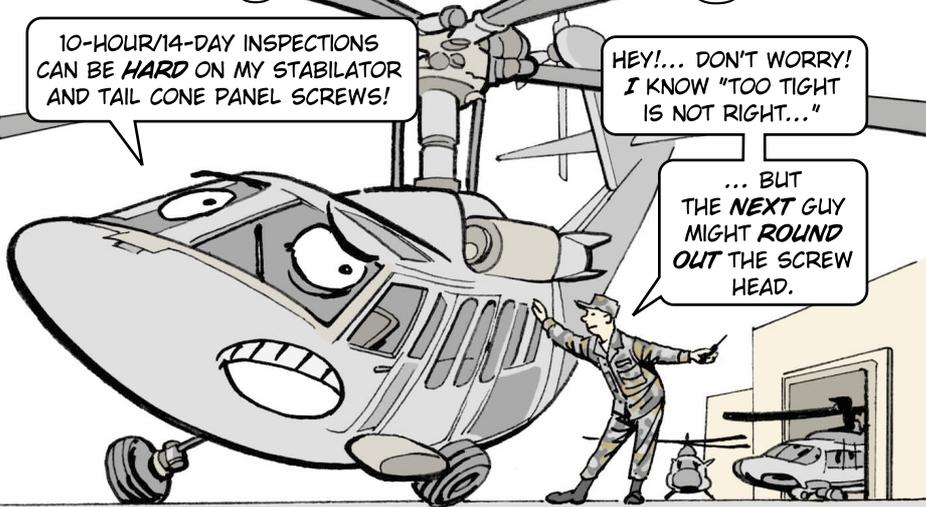
THE RUBBER PAD PROTECTS THE HONEYCOMB PANEL.

Too Tight's Not Right

10-HOUR/14-DAY INSPECTIONS CAN BE **HARD** ON MY STABILATOR AND TAIL CONE PANEL SCREWS!

HEY!... DON'T WORRY! I KNOW "TOO TIGHT IS NOT RIGHT..."

... BUT THE **NEXT GUY** MIGHT **ROUND** OUT THE SCREW HEAD.



Black Hawk mechanics, don't overtighten screws when you install access panels after your 10-hour/14-day inspections.

It's easy to bear down too hard on the screws when you reinstall the right and left tail cone panels and the stabilator panel.

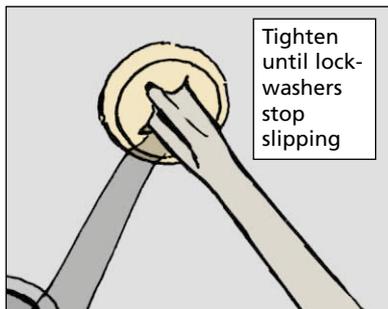
But if you do, you'll probably end up

rounding out the screw heads when you remove them for the next inspection.

But avoid all that trouble by tightening the screws only until the lock washers stop slipping. If you round out a screw head, get your lead mechanic to help you remove it. Always refer to your general aircraft TM 1-1500-204-23 for checking how tight a screw should be.



Do not overtighten screws



Tighten until lock washers stop slipping

RAISING THE RAMP

Chinook crews, if you've got a sticking cargo door ramp sequence valve, you could end up with a ramp that won't close or seal properly. That could sink you like the Titanic if you have to land your bird in the drink.

The sequence valve determines when the cargo door extends from the ramp as the ramp is closed.

When you set the control to close the ramp, the valve may stick. If it does, the cargo door extends too late. It tears the ramp fiberglass coaming and rips the weather seal around the ramp frame. That seal is what keeps excess water out in a water landing.



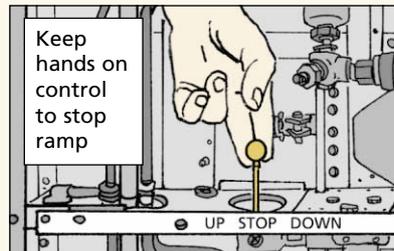
Cargo door damages coaming and seal



RAMP, DON'T FAIL ME NOW!

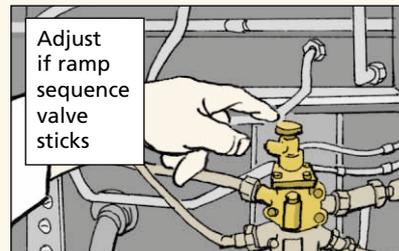
So, if you're raising the ramp, keep your hands on the ramp control handle and eyeball the ramp as it closes. If the sequence valve sticks and the cargo door shoots out too late, you can prevent the damage by stopping the ramp before it closes.

If you have trouble with the cargo door, adjust the sequence valve per Task 7-282 of TM 1-1520-240-23. If it continues to stick, have your AVIM shop test or repair it per Tasks 7-280 and 7-278 in the TM.



Keep hands on control to stop ramp

UP STOP DOWN



Adjust if ramp sequence valve sticks

LAUNCH with CARE

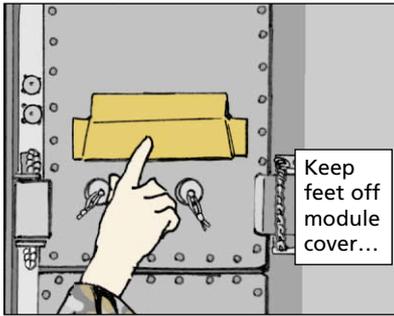
YOU'VE GOT TO BE CAREFUL WHERE YOU PUT YOUR FEET! I'M A LOT MORE SENSITIVE THAN I LOOK!



A little care with your Patriot missile system's launcher can lead to good launching.

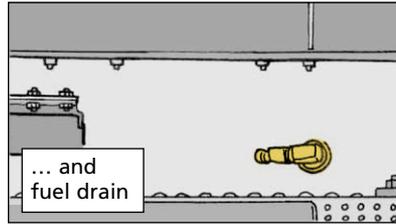
Watch Your Step

A misplaced boot on the cover for the launcher's 5A2 data link terminal module can break the electrical connections for the fiber-optic cables. That means no comms between the launcher and engagement control station (ECS). A good first step in heading off that problem is to paint NO STEP on the module cover. And keep bundles of camouflage netting off the cover, too. The weight can damage the connections.



Keep feet off module cover...

A no-step rule goes for the launcher generator's fuel drain, too. If you step on it, fuel gushes out the drain.



... and fuel drain

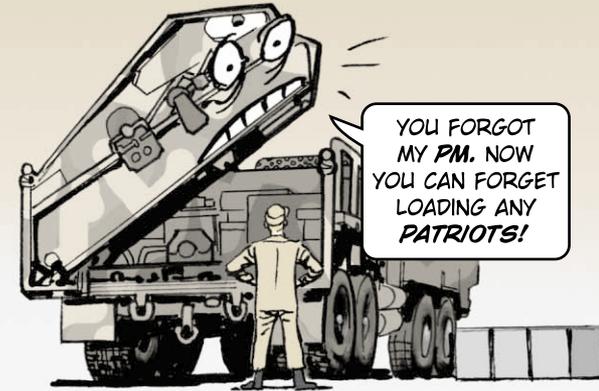
Release Release Pin

Any time you're going to raise or lower the launcher, **make sure** the quick release pins have been removed. If you forget and the quick release pins have not been removed, the whole launcher frame can be twisted or the launcher motor burned out.



Remove both quick-release pins

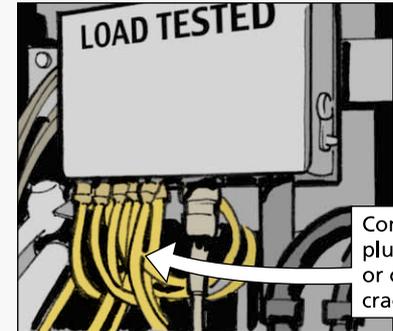
DON'T FORGET THE CRANE



YOU FORGOT MY PM. NOW YOU CAN FORGET LOADING ANY PATRIOTS!

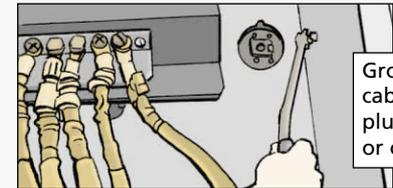
If you forget crane PM on the M985E1 guided missile transport, your Patriot missile system soon won't be shooting or moving many missiles. Here are three things you can do to keep the crane lifting:

Check the cables. If the electrical cable connectors are filled with dirt, you'll have problems operating the crane with the remote control. So blow out dirty connectors with the truck's air hose. Wear goggles to protect your eyes. If the connectors are plugged with oily dirt, wipe them out with a dry cloth. If any of the cables are cracked or dry rotted, tell your repairman.



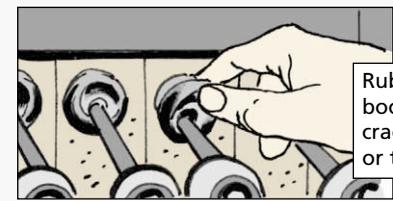
Connectors plugged up or cables cracked?

Check the crane's five grounding cables. If they're filled with dirt or the cables are cut, you won't be able to ground the missile canisters. Clean any dirty connectors with the crane's air hose. Report damaged cables. See TM 9-1410-600-14 for more info.



Grounding cables plugged or cut?

Check the five rubber boots on the operating control station. If the boots are cracked or ripped, the hydraulic levers can leak. The crane will eventually lose hydraulic pressure. So, if you spot any damage to a boot, get it replaced.



Rubber boots cracked or torn?

WEAPONS RACK

FROM NOW ON,
**ORDER YOUR
RACKS... DON'T
GET THEM MADE
LOCALLY!**



The Army has changed its requirements on racks for rifles, machine guns, and pistols.

Para 4-2c in AR 190-11, *Physical Security*, has been changed to outlaw the fabrication of any racks after 1 Jan 01.

Also, any fabricated or modified racks already in use must be certified as secure by a TACOM logistics assistance representative (LAR)—or an authorized reserve component representative—along with a battalion-level command representative before 1 Jan 02.

REQUIREMENTS CHANGE

To be certified as secure, a fabricated or modified rack must:

- ★ Have hinged locking bars with hinge pins welded or otherwise secured to the rack frame
- ★ Be secure enough to prevent weapons from being disassembled and removed while locked in the rack
- ★ Use at least 3/8-in diameter bolts or machine screws. Bolts and nuts must be tack welded, brazed, or peened. Any modifications to standard-issue

racks, including adding an adapter bar for the M12 rack to store M4 carbines, must also be approved by TACOM-Rock Island. Send requests for rack certification or modification to:

TACOM
EA-SALD
ATTN: AMSTA-LC-CSL-D
Rock Island, IL 61299-6000

Questions? Contact James Rollins at (309) 782-1797, DSN 793-1797, e-mail rollinsj@ria.army.mil.

The NSNs for standard-issue racks are:

RACK	WEAPON	NSN 1095-
M11	M1 and M14 rifle	00-897-8755
M12	M16 rifle / M4 carbine	00-407-0674
M13	M249 machine gun	01-197-7902
M14	M9 / M11 pistol	01-236-2203
M15	MK 19 machine gun	01-216-9295
	M240B machine gun	01-466-2065

For all other weapons, use the universal rack, NSN 1095-01-454-6320.

AN PAQ-4 Light Bracket

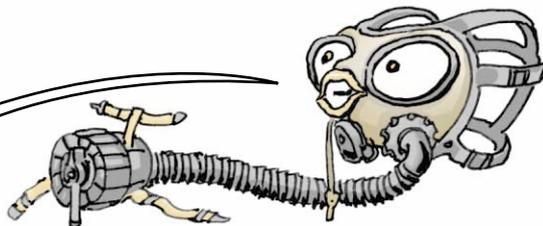
The article on AN/PAQ-4 aiming light brackets on page 40 in PS 571 (Jun 00) had a mistake. The M2/M60 adapter is NSN 5340-01-362-9873, not the NSN listed.

Get the Right M9 Pistol Laser

If you're ordering the new laser grip aiming lights for your unit's M9 pistols, make sure you order the right one. The M9 laser light comes with NSN 5855-01-460-9157 and costs \$325.

FACEFORMS FADE FAST

HERE IS SOME NEWS ON YOUR M40/M42 MASKS THAT YOU MAY HAVE MISSED, NBC NCOs.

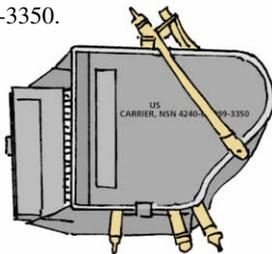


Faceforms

Throw away the faceforms. You no longer need to store your masks with the faceforms stuck inside. Soldier and Biological Chemical Command (SBCCOM) has decided the masks do not need faceforms to keep their shape during storage. The word's in SBCCOM Maintenance Advisory Message (MAM) 99-05.

New M42 Carrier

The M42 has its own carrier now. It's larger than the M40's and makes it easier to store the M42. Order the M42 carrier with NSN 4240-01-399-3350.



Do not use the M42 carrier for the M40, though. It lets the M40 shift out of its proper storage position, which can lead to damage.

Obsolete Decon Kits

Turn in M258 and M280 decon kits. They're obsolete and have been replaced by the M295 decon kit, NSN 6850-01-357-8456, and M291 kit, NSN 4230-01-101-3984.

Teaching Tip

It's difficult to see small cuts and pinholes inside the face-piece, particularly below the side voicemitter. Tell your soldiers to slightly flex the face-piece as they check for cuts. That makes them easier to spot.



Masks Need MWO

I NEED THIS MWO. CHECK OUT YOUR M40s AND M42s... MAKE SURE THEY'VE BEEN MODIFIED.



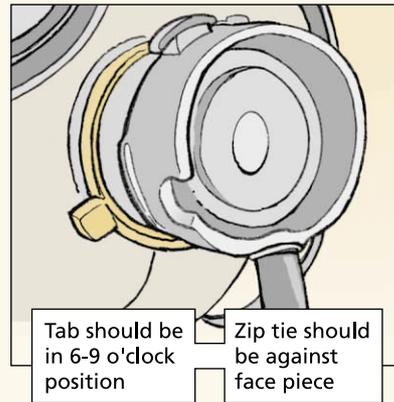
An MWO has been kicking around the Army for a couple of years now that will keep the M40/M42 mask silicone rubber of the outlet valve housing from pulling loose further.

Unfortunately, many M40/M42s are still waiting for MWO 3-4240-347-20-1 (Jun 98). It's simple to check if your masks have been modified, NBC NCOs. Look at the outlet valve. If a zip tie has been fastened around the valve, the MWO's been done.

No zip tie? Contact your local MWO coordinator or SBCCOM logistics assistance representative. They can get you the kit you'll need to modify your masks. The zip tie is easier to install if you pull it hand-tight before using the tensioner tool to fully tighten it.

The tie should go against the face piece behind the drink tube nipple. If it's anywhere else on the valve housing, the tie can't prevent the housing from separating from the facepiece.

When you put on the zip tie, remember to put the tab of the tie in the 6-9 o'clock position. If you try to put it in the 12-6 position, the drink tube gets in the way.



Failing the Self-Test



No one likes to fail. That includes your new Advanced System Improvement Program (ASIP) SINGGARS. But a lot of them are failing the self-test. You're not getting a "GOOD" on the display.

But before you give your SINGGARS an "F," disconnect the antenna and the hand mike from the RT.

Now try the self-test again. Bet your radio gets an "A" this time and goes to the head of the class.

When the radio is connected to the antenna or the hand mike, it fails the self-test because there may be signals present at the antenna or handset.



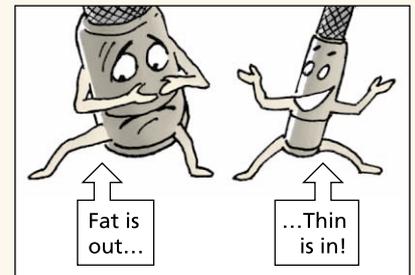
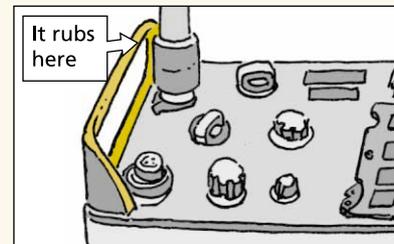
So help your radio get a passing grade—disconnect before you do the test.

FOR AN UP-TIGHT ANTENNA



Having a problem attaching your SINGGARS manpack long antenna, AS-4266A/PRC, NSN 5985-01-425-7305, to your RT-1523A or RT-1523D receiver-transmitter because the handle gets in the way?

The solution is electronic connector shell, NSN 5935-01-468-5485. The shell replaces the part of your antenna that attaches to the radio. It's narrower so it won't rub against the handle.



Detach the bottom of your antenna and replace it with the shell. This will let you snug your antenna down tight. The shell comes with three attaching screws, NSN 5305-00-455-2507. Coat the screw threads with sealing compound, NSN 8030-00-952-2205, before installing them.

PLGR...



Battery Enlightenment

You've ordered BA-5800 batteries for your unit's AN/PSN-11 precision lightweight GPS receivers (PLGR) and the days are piling up and they still haven't arrived.

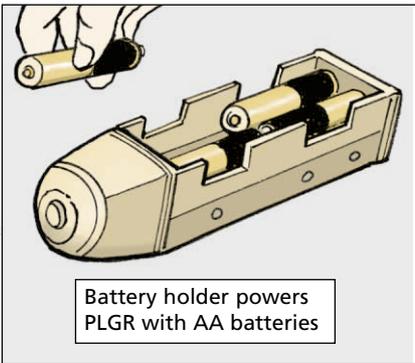
It's true, the backlog for BA-5800 batteries is a long one, because the supply is low. The supply is low because new batteries are trickling in from the supplier. But there is hope. Another supplier is gearing up so the supply situation will get better. Currently, high priority and low quantity requisitions are being filled along with any urgent requests.



If your need is other than these, choose one of these other PLGR power options. They all will do the job.

Alkaline

Order battery holder, NSN 6160-01-385-4358, and packages of 24 AA alkaline batteries, NSN 6135-00-985-7845. The holder holds eight AA batteries, which equals the power delivered by one BA-5800.



AAs have two advantages over the BA-5800. They are a much cheaper power source (around \$5 for 24) and they don't require disposal as hazardous waste.

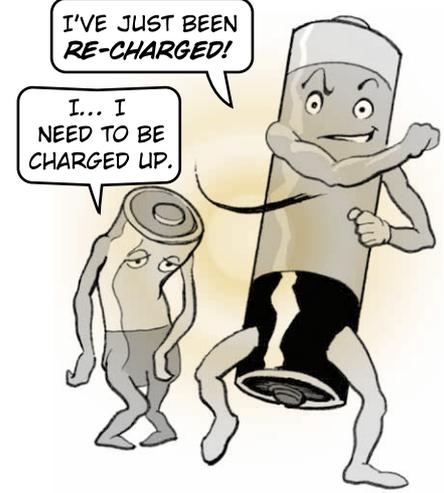
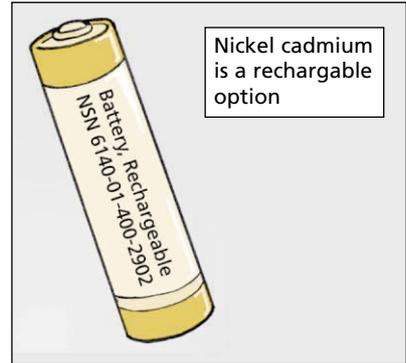
The disadvantage is you have to change them out about three times to equal the life of one BA-5800. So make sure each PLGR user carries enough AAs and a loaded, extra battery holder.

Rechargeable

Another alternative to the BA-5800 is rechargeable batteries. They will be the preferred battery choice in the not-too-distant future. Right now a new rechargeable battery and charging unit is being developed that will do your PLGR chore well at a fair cost.

In the meantime, there are two rechargeable choices, but both of them are more expensive than eight AA alkalines and they do not provide a longer duration of use before they need recharging.

Ni-cad rechargeable, NSN 6140-01-400-2902, is the same size as the BA-5800. It can be recharged using cable, NSN 6150-01-375-8661.



There are also three battery recharging stands (for one, three and six batteries) that must be ordered directly from Rockwell-Collins at (800) 321-2223.

Ni-cad rechargeable, NSN 6140-00-449-6001, is AA size. Just like the alkaline version, you'll need eight batteries and a battery holder. The recharging stand is NSN 6130-01-225-9554.

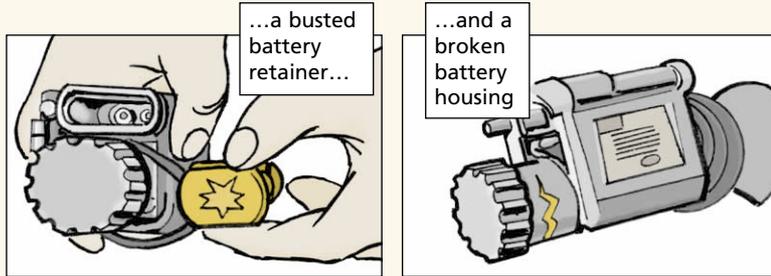
If a critical mission demands BA-5800s, submit a requisition for a low quantity with your highest priority. Also, make sure you're using the new NSN, 6135-01-440-7774. This new NSN brings a package of eight batteries.



Who is the *real* victim in...

There's a crime being committed against the battery retainer cover, NSN 6160-01-444-1208, and the battery housing of the AN/PVS-14 monocular night vision device. And chances are good that you, the user, are the perpetrator.

Your crime is carelessness and the results are...



Scene of the Crime: Cold Night

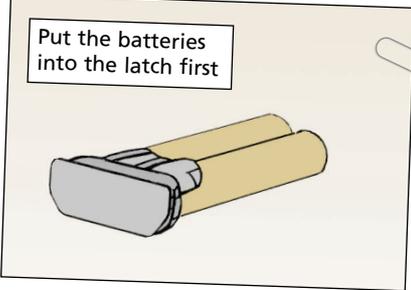
Let's look at the scene of the crime. You're on an exercise. It's night. It's cold, so you're wearing gloves. You have to replace the batteries in your night vision device. You take out the old batteries, drop in the new ones, and push hard on the cover.



Inside the battery compartment, the battery retainer breaks. Outside, the lip of the housing that meets the cover shatters.

Here's how to prevent this kind of criminal activity:

Insert the batteries into the cover retainer and not the compartment.



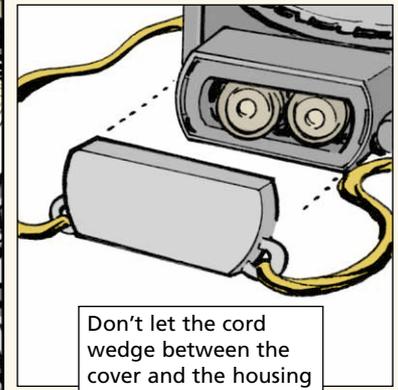
... THE FORCED COVER CAPER?



When you put the batteries into the compartment first, it's easy to break the retainer when you push the cover on. Make sure you have the battery polarity right when you put in new batteries.

If you don't, you'll be opening the compartment again, because you won't be operating.

Keep the neck cord out of the way. The neck cord is threaded through the edge of the cover and keeps you from losing the cover in the dark. But this preventive measure can lead to damage if the cord gets wedged between the cover and the housing. When that happens, and you push hard on the cover, the edge of the housing shatters.



Read your TM. Don't have it? TM 11-5855-306-10 can be downloaded from the USAMC Logistics Support Activity (LOGSA) website at: www.logsa.army.mil.

The Scoop on the

10 Percent Variance

Dear Half-Mast,

There's a lot of confusion in Army maintenance shops these days about the 10 percent maintenance variance window. Some units use it as the standard rather than the exception it is intended to be.

Everybody seems to have their own way to calculate and apply it. Then it's Confusion City when you try to figure out how to use it when you piggyback services to save time and manpower.

Finally, many units don't know how to report equipment when services go into an overdue status.

Can you shed some light for me on the variance rule for completing scheduled maintenance?

CW2 R. D.

I'LL TRY, SIR!



The top Army maintenance experts knew that missions would sometimes get in the way of pulling all scheduled PM on time. So they approved a 10 percent variance to help you out.

The Variance Is Authorized!

The variance is authorized by Para 3-3b(1)(h)1 of DA Pam 738-750. Its purpose is to give you time before and after a service is scheduled so that you have time to accomplish the mission and still get the service done on time.

Of course, you should always try to do scheduled services on time and use the variance as an **exception** when

missions get in the way. And, always check out your TM before you use the variance. Some services can't use the variance because time is too critical. For example, Item 19 of Table 2-1 in TM 9-1425-646-20, states "Interval: Annual. MLRS system is Not Mission Capable if: Safety load test date has expired."

Calculating the Variance

Calculate the variance by multiplying the scheduled service time by 10 percent. For a semiannual service (180 days), multiply 180 days by 10 percent. The variance equals 18 days. Some

scheduled services use rounds, miles or hours instead of days. No problem. Just substitute rounds, miles or hours for days and multiply by 10 percent.

SCHEDULED SERVICE			10% VARIANCE MULTIPLIER	AUTHORIZED VARIANCE (IN DAYS)
FREQUENCY:	IN DAYS:	(TIMES)		
Quarterly	90	X	.10	9
Semiannual	180	X	.10	18
Annual	360	X	.10	36

Applying the Variance

When you know the variance, get out your calendar and do the following:

1. Determine the scheduled service date. Let's say the scheduled service date is 12 Feb 01.

2. Apply the variance (18 days for our semiannual service) as follows:

* Back off the scheduled service date (12 Feb 01) by 18 days. The variance start date, then, is 25 Jan 01.

* Add 18 days to the scheduled service date (12 Feb 01). The variance close date is 2 Mar 01.

The 10 percent variance window for this semiannual service is 25 Jan 01 through 2 Mar 01. Services done within this window are considered done on time.

Applying variance window for a semiannual service: scheduled for 12 Feb

2001						
JANUARY						
S	M	T	W	T	F	S
	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			
FEBRUARY						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	28
25	26	27	28			
MARCH						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	28
25	26	27	28	29	30	31



Piggybacking Services

Many maintenance shops schedule different services at the same time—piggyback them—to save time and manpower. This is great as long as you keep in mind that each service has its own variance window that does not change just because it is scheduled with other services.

To avoid an overdue status with a service, do the checks and services with the shortest variance window first.

For example, if you have a quarterly, a semiannual and an annual service scheduled together, do the quarterly checks and services first. Then, do the semiannual services and follow up by doing the annual services last. That way, if you have to stop doing your group of services, for any reason, at least you will have covered the services for the shortest variance window.

SCHEDULED SERVICE	AUTHORIZED VARIANCE	VARIANCE WINDOW (12 Feb is Sch. Svc. Date)
Quarterly (90 days)	9 days	2 Feb - 21 Feb
Semiannual (180 days)	18 days	25 Jan - 2 Mar
Annual (360 days)	36 days	7 Jan - 20 Mar

Administrative Deadline

Vehicles and equipment are placed on administrative deadline when scheduled services become overdue. This is shown on the DA Form 2406 as a “below the line failure” for readiness reporting and as a status code E for ULLS-G users.

Vehicles in an overdue status beyond the 10 percent variance should not be operated until the services are done.

Otherwise, there is a risk of damage to the equipment, injury to personnel or both.

If a vehicle is on extended dispatch when services are due, the commander should circle X the vehicle. This administratively deadlines the vehicle but allows the operator/crew to drive the vehicle back to the motor pool for service.

Posting Scheduled Services

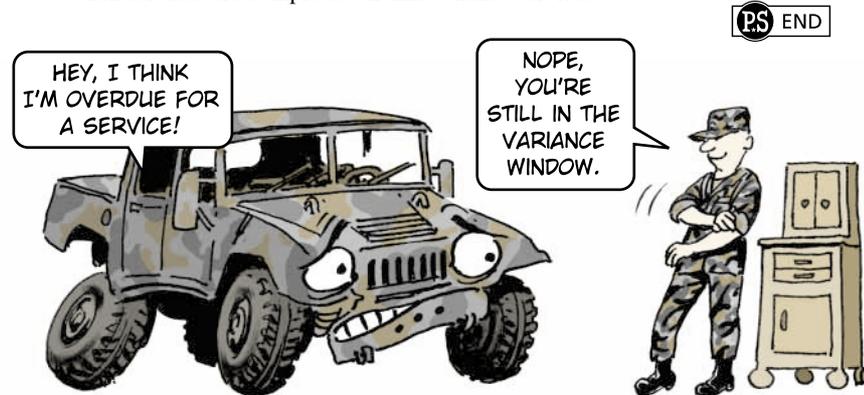
Manual system users use DD Form 314, *Preventive Maintenance Schedule and Record*, to schedule services. Pencil entries indicate scheduled services and their variance windows.

When services are completed on time—within the variance window—the scheduled service date is changed from a pencil entry to an ink entry.

AWCMF452, *Service Schedule Form*, is used to schedule services in ULLS-G. Since the ULLS developer did not automate the 10 percent variance process, ULLS-G users must manually calculate and maintain the variance window when needed.

—within the variance window—put in the scheduled service date as the service completion date. If that date is a future date, suspense the action—note it on your calendar—and input it when it is the current date. ULLS-G will automatically schedule the next service when the completion date is input.

Currently, the Office of the Deputy Chief of Staff for Logistics (ODCSLOG) is reviewing the policies defined in AR 750-1, AR 700-138, AR 220-1 and DA Pam 738-750. The purpose of this review is to resolve misunderstandings and conflicts and provide a clear picture to the field on scheduled maintenance services.



Put a LOCK on

There's no TM for the high security padlock (HSP), like the one on your arms room door. But it still needs PM to do its job.

Here's the key to good security.

Lock Maintenance

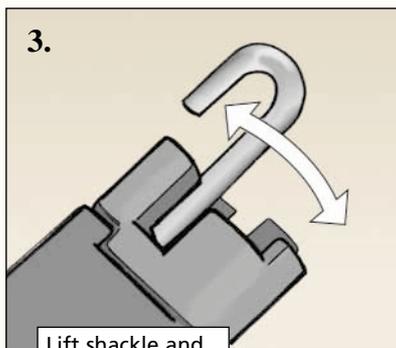
Clean locks every 6 months. You will need the following items for the job:

ITEM	NSN
Wire brush	7920-00-449-6859
Aerosol cleaning solvent	6850-01-061-5493*
Molybdenum disulfide powder (graphite)	6810-00-264-6715
Corrosion preventive compound	8030-00-938-1947
Molybdenum disulfide grease	9150-00-943-6880

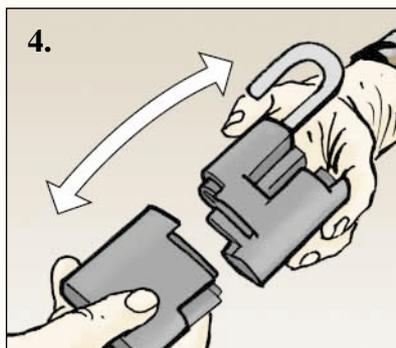
*Order it on a DD 1348-6 from SOS S9I and note "NSN not on AMDF" in the REMARKS block.

To clean the lock, follow these seven steps:

1. Hold the lock in your hand. Insert the control key fully in the keyway.
2. Rotate the key 1/4 turn counterclockwise.



3. Lift shackle and rotate 1/2 turn

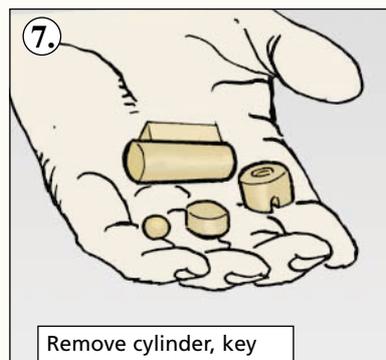


4. Slide upper and lower case apart and set upper case aside

5. Rotate the key back to the locked position and take it out.
6. Cover the top of the lower case and turn the case upside down.

Maintenance

IT DOESN'T MATTER HOW BIG OR STRONG THEY ARE... WITH THE PROPER PM, NOBODY WILL GET INTO YOUR ARMS ROOM!



7. Remove cylinder, key cap, cam and steel ball

All parts and both cases can now be inspected and cleaned with the cleaning solvent.

Remove any corrosion with the wire brush.

Clean and **very sparingly** lubricate the cylinder by spraying it with corrosion preventive compound.



Go light on corrosion preventive compound

Lube the shackle, steel ball and cam with a **small amount** of molybdenum disulfide grease. Using too much grease or lubricant can gum up the works.

If you use the molybdenum disulfide powder (graphite) to lubricate the key-way and cylinder, lube it this way:

1. Dip the key in the can of lubricant. Remove excess lube by lightly tapping the key against the interior rim of the can.

If you use a corrosion preventive

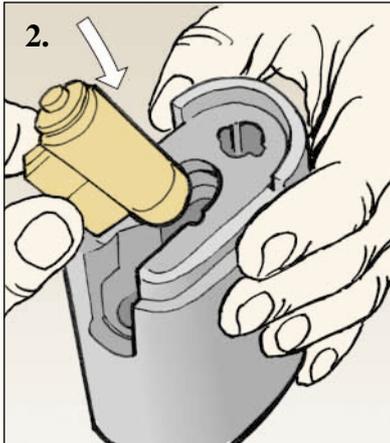
compound lubricant on the cylinder, **don't use** graphite at the same time. This, too, can really gum up the lock cylinder's internal components.

2. Insert and remove the key several times, turning the key from LOCK to UNLOCK each time.

Avoid using petroleum-based products like Lock-Eze or WD-40 on the lock. They are big collectors of dust, sand and other elements that get into the lock cylinder.

Put the Lock Back Together

1. Place the key cap over the end of the cylinder.



Insert cap and cylinder into lower case and press down on the cylinder

3. Insert the control key and rotate it 1/4 turn counterclockwise. **Don't** remove the key from the lock.

4. Place the cam on top of the cylinder.

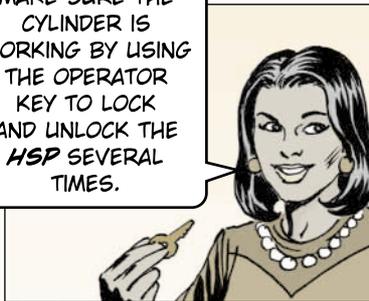
5. Slide the upper case assembly back into the lower case.

6. Rotate the shackle back and insert it into the shackle hole.

7. Turn the key 1/4 turn clockwise.

8. Remove the key.

MAKE SURE THE CYLINDER IS WORKING BY USING THE OPERATOR KEY TO LOCK AND UNLOCK THE HSP SEVERAL TIMES.



Won't Work?

If you've disassembled, cleaned and reassembled the HSP, and the cylinder doesn't work, order a new cylinder with NSN 5340-01-323-1087. Order it on a DD 1348-6 from SOS S9I and note "NSN not on AMDF" in the REMARKS block.

Maintaining Keys

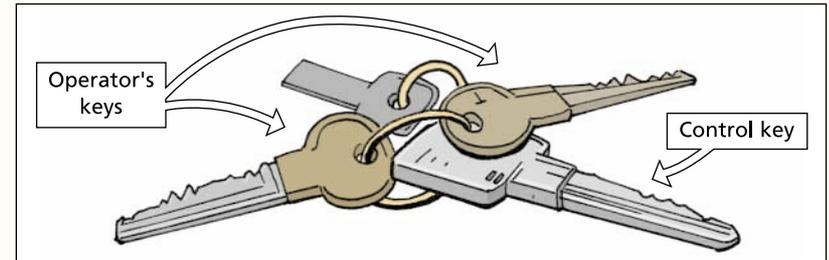
A key's deep cuts and sharp angles make it easy to crack if forced or twisted before it's fully inserted into the cylinder. If the key doesn't go in or turn easily, clean and lube the lock as above.

Use the control key only to service or replace a cylinder.

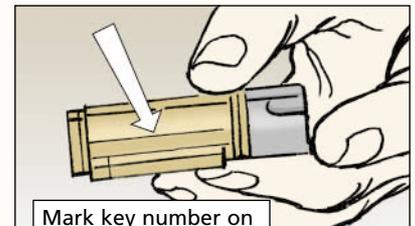
Check the keys every time you use them. When you see cracks in a key, stop using it and start using your spare operator key until you can get a new one made. Call the Defense Locking Systems, at DSN 482-1354/(812) 854-1354, for assistance on ordering new keys.

Sargent and Greenleaf (S&G) Model 833C, NSN 5340-01-217-5068, has replaced High Shear Model LK-1200 and S&G Model 831B. When the older models become unserviceable, replace them with 833Cs.

Each padlock has its own matched set of serial-numbered keys—a control key (with a square bow) for servicing or replacing a cylinder and two operator keys (with a round bow) for day-to-day operation.



A good way to remember which keys match which cylinder is to mark the serial number of the keys on the matching cylinder. Use a fine-point permanent marker. **Never etch** the number on the cylinder, or you'll damage its Teflon coating.



Mark key number on cylinder - don't etch

Army Award for Maintenance Excellence



CONNIE, WE DO GOOD WORK, TOO. HOW CAN WE GET OUR UNIT INTO THE MAINTENANCE AWARDS COMPETITION?

AR 750-1 TELLS YOU HOW, BUT IT'S BEING CHANGED. SO USE THIS CHECKLIST.



The Army Award for Maintenance Excellence (AAME) program recognizes unit maintenance program excellence in support of unit missions.

- ✓Competing units must submit the newly revised Phase I AAME nomination package through command channels to their major command (MACOM).
- ✓MACOM-approved AAME packages must get to the US Army Ordnance Center and School (USAOC&S), Aberdeen Proving Ground, MD, by 15 December following the end of the fiscal year (FY) of competition. For example, FY01 AAME packages must arrive at the USAOC&S by 15 Dec 01.
- ✓The new Phase I AAME nomination package format is both short and easier to complete. Check it out at the HQDA ODCSLOG web site by clicking on the AAME button. The new format will be in the new AR 750-1, *Army Materiel Maintenance Policy and Retail Maintenance Operations*.
- ✓Top AAME winners become nominees for the Secretary of Defense Maintenance Award.



GET YOUR UNIT'S FY01 AAME PACKAGE TO YOUR MACOM SO THEY HAVE ENOUGH TIME TO GET IT TO THE ORDNANCE CENTER AND SCHOOL BY 15 DEC 01. GOOD LUCK.



HMMWV 2-Man Camo Curtain

A sharp reader noted that we left the 2-man crew curtain assembly out of the listing of woodland camouflage covers and doors for HMMWVs on Page 5 of PS 575 (Oct 00). Get the assembly with NSN 2540-01-450-4018.

Getting Pure Argon

The Army has had trouble controlling the purity of the argon gas used with Stinger missile systems so it's going to single-source supply. Argon not 99.998 percent pure hurts the Stinger's cryogenics and causes self- test faults. Units now must order 100 percent argon, NSN 9135-00-882-1793, directly from Kelly Air Force Base, TX. For ordering info, contact Elena Barron at (210) 925-4844, DSN 945-4844, fax - 8048, or e-mail: elena.barron@kelly.af.mil.

Battery Post Washers 5986

Mechanics, you can help prevent corrosion from forming on all lead-acid batteries by adding a felt washer to battery posts before installing the cable clamps. The washer absorbs moisture and keeps the post clean and dry. NSN 5970-01-101-4147 brings 100 felt washers.

Collimator Lamp 5324

Need a replacement lamp for the collimator, NSN 1240-00-757-3291, on your weapon system's azimuth test fixture, NSN 4931-00-769-1596? You won't find the NSN in any parts manual. Get the lamp with NSN 6240-00-617-1713.

M40/M42 Mask Repair Kits 5955

Some M40/M42-series masks have loose or separated nosecup valve seats, which fog the eyelenses. A repair kit is available for NBC NCOs to fix bad valve seats. To get the kit, fax SBCCOM's Sam Carter at (410) 436-6533, DSN 584-2149, or fax -2149. E-mail him at samuel.carter@sbccom.apgea.army.mil. He needs your name, shipping address, phone number, and the number of valve seats needed.

DISTRIBUTION: To be distributed in accordance with the initial distribution number (IDN) 340312, requirements for TB 43-PS-Series.

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