



**THE
PREVENTIVE
MAINTENANCE
MONTHLY**

TB 43-PS-561, 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 writeto:

**MSG Half-Mast
The Preventive Maintenance Monthly
LOGSA, Bldg. 5307
Redstone Arsenal, AL 35898-7466**

Or E-mail to:

psmag@logsa.army.mil

Internet Address:

<http://www.logsa.army.mil/psmag/pshome.html>

By Order of the Secretary of the Army:

ERIC K. SHINSEKI

General, United States Army Chief of Staff

Official:

Joel B. Hudson
JOEL B. HUDSON

Administrative Assistant to the Secretary of the Army
9915303

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TO MAKE AN ACCURATE READING ...

1. MAKE CHECK ON LEVEL GROUND
2. WIPE DIPSTICK OFF
3. DIP, THEN CHECK OIL LEVEL.

LEVEL IS OK IF IT'S BETWEEN THE **ADD** AND **FULL** MARKS.



See your Operator's TM for specific details

Issue 561

PS

August 1999

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-561



Approved for
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Yellow Brick Road
... See Page 27

The Maintenance Standard

You've heard about it and maybe even read about it, but do you really understand how the Army's maintenance standard applies to you and your equipment?

OK, so it's spelled out in AR 750-1, *Army Materiel Maintenance Policy and Retail Maintenance Operations*, which is the gospel on equipment maintenance. But when's the last time you read the AR?

So, in a nutshell, here's what you need to know:

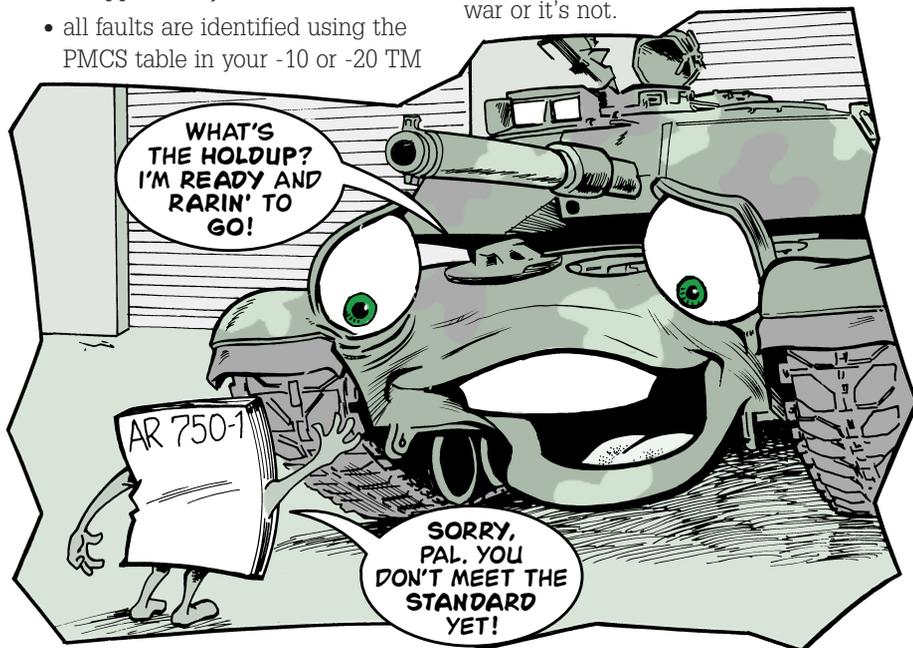
The Army's maintenance standard is based on the preventive maintenance checks and services in your equipment TMs. You know, PMCS. The standard is the condition of your equipment when it is fully mission capable. That happens only when:

- all faults are identified using the PMCS table in your -10 or -20 TM

- you fix all faults that you are authorized to fix
- you prepare a DS maintenance request for all faults that you're not authorized to fix
- you perform all scheduled services on time
- all urgent and limited urgent MWOs are applied
- all authorized BII and COEI are present and serviceable or on a valid supply request

If any one of these conditions is not met, your equipment fails to meet the standard. It's as simple as that.

So make no mistake about it, your equipment either meets the standard or it doesn't. It's either ready to go to war or it's not.



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Backing Up Is

Hard to Do



Backing a trailer is really hard to do—until you’ve practiced enough. Even practiced drivers try to avoid backing. Most of ’em will go around the block to avoid it.

But you still have to learn how, and you’re asking for big trouble if you put off learning until you get a hurry-up mission.

For practice, you need a big space, someplace where nothing’s in your way and where you won’t be in someone else’s way. You can find good tips on training layouts in these training circulars (TCs):

- TC 21-305-1, HEMTTs
- TC 21-305-3, M939-series trucks
- TC 21-305-4, HMMWVs
- TC 21-305-5, Equipment Transporters (Heavy, Medium and Light)
- TC 21-305-6, Tractor and Semitrailer (M915/M931/M932)
- TC 21-305-7, Light Vehicles
- TC 21-305-8, Medium Vehicles
- TC 21-305-9, Heavy Equipment Transporter System
- TC 21-305-10, Palletized Loading System

For info on backing semitrailers, see FM 21-305, *Manual for the Wheeled Vehicle Driver*. But you need more than that info to get a good handle on backing small, lunette-type trailers.

The most important help you need is a ground guide, someone to tell you what’s going on behind you as you back up. When you’re backing toward your “blind” (right) side, you can’t see enough in your right-side mirror. And it’s hard to judge how much your trailer is turning—a setup for jackknifing.

Heading Back

Before backing, get out of the vehicle and check the area to the sides, rear, underneath and overhead for obstructions.

Back slowly, turning the steering wheel clockwise to move the trailer to the left and turning the wheel counterclockwise to move the trailer to the right. Remember, the trailer turns in the opposite direction from the truck.

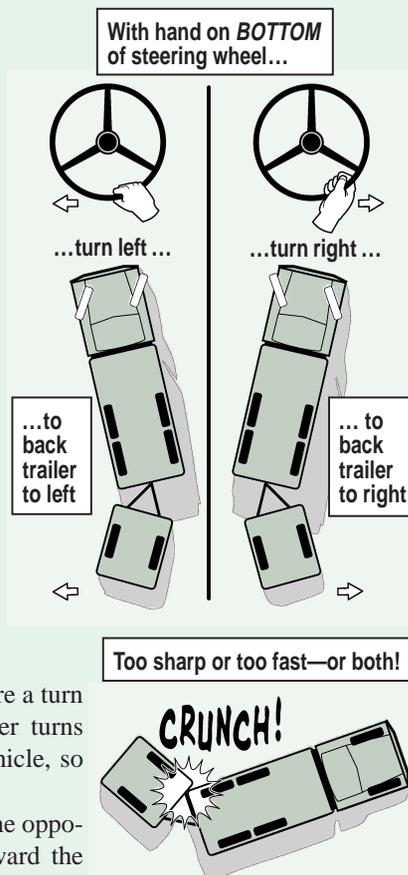
A good learning technique is to repeatedly turn the steering wheel in the proper direction and then straighten it as the trailer responds to the action of the vehicle.

Two errors to avoid are turning the steering wheel too much and holding it in the turned position too long. Turning the wheel too much causes the trailer to turn more than necessary—which then requires greater correction, and often a botched job. Holding the wheel too long can cause the trailer and vehicle to jackknife.

Whenever you back into a position where a turn is required, try to back so that the trailer turns toward the left (driver’s) side of your vehicle, so you can look over your left shoulder.

This is much easier than backing from the opposite direction, where the trailer turns toward the right side (blind side) of your truck. Where possible, go around the block or come in from the opposite direction.

Some people can back a trailer almost perfectly by using outside mirrors. Others find that mirrors do not show the action of the trailer. You may find it useful to stick your head out the window to see.



Following the Trailer

Get the knack of following the trailer. You'll need this skill when you're backing into a parking space. When you start the turn, your truck's going one way and your trailer's going the other. As you get well into the turn, start turning the steering wheel back in the opposite direction to bring the truck and trailer into line.

Take it easy, though. If you turn the steering wheel too far, your trailer will turn in the opposite direction. Try backing this way:

1. Turn your front wheels to the right to start your trailer backing to the left.

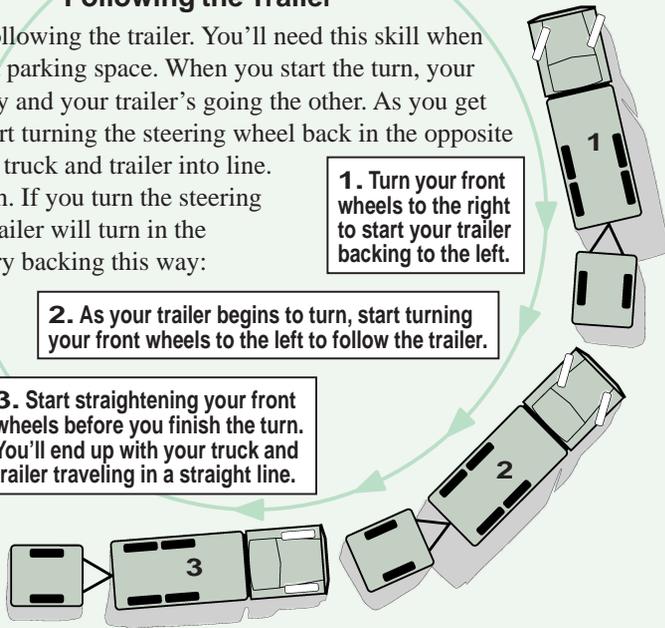
2. As your trailer begins to turn, start turning your front wheels to the left to follow the trailer.

3. Start straightening your front wheels before you finish the turn. You'll end up with your truck and trailer traveling in a straight line.

With practice, you'll be able to back your combo around a corner and then follow the trailer in a straight line.

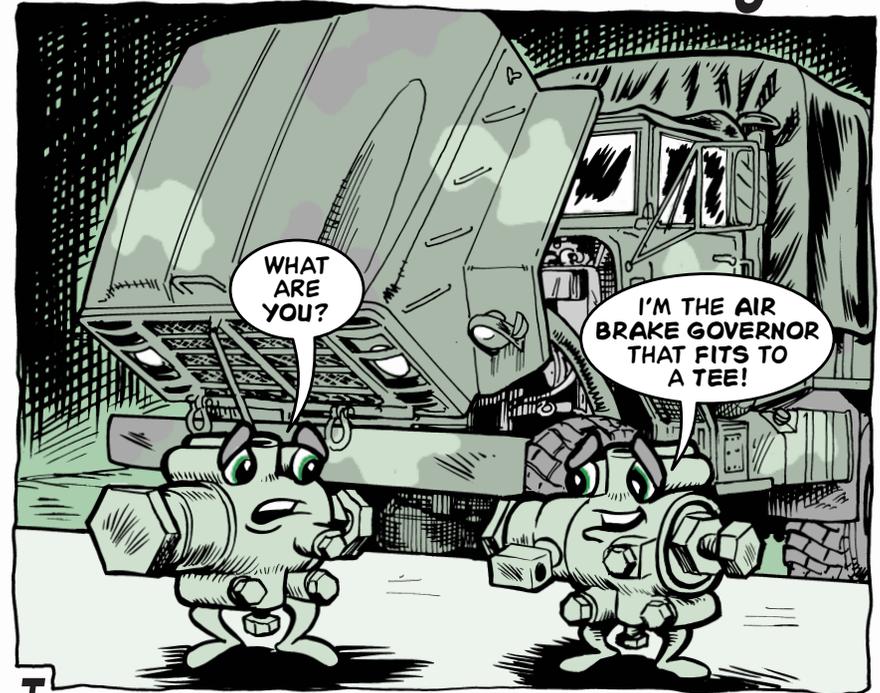
When you're backing into a turn, make it toward your left side when possible. There's less chance of clobbering something behind you.

And make it easier on the next driver if you're among several parking in a line. Park so others can back alongside on their "good" left side, saving damage to both your vehicles.



M939-Series Trucks . . .

Air Brake Governor Changes



There have been two manufacturers of the air brake governor assembly, NSN 2530-00-854-4457, used on M939-series and M939A1-series trucks.

One assembly, FL Industries' part number N-20856-D, is no longer available. The other assembly, Allied Signal's part number 7003-03C068537, is available—and interchangeable—as an assembly, but not in parts.

If you have problems interchanging these governor assemblies, ask your support unit to add a tee, NSN 4730-00-782-5461, to the hookup. It's Item 15 in Fig 150, TM 9-2320-272-34P-1.

Details on how to install the tee are found on Pages 3-580 through 3-583 of TM 9-2320-272-24-1.

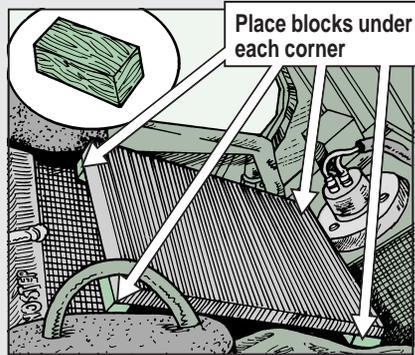
Do not try to mount either of these assemblies on M939A2-series trucks. They do not have the low-pressure cutoff for CTIS that reserves air pressure for braking in case of air system failure. You must use assembly, NSN 2530-01-287-4529 (PN 106400), for A2-series vehicles.

To ensure that you get the correct assembly when ordering, add the part number to your requisition's Remarks block.

Cooling System Care



Then raise the oil cooler carefully and place a 2½-in block of 2 x 4 under each corner of the cooler.

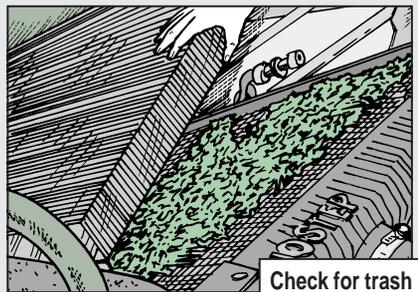


Clean between the cooler and radiator using only low-pressure water and low-pressure air.

eyeball the radiator fins when the cleaning is done. Straighten all the bent fins you can reach with the fin straightening tool, NSN 5120-00-157-2180, from either of the Common shop sets. If your set doesn't have this tool, local purchase it.

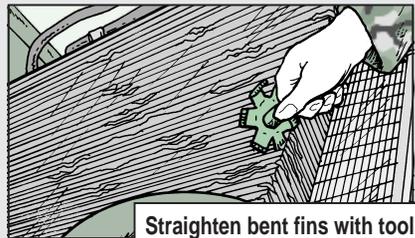
Keeping a HMMWV cool in the heat of summer requires a clean oil cooler and a clean, straight-finned radiator.

To get the trash out from between the cooler and the radiator is a real job. There's not much room between the cooler and the radiator, so go with this:



First, move the power steering cooler out of the way.

Then remove the four sockethead screws and washers that hold the oil cooler to the radiator.



After you've finished, remove the wood blocks and secure the cooler in place. Straighten any bent fins on the cooler. Then put the power steering cooler back in place.

Clean and Lube Zippers

Zippers get no respect. Up and down, over and over again, with no cleaning and no lubing no matter how much dirt has gummed up the teeth.

Then, when the zippers just can't zip any more, what do you do? You try muscle, and that ruins them.

That's the story with soft-top zippers on HMMWVs.

Drivers, before your truck's zippers get to the muscle stage, clean them. 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.

That'll get you a box of 24 sticks. Bar soap works, too.

If you've already ruined a zipper, use hook and pile tape to keep your soft top from flapping until it's repaired or replaced.

The hook and pile fix won't be waterproof and it isn't as strong as a zipper, but it'll do for the short term. Get a yard of 1 inch wide, self-adhesive hook with NSN 8315-01-115-7617. Matching pile is NSN 8315-01-043-9881. Both of these items are local purchase. Cut and place pieces of tape where they'll do the most good.



Matching Circuits to Circuit Breakers

Stop that swap-and-check business to determine which circuit breaker goes to which electrical circuit on your 2½-ton or 5-ton model FMTV. Use the list on Page 9 to match the breaker to the circuit. Unless noted, each breaker is the same in both series of vehicles.

No circuit breakers are used on the 2½-ton models in positions CB 35, CB 53, CB 61 through CB 64 and CB 68.

No circuit breakers are used on the 5-ton models in positions CB 35 and CB 61 through CB 64.

	D3	K12	K15	K9	K2		K32	K13	K19	K24												
	D1	CB30	CB45	CB20	CB48	CB41	CB42	CB44	CB43	CB50	CB39	CB36	CB23	CB21	CB22	CB79	CB40	CB37	CB49	CB77	CB68	
	D2	CB72	CB67	CB63	CB65	CB80	CB64	CB66	CB76		CB70	CB78	CB38	CB35	CB71	CB74	CB73	CB63	CB64	CB61	CB62	
	storage	K25	K29	K6	K11	K26	K1	K10	K8	K7												
	K20	K52	K53	K28	K27		K30	K31	K34	K37												

- CB 20: Cab radio, 25 amp
- CB 21: Vehicle interface mode (VIM) simplified test equipment/internal combustion engine (STE/ICE), 15 amp
- CB 22: Fan/ether, 10 amp
- CB 23: Heater blower, 15 amp
- CB 30: Chemical alarm, 10 amp
- CB 35: VIM power (world transmission electronic control (WTEC) II), 15 amp
- CB 35: Empty (WTEC III)
- CB 36: Horn power, 20 amp
- CB 37: Windshield wiper/washer, 20 amp
- CB 38: Rotating beacon, 20 amp
- CB 39: Trailer stop blackout (BO) lights, 10 amp
- CB 40: Central tire inflation system (CTIS) power, 10 amp
- CB 41: Trailer rear lights power, 15 amp
- CB 42: BO marker lights power, 10 amp
- CB 43: Rear composite lights, 15 amp (WTEC II)
- CB 43: Transmission electronic control unit (ECU) power, 10 amp (WTEC III)
- CB 44: Rear composite lights, 15 amp
- CB 45: Fuel preheater, 15 amp
- CB 48: Arctic cab, 20 amp
- CB 49: PTO power, 15 amp
- CB 50: Swingfire pump power, 10 amp (all 5-tons except M1090/M1094; all 2½-ton except M1079)
- CB 50: Dump bed up and down/Swingfire pump power, 15 amp (M1090/M1094 only)
- CB 50: Swingfire pump power, 15 amp (M1079 only)
- CB 53: Wrecker control panel, 15 amp (5-ton wrecker only)
- CB 54: BO head lights, 8 amp
- CB 65: Parking lights, 8 amp
- CB 66: BO marker power, 8 amp
- CB 67: Marker lights, 25 amp
- CB 68: Auxiliary oil fan cooler, 25 amp (M1088/M1089 only)
- CB 68: Auxiliary oil fan cooler, 20 amp (all 5-tons except M1088/M1090)
- CB 70: Trailer stop BO lights, 20 amp
- CB 71: Hazard flashers/work lights, 15 amp
- CB 72: Work lights, 15 amp (5-ton models only)
- CB 73: Backup lights power, 8 amp
- CB 74: Backup lights power, 10 amp
- CB 76: BO stop relay power, 15 amp
- CB 77: Engine instrument power, 10 amp
- CB 78: Headlights, 15 amp
- CB 79: VIM power, 15 amp (WTEC II)
- CB 79: Transmission ECU power, 15 amp (WTEC III)
- CB 80: Taillights, 25 amp



No More Bias Tires



When you order M911 commercial heavy equipment transporter tires using the NSN in the parts TM, you're going to get radials, NSN 2610-01-364-5044. Bias tires are no longer available.

No problem, except:

- ⦿ You can't use bias and radial tires on the same axle of your M911. It's either all bias or all radial on a single axle.
- ⦿ You can't use bias inner tubes in radial tires. They may not be strong enough for use in radials, and could fail. If you need a radial tube, order NSN 2610-01-364-4097. You **can** use a radial tube in a bias tire.

Air Chamber Line Check

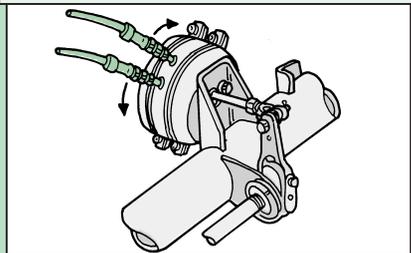
Next time you mechanics are on your back under the rear end of your M967/M969/M970-series fuel tanker, eyeball the air lines to the brake chambers.

Sometimes the chambers get rotated so that the lines chafe against the frame or against the axle. Next thing you know the lines are leaking and that puts a sudden stop to everything when the brakes lock up.

Follow the air lines from the reservoir to the chambers with your hands, feeling for rough spots. If you find any, replace the line.

To prevent the chafing, rotate the chamber housing left or right to move the lines away from the frame or axle.

Check hoses and rotate chamber if needed

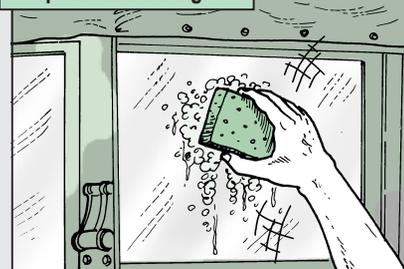


Yes, You Do Windows!

Not only do you do windows, you do them without commercial cleaners that come in aerosol cans. The propellants can etch the glass and damage rubber seals.

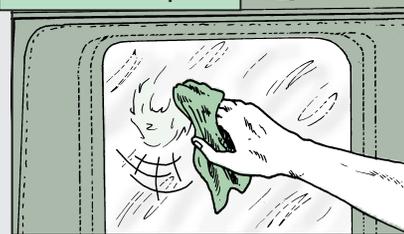
Regular glass windows get the soap and water treatment, then a rinse and dry. That's all there is to the job.

Soap and water for glass



Plastic windows require a little more effort. Those that are yellow, discolored or scratched may not be helped by washing, but put the soap and water to them as above, anyway. Then apply hand cleaner, NSN 8520-00-782-3509. Once the cleaner is dry, wipe it off with another clean cloth.

Soap and water and hand cleaner for plastic

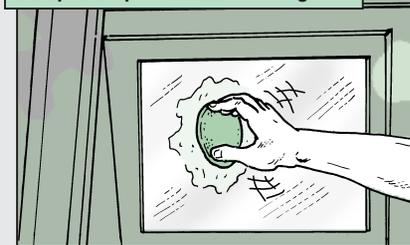


In some cases, this cleaner will remove discoloration and minor

scratches. But if the windows are still so damaged that you can't see clearly through them, let your mechanic know so they can be replaced.

For ballistic glass—used on armored HMMWVs—apply plastic polish, NSN 7930-00-935-3794, once you've got the windows clean and dry with soap and water and hand cleaner. The polish removes light scratches.

Soap and water, hand cleaner and plastic polish for ballistic glass



In all instances, stay away from products that contain ammonia. Ballistic glass is especially vulnerable to ammonia, which will eventually cause the two-piece glass "sandwich" to separate.



Keep Your TRU Cool!

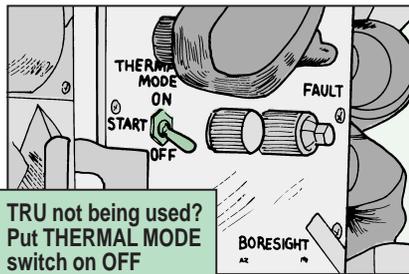


A thermal receiving unit (TRU) that can't keep its cool is bound to make your tank hot under the collar.

Keep it cool by making sure the dewar/cryogenic cooler assembly doesn't lose helium pressure. Here's how:

Crewmen

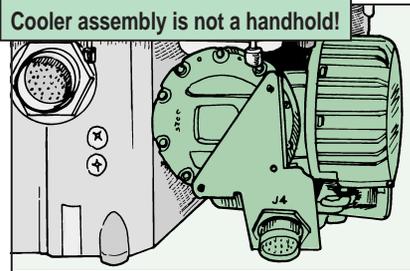
Keep the TRU turned off during daylight hours and at night when it's not in use. Unnecessary use increases the chance of a failure.



Pay attention to how long it takes the TRU to cool down. If it consistently takes longer than 15 minutes, the cooler assembly is probably low on helium. Report it.

Mechanics

Keep your hands off the cooler assembly when removing or installing the TRU. Use it as a handhold and the seals will pull loose. Then the entire assembly has to be replaced.



Use the TRU's reusable container whenever storing or shipping the unit. That protects the cooler assembly from knocks and bangs that can damage seals.

NO SMOKE? WATCH FOR FIRE!



Drivers, if you're carrying anything besides diesel in your tank's fuel pods, running the smoke generator is a no-no.

JP-4 and MOGAS both have low flash points. If you use the smoke generator with those fuels, you'll cause an explosion.

Using JP-8 won't cause an explosion, but it won't create any smoke, either.

So, it pays to know what fuel is in your tank. Diesel is the only fuel you can safely use to make smoke.

Even if you're using something other than diesel in your tank, you should still follow all operational and maintenance procedures listed for the smoke generator in the -10 TMs. That's the only way to make sure it will work when you **do** have the right fuel.

Keep Drain Valve in Check

Drivers, make sure your M1-series tank's hull drain valves are closed before a mission. Running with the valves open lets dirt and water into the hull. It also makes valves easy targets for damage as they hang underneath the tank.

When you shut down for the day, open the valves to drain any water. Water in the hull causes corrosion and shorted-out electronics.

It also mixes with dirt to make mud. When the mud hardens, it has to be chipped away.



Get Started Now!



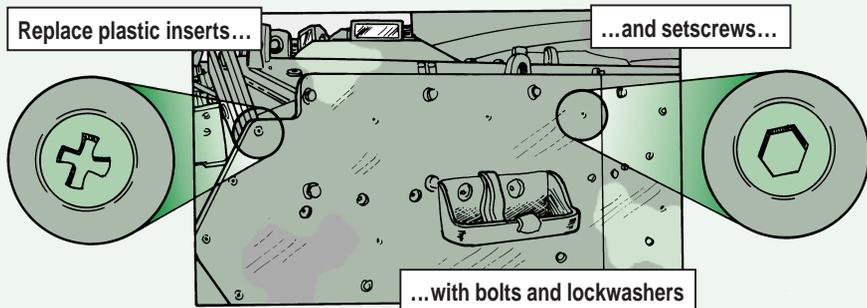
Mechanics, when it's time to install the armor tile brush guards on M2A2/M3A2 Bradleys, you've got your work cut out for you.

During production, threaded holes were drilled in the Bradley's armor for mounting the brush guards. Plastic inserts were plugged into the holes to keep the threads from corroding.

It didn't work. Replacing the inserts with setscrews didn't work either. The corrosion problem continued. Now, you face the difficult task of peeling out the plastic inserts or drilling out stuck setscrews.

Don't put it off, though. The longer the inserts and setscrews stay in place, the worse the corrosion will get.

Once they're out, replace each insert and setscrew with a bolt, NSN 5305-00-724-7219, and lockwasher, NSN 5310-00-232-8194. Apply some antiseize compound, NSN 8030-00-597-5367, to the threads before installing the bolt. That puts a stop to the corrosion and makes removal a little easier.



Just Follow the Signs

Dear Editor,

It can be confusing when you boresight the Bradley's coax machine gun mount. There are two boresighting adjustment knobs, but they aren't marked. You're forced to experiment to figure out which knob adjusts elevation and which adjusts azimuth.

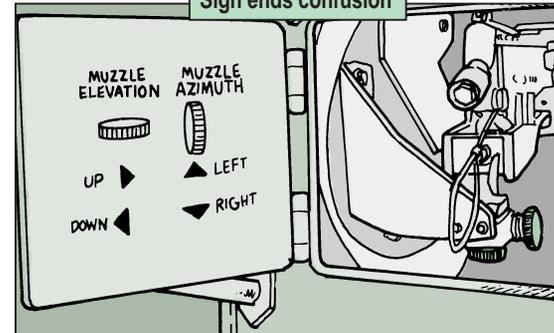
We ended the knob confusion with this simple sign:

The sign tells you to turn the elevation knob to the right (clockwise) to tilt the muzzle up and to the left (counter-clockwise) to tilt it down. Turn the azimuth knob up (clockwise) to move the muzzle to the left and down (counter-clockwise) to move it to the right.

Use a permanent marker to write the directions on the inside of the door to the boresighting knobs.

SSG John Brandenburg
SGT Joseph Dirks
3/3 ACR
Ft Carson, CO

Sign ends confusion



FROM THE DESK OF THE Editor 

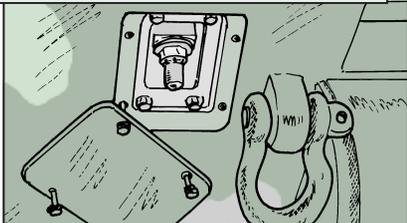
I think we can sign off on your suggestion. Thanks.



Uplifting Lubing

Mechanics, forget to regularly lube the cab lift mechanism on the MLRS carrier and pretty soon corrosion takes over. The mechanism freezes in place and so does the cab.

Dirt and corrosion freeze lift mechanism

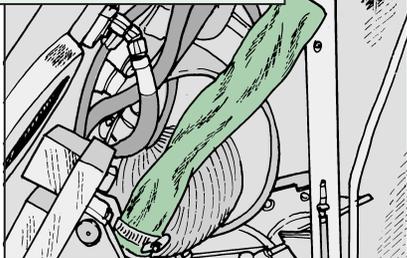


You can avoid a stuck cab by lubing the lift mechanism semiannually like it says in LO 9-1450-646-12.

After you raise the cab, remove the clamp and then coat the inside of the canvas boot with molybdenum disulfide grease (GMD). That'll keep it lifting for another six months.

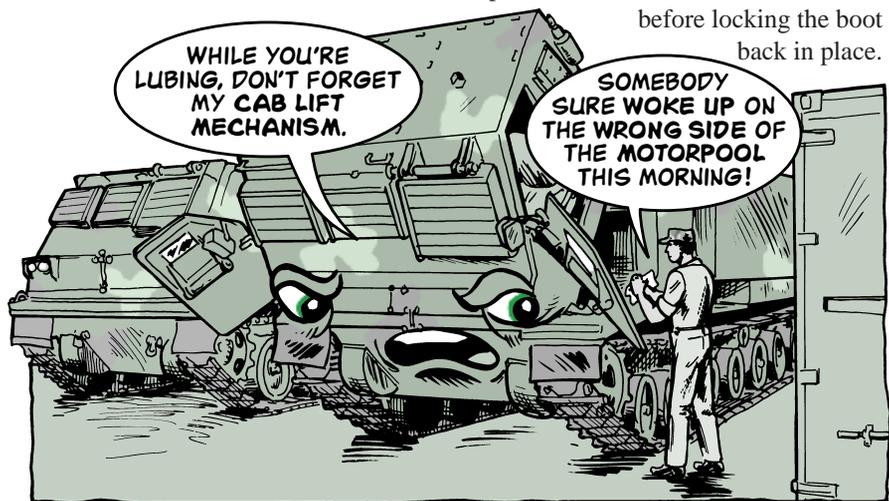
While you're at it, carefully check the surface of the boot. Engine heat and constant wear from the lift mechanism stud can create small leaks. The holes are difficult to see, but will let the boot go dry as the GMD leaks out.

Eyeball boot for leaking GMD

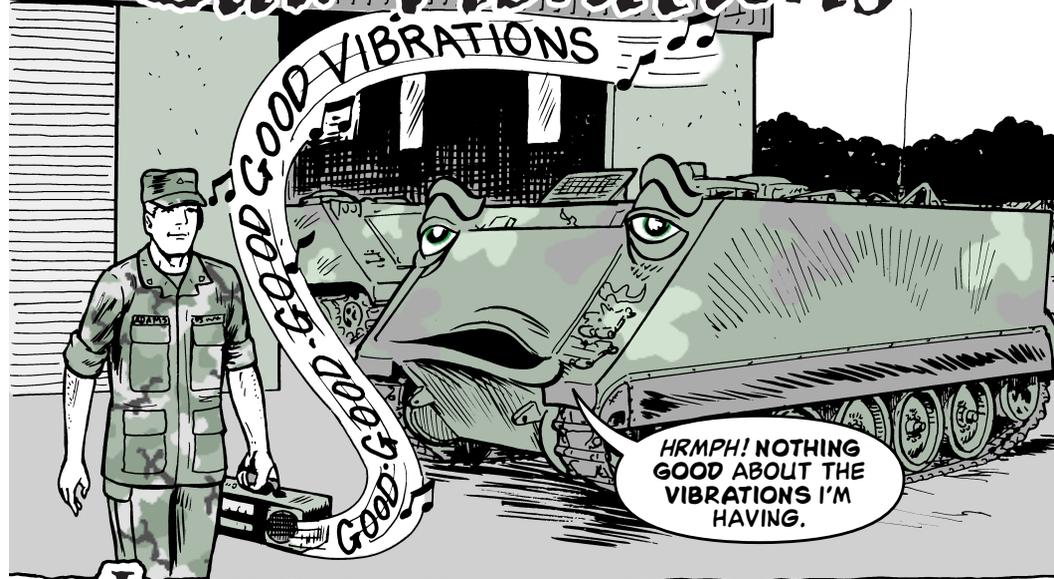


If you see grease and dirt building up on the outside of the boot, chances are it's leaking. Replace it with NSN 2530-01-108-5261.

If the clamp is worn or damaged, replace it with NSN 4730-00-908-3193 before locking the boot back in place.



Bad Vibrations

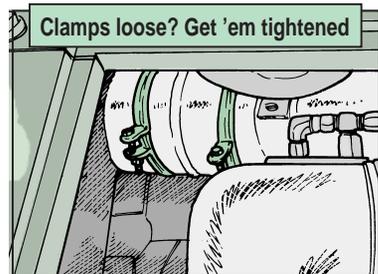


It may sound good put to music, but vibration plays havoc with the double flex joint on your M113A3 carrier's exhaust system.

Enough vibration loosens the two V-clamps that hold the joint in place. As the joint loosens, hot exhaust gases vent into the engine compartment. That cooks the air filter and other components.

Prevent this by checking the V-clamps after each operation. If you can move the clamps with your hand, they're too loose. Call in your mechanic to tighten 'em.

Mechanics, replace missing or damaged V-clamps with NSN 5340-01-134-3802.



M113A3 Steer Lock Conversion

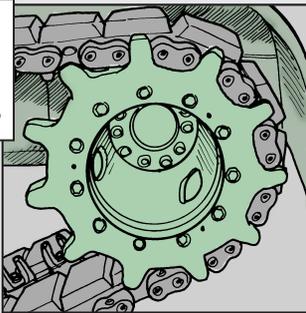
Mechanics, hold off on replacing a bad electrical steer lock solenoid, NSN 5945-00-933-8450, on that M113A3 FOV. Instead, get your DS to install the new electrical-to-mechanical conversion kit, NSN 2520-01-434-8596. At \$480, the kit costs more than a new electrical solenoid, but it also lasts a lot longer.

Walking the Track

It's slow and time-consuming, but walking the track is something that every M88A1 and AVLB driver **must** do. Otherwise you'll end up with a thrown track—a far more time-consuming prospect.

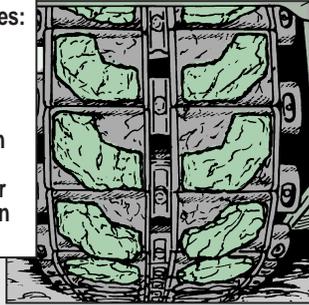
Before each day's operation, take a walk around your vehicle and look for these potential suspension system trouble spots:

Drive sprockets: loose, worn or damaged?

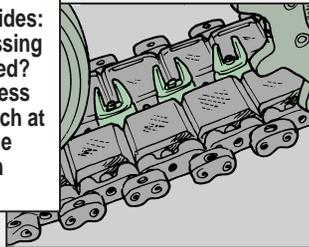


Shock absorbers: leaking, loose or bent?

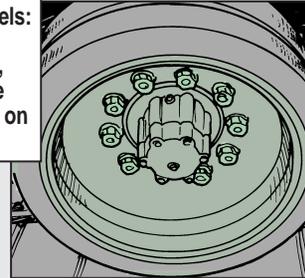
Track shoes: grouser height $\frac{3}{8}$ inches or more? Pads worn unevenly, missing or worn down to metal?



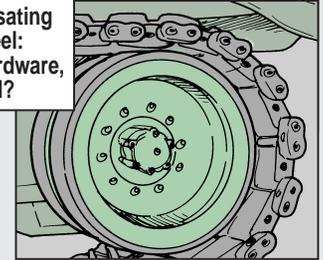
Center guides: loose, missing or damaged? Measure less than $\frac{5}{8}$ inch at a point one inch down from tip?



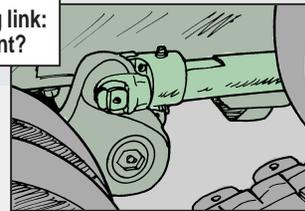
Roadwheels: loose hardware, excessive chunking on tires?



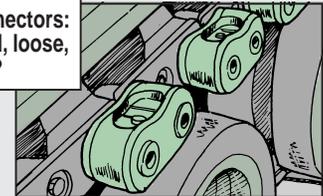
Compensating idler wheel: loose hardware, damaged?



Adjusting link: loose, bent?

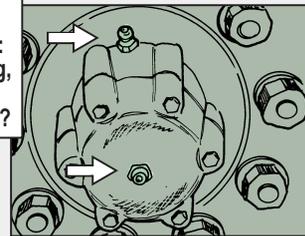


Track support roller: loose hardware, damaged?



End connectors: damaged, loose, missing?

Lube fittings: missing, broken or bent?

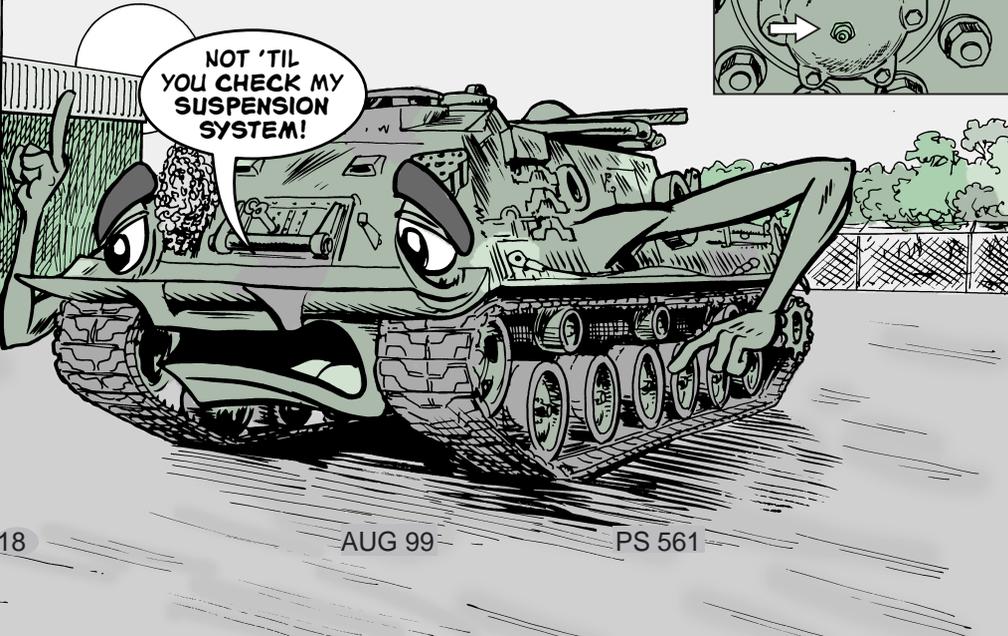


Bumper springs: loose hardware, broken?

WE'VE GOT SOME WORK TO DO. ARE YOU READY?



NOT 'TIL YOU CHECK MY SUSPENSION SYSTEM!



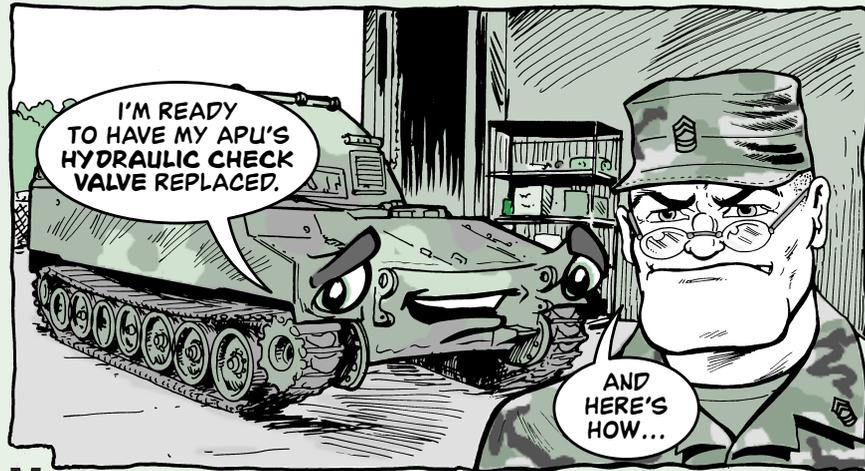
Once the suspension system checks out, keep it that way by using proper driving techniques. That means avoiding sharp turns while driving in first gear on sand or mud.

If you don't, debris sprays onto the track. When enough accumulates, the track works free of the sprocket. End connectors break, center guides bend and you're broken down.

So, keep your vehicle on its tracks by taking those turns in second or third gear. That keeps build-up to a minimum and keeps you on the way to completing your mission.

For more information on track and roadwheel maintenance, check out TM 9-2350-200-24.

New Hydraulic Check Valve



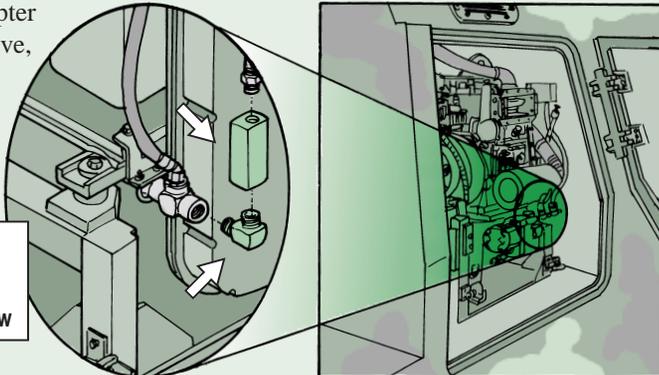
Mechanics, the hydraulic check valve, NSN 4820-00-732-3944, for the FAASV's auxiliary power unit (APU) is being replaced.

When the check valve goes bad, order check valve, NSN 4820-01-107-6115, and pipe elbow, NSN 4730-00-852-5654, to replace it.

Here's how to install the new valve:

1. With the vehicle shut down, remove the APU pump's inlet hose and adapter from the old check valve.
2. Remove the old valve from the tee. Toss the valve.
3. Install the new pipe elbow and check valve into the tee. Make sure the valve's arrow markings point in the direction of the tee.

4. Install the adapter into the check valve, then reattach the inlet hose assembly into the adapter.



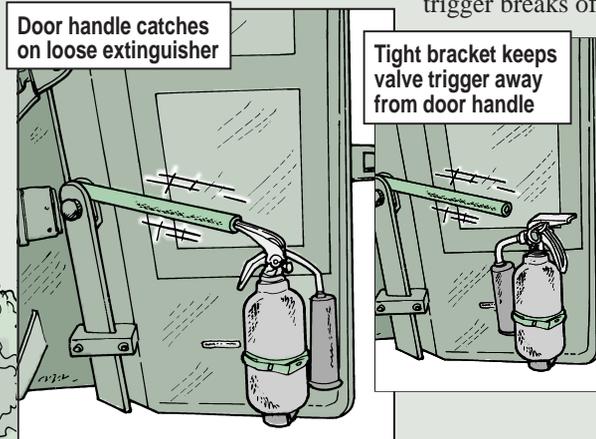
KEEP BRACKET TIGHT

Divers, Para 2-5.5d of TM 9-2350-314-10 reminds you to check all attaching hardware for looseness during your PMCS. That includes the fire extinguisher mounting bracket on the inside of your Paladin's rear door.

When vibration loosens the bracket, the extinguisher moves around freely.

The next time you open the door from the outside, the door handle can catch on the fire extinguisher. If you force the door handle, the fire extinguisher valve trigger breaks off. That discharges the extinguisher and leaves you a real mess.

So, check the extinguisher bracket as part of your AFTER PMCS. Tighten loose hardware. If the hardware is stripped or missing, call in your mechanic.



← What's the Right Way? →

Dear Half-Mast,

Our unit has wheeled construction equipment like the 130G grader, MW24C scoop loader and 621B scraper.

Does it matter which direction the tires are mounted on these vehicles?

SFC W.M.



Dear Sergeant W.M.,

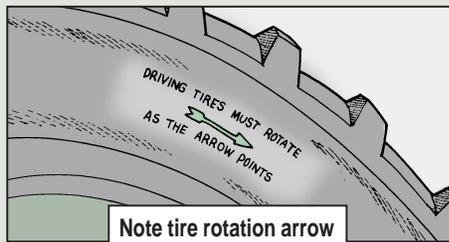
Tactical vehicles, like HEMTTs and M939-series trucks, use a non-directional tire. That means the tire can be mounted any way you want.

But, with the large tires on construction equipment, it's a different story. Those tires are designed for off-road use in loose sand, dirt, mud and gravel. When pointed in the right direction, the driving tires' chevron pattern provides the traction the vehicles need.

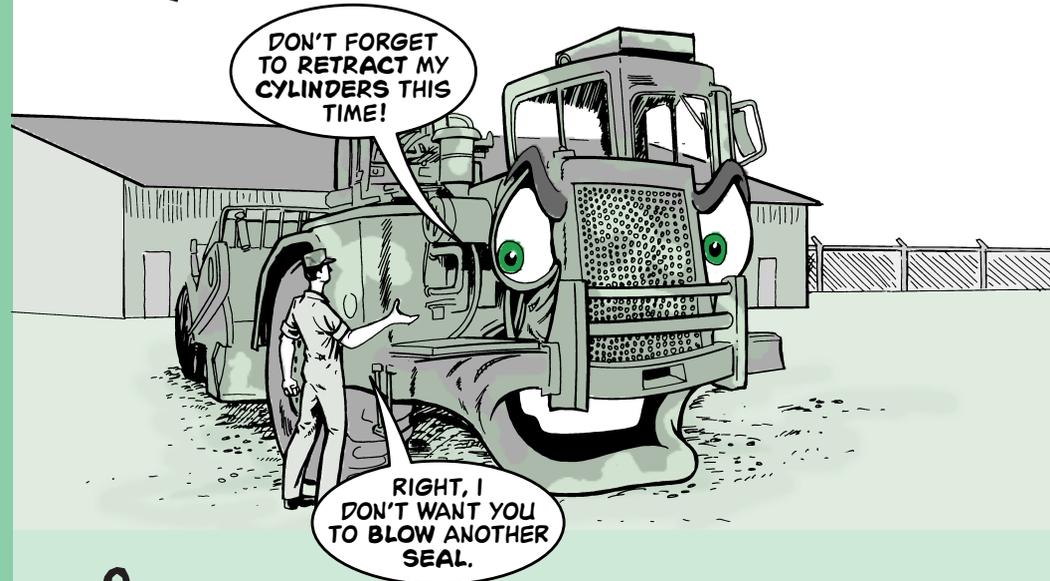
If you're not sure which way the tire mounts, look at the direction arrow on the tire's sidewall. It shows you the way.

Tires on non-driving wheels can be mounted either way.

Half-Mast



Hydraulic Fluid Overload



Operators, there are good reasons why your scraper's TM 5-3805-248-14&P-1 tells you to check the hydraulic oil with the scraper idling and the cylinders retracted. Checking oil that way saves seals and the hydraulic reservoir's sight glass, by making sure you don't overfill the reservoir.

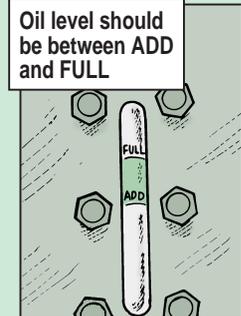
Why idling? Oil expands as it warms up. Warm oil registers a little higher on the gauge than cold oil.

OK, but why retract cylinders? Oil used to extend the cylinders isn't in the reservoir to be measured. It's in the cylinders doing its job. If you measure the tank with the cylinders extended, it looks low.

If you overfill the tank for either reason, pressure builds up—blowing seals. Too much oil has even been known to blow out the hydraulic reservoir's sight glass.

So, before you add oil, make sure the scraper is in the parked position and all cylinders are retracted. Let the scraper warm up a few minutes. The hydraulic oil level should show between the ADD and FULL marks.

If you overfill the reservoir, remove the excess with an AOAP vampire pump.



Put a Cap on It



The AOAP and slave receptacle caps on your D7G dozer often get lost or damaged. That can cause expensive problems.

AOAP Valve

The AOAP valve, NSN 4820-01-120-4532, has a dust cap that often vibrates off. You can't order just the cap, so you have to replace the entire valve for \$95.

But, you can get a cap, NSN 4730-00-633-4398, that works fine and costs less than 63 cents.

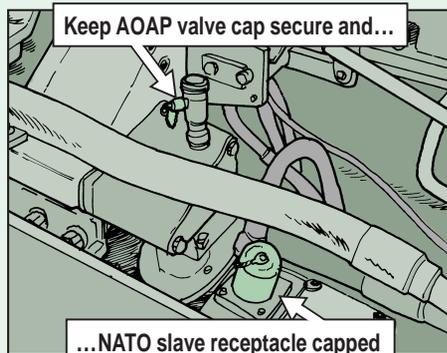
Secure the cap to the valve chain with wire, NSN 9505-00-293-4208, and you won't lose it.

NATO Slave Receptacle

The NATO receptacle is mounted straight up—it'll hold water if the dust cap's missing. Water corrodes the receptacle's metal contacts. In winter, water freezes in the receptacle. Ice keeps you from slaving a dead vehicle, and could crack the receptacle.

So, do yourself a favor. Make sure the dust cap is snugly in place. If the dust cap is missing, replace it with NSN 5340-01-059-0114. The cap comes with an attaching cord assembly.

Until a new cap comes in, cover the receptacle with tape.



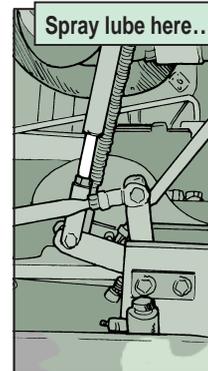
Put Slide Back in Linkage

Operators, linkage for the dozer's governor control lever—the throttle—has a tendency to rust. That rust keeps the lever from moving smoothly, or from moving at all.

A stuck lever isn't much good when you want to change engine speed during operations.



Spray lube here...

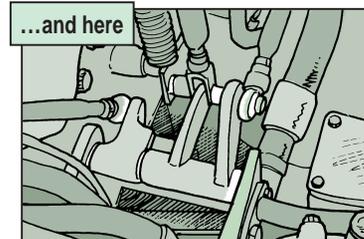


So, keep it moving smoothly. Here's how: clean off the dozer's throttle linkage with a brush or clean rag. Then spray it with a shot of lubricating spray, NSN 9150-00-458-0075.

Work the throttle lever back and forth a few times.

Spray the linkage at each scheduled service.

...and here



6K Variable Reach RTFL . . .

Get a Safety Window

If the old-style, glass rear window on your 6K forklift is cracked or broken, replace it with a new pull-out window made of safety glass. It won't break.

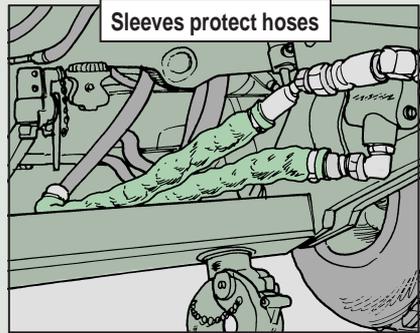
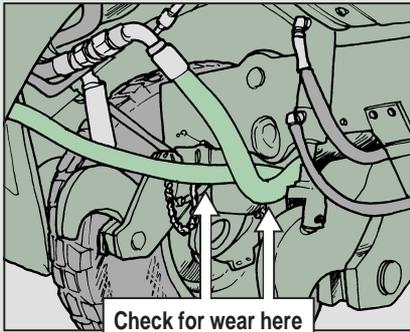
NSN 2510-01-357-5680 brings a kit that includes a Plexiglass window, seal, pull tab and installation instructions.

Old window not broken? Check with your CO on replacing it with the new, safer window.

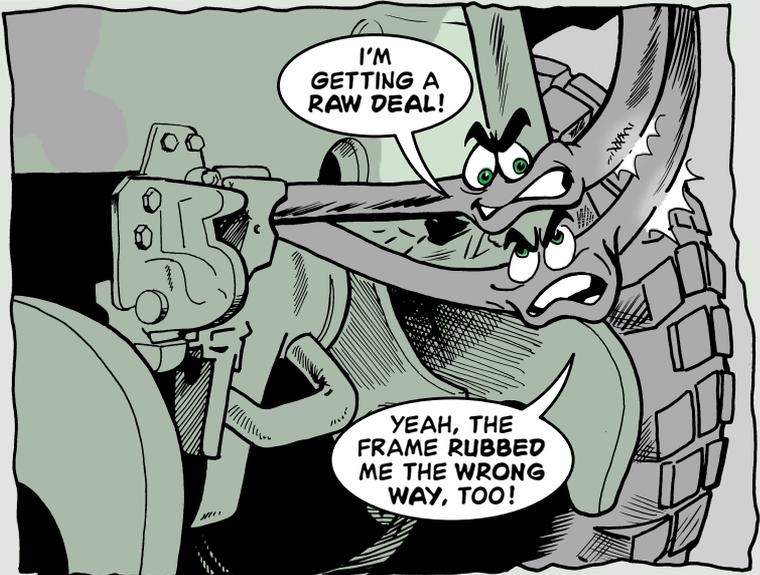
Hoses Rubbed Raw?

Mechanics, the hydraulic hoses under the SEE's backhoe get a raw deal. The hoses rub against the vehicle's frame when the backhoe is extended or retracted. All that rubbing can wear holes in the hoses, leading to fluid leaks and no backhoe operations.

Eyeball the hoses for wear marks. If you see any, protect the hose. You can wrap a piece of rubber tubing around it, or add the protective sleeve, NSN 5970-01-244-6762, shown as Item 33 in Fig 285 of TM 5-2420-224-24P. Hold the tubing or sleeve in place with a tie strap, NSN 5975-00-570-9598.



If the hoses need replacing, you can get the reinforced hoses also shown in Fig 285. The hoses are NSN 4720-01-241-2937 (Item 19) and NSN 4720-01-241-5496 (Item 38).



The Yellow Brick Road to PM



I CAN'T FIGURE OUT THIS CONFOUNDED MANUAL!

IS IT TIME TO LUBE THE TRACTOR YET?

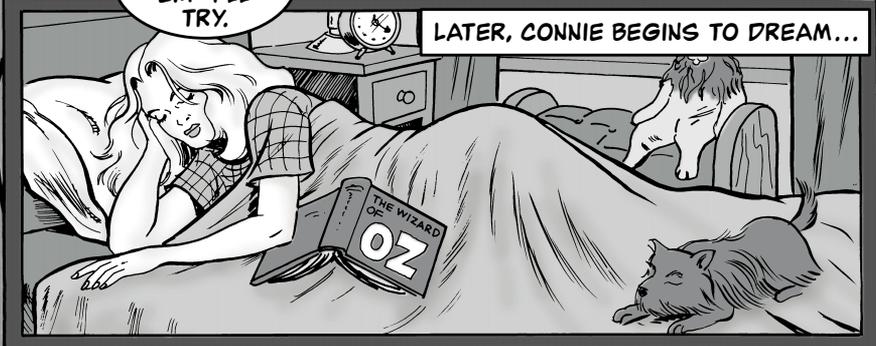
IT'S GOOD TO SEE YOU AGAIN, AUNTIE EM. HOW IS EVERYTHING GOING HERE ON THE FARM?

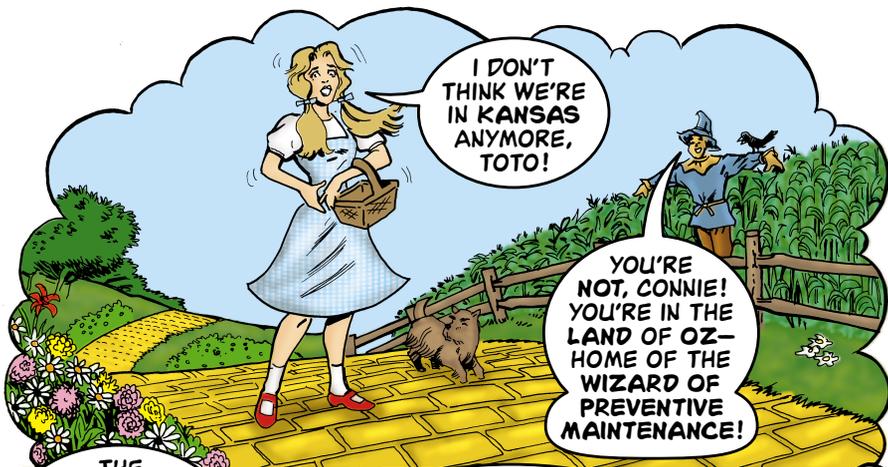
YE OUCH! DAD BURNED TEST EQUIPMENT!

YOU'VE HAD A LONG TRIP, DEAR. WHY DON'T YOU GO IN AND REST. DON'T WORRY ABOUT US.

THANKS, AUNTIE EM—I'LL TRY.

LATER, CONNIE BEGINS TO DREAM...





I DON'T THINK WE'RE IN KANSAS ANYMORE, TOTO!

YOU'RE NOT, CONNIE! YOU'RE IN THE LAND OF OZ—HOME OF THE WIZARD OF PREVENTIVE MAINTENANCE!



THE WIZARD OF PREVENTIVE MAINTENANCE? PM MIGHT BE JUST WHAT THE FARM NEEDS. CAN YOU TAKE ME TO SEE HIM?

LET'S GO.



DON'T LISTEN TO HIM. HE HAS A HEAD FULL OF STRAW.

-SIGH- HE'S RIGHT.



IF I ONLY HAD A BRAIN—I COULD UNDERSTAND THESE BIG, THICK MANUALS.



I DON'T KNOW HOW TO TAKE CARE OF FARM EQUIPMENT... OR CROWS.

MAYBE THE WIZARD CAN PROVIDE BOTH OF US WITH THAT KNOWLEDGE.

HELP ME...



I'M FROZEN BY CORROSION.

LOOK, CONNIE, IT'S A TIN MAN.

WHY ISN'T HE MOVING?



HERE'S AN OIL CAN.



THIS SHOULD DO THE TRICK.

AHH, THANK YOU.



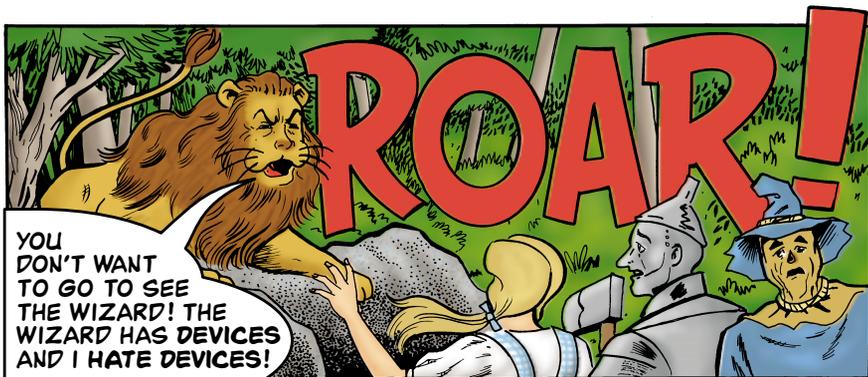
THAT WAS CLOSE. I WISH I COULD PREVENT THIS FROM HAPPENING AGAIN.

WE'RE GOING TO SEE THE WIZARD OF PM. WHY DON'T YOU JOIN US?



YOU THINK HE CAN HELP ME, TOO?

SURE, I'LL BET HE'LL HAVE LOADS OF INFORMATION ON LUBING.



YOU DON'T WANT TO GO TO SEE THE WIZARD! THE WIZARD HAS DEVICES AND I HATE DEVICES!



I WANT TO TEAR 'EM APART—COMPONENT BY COMPONENT! THEY'RE NOTHIN' BUT TROUBLE!

BUT, LION, YOU CAN FIND PROBLEMS FASTER AND EASIER WITH DEVICES.



I KNOW, BUT THESE DEVICES SCARE ME! I'M AFRAID THEY'LL BLOW UP OR MELT DOWN OR... ..OR CRASH!



DON'T BE AFRAID! COME WITH US—THE WIZARD CAN GIVE YOU THE COURAGE TO TRY SOMETHING NEW.

HE CAN HELP A SCAREDY CAT. LIKE ME? SNIF-SNIF



WHERE DO YOU THINK YOU'RE GOING?

WE WANT TO SEE THE WIZARD OF PM!

WE'RE OFF TO SEE THE WIZARD, THE WONDERFUL WIZARD OF PM!



YOU CAN'T COME IN HERE! GO AWAY!



MAYBE THIS WILL TAKE CARE OF YOU!

SQINK SQINK !!

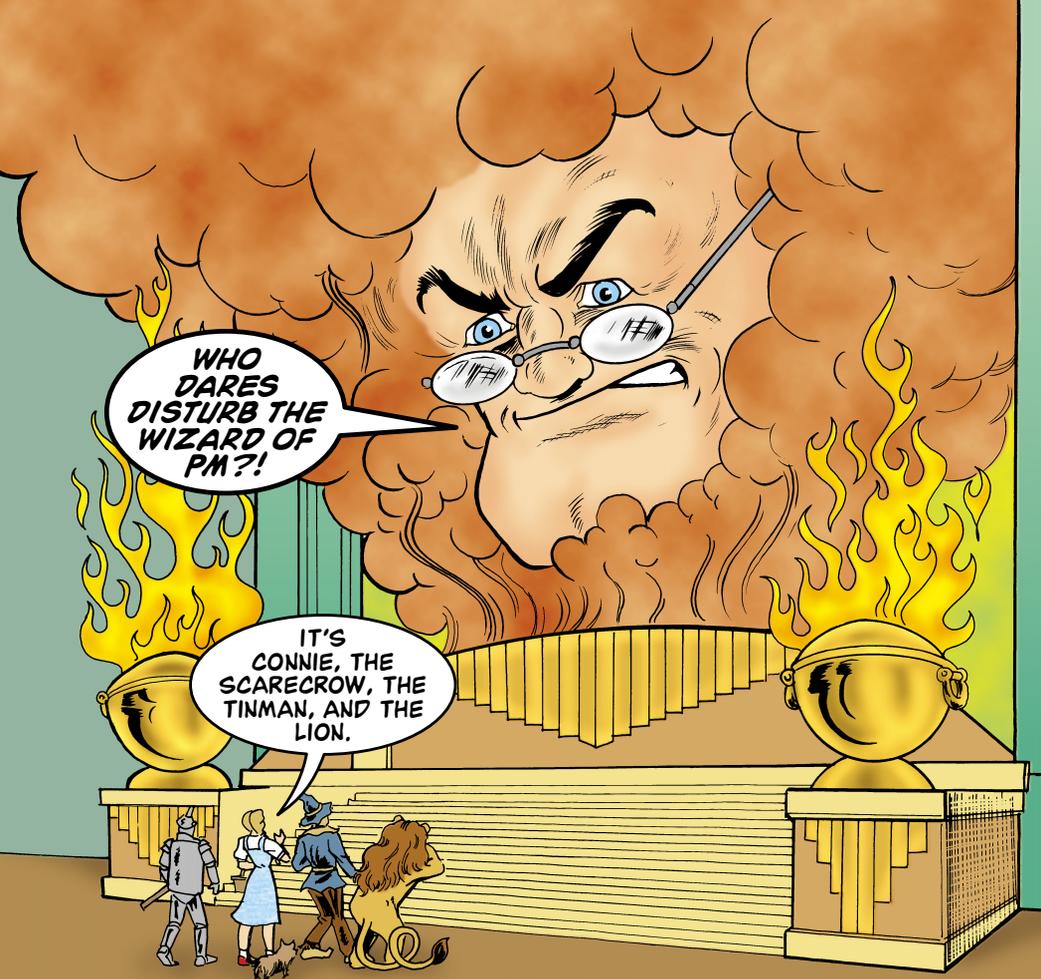


I'M MELTING!!!

HISSSSSS



FOLLOW ME! WE MUST BE CLOSE!



WHO DARES DISTURB THE WIZARD OF PM?!

IT'S CONNIE, THE SCARECROW, THE TINMAN, AND THE LION.



WE COME SEEKING THE SECRETS OF PM KNOWLEDGE.

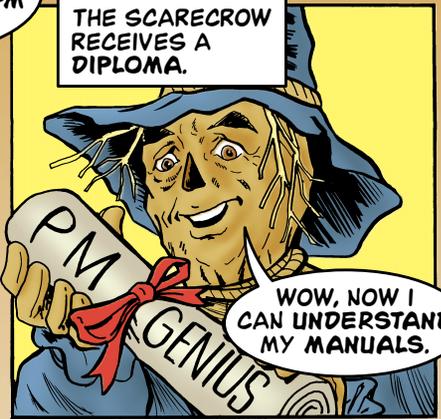
OH! WELL, WHY DIDN'T YOU SAY SO IN THE FIRST PLACE?



THE SUM TOTAL OF PM KNOWLEDGE IS RIGHT HERE.

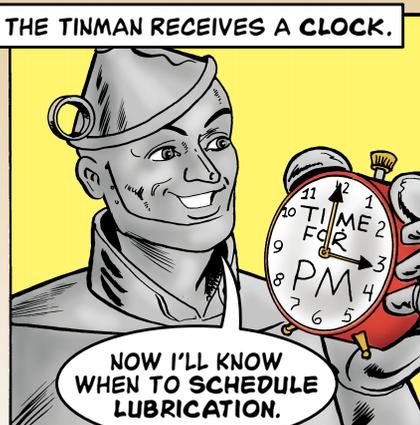
BUT THE SECRETS OF PM HAVE BEEN AVAILABLE ALL ALONG. THERE IS NOTHING IN HERE YOU CAN'T DO ALREADY.

I ALSO HAVE ANSWERS TO EACH OF YOUR PM PROBLEMS.



THE SCARECROW RECEIVES A DIPLOMA.

WOW, NOW I CAN UNDERSTAND MY MANUALS.



THE TINMAN RECEIVES A CLOCK.

NOW I'LL KNOW WHEN TO SCHEDULE LUBRICATION.



THE LION GETS A MEDAL FOR COURAGE.

I FEAR TECHNOLOGY NO MORE!



WHAT ABOUT ME?

I FORESEE GREAT THINGS FOR YOU— YOU WILL HELP OTHERS GAIN PM UNDERSTANDING.

BUT, NOW IT'S TIME FOR YOU TO GO HOME. TAP YOUR HEELS TOGETHER AND REPEAT AFTER ME...

THERE'S NO MAINTENANCE LIKE PREVENTIVE MAINTENANCE. AND NO PLACE LIKE HOME!

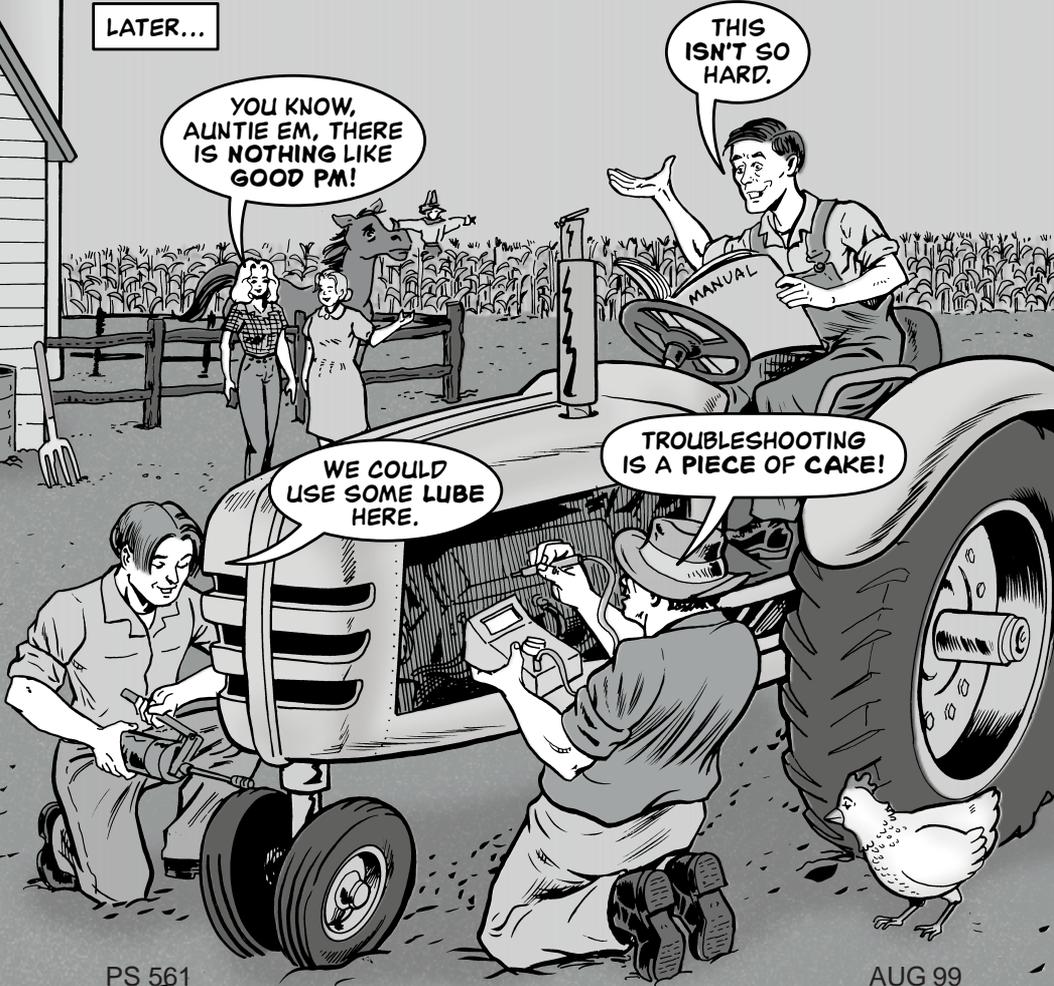
LATER...

YOU KNOW, AUNTIE EM, THERE IS NOTHING LIKE GOOD PM!

THIS ISN'T SO HARD.

TROUBLESHOOTING IS A PIECE OF CAKE!

WE COULD USE SOME LUBE HERE.



Don't Pry Them Apart



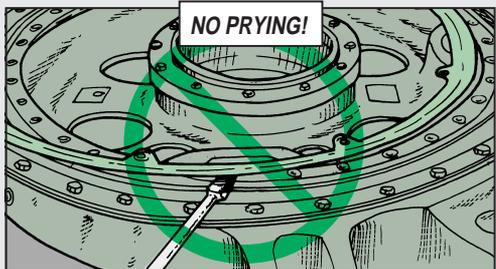
Some things belong together. Like the inner bearing retainer ring and the bearing retainer shield on a Black Hawk's main rotor swashplate.

But some people feel obliged to split them up. They take a screwdriver and pry the shield from the ring. Don't be like that. The two should stay in one piece. If they get pried apart, the shield could get damaged. If it does, it won't fit properly on the ring. Then contamination can get into the bearing.

The greatest temptation seems to occur at the 500-hour swashplate lube in Para 1-5.3 in TM 1-1520-237-23-1. Some think that once the 33 bolts are removed from the inner bearing ring to gain access to the bearing seal, the next step is to remove the shield.

Don't do it! The shield stays put. You don't need to remove it to lubricate the swashplate bearing.

Leave them together—forever.



Better Blade Booting

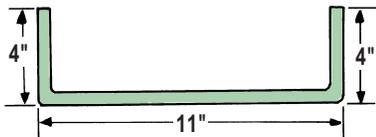


Sliding a tail rotor blade boot down a Black Hawk tail rotor blade can be a tough job. You can make it easier with the simple tool shown on Page H-327 of TM 1-1520-237-23-11 and by following the procedures in Para 5-4-42.1.3.

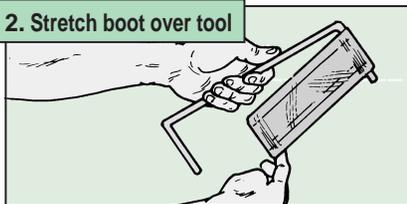
To make the tool, you need a 19-in piece of $\frac{3}{8}$ -in rolled steel bar. Measure four inches from each end and bend the rod 90° .

To install the boot, just slip the rubber boot over the ends of the tool. Slide the tail rotor boot down the blade to its position and remove the tool.

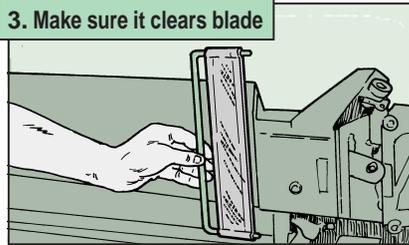
1. Configure tool like so:



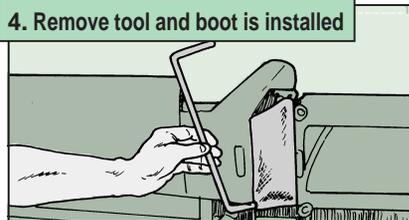
2. Stretch boot over tool



3. Make sure it clears blade



4. Remove tool and boot is installed



Keep Oil Sampling Clean

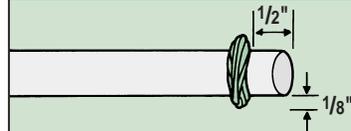
A rubber band is all you need to stop oil spills in the Black Hawk's tail rotor and intermediate gear box area during oil sampling.

Too often, when sticking the sampling tube into the oil release valve, oil spills in those areas.

To stop the spills, wrap a rubber band around the sampling tube about $\frac{1}{2}$ -inch from the end. The rubber band should be wrapped so it sticks up about $\frac{1}{8}$ inch from the tube. That should be enough to seal the release valve and prevent spills.

Another solution is a $\frac{5}{8} \times \frac{3}{8} \times \frac{1}{8}$ -in rubber washer placed over the end of the tube.

Rubber band reduces oil sampling spills



NO MORE FUSS, NO MORE MUSS.



Input Module Seal Removal

Dear Editor,

The lockwire used to help remove the Black Hawk's input module seal can easily break.

So, instead of busting our knuckles trying to pull that seal off with wire, we switched to a light cable.

We save knuckles and time using $\frac{1}{16}$ -in cable, NSN 4010-00-222-4494, for Task 6-4-25 of TM 1-1520 237-23-4.

SPC Harold Demmon
D Co, 2/3 Avn Bn
Hunter Army Airfield, GA



GOOD IDEA. IT WINS OUR SEAL OF APPROVAL.

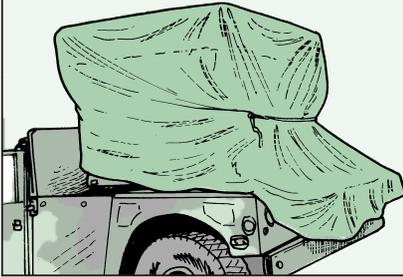
WARM AND DRY

Dear Editor,

We've come up with a few ways to keep Avengers and their crews warm and dry.

For starters, any time the Avenger will be sitting for more than two days we cover the entire system with a tarp. That protects the canopy and helps keep water out of the turret.

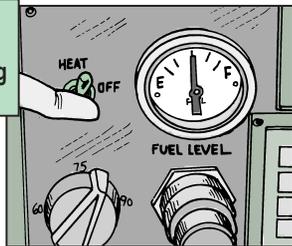
Keep Avenger covered



But in wet areas like Germany or Korea, or where condensation is a problem, a tarp may not be enough. Moisture still gets in the turret, causing electrical faults and soaking the seat cushion.

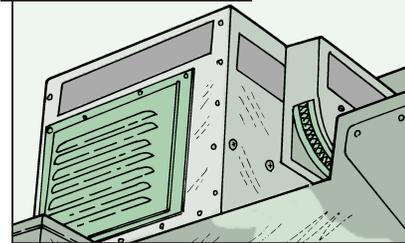
So, before we do our weekly PMCS, we run the personnel heater for 15 minutes. That not only dries up most moisture, but exercises the heater. If the heater sits for months, its moving parts can lock up. Heater parts are hard to get.

Run heater 15 minutes before doing PMCS



Another way to cool off heater problems is to check its four filters weekly for tears and dirt. The outside filter comes with NSN 4130-01-312-5511. Get the two smaller inside filters with NSN 4130-01-312-5512 and the other inside filter with NSN 4130-01-312-5510. Replace them if you find problems. Otherwise, replace them every six months.

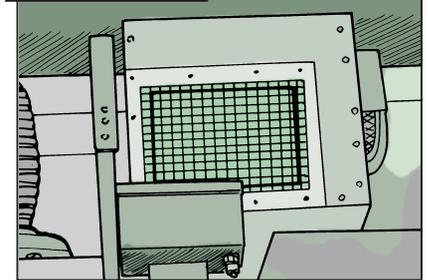
Check four filters weekly



Keep the outside filter's grate (or "chicken wire") in place.

Without the grate, the filter gets sucked into the heater.

Keep grate in place



Make sure to put only diesel fuel in the heater. MOGAS destroys the heater.

SFC Jeff Miller
C Btry, 1/62 ADA
Ft Lewis, WA

FROM THE DESK OF THE Editor

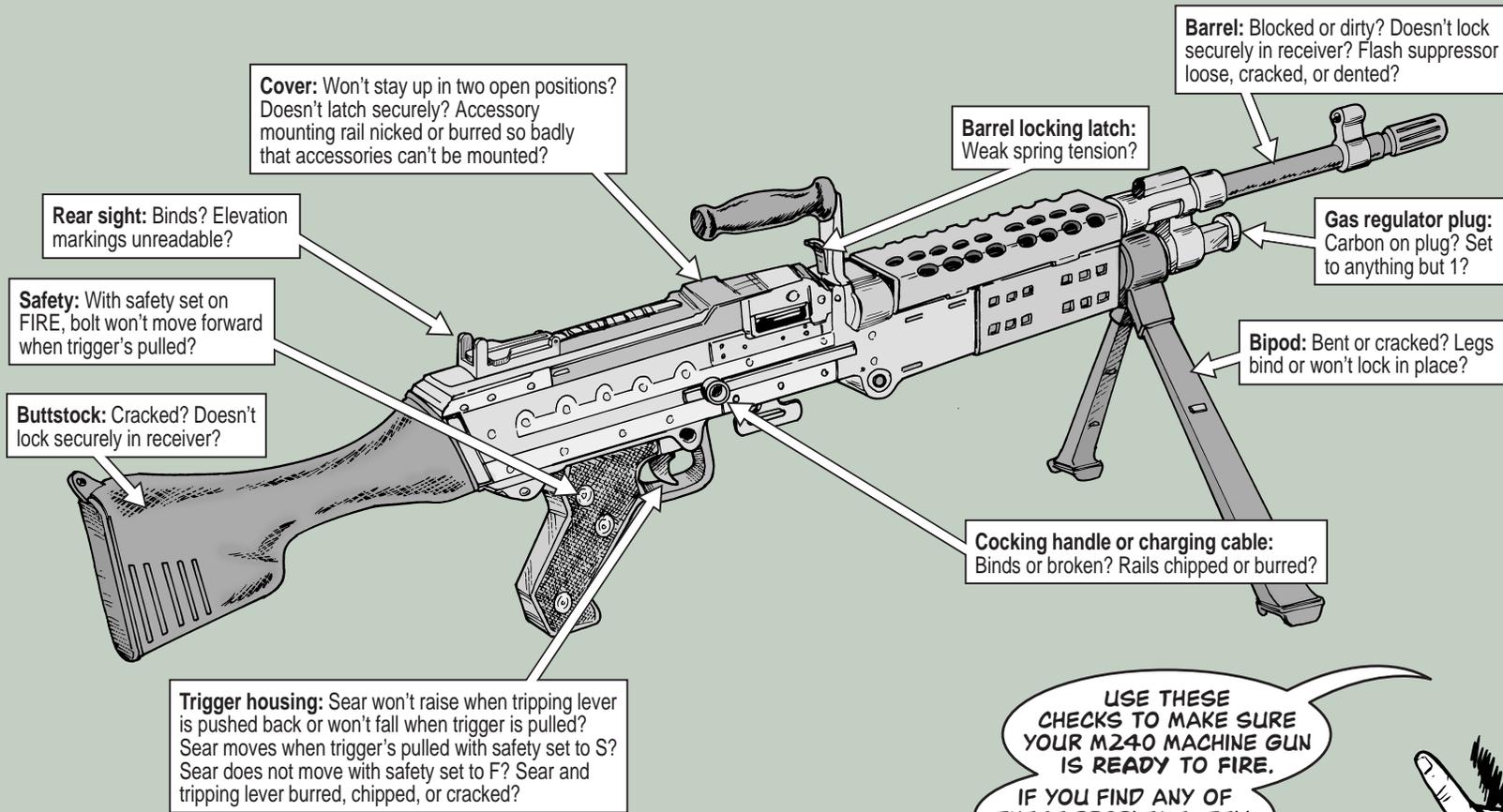
Your heater tips are hot ones.
Thanks for the good info.

WHAT'S WRONG WITH HIM?

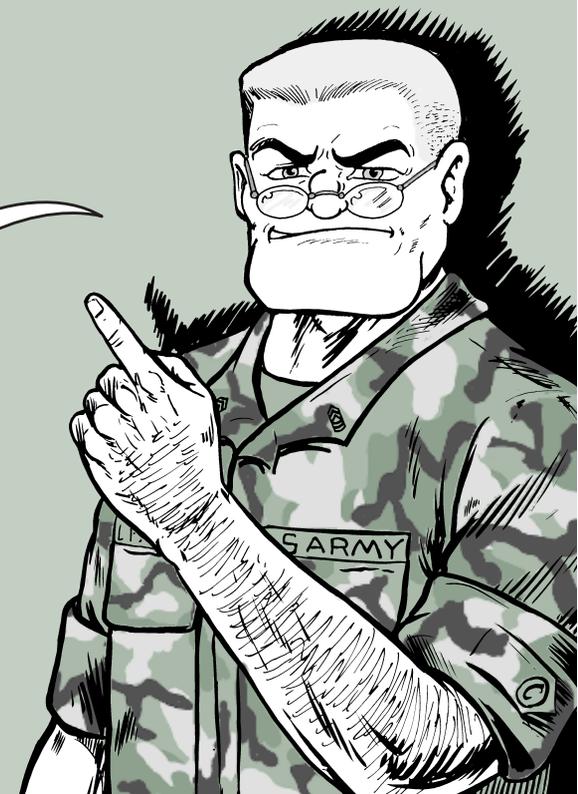
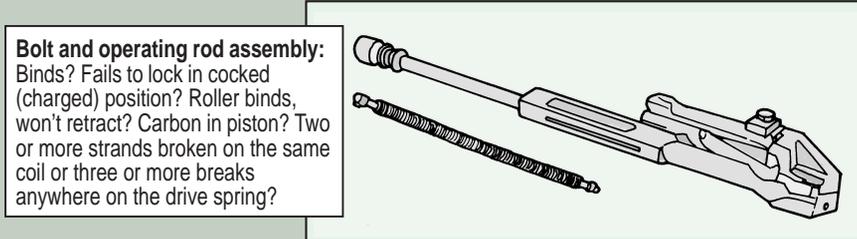
HE LOOKS UNDER THE WEATHER.

I DIDN'T GET TO SPEND THE NIGHT IN A NICE DRY TENT LIKE YOU. TURN ON MY HEATER AND COVER ME NEXT TIME!

Be Your Own Inspector



USE THESE CHECKS TO MAKE SURE YOUR M240 MACHINE GUN IS READY TO FIRE. IF YOU FIND ANY OF THESE PROBLEMS, TELL YOUR ARMORER.



CRACKS AND SPRINGS

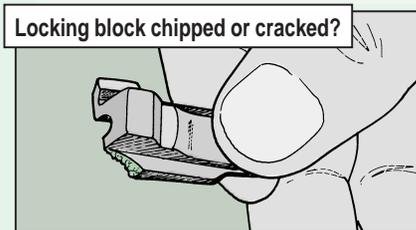


Cracking down on cracks and missing springs is important to the health of your M9 pistols.

There are no **ifs, ands or buts** about cracks. Eventually, your M9s will crack. It's your job to catch cracks before they become dangerous.

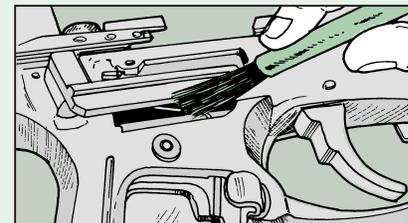
After every firing, eyeball the slide rails and the area around the magazine catch for cracks. That's where cracks usually appear. Cracks in the receiver or slide make the M9 NMC. Turn it in. Support can replace the slide.

Also check the locking block for cracks, particularly the left side. Several armorers have reported locking blocks whose left sides were broken off. A damaged locking block damages the receiver and slide. Support can replace the locking block.



It's difficult to clean in the magazine well without dislodging the trigger bar spring. ZING, it's gone. No spring means no firing.

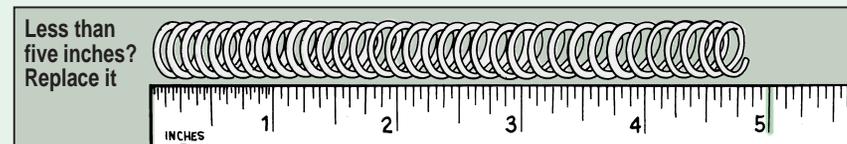
You can lose fewer springs by providing your unit soft brushes for cleaning around the spring. Soft brushes get rid of most of the dirt, but are less likely than a toothbrush to dislodge the spring. If your self-help store doesn't have brushes, you can order some with NSN 7920-00-514-2417.



Soft brush safer for trigger bar spring

When pistols come back from the range, function test them before you store them. If a pistol fails to fire in double action, the trigger bar spring's probably gone. Replace the spring, NSN 5360-01-204-4350.

Measure recoil springs. If the spring's shorter than five inches, firing slows way down. You can replace short recoil springs yourself with NSN 5360-01-206-0934.

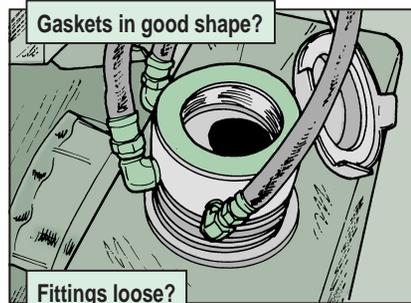


SMOOTHER SMOKING WITH PM

Smoking will be so much smoother for your M157 or M157A2 smoke generator if you stoke up on a bit of PM.

Pay attention to fuel. Sounds simple, but some smoke crews think they are having major problems when they are really just out of fuel. So, check how much fuel is in the two cans before smoking. If they're not full, fill 'em up.

While you have the fuel can lid off, check that the two rubber gaskets—one between the can lid and the lid assembly and the other between the lid assembly and can—are in place and not cracked. If the gaskets, NSN 5330-01-337-5350, are missing or cracked, your M157 will have trouble drawing fuel.

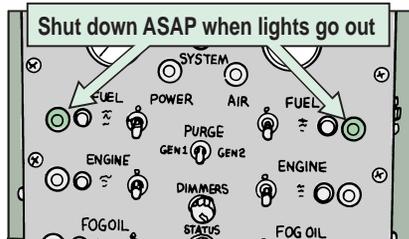


For the same reason, wiggle the fuel line fittings at the lid assembly, at the fuel/water separator, and at the generator to see if they're loose. Tighten them with your wrench if necessary.

During operations, keep your eye on the control panel fuel lights. When the lights go out, shut down ASAP.



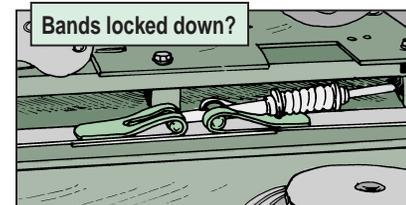
or you're out of fuel. Either way, the fuel pump can burn out if you don't shut down.



Keep it tight. If the fog oil tank isn't tightly strapped down, it can bounce around and break loose. That could be fatal to the crew.

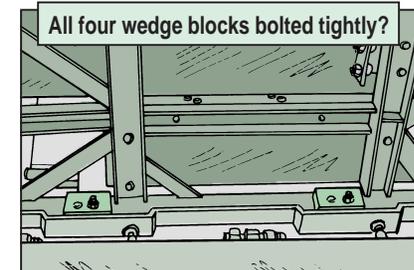


Check the bands holding the tank for breaks or kinks. Make sure nothing has been pushed between the bands and tank and that the bands are locked in place on the top of the tank. If the



four wedge blocks aren't tightly bolted down on both generators, the generators bounce around during travel and operation. That bends the fuel lines,

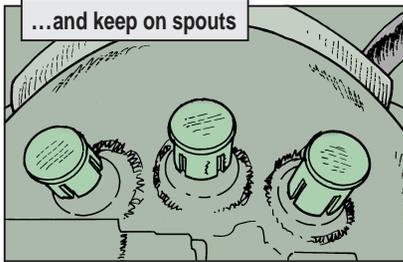
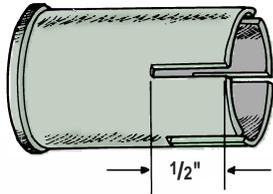
causes leaks, and damages the fuel pump and the cables. So make sure that all four wedge blocks are in place and tight. Tighten their bolts if neces-



sary. Tell your repairman if blocks are missing. He can order more with NSN 3040-01-248-8921.

Cap spout holes. If the smoke discharge holes are left uncapped when you're not smoking, sand and dirt blow into the engine chamber. Eventually, that makes it hard for fog oil to turn to smoke. Cap the hole spouts with M16 barrel caps. The caps fit tight after four equidistant 1/2-in slits are made in them.

Modify caps like this...



When it's time to smoke, just pull off the caps and stick them in your pocket.

If your armorer doesn't have extra caps, order more with NSN 5340-00-880-7666.

YOUR FIRST SMOKE OF THE DAY—HOW'S IT FEEL?

THANKS TO PM, IT'S SMOOTH!

PS END

CX-11230 Cable . . .

CONNECTORS AND CAPS



POP!

"Rats!" Another UG-1870 connector bites the dust and another CX-11230 cable goes to support for repair.

It's not speed that kills the CX-11230 cable when you pay it out—it's the sudden stop. Like when you get to the end of a 1/4-mile reel before you're ready for it.

Save cables by going slow and keeping an eye on the reel. Have a signal with the driver so you can let him know when the end is near.

Go slow when you reel the cable in, too. Have someone hold the connector off the ground, if you can.

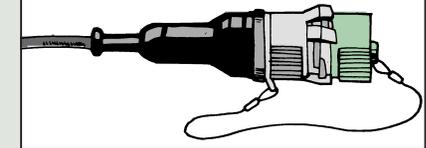
Once a CX-11230 cable is disconnected, its connectors are at the mercy of dirt and water that

PS 561

can make them useless—unless you use protective caps.

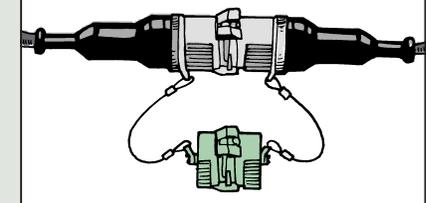
So put caps on all the connectors.

Always cap connector when not in use



When you have two connectors together, put the two caps together, too, to keep dirt or mud out of them.

Mate caps when in use



If cap, NSN 5999-00-136-9040 (NSN 5999-01-146-3414 for the UG-1870A/G), is missing, get your repairman to replace it.

Reel in cable slowly



47

AUG 99

Tying Up Tie-down Loose Ends

Dear Half-Mast,

What's the story on whip antennas?
Do they always have to be tied down when the vehicle is moving?

And, if so, is there a minimum height to which you tie down an antenna? I've seen them as low as eye level and so high they looked like they weren't tied down at all.

Do we leave them tied down when the vehicle is not moving?

Finally, is a tip cap mandatory?

SPC K. W.



Dear Specialist K. W.,

Whether your vehicle is packing a SINCGARS or AN/VRC-12-series radio, you need to tie down the whip antenna when you're on the move. Antennas left standing tall can smack into an overhead bridge or tree limb and shatter. Even worse, they could strike a power line.

Tie down the antenna at a 45–60° angle to the ground. That's low enough to avoid collisions with most overhead obstacles, but not so low that you risk cracking the antenna sections or the base.

Attach the antenna clip midway between the tip and the base.

Get a tiedown kit for your AS-3900 antenna with NSN 4020-01-341-8795. NSN 4020-00-908-6416 brings a tiedown kit for the AS-1729 antenna.

If your vehicle has more than one antenna, tie them down alongside the vehicle. Never cross them. If you do, the transmitting antenna will feed its signal to the one it's touching. You'll get interference and maybe even damage to your radio's circuits.

When your vehicle is parked for any length of time, like overnight, you should take the antenna out of the clip and let it stand straight up.

That relieves tension on the base spring. A base spring kept under tension all the time will weaken.

Also, an upright antenna keeps the base spring coils close together, which helps keep out moisture and dirt. A tied-down antenna has its spring coils spread open making it easier for dirt and moisture to get inside and damage the base and the RF cable.

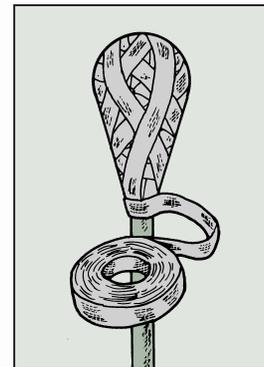
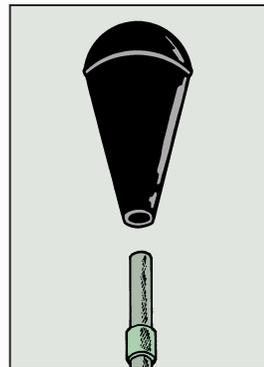
Finally, a tip cap should always be used. The risk of injury is too great without one. Here's how to make sure the tip cap, NSN 5820-00-437-2353, stays on tight.



Wrap 1/2-in pressure tape, NSN 7510-00-582-4771, six times around the whip two inches from the top.

Push the tip cap down over the tape. Starting just below the bottom of the cap, wrap the top antenna element and the cap with the 1/2-in tape. Cover it completely.

Finish up by covering the cap with 3/4-in electrical tape, NSN 5970-00-419-4291.

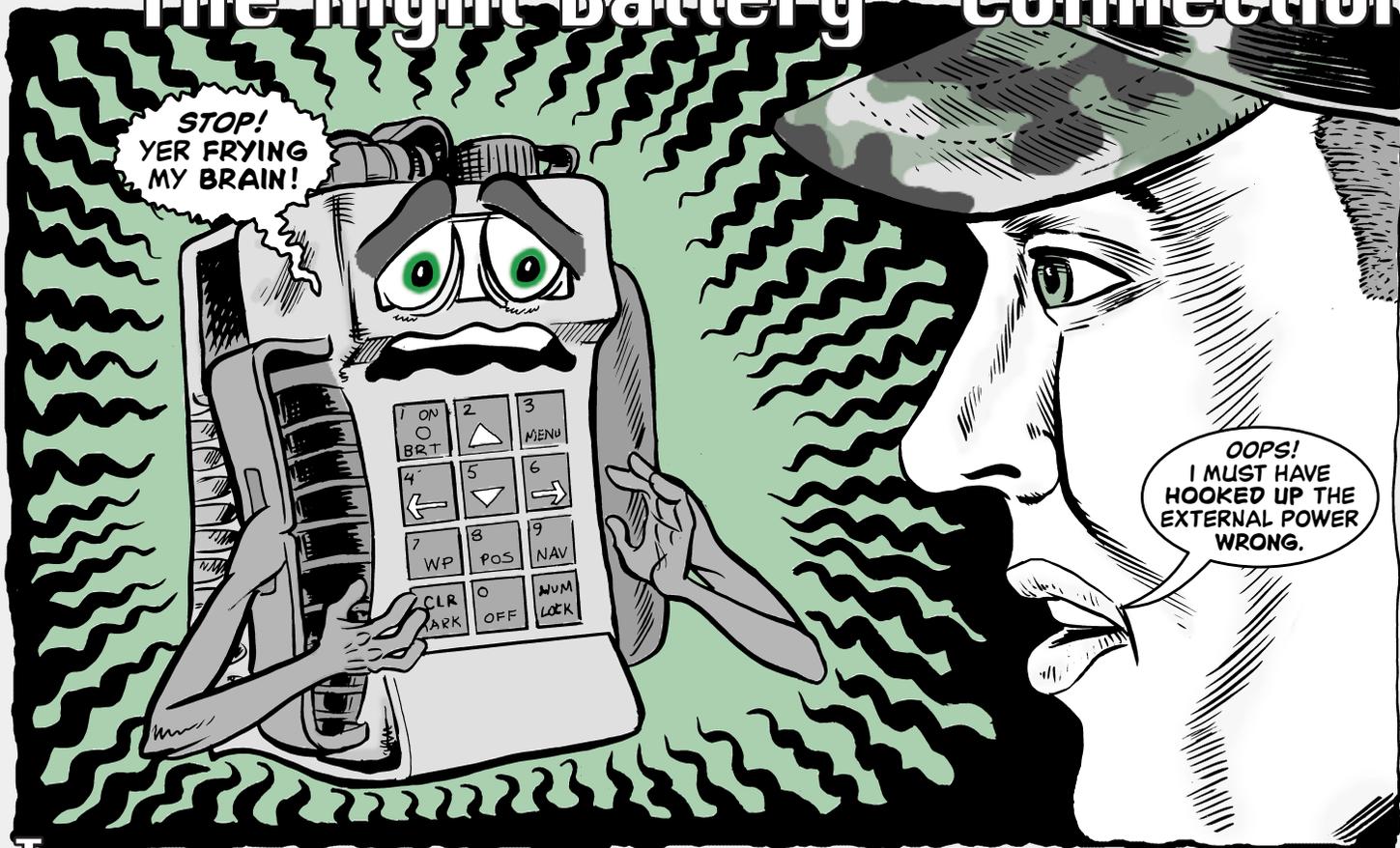


The pressure-sensitive tape holds the two shells of the cap together, cushions the cap impact and holds it firmly on the top element. The electrical tape protects against sunlight and moisture.

Replace the tape when it becomes badly scuffed or worn out.

Half-Mast

The Right Battery Connections

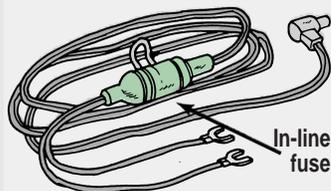


The AN/PSN-11 PLGR can be powered from an external source using cable, NSN 6150-01-375-8661. But you must hook up the cable right! A cable connected wrong could damage the PLGR, the cable and you.

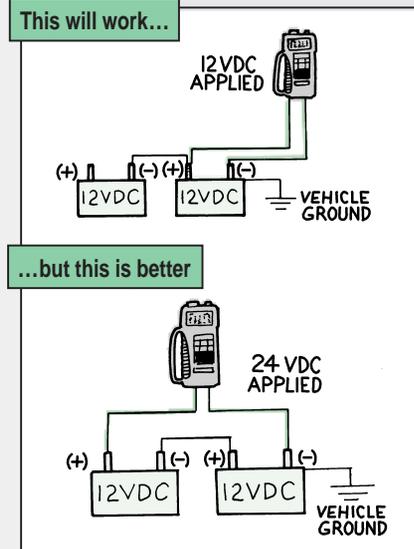
Step one in the hookup process is to make sure you don't reverse the polarity when attaching the cable to the vehicle power source. A good way to make sure is to remember that the cable

wire with the in-line fuse is always the positive or "hot" wire. It is always connected to a positive terminal.

Wire with in-line fuse goes to positive terminal



A wrong hookup can lead to the memory battery getting a charge from the vehicle battery and the memory battery exploding. This happens when the memory battery cap touches a grounded metal object while the PLGR is connected to the vehicle's power.



Step two is to make sure the PLGR ground is the same as the vehicle ground. This can be a bit confusing since most military vehicles have batteries connected in series.

The PLGR grounding wire should be attached to the same battery post as the ground wire that runs from the vehicle to the vehicle's battery.

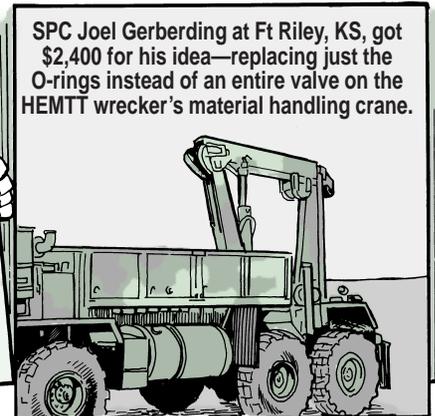
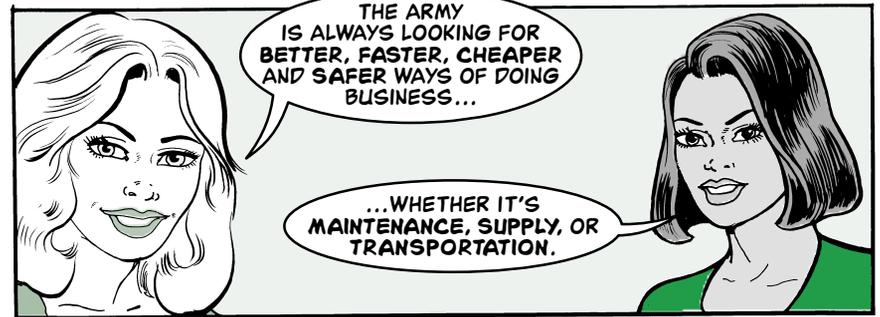
An alternative is to attach the grounding wire to the vehicle body.

Also, remember that when the external power cable is disconnected from the PLGR, but still connected to the vehicle's power source, your cable is "hot."

So when the PLGR is removed from its external power source because your mission is over, remove the cable, too. For those times you can't remove the cable, make sure the plug-in is secured and not allowed to swing around and make contact with metal.

THE SMART/TIPS

SCRAPBOOK



THE TIPS PROGRAM HAS BEEN COMBINED WITH SMART. BUT IT FOCUSES ON TOOLS. HERE'S HOW IT WORKS.

TIPS

Report tools that should be deleted from the system—
 Maybe they aren't used anymore. Maybe they were NEVER used.

Tool modification—
 Share your ideas on how to make tools work better. Save duplication of effort and give others the benefit of your experience. Tell TIPS who makes the tool. Most items will show a manufacturer's name, code or part number.

Report bad tools—
 If a tool breaks, fails to hold its calibration, quickly wears out, or can't take the pressure it's supposed to, report it. Offer a solution if you have one.

Report tools that should be added to the system—
 If you know of a commercial tool that can do the job better, don't keep it to yourself.

IF SEVERAL PEOPLE SEND IN REPORTS ON AN ITEM, IT'LL STAND OUT LIKE, WELL, A SORE THUMB.

CW3 Larry D. Swan, Ft Hood, TX, suggested changing the basis of issue for the Tank Turret Mechanics Supplemental Tool Kit to Artillery Maintenance Shop Set from Artillery Mechanics Tool Kit. The savings were \$978,866. He was awarded \$9,094.



WHAT ABOUT YOU?

1,400 Tool Improvement Suggestions submitted.
 \$2.3 million saved.
 \$65,000 in awards recommended.

THE SMART/TIPS PROGRAM HAS RECOMMENDED NEARLY \$1,000,000 IN AWARDS SINCE 1982.

PUT YOUR SMART IDEAS ON A DA FORM 5533 AND TIPS ON DA FORM 2.2.33 OR ON PLAIN PAPER, AND SEND THEM TO:
 PROJECT SMART/TIPS
 DIRECTOR OF COMBAT DEVELOPMENTS FOR COMBAT SERVICE SUPPORT
 3901 A AVENUE, SUITE 2.20
 FT LEE, VA 23801-1809.

OUCH! LET'S TAKE A LOOK AT SOME TIPS WINNERS.

The pocket knife in the General Mechanics Tool Kit was easily pilfered, and another tool did the same work. So George Anthony of Aberdeen Proving Grounds, MD, suggested removing it from the kit. That saved \$160,920 and he was awarded \$4,000.

CW2 Donald E. West of the Delaware National Guard suggested replacing the timing light with one that uses cheaper bulbs. The idea saved \$175,547 and he was awarded \$4,077.

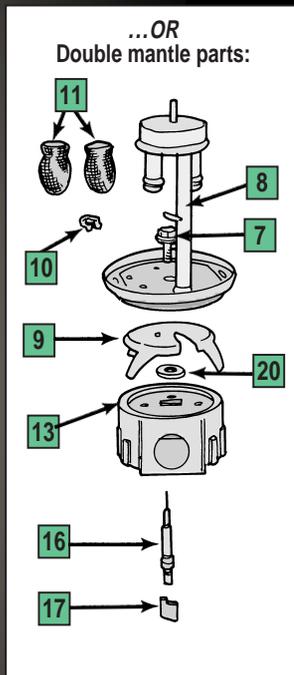
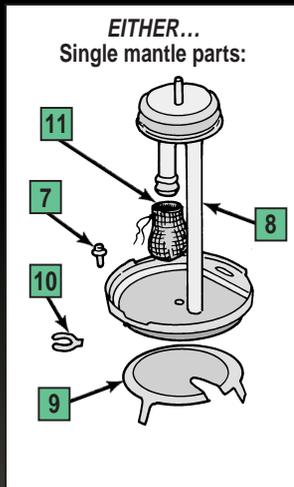
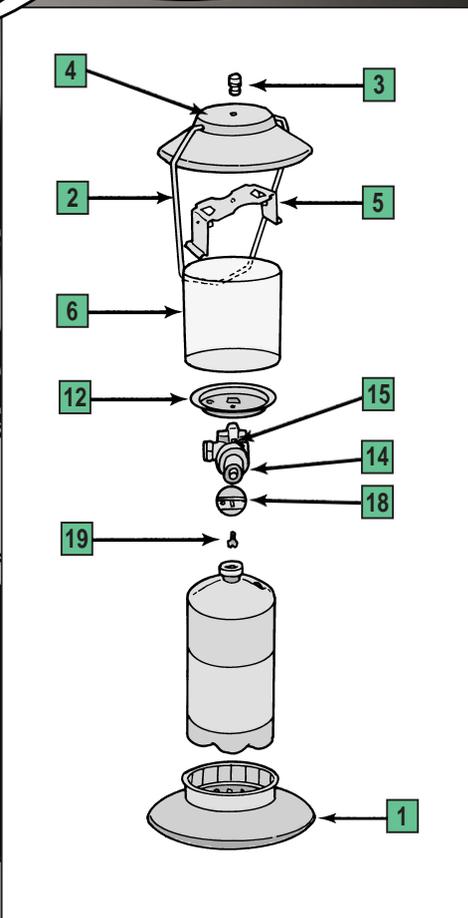
VISIT THEIR WEB SITE AT...

FOR DETAILS, CALL DSN 687-0363/2406/2399, (804) 734-0363/2406/2399, OR E-MAIL: SMART@LEE.ARMY.MIL

http://www.cascom.army.mil/multi/project_smart/

KEEP YOUR LIGHT SHINING

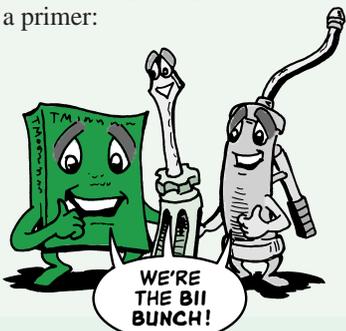
IF YOUR SINGLE MANTLE LANTERNS, NSN 6260-01-124-7467, AND DOUBLE MANTLE LANTERNS, NSN 6260-01-124-7468, AREN'T PUTTING LIGHT ON THE SUBJECT, BRIGHTEN THINGS UP WITH THESE REPAIR PARTS...



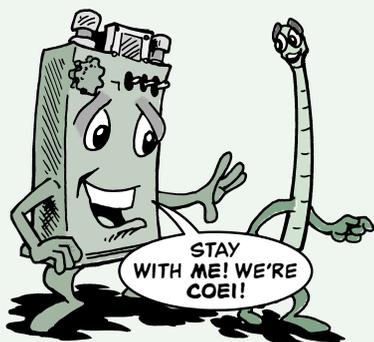
#	Key item	PN/NSN
1	Lantern base (single mantle) Lantern base (double mantle)	5151B5451 5114G1031
2	Bail (both)	5114A4231
3	Ventilator nut (both)	288-441
4	Ventilator (both)	5107B4851
5	Bail bracket (both)	5152A1041
6	Globe (both)	6260-01-340-5360
7	Screw (both)	5114B060
8	Burner assembly (single) Burner assembly (double)	5151A6621 5154D6621
9	Heat shield (single) Heat shield (double)	5154A1151 5154-1151
10	Spring clip (both)	231A3111
11	Mantle (both)	21A1001 or 6260-00-270-4060
12	Spacer plate (single) Spacer plate (double)	5152A1601 5152-1601
13	Collar assembly (double)	5451-5911
14	Regulator valve (single) Regulator valve (double)	5152A 5154D4601
15	Gas tip (single) Gas tip (double)	5107A2181 5107-5261
16	Ignitor assembly (double)	5154-5851
17	Cam follower (double)	5154-1101
18	Knob assembly (both)	5154A1491
19	Knob screw (both)	5154D029
20	Washer (double)	5154-320

AAL the Basic Components

Knowing about BII, COEI, and AAL can make all the difference when you're trying to figure out what item your unit needs and how to order it. Here's a primer:



Basic Issue Items (**BII**) are items your unit *must* have to support and maintain an end item—screwdrivers, TMs and grease guns are usually BII. BII stay with the equipment at all times, even when you turn it in. Your -10 TM is the authority for ordering BII based on your unit's TOE/MTOE.



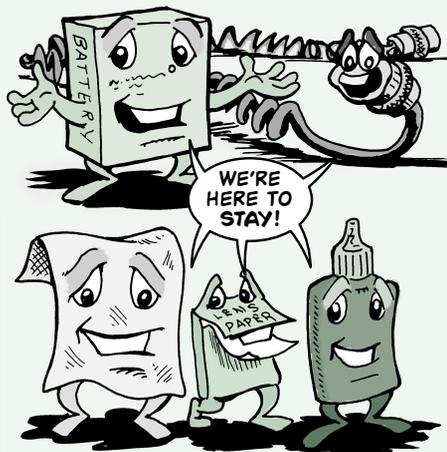
Components of End Item (**COEI**) are parts of the end item that are packed separately. COEI also stay with the end item if it's turned in. The short antenna for the AN/PRC-126 radio set is an example of COEI.

COEI are listed in your -10 TM only so you will have the information if you need to order replacements. That's the only time you order COEI—when you need a replacement.

Your -10 TM is not an authority for ordering COEI. Your authority is the parts manual in which the item is listed.

Additional Authorization List (**AAL**) items are things like cable assemblies and batteries that support an end item. AAL items may stay with your unit when the end item is turned in. The ordering authority for AAL is a CTA, MTOE, TDA or JTA.

Expendable/durable supplies and materials are things like rags, lens paper and lubricants that you need for taking care of an end item. You get to keep these. The authority to order them is CTA 50-970 or CTA 8-100 (Medical).



PUBLICATIONS Go On-Line



MANY OFFICIAL ARMY PUBLICATIONS ARE AVAILABLE FOR READING ON THE INTERNET.

ONLINE SITES INCLUDE...

- <http://www.logsa.army.mil>
Technical and equipment publications (except engineering and medical)
- <http://www.usapa.army.mil>
Administrative publications and forms
- <http://155.217.58.58>
Training and doctrinal publications
- <http://www.usace.army.mil/usace-docs>
Engineering publications
- <http://www.armymedicine.army.mil>
Medical publications

Maintenance Excellence Awards

ACTIVE ARMY TOE ORGANIZATIONS

LIGHT CATEGORY

Winner: HHC, 7th Sig Bde (Mannheim, Germany)
 Runner-up: HHD, 91st Ord Bn (Miseau, Germany)

INTERMEDIATE CATEGORY

Winner: 58th Sig Co (Mannheim, Germany)
 Runner-up: 109th Trans Co (Mannheim, Germany)

HEAVY CATEGORY

Winner: 324th Sig Co (Mannheim, Germany)
 Runner-up: 230th MP Co (Kaiserslautern, Germany)

ACTIVE ARMY TDA UNITS

LIGHT CATEGORY

Winner: 1st Bn, 81st Armor, Ground Mobility Department (Ft Knox, KY)
 Runner-up: C Co, 1110th Sig Bn (Camp Roberts, CA)

INTERMEDIATE CATEGORY

Winner: HHC, 111th MI Bde (Ft Huachuca, AZ)
 Runner-up: 6966th Trans Truck Terminal (Kaiserslautern, Germany)

HEAVY CATEGORY

Winner: 751st MI Bn (Camp Humphreys, Korea)
 Runner-up: 1st Bn, 29th Inf (Ft Benning, GA)

U.S. ARMY RESERVE TOE UNITS

LIGHT CATEGORY

Winner: 942nd Trans Co (Terminal Service) (North Charleston, SC)
 Runner-up: None selected

INTERMEDIATE CATEGORY

Winner: 425th Trans Co (Medium)(Petroleum) (Salina, KS)
 Runner-up: C Co, 489th Engr Bn (Combat)(Mech) (Harrison, AR)

HEAVY CATEGORY

Winner: HHC, 479th Engr Bn (Combat)(Mech) (Watertown, NY)
 Runner-up: 952nd Engr Co (Combat Support Equipment) (Paris, TX)

U.S. ARMY NATIONAL GUARD TOE UNITS

LIGHT CATEGORY

Winner: 210th Finance Bn (Jackson, MS)
 Runner-up: None selected

INTERMEDIATE CATEGORY

Winner: 1086th Trans Co (Jena, LA)
 Runner-up: 1031st Engr Co (Panel Bridge) (Gate City, VA)

HEAVY CATEGORY

Winner: 527th Engr Bn (Ruston, LA)
 Runner-up: 3637th Maint Co (Springfield, IL)

HERE ARE
 THE WINNERS OF THE
 FY98 ARMY AWARDS
 FOR MAINTENANCE
 EXCELLENCE.

WAY
 TO GO!

Connie's
 POST
 SCRIPTS

DON'T WORRY,
 TOTO-GOOD PM TOOK
 CARE OF THAT OL'
 WICKED WITCH!

ARF ARF

ARF

Blackout Marker

NSN 6220-01-343-1327 gets the front blackout marker for M915A2-series and M916A1-series tractor trucks. The NSN shown for Item 1 in Fig 89 of TM 9-2320-363-24P brings the wrong marker.

M939 Exhaust Cap

Keeping rain and snow out of M939-series truck exhaust stacks is a snap with weathercap, NSN 9390-01-204-1161. Note this info in Fig 32 of TM 9-2320-272-20P.

Rack for M240B Machine Gun

The M240B machine gun doesn't have its own storage rack. But you can have support modify the M249 machine gun's rack, NSN 1095-01-197-7902, so that it works for the M240. Directions for modifying it are on the Army Electronics Product Support homepage at:

<http://aeps.ria.army.mil>

Click on Maintenance, then TACOM Authorized Equipment Modifications, then on Modification Plans for M13 Small Arms Racks. Do not try to modify the M60 rack for the M240B. The M60 damages the M240's rear sight.

Cannon Questions?

If you see an irregularity of any kind with a cannon barrel or mortar tube, call the folks at the Watervliet Arsenal Product Assurance Engineering Division: DSN 974-5587 or (518) 266-5587, fax DSN 974-5261 or (518) 266-5261. Or e-mail them at:

gunrecords@wva.army.mil

They'll give you the technical guidance you need.

SCs on Internet

Most Army supply catalogs (SC) are now on the Internet. The only exceptions are SCs for medical or TMDE equipment. Access the SCs on the Logistics Support Activity (LOGSA) home page at:

<http://www.logsa.army.mil/pubs.htm>

Just click on Publications & Forms. If you have questions, call (256) 313-2442, DSN 897-2442, or e-mail:

sko@logsa.army.mil

HMMWV Distribution Box

The new power distribution box and cable assembly, NSN 6110-01-446-7125, for HMMWVs is now available separately. Get the distribution box with NSN 6110-01-446-7126 and the cable with NSN 6110-01-446-7124. Make a note in Fig 43 of TM 9-2320-280-24P-1 until it's updated.

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

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