

Issue 502

PS

September
1994

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-502

Read and
heed, then
pass along!



SARGE,
OUR LITHIUM
BATTERIES ARE
GONE!

**THE RACE
IS ON**
... SEE PAGE 27

WALK WHAT YOU TALK

NCOs, do you practice what you preach about effective maintenance in your motorpool?

BLAH
BLAH
BLAH

THERE
GOES
SERGEANT
ALTAUK!

YEAH,
ALL TALK
AND NO
ACTION!



You'd better, for you can't ask operators and mechanics to do more or better than you do.

How can you expect your operators to perform day-to-day preventive maintenance checks and services unless you've shown them how to do it?

How can you expect them to properly operate their equipment unless you've shown them how to do it?

How can you expect your mechanics to use the right tools and make the right repairs unless you've shown them how to do it?

You must have trained, self-reliant soldiers in your motorpool. Here are some tips on how to develop soldiers who do what you expect:



Listen to what your mechanics have to say. Hold a weekly meeting in which each person tells what he or she is doing. That way everyone stays informed.

SHARE IDEAS

YEAH,
NOW YOU'VE GOT
THE IDEA.



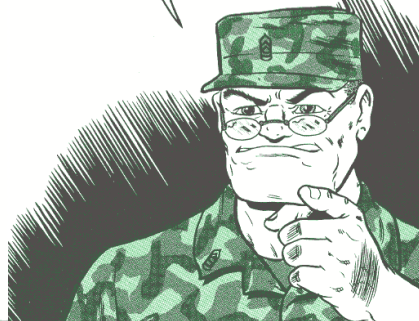
Knowledge is the key to training and maintaining. Let your experienced mechanics share ideas and provide examples to new mechanics.

Maintenance problems surface when ideas are shared. Better mechanics in the motorpool are the end result--that's what's important.



Do what you say you're going to do. Soldiers believe what you do far more than what you say. Let them know your emphasis on preventive maintenance and keeping equipment mission-ready.

JUST REMEMBER,
IT'S UP TO YOU--THE NCO--TO
MAKE THE DIFFERENCE IN THE
MOTORPOOL.



PS

THE
PREVENTIVE
MAINTENANCE
MONTHLY

TB 43-PS-502, 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.

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You are invited to send PS your ideas for improving maintenance procedures, suggestions for articles, or comments on material published in PS. Just write to:

MSG Half-Mast
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By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army Chief of Staff

Official:

Milton H. Hamilton

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Administrative Assistant to the Secretary of the Army
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GO THE EXTRA MILE



Tires

Keep air pressure at the proper PSI for the type and size tire being used. Underinflated tires get hot, causing tread separation and breaks in the body cords. Cornering causes the rim to cut the sidewalls.

Use these pressures for cold tires:

Underinflation
murders
sidewalls

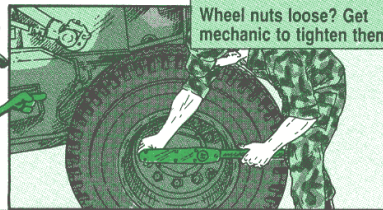
Tire	NSN 2610-	Tire Size (inches)	PSI
Radial	01-287-6409	11-20	110
Bias ply (narrow)	00-204-4029	10/9.75-20	105
Bias ply (narrow)	00-060-9960	10/9.75-20	105
Bias ply (wide)	00-763-7333	16.5-19.5	90

Wheels

WATCH FOR SHINY SPOTS THAT SIGNAL LOOSE WHEEL NUTS. GET YOUR MECHANIC TO TORQUE LOOSE NUTS TO 450-500 LB-FT.

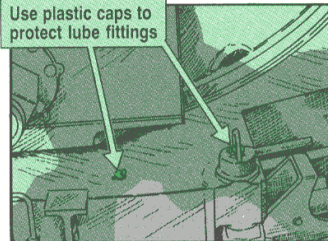


Wheel nuts loose? Get mechanic to tighten them



Lubrication

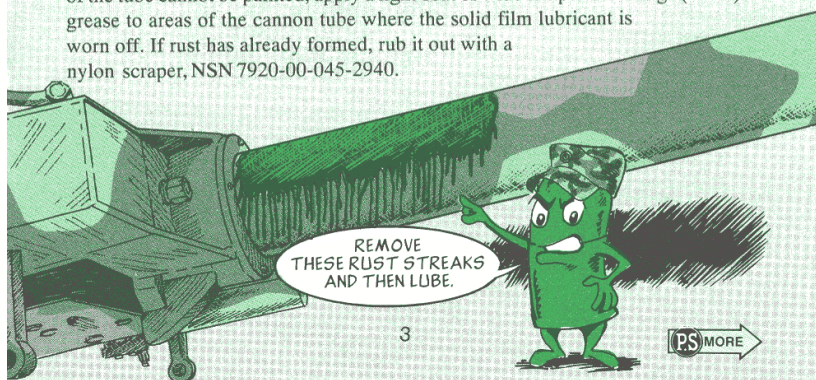
Use plastic caps to protect lube fittings



Cover all lube fittings. If the red plastic caps that came with the weapon are missing, replace 'em. NSN 5340-00-450-5718 gets you 156 caps and plugs in different sizes.



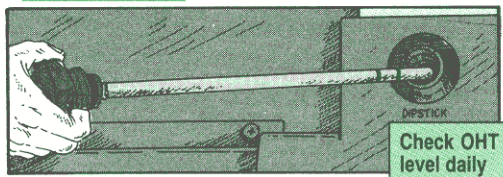
Avoid rust streaks on the recoil surface of the cannon. Since the recoil surface of the tube cannot be painted, apply a light coat of wide temperature range (WTR) grease to areas of the cannon tube where the solid film lubricant is worn off. If rust has already formed, rub it out with a nylon scraper, NSN 7920-00-045-2940.



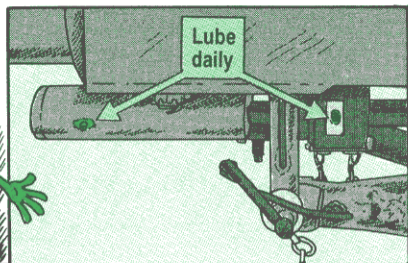
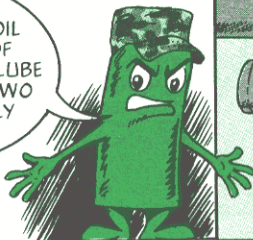
REMOVE THESE RUST STREAKS AND THEN LUBE.

Lubrication

👁️ Eyeball the manifold assembly's hydraulic fluid level daily. Add OHT as needed to bring the level between the FULL and ADD marks on the dipstick.



KEEP THE VARIABLE RECOIL SHAFT FREE OF PAINT AND MUD. LUBE THE SHAFT'S TWO FITTINGS DAILY WITH WTR.

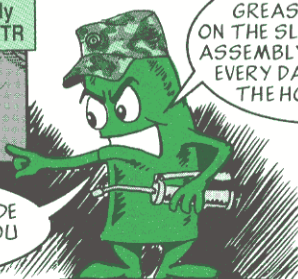


👁️ Look at the brake fluid level in the hydraulic reservoir every time you move out. If fluid's low, fill the reservoir to within $\frac{3}{4}$ inch of the top of the fill hole with silicone brake fluid.



LUBE THE GREASE FITTING ON THE SLEEVE BEARING ASSEMBLY WITH WTR EVERY DAY YOU USE THE HOWITZER.

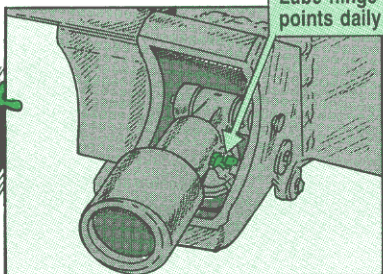
HIT THE TOP AND BOTTOM FITTINGS ON BOTH GUIDE ASSEMBLIES WITH WTR WHEN YOU DO THE SLEEVE BEARINGS.



LUBE THE RAM HYDRAULIC PUMP HINGE POINTS WITH EITHER PL-S OR CLP.

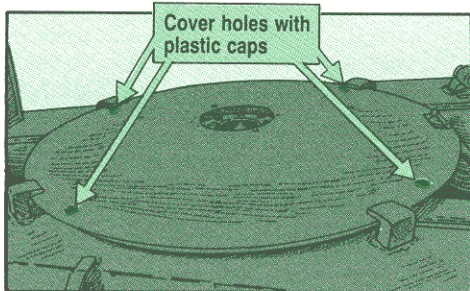


Lube hinge points daily

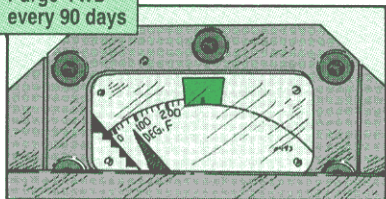


And Remember to . . .

➤ Cover the four holes in the firing baseplate with $\frac{3}{4}$ -in plastic caps. Missing caps let rain, snow and dirt get inside and allow rust to form. Replacement caps come with NSN 5340-01-043-7078.

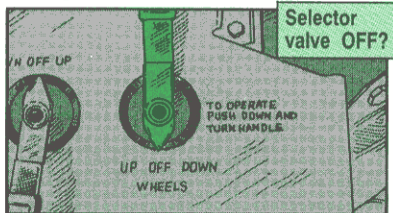


Purge TWD every 90 days

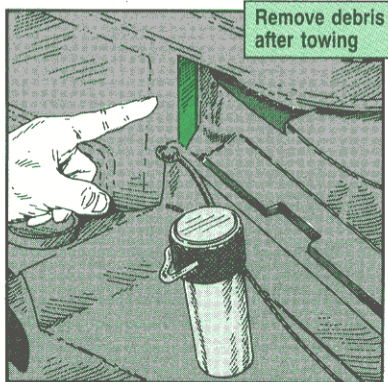


➤ Watch the thermal warning device (TWD) indicator. If the calibration is wrong or the needle sticks at a high temperature and fails to return to ambient temperature after the tube has cooled down, call in your mechanic.

➤ Prevent axle arm damage by making sure the selector valve is OFF whenever it's supposed to be. Move the lever back and forth on either side of the OFF mark to make sure all pressure is off before towing.



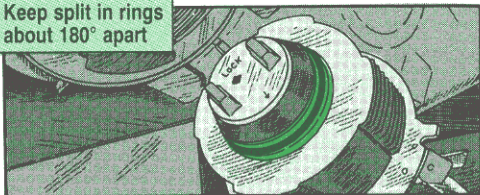
➤ Look for dirt and mud between the trail head and bottom carriage before spreading trails after towing. The trails will not completely open if debris is caught there. Besides, you can't get the trail lock pins in place.



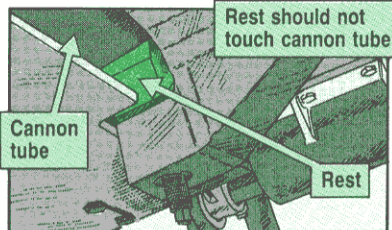
... Go the Extra Mile

- Position the obturator spindle rings so that the splits in the two rings are about 180° apart. Gas will escape if the splits are directly opposite each other.

Keep split in rings about 180° apart



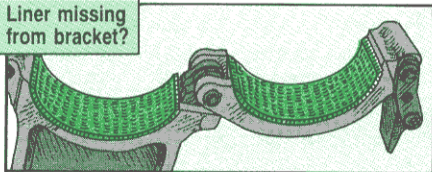
- Keep the pump handles in their brackets. Otherwise, they'll get lost when the howitzer is being towed.



- Leave the rest—the wedge-shaped piece of metal below the cannon tube—alone. If the long screw has been turned so that the rest is in contact with the cannon tube, screw it back down away from the tube as far as it will go and leave it there. That keeps the tube from being scored when the howitzer is fired.

- Look at the gun tube stowage bracket. If the lining is missing, report it. Without the lining, the gun tube rattles around and gets scratched up. That gives rust a foothold.

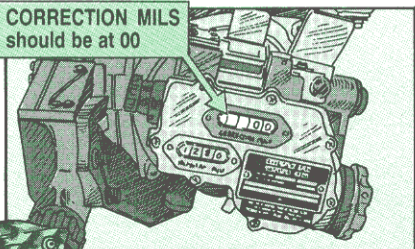
Liner missing from bracket?



- Keep the M139 alignment mount cover down except when the M139 alignment device is in position. Otherwise, the dovetail will get scratched and become inaccurate.

Always wipe off the dovetail before installing the M139. Make sure the tube is at zero elevation. Do not elevate the tube with the M139 installed or you'll mess up the boresight.

CORRECTION MILS should be at 00



- Set the CORRECTION MILS scale to 00 before adjusting the M17/M18 fire control quadrant.

PM HAS MADE THESE SOLDIERS FRONT RUNNERS!



PS END

Keep Slave Receptacle Dry



To keep the M88A1's NATO slave receptacle from becoming a water container, keep the dust cap in place.

The receptacle is mounted at just the right angle to hold water if the cap's missing. Once in the receptacle, water corrodes and rusts the receptacle's metal contacts. Worse yet, if water freezes in the receptacle, you can't slave start a dead vehicle — and the ice could crack the insides.

Do yourself a favor. Make sure the dust cap is in place, snug like. If the dust cap and cable assembly is missing, replace it with NSN 5340-01-059-0114.

Until a new cap comes in, tape over the receptacle with electrical or duct tape.

M113A2 FOV . . .

Which Check Is Correct?

Dear Half-Mast,
The figure on Page 18 of LO 9-2350-261-12 says the oil level in the fan gearbox on our M113A2 should be checked daily. But Note 1 on Page 19 says it's a monthly check. Which is right?
SFC D.B.C.

NOT ME!

BUT ME!

Dear Sergeant D.B.C
The oil level check for the fan gearbox should be done monthly. Make a note in your LO until it can be changed.
Half-Mast

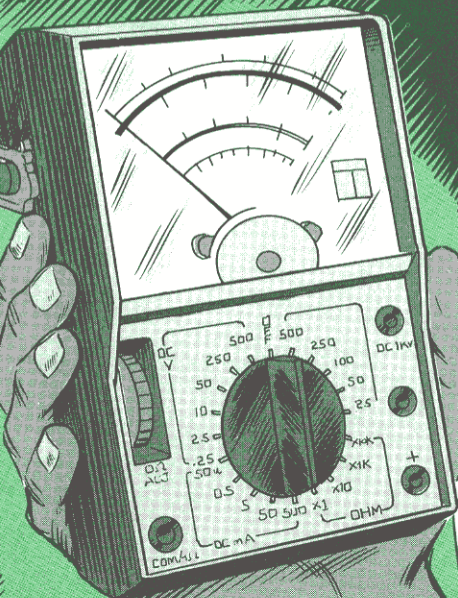
Hand-held Multimeter NSN

Dear Half-Mast,

The multimeter that comes with our tool kit is easily broken. Then we cannot make the needed voltage and continuity checks on our equipment.

We need an inexpensive, hand-held multimeter. Can you help?

SGT M. R. F.



Dear Sergeant M. R. F.,

You bet! Get a pocket-size multimeter with NSN 6625-00-914-4113. It costs less than \$23 and works well on tactical and combat vehicles.

The multimeter is an expendable item that's authorized by Appendix A of CTA 50-970.

Before using the multimeter, check to see that the meter zeros when no load is applied. Here's how:

- Put red probe in the positive connection.
- Put the black probe in the ground connection.
- Turn the meter to the ohms range.
- Touch the probes together.
- Adjust the dial to 0.

If the meter fails the test, make sure the battery and test leads are connected properly. Try the test again.

Be sure to turn the meter off to save battery power.

Half-Mast

Return of the Repair Kit

I MUST BE GOIN' CRAZY!
I KNOW I'VE SEEN THAT BURNER
REPAIR KIT LISTED IN HERE
SOMEWHERE!

YOU'RE NOT
CRAZY, SERGEANT! THAT REPAIR
KIT WAS LEFT OUT DURING THE
LAST UPDATE!

Here's what they'll get:

Item	PN/NSN	QTY
Nut, hex castellated	705587*	3
Wick	9390-01-070-5959	1
Washer	5310-01-126-0466	2
Washer	705136*	2
Washer, shouldered	5310-01-059-0988	1
Vaporizer, fuel	2910-01-124-9284	1
Washer	5310-01-126-0467	1
Washer, flat	5310-01-137-6801	1
Shield, fuel vaporizer	2540-01-057-7443	1
Screw, machine	5305-01-136-8734	1
Screw	5305-01-066-3431	3

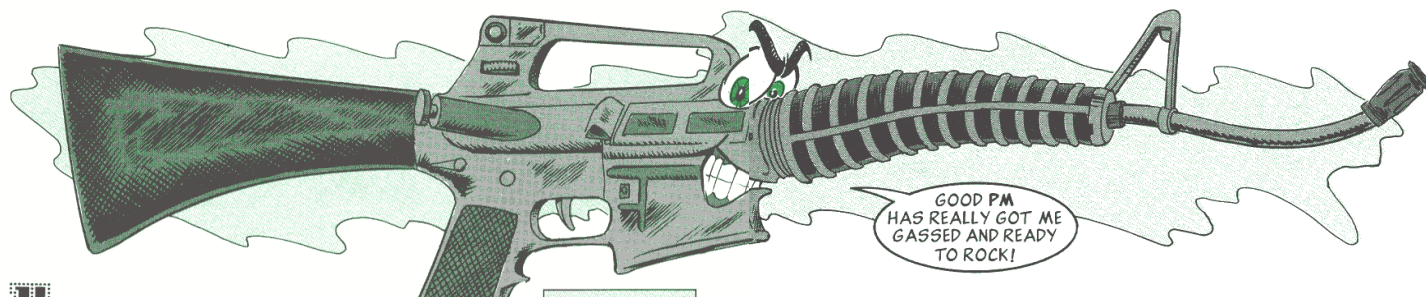
*Order on a DD Form 1348-6 using part number and CAGE 78385 from RIC AKZ.

Mechanics, when you send that Stewart-Warner heater with the bad burner to DS, chances are they'll put in an expensive new burner instead of repairing the old one.

That's because the burner repair kit, NSN 2540-00-255-0777, was left out of the parts TM.

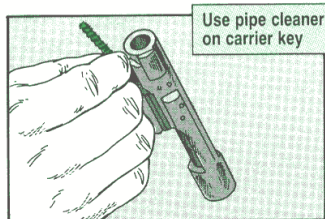
Let DS know the repair kit is still available and that it works with 10560C, 10560G, 10560M and 10560M24B1 models.

Keeping It Gassed



Uour M16 rifle's like your car: If it doesn't get enough gas, it won't work. Rounds won't chamber or you get short recoil. Keep your M16 gassed like this:

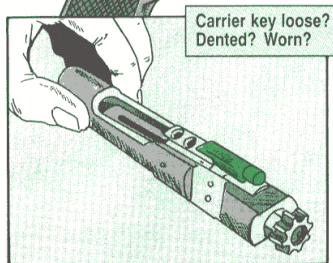
Clean the carrier key thoroughly with an old bore brush, CLP (or RBC), and a pipe cleaner. Work the bore brush all the way back in the key to get out every bit of carbon.



Use pipe cleaner on carrier key

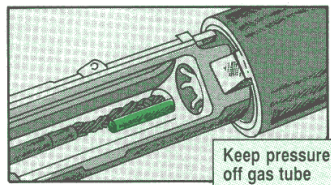
Never use a cotton tip. Cotton comes off and mixes with lube and carbon. The gunk hardens and plugs up the gas port.

Examine the carrier key for looseness, dents, or wear. If the carrier key can't mate with the gas tube, your rifle will have short recoil and the gas tube will be damaged.



Carrier key loose? Dented? Worn?

Clean the outside of the receiver end of the gas tube with the bore brush and CLP (or RBC)—but carefully. If the tube is bent, it won't mate with the carrier key and may have to be replaced. Work the bore brush around the tube as straight as possible. Keep your weight off the tube.

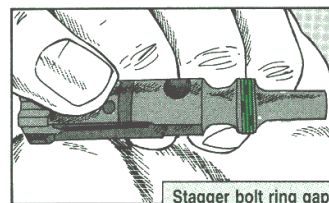


Keep pressure off gas tube



Hands off gas tube

When the handguards are off, hands off the gas tube. It doesn't take much pressure to bend it.



Stagger bolt ring gaps

Make sure the gaps in the bolt rings are staggered...or you'll get short recoil.

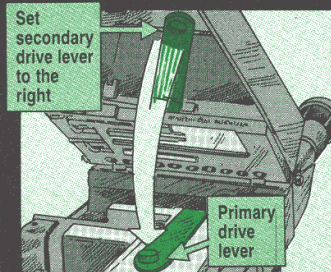
MK 19 Machine Gun . . .

Right Is Right

Gunners, make sure the secondary drive lever assembly is all the way to the right before you close the MK 19's top cover.

If the lever is to the left, the cover will still close—but, the lever snaps off when the weapon's fired.

When the lever is to the right it allows the secondary drive lever to connect with the primary drive lever and prevents damage to your weapon.



Set secondary drive lever to the right

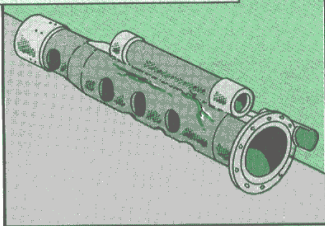
Primary drive lever

The M242 Crack Drill



Cracks are critical when it comes to the M242 automatic gun's barrel support. If the support tube becomes too cracked, the M242's unsafe.

Look for cracks in barrel support tube or damper weld

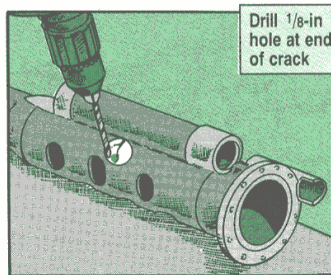


Eyeball your unit's M242s after every firing. Look at the barrel support's damper welds first. If you find any cracks in the welds longer than two inches, the barrel support tube's shot. All four welds can have cracks as long as none are longer than two inches.

Eyeball the rest of the support. If

there are any cracks longer than one inch, the tube's no good.

If you find any crack—other than on the damper weld—less than 1 inch, drill a 1/8-in hole at the end of the crack farthest from the damper assembly. Drill all the way through the tube. That relieves the pressure causing the crack and stops it from going farther.

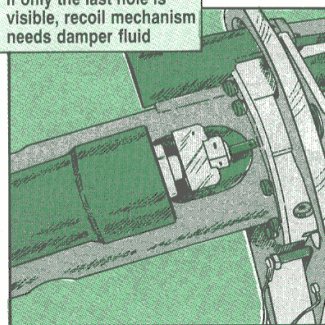


Continue to measure cracks after every firing and continue to stop drill. If any cracks reach 1 inch anywhere but

the damper weld, stop using the barrel support tube. If any cracks in the weld reach two inches, stop using the tube.

Help stop cracking by checking the level of damping fluid in the recoil mechanism daily. Low fluid is one of the biggest causes of cracks. When only the first hole from the end of the piston rod is visible, the recoil needs fluid.

If only the last hole is visible, recoil mechanism needs damper fluid



Ride the Bolt Forward

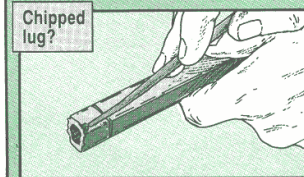
Never dry fire your M60, soldier!

Letting the bolt slam forward after pulling the trigger will chip the bolt's locking lugs and burr the barrel socket.



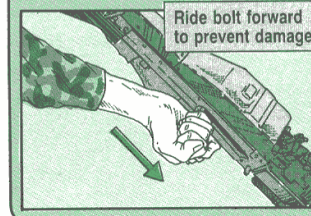
Then the barrel has to be replaced.

Minor chips, dents and gouges are now OK at the leading edge of the bottom lug if they are within 1/8 inch of the front or sides of the lug.

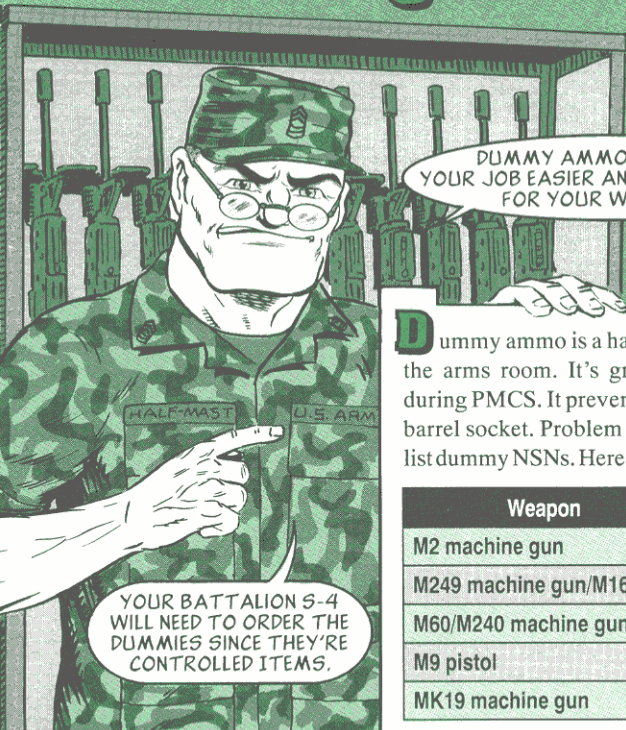


But if the bottom lug has a chip that is 1/8 inch or larger, the bolt is shot.

Prevent that damage by riding the bolt forward as you pull the trigger.



Ordering Dummies



DUMMY AMMO CAN MAKE
YOUR JOB EASIER AND THINGS EASIER
FOR YOUR WEAPONS.

YOUR BATTALION S-4
WILL NEED TO ORDER THE
DUMMIES SINCE THEY'RE
CONTROLLED ITEMS.

Dummy ammo is a handy thing to have around the arms room. It's great for testing weapons during PMCS. It prevents damage to the bolt and barrel socket. Problem is, small arms TMs don't list dummy NSNs. Here's info that shoots straight:

Weapon	Dummy NSN
M2 machine gun	1340-00-028-6382
M249 machine gun/M16 rifle	1305-00-764-8437
M60/M240 machine guns	1305-00-460-2600
M9 pistol	1305-01-206-8351
MK19 machine gun	1310-01-154-6525

M203 Grenade Launcher . . .

Pin Down Old Pins

Old firing pins are still being used in M203 grenade launchers and they're dangerous.

The old pins can cause misfires that damage the M203s and the soldiers firing them.

Right now, look for the old pins.

If you find an old pin, turn in the M203 to support.

New pin



Old pin



Quick Draw to Holster PM

If you armorers don't draw down on M12 hip holster problems with PM, your unit may soon have trouble drawing their M9 pistols in the field. Stick these PM tips in your holsters:

Keep the inserts that come with the holsters — and use them. Any time the M9s aren't in the holsters, put the inserts in the M9s' places. That helps the holsters keep their shape and makes it easier for the M9s to slide in them.

If the holsters are dirty, clean them with mild soap, warm water, and a soft bristle brush. Rinse off the soap with clean water. Let the holsters dry at room temperature with the inserts installed. Store the holsters in a cool place out of direct sunlight.

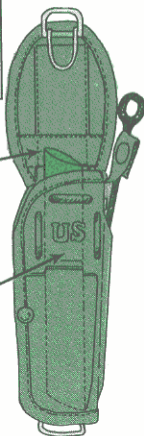
If the holsters get any chemicals — like oil or decon agent — on them, clean off the spots as soon as possible with soap and water.

The plastic cleaning rod that comes with the holster is an extra with no replacement. It is not a substitute for the M4 steel cleaning rod. If the plastic rod gets lost, get the M4, NSN 1005-00-556-4102.

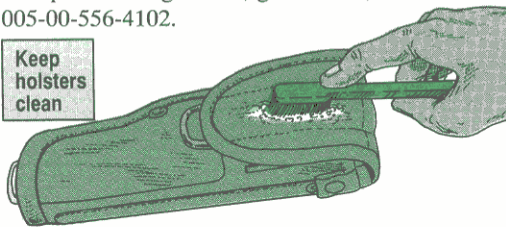
When M9's not in holster, put insert in its place

Point towards open side

Holster insert



Keep holsters clean



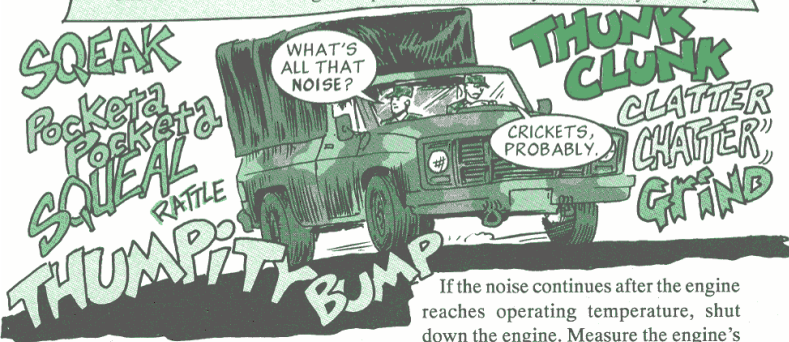
DRAW ON THIS PM FOR YOUR HOLSTER.



What's That Strange Noise?

Drivers, think of those strange noises you hear coming from your truck as pesky mosquitoes.

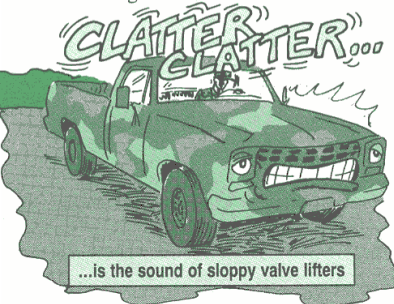
Those noises are warnings that pain — trouble — may be headed your way.



Here are some helpful hints about the sounds that abound while driving.

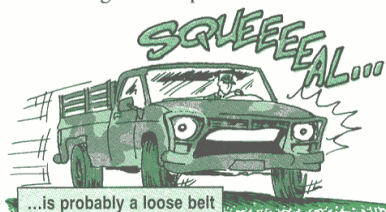
FROM THE ENGINE

Clatter-clatter: Listen for a light tapping or clicking from under the hood — when the engine is warming up. That sound comes from the valve lifters. They need time to refill with engine oil upon starting.

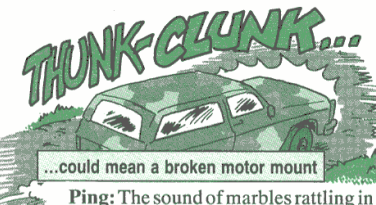


If the noise continues after the engine reaches operating temperature, shut down the engine. Measure the engine's oil level. If the oil level is OK, call in your mechanic.

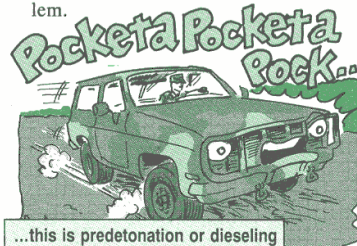
Squeal: That high-pitched squeal during engine start up or when making a tight turn is probably a worn or loose power steering belt. Have your mechanic tighten or replace the belt.



Thunk or clunk: The sound of a clunk during quick acceleration and deceleration can mean there's one or more badly worn or broken engine mounts. Write it down on the DA Form 2404. Get it fixed — PRONTO!

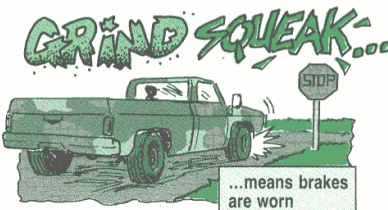


Ping: The sound of marbles rattling in a metal container, usually during acceleration, is predetonation or dieseling. That knock could mean something's wrong. Get your mechanic on the problem.



FROM THE BRAKES

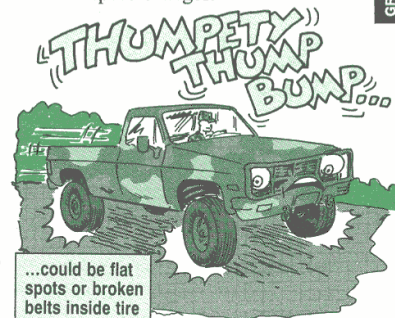
Grinding or scraping: The metal-on-metal sound you hear each time you apply the brakes means the brake shoes or disks are worn. Report it. Your mechanic will replace the brake shoes or disks if needed.



Squeak or squeal: The brake linings or pads are probably worn or glazed. Have your mechanic check the brakes when you hear that sound.

FROM THE TIRES

Thump: Flat spots or broken belts inside the tire will cause an increasing or decreasing thump sound as the CUCV's speed changes.



Remember, a strange noise coming from your truck may be your only notice of bad things to come. Report what you can't fix so your mechanic can.



Check Before You Chuck



When you find a bad glow plug, mechanics, replace it.

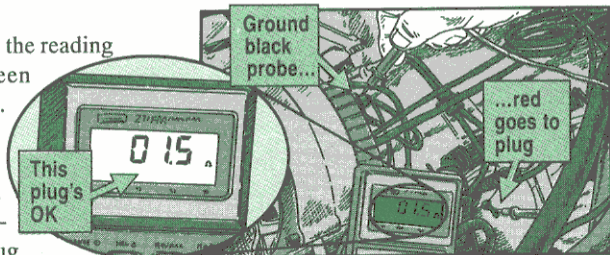
But don't assume all the others are bad, and replace them too. You'll be throwing away good plugs.

Glow plugs shouldn't fail as a set. If they do, something else is probably wrong... like a controller. And, the old eyeball won't tell you when a plug is getting ready to fail. The only way to know a plug is bad is to test it. All you need is a multimeter.

Disconnect the terminal assembly from each glow plug. Check each plug for looseness or damage. If one is loose, torque it between 8 and 12 lb-ft.

Then, put the black multimeter probe on the frame, and the red probe on the glow plug.

On a HMMWV, the reading should be between one and two ohms. A good CUCV plug will read one to three ohms. Anything else, replace the glow plug.



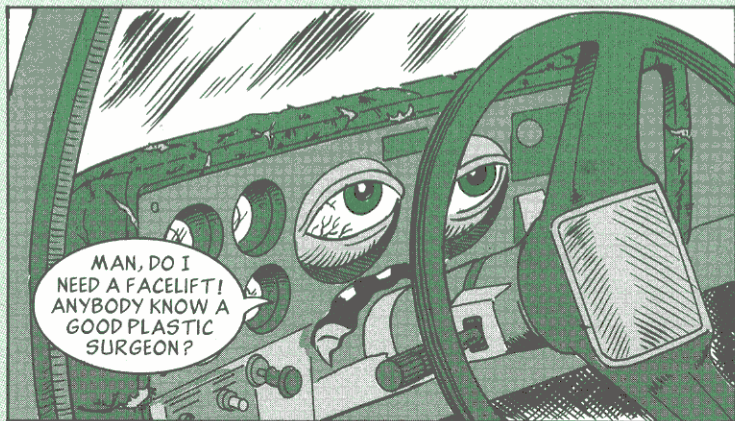
These tests should also be done as part of your semiannual services. It's in the CUCV pub on Page 2-13, TM 9-2320-289-20, and on Page 2-7 of the HMMWV's TM 9-2320-280-20-1.

Hide the Dash

If the instrument panel pad on your CUCV needs a facelift, don't replace it, hide it.

You can get a thin vinyl cover, NSN 2590-01-386-0876 that will hide cracks and faded colors. It comes with adhesive and instructions for installation.

If the pad is seriously damaged, of course, go ahead and replace it.



HMMWV ...

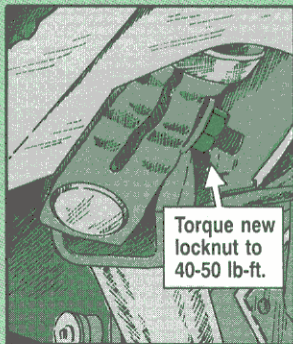
Lock Down Steering Shaft

When you replace the Humvee's intermediate steering gear or gear box, mechanics, always use new locknuts and the correct torque.

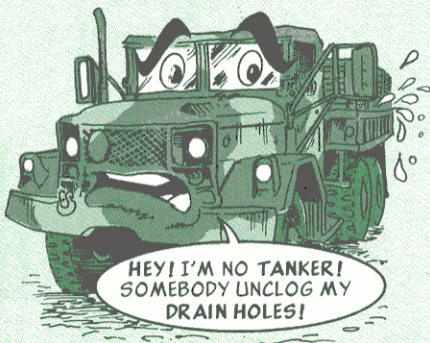
Locknuts form to the bolt when first put on. They will work loose if used over and over. Likewise, if you don't use the correct torque on the new locknuts, they can still work loose.

Once a locknut works loose, not only does steering control suffer, but U-joints and steering gear splines are damaged.

Replace the old locknuts, NSN 5310-00-840-6222, and torque the new ones to 40-50 lb-ft.



Unplug That Drain Hole



Water that's standing in the bed of your M35A2 cargo truck should tell you something. The drain hole's stopped up.

Leave it there long enough and it'll sure show you something — a rusted out cargo bed.

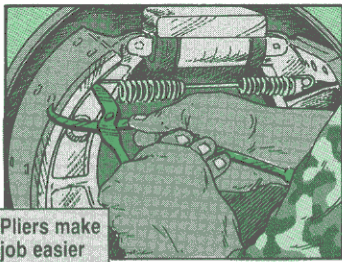
Eyeball the drain holes in the front corners of the cargo bed. If you find dirt and leaves, run the tip of a ballpoint pen or small screwdriver through the holes to keep 'em open.

Holes get painted over, too. Unless you scrape off the paint, water stands in the bed.

Tactical Trucks . . .

Brake Pliers Available

Forget the screwdrivers or makeshift tools when it's time to tackle brake shoe return springs. You can get a set of brake pliers with NSN 5120-00-540-4022.



These pliers will be added to both the No.1 and No. 2 Common shop sets when they are revised. Until then, use Appendix A of CTA 50-970 as your authority to order the pliers.

6TL Battery Cap NSN

You can now cap the cells on 6TL batteries, NSN 6145-01-210-1964, for operation or turn-in. Caps are available with NSN 6140-01-387-5045.

Soak Up Spills

To help stop injuries caused by mechanics slipping on oil spills, get a compound to soak 'em up. NSN 7930-01-145-5797 gets a 25-lb bag of absorbent/anti-slip compound.

TIRES NEED O-RING

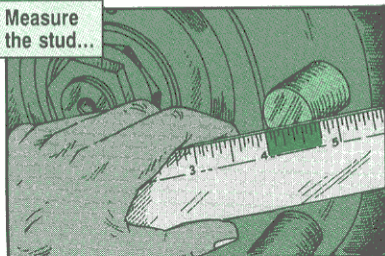
Use a new O-ring on this 5-tonner's wheel when you put it together, mechanics, or you'll be doing it later, when the tire goes flat.

The O-ring is part of the tire's seal. Without it, the tire won't hold air.

For wheels with $\frac{3}{4}$ -in studs, use O-ring NSN 5330-01-314-7598. Wheels

with $\frac{5}{8}$ -in studs use NSN 5330-01-210-2155. They're not interchangeable. Be sure to lubricate any O-ring with tire and rim lubricant, NSN 2640-00-256-5527, before installation.

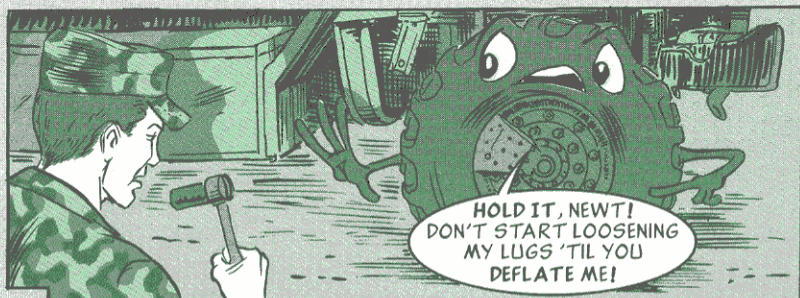
Measure the stud...



...to get correct O-ring



Safety Reminder!



Before you remove even one of the locknuts that hold together one of these M939A2-Series 5-ton truck wheels, mechanic, let all the air out of the tire.

That includes when you flip the counterweight like we told you on Page 19 of PS 495.

Even loosening one locknut can let the two-piece rim blow apart if there's still air left inside. Take no chances.

Likewise, when you inflate the tire, put it inside an inflation cage. That's SOP for any two-piece rim.

Tires . . .

CAGE INFLATION SAFETY

In real estate, it's location, location, location.

In tire inflation, it's safety, safety, safety — plus portability and cost.

And, after an extensive search, the Army now has its own "store-bought" tire cage that meets those standards.

Your unit can get one with NSN 4910-01-373-0267. It will hold most tactical vehicle tires. Its inside dimensions are:

Length - 40³/₄ inches

Width - 25 inches

Height - 56 inches

Safety comes from the steel tubing frame. It also has a wire mesh screen to keep small parts from becoming unguided missiles and injuring someone in the area.

Portability? The cage weighs only 315 pounds. Cost? Initial cost is about \$1,300.

If you need a cage for still bigger tires, consider NSN 4910-00-025-0623. Its inside measurements are:

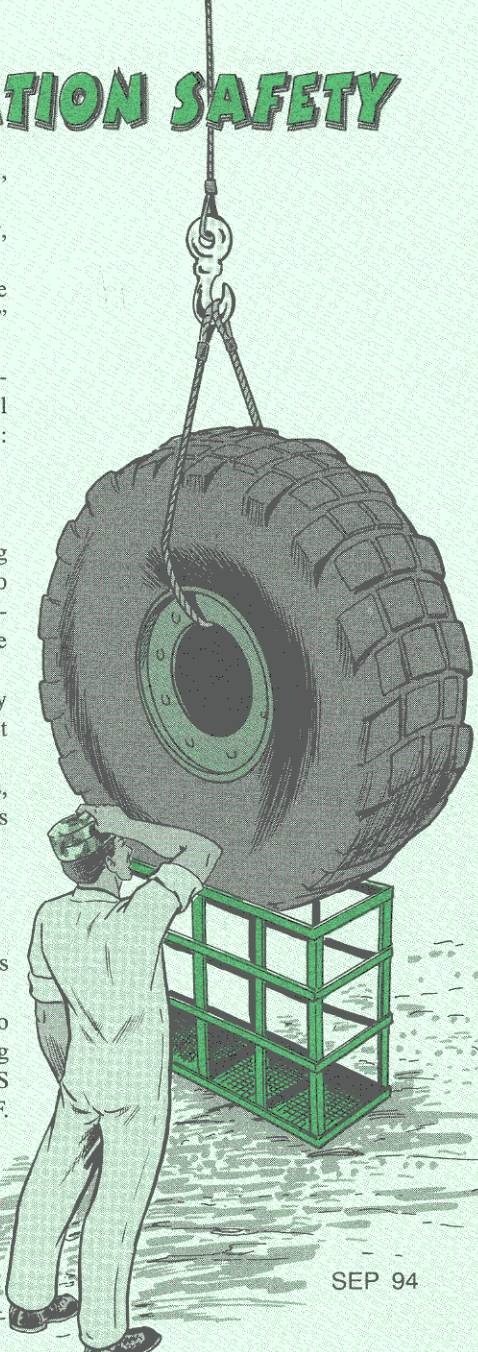
Length - 78³/₄ inches

Width - 35¹/₂ inches

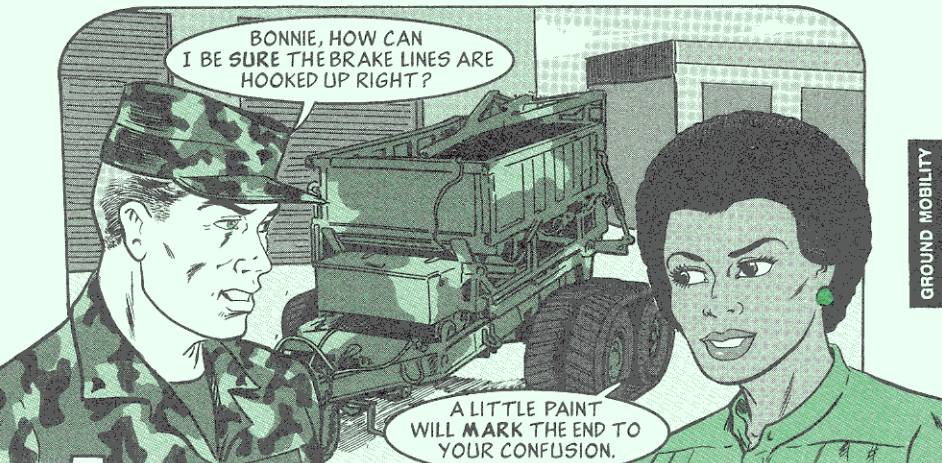
Height - 86¹/₄ inches

It costs around \$3,500 and weighs 1,600 pounds.

This NSN is not on the AMDF, so order it with a DD Form 1348-6 using RIC FPZ. Note in the REMARKS block that the NSN is not on the AMDF.



KEEP SHINY SIDE UP



GROUND MOBILITY

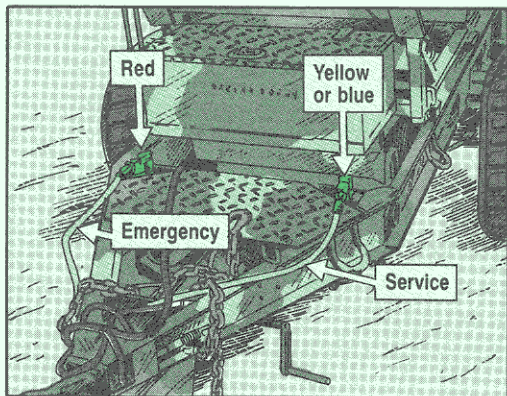
Locked-up brakes can turn your new tracked trailer into a bucking sled, spilling its cargo and damaging the trailer and any soldier in its way.

The brakes can lock up if the service and emergency lines are hooked up wrong. Note that the trailer's service line is on the left side of the trailer. Make sure that line is connected to the prime mover's service line.

Test your hookup job by starting and stopping at a slow speed — less than five MPH. If the brakes stop the trailer and the trailer is able to roll again when you release the brakes, the trailer brakes are OK.

Make sure you get the connections right each time by marking the trailer's connector and the prime mover's receptacle with dots of paint.


Mark the emergency side with red paint. Use yellow, or Department of Transportation-recognized blue for the service side. NSN 8010-00-721-9746 gets a pint spray can of blue paint.

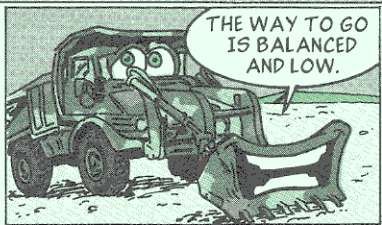



Keep 'em Low and Slow


Gymnasts learn early to keep themselves balanced and steady so they can excel in their sports. The same lesson applies to you SEE operators, especially when traveling over rough or hilly ground.

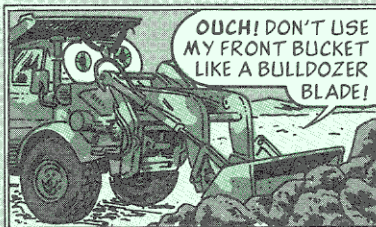
The SEE requires handling balance and steadiness that you must remember every time you crank it up.


 If you're hauling a bucket of dirt, keep it low until you're ready to dump. A full bucket carried high makes the SEE top heavy. When you're on the move, gullies, bumps and tricky slopes can rock the SEE from side to side. Low and balanced keeps you upright.



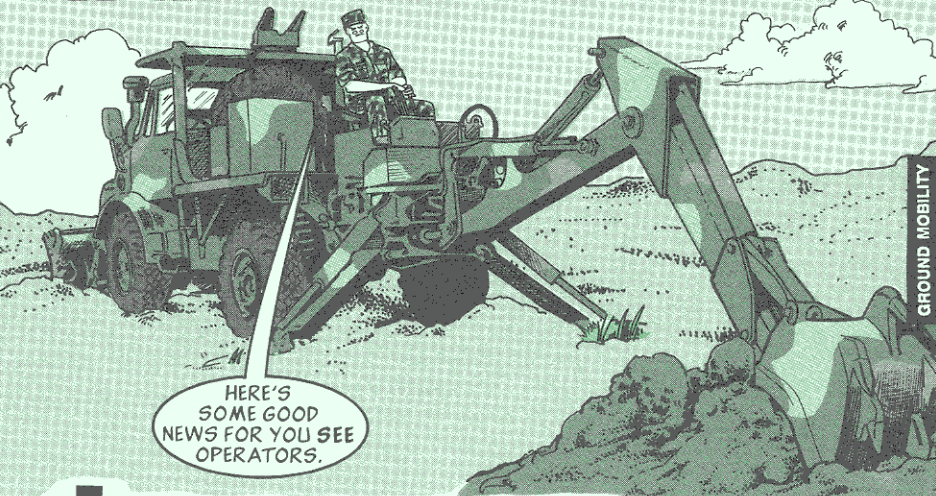
 Steady as she goes when driving the SEE up or down a slope. Never approach a slope at an angle, with one side of the vehicle higher than the other. Go straight up and straight down.

 Always use four-wheel drive when moving cross-country. And on really steep hills, engage the differential locks.



 Use the front bucket only for loading or backfilling loose dirt. Never use the SEE to excavate banked or compacted soil. You'll blow the hydraulic hoses or ruin the bucket if you try to dig with the SEE's front bucket. Save that work for the M9 ACE or a bulldozer.

HERE'S THE SCOOP!



There's a stronger backhoe bucket available for your SEE, good for digging in frozen ground, stony or clay soils. This 16-in ripper bucket comes with NSN 3830-01-361-8209. It's coded AAC "J" on the AMDF, so be prepared for a long wait. Make sure you get your CO's OK before ordering.

There's also good news in the engine compartment. NSN 2910-01-236-7242 gets the wing nut and bail assembly for the presediment bowl. Make a note until TM 5-2420-224-24P is updated.

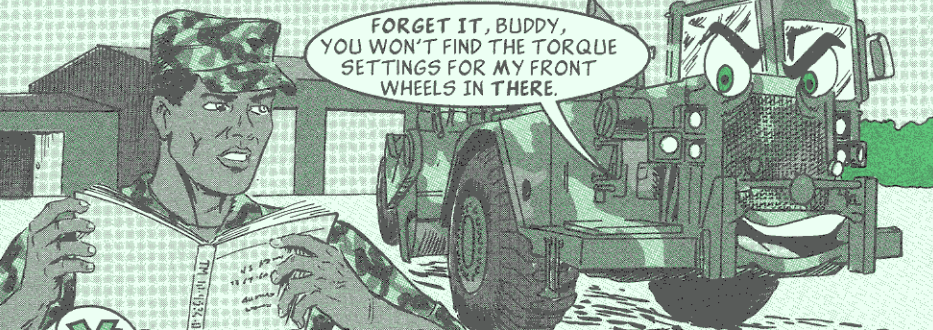
New Tire for Crusher

There's a new radial tire to replace the old bias-ply on the Eagle M5230B roll and M5157 jaw rock crushers. Use NSN 2610-01-325-1934. The radial tire pressure stays the same as for the bias-ply tire — 100 PSI.

Crane Hoist Rope NSNs

The MT250 crane uses wire rope, NSN 4010-01-046-5241, (375 ft) on the main hoist. The auxiliary hoist uses wire rope, NSN 4010-01-046-2533 (230 ft). These NSNs are not in TM 5-3810-293-20P.

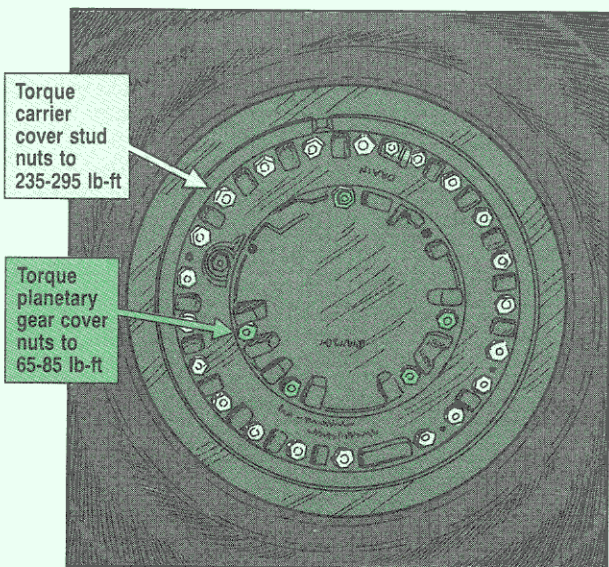
TORQUE TALK



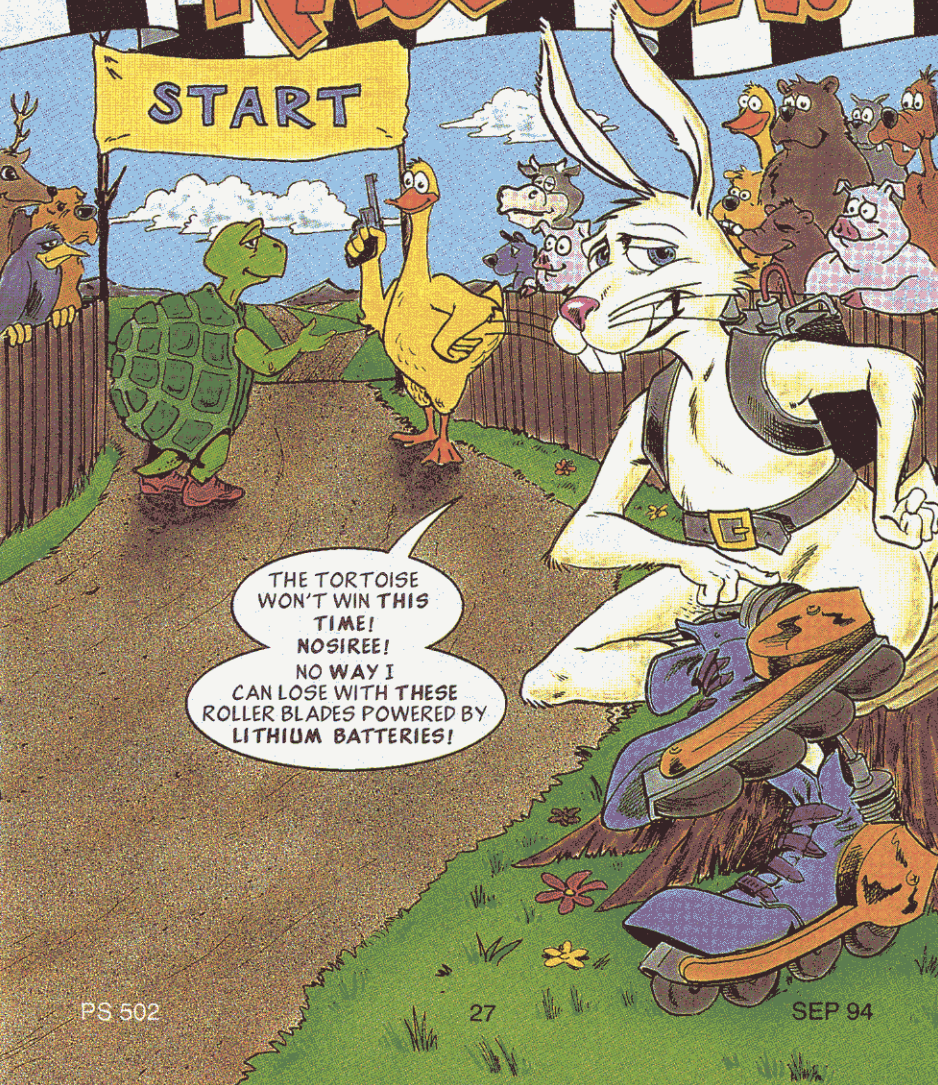
You've gotta have torque — different torque, that is — for the nuts on the 621B's front wheels.

Too much torque on the planetary gear cover will put the squeeze on the O-ring underneath. Then the O-ring will leak. Low or no oil means the bearings will burn out.

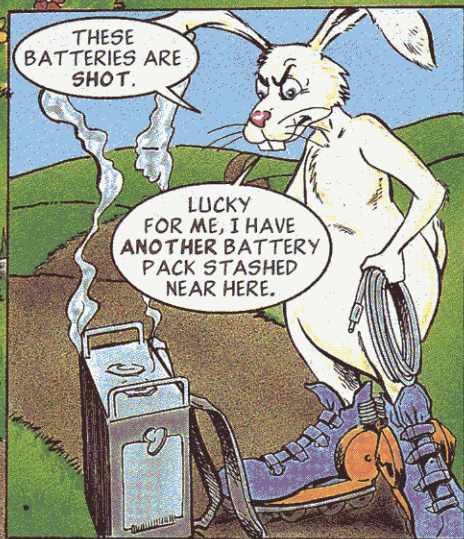
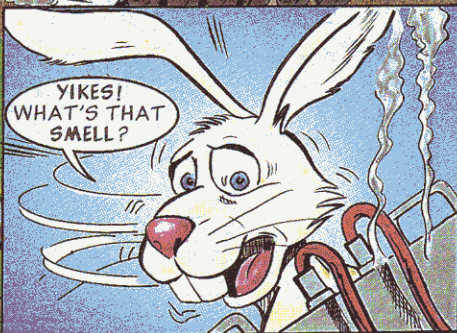
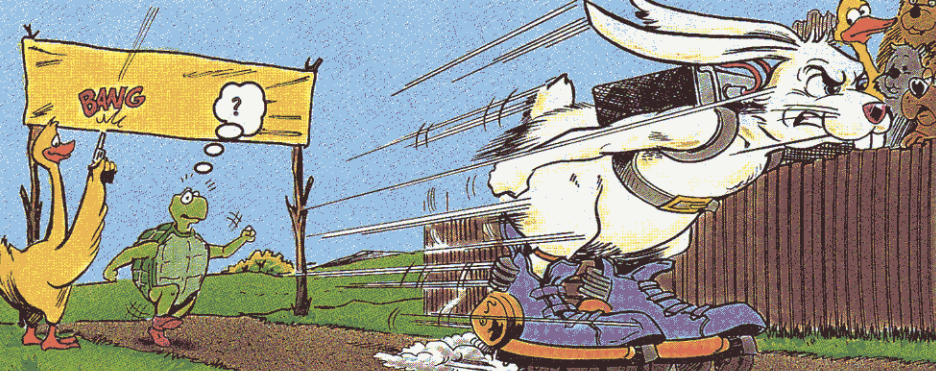
Since you won't find these torque settings in the TMs, use these:



The RACE is ON!



THE TORTOISE
WON'T WIN THIS
TIME!
NOSIREE!
NO WAY I
CAN LOSE WITH THESE
ROLLER BLADES POWERED BY
LITHIUM BATTERIES!



A SHORT
WHILE
LATER...

WAIT, THE
BATTERIES MAY BE TOO HOT
TO HANDLE! YOU SHOULD
PROTECT YOURSELF!

WHAT'S
THIS
BATTERY
PACK
DOING
HERE?

YOU NEED TO WEAR
GLOVES AND LONG SLEEVES TO
PROTECT YOUR SKIN.

AND GOGGLES
TO PROTECT MY EYES.

LITHIUM-SULFUR DIOXIDE
BATTERIES CAN BE DANGEROUS
IF THE CHEMICALS INSIDE
ARE RELEASED.

FOR SOME
BATTERY DO'S
AND DON'TS,
TURN THE
PAGE.

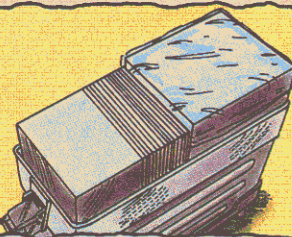
DO

KEEP BATTERIES IN ORIGINAL PACKAGING UNTIL READY FOR USE.



DO

REMOVE BATTERIES WHEN THE GEAR WILL NOT BE USED FOR A WHILE.



DO

... REPLACE BOTH BATTERIES AT THE SAME TIME WHEN MORE THAN ONE IS USED.

... TRY TO USE BATTERIES FROM THE SAME MANUFACTURER AND LOT.

... TURN IN BATTERIES WHEN YOU'RE THROUGH WITH THEM.

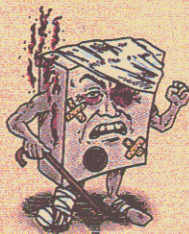
... TURN OFF GEAR ASAP IF YOU FEEL THE BATTERY COMPARTMENT HEATING UP, HEAR THE BATTERY HISsing OR SMELL SOMETHING LIKE ROTTEN EGGS. THE BATTERY MAY EXPLODE.

THEN, ALWAYS LEAVE THE AREA AND WAIT ABOUT A HALF HOUR FOR THE BATTERY TO COOL BEFORE REMOVING IT.

DON'T

CRUSH, PUNCTURE, BURN, HEAT, BURY,

DISASSEMBLE OR MUTILATE THESE BATTERIES.



DON'T

... SMOKE OR USE AN OPEN FLAME IN THE BATTERY STORAGE AREA.

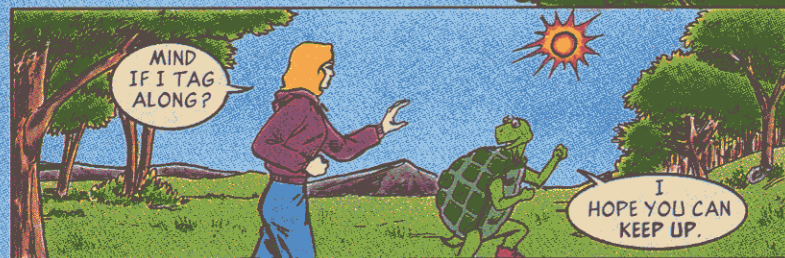
... USE SWELLED BATTERIES THAT WILL NOT EASILY FIT INTO THE BATTERY COMPARTMENT.

... SHORT CIRCUIT, RECHARGE OR TEST BATTERIES.

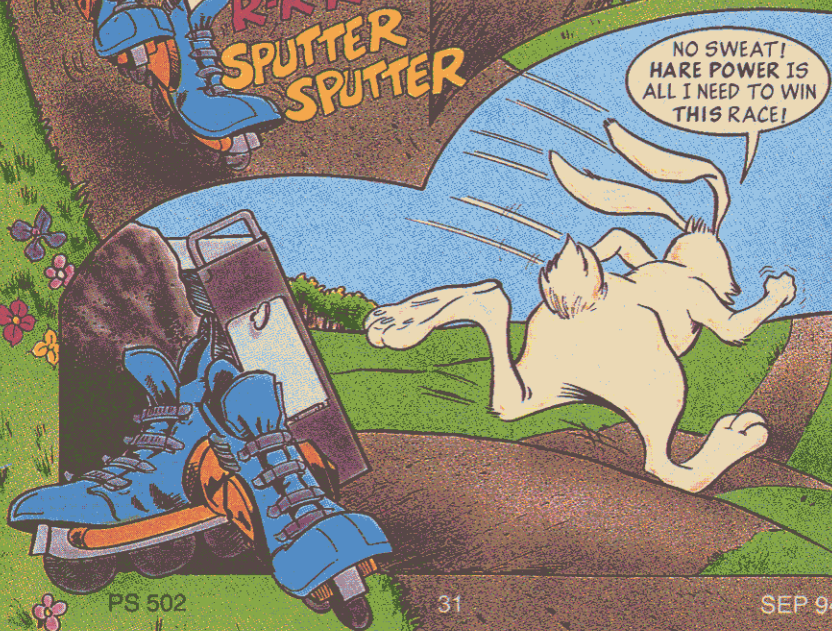
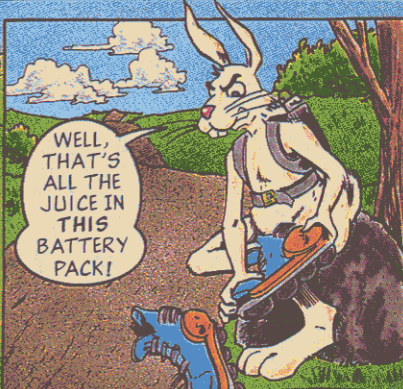
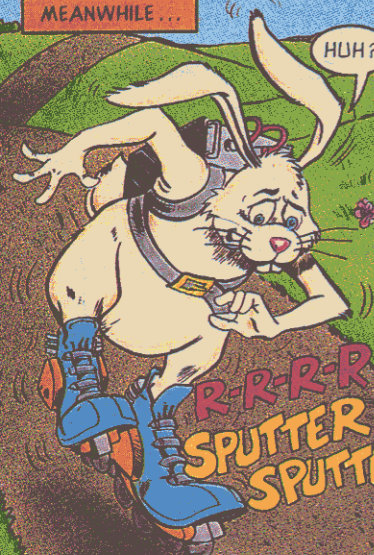
... USE BATTERIES THAT SHOW A LIQUID WITHIN THE PLASTIC STORAGE WRAP OR THAT HAVE BULGED OR BURST. TURN THEM IN FOR A TRIP TO THE DRMO.

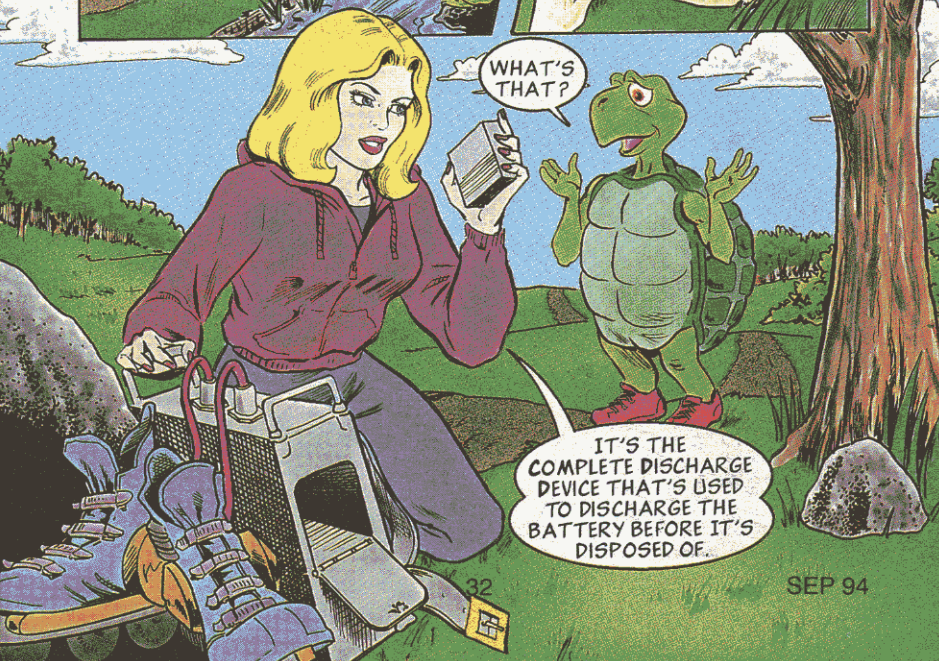
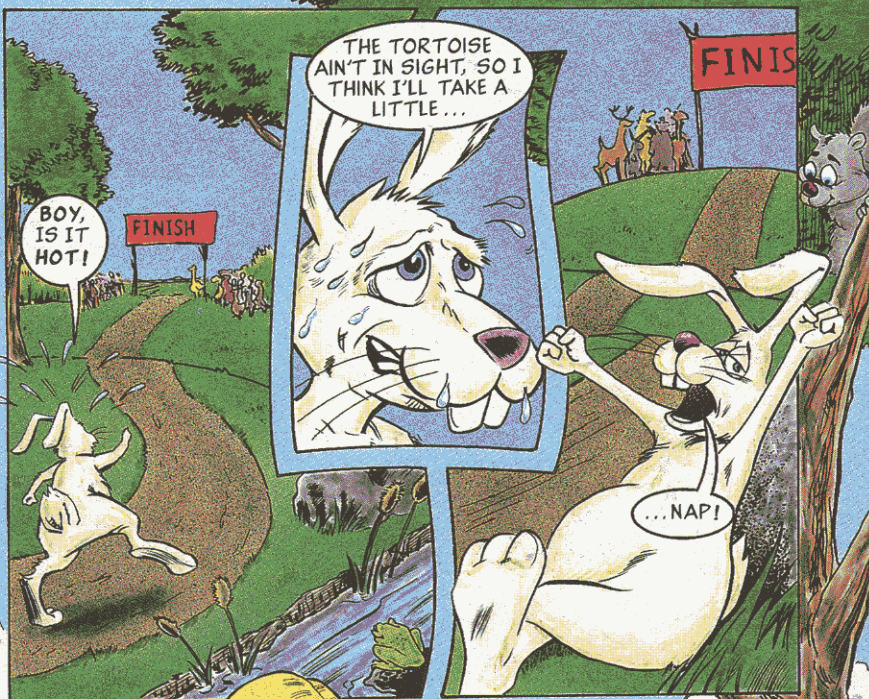
WELL, CONNIE, I DO HAVE TO BE GOING IF I DON'T WANT MR. HARE TO GET TOO FAR AHEAD.

YOU'RE RIGHT.



MEANWHILE ...





IF YOUR BATTERY HAS A BUILT-IN COMPLETE DISCHARGE DEVICE, USE IT TO DISCHARGE THE BATTERY BEFORE YOU TURN IT IN TO THE LOCAL DEFENSE REUTILIZATION AND MARKETING OFFICE.

A LABEL OVER THE MANUAL SWITCH OR AN INFORMATION CARD INSIDE THE PLASTIC BAG TELLS YOU WHERE THE CDD IS LOCATED.

AFTER THE CDD IS ACTIVATED, STORE THE BATTERIES FOR FIVE DAYS BEFORE DISPOSAL.

MAKE SURE DISCHARGING BATTERIES ARE AT LEAST 2 INCHES APART. STORE THE BATTERIES IN A COOL, DRY AND WELL VENTILATED AREA UNTIL THEY ARE COOL TO THE TOUCH.

LOOK, CONNIE!

SHHH ...
YOU GO AHEAD.
I WANT TO HAVE
A FEW WORDS WITH
MR. HARE!

NEVER HANDLE OVERHEATED LITHIUM BATTERIES. WAIT UNTIL THEY COOL DOWN. IF YOUR BATTERY DOESN'T HAVE A CDD, DISPOSE OF IT THROUGH DRMO.

OF COURSE, I'D CHECK WITH MY LOCAL ENVIRONMENTAL OFFICE FOR ANY FEDERAL, STATE AND LOCAL REQUIREMENTS ON BATTERY DISPOSAL.

FINISH



OH, NO!
NOT
AGAIN!

HE'LL NEVER LEARN!

FINISH

IF THOSE
BATTERIES HADN'T
FAILED ME, I
WOULD'VE WON
BY A MILE!

SPEAKING OF
BATTERIES, MR. HARE,
YOU'RE VERY LUCKY THAT
FIRST BATTERY PACK YOU
USED DIDN'T CAUSE YOU
TO LOSE MORE THAN
THE RACE.

FOR MORE SAFETY TIPS,
GET A POSTER AND A READY REFERENCE CARD
FROM CECOM. JUST WRITE...

**Power Up
With
Safety**

USING
LITHIUM BATTERIES
SAFELY



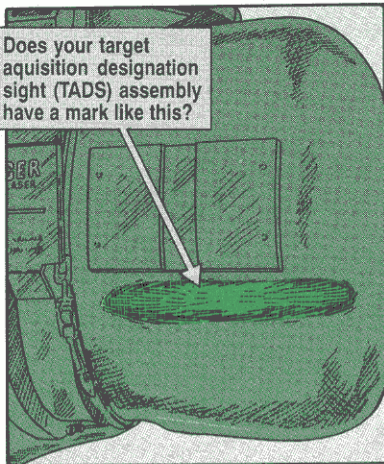
U.S. ARMY CECOM

US Army CECOM
ATTN: AMSEL-SF-REE
Ft Monmouth, NJ 07703-5024

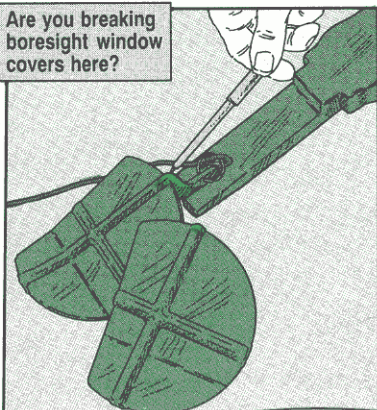
Or call:
DSN 995-3112
Commercial (908) 544-3112

Turning TADS? Remove the Cover!

Does your target acquisition designation sight (TADS) assembly have a mark like this?

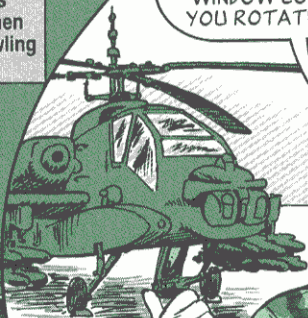
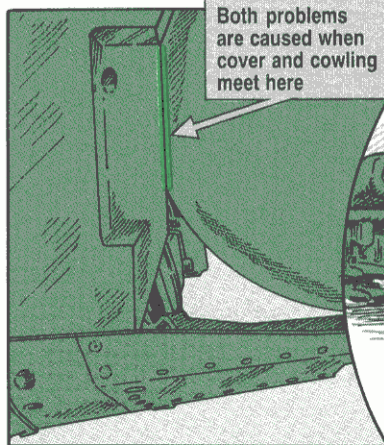


Are you breaking boresight window covers here?



ALWAYS BE SURE TO REMOVE THE BORESIGHT WINDOW COVER BEFORE YOU ROTATE THE TADS.

Both problems are caused when cover and cowl meet here

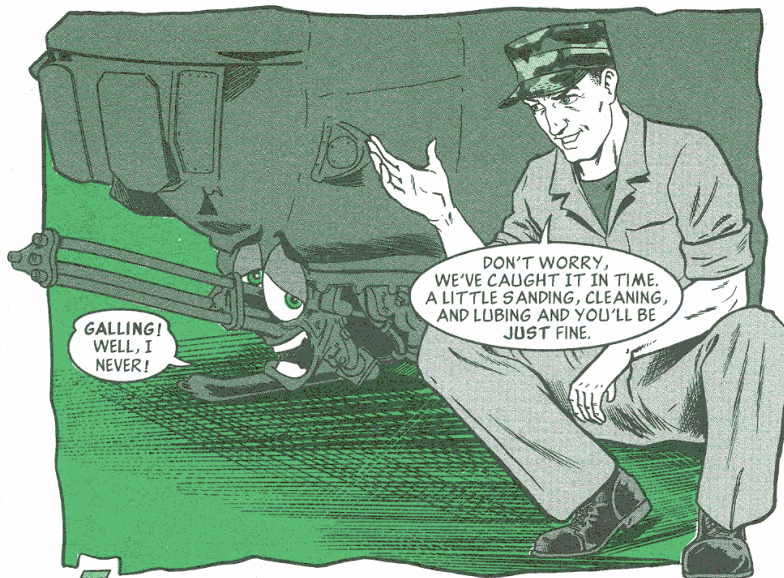


Troubleshooting TM Binders

Order a box of 25 11x17-in pressboard binders for those long aircraft troubleshooting TMs with NSN 7510-00-281-4310.

THAT GUN'S

GOT GALL!



Too many of the recoil adapter spindles and sliders on M197 automatic guns are neglected by Cobra armament mechanics during PMCS.

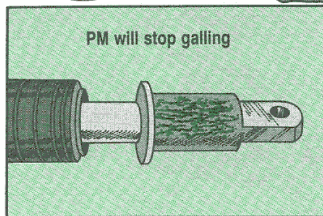
The results are "galling".

Galling is caused by friction from lack of lubrication. Friction wears away metal, leaving gouges and abrasions in the surface.

If galling is concentrated in a $\frac{1}{16}$ -in area or larger on the spindle, you have to replace the spindle like it says in Para 3-55 of TM 9-1090-206-20-1.

The same goes for the slider, except that galling is allowed up to a $\frac{1}{16}$ -in area before the slider has to be replaced.

Catch galling in the early stage—when you pull monthly inspection on the 20-MM's recoil adapter and slider, or after 1,500 rounds, whichever comes first.



AH-1P, E, F...

Tail Rotor Control Confusion

Dear Windy,

We've got a problem. We can't agree on how to interpret the tail rotor control tube and wiper seal installation instructions on Page 5-167 of TM 55-1520-236-23-1. Can you help? We can't seem to agree.

WOC J. A. N.

Dear Mr. J. A. N.,

Yep. Do this:

1. Install the bearing (1) in the housing (6). Wet the mating surfaces of the bearing and control tube (2) with oil, MIL-L-7808 or MIL-L-23699, during installation.

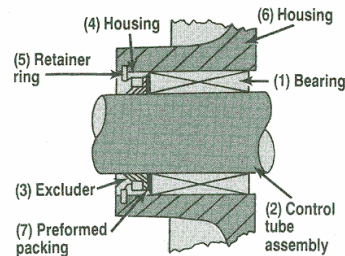
2. Put in the excluder (3) so that the packing (7) sits inboard.

3. Put the housing (4) in the housing (6). Apply a small amount of sealant, MIL-S-8802E, between the two housings.

4. Hold the excluder (3) and the housing (4) with the retaining ring (5).

5. Problem solved!

Windy



Lockpin



Greasing your Black Hawk's tailwheel lockpin every 500 flight hours as required in TM 55-1520-237-T may not be enough to keep it from locking up.

If you're operating in a wet or humid environment, or if your bird has been down for an extended period, you probably need more lube on the lockpin.

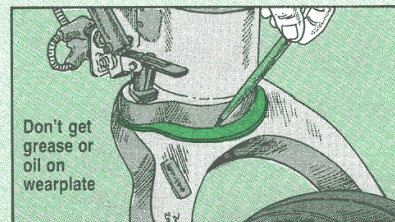
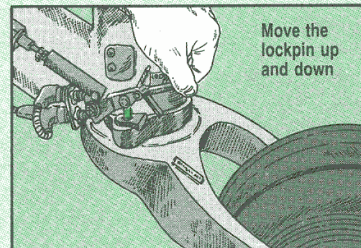
If you fail to lube the pin often enough, rust can build up and then it won't lock or unlock on command. When the bird's towed or taxied, the pin will shear.

You can prevent rust buildup on the lockpin by coating it with grease, NSN 9150-00-944-8953, MIL-G-81322. Move the pin up and down with the manual lever to make sure it moves freely.

Lockup Lowdown

If the pin won't move free and easy, put a drop or two of penetrating oil on it. NSN 6850-00-508-0076 gets a 1-oz can.

But keep oil and grease away from the landing gear wear plate on the fork assembly below the lockpin. The wear plate is Teflon-lined and will deteriorate fast if it's soaked with lube.



If you accidentally get oil or lube on the wear plate, remove the lube with a clean cloth and wash the plate with soap and water. If the Teflon on the plate is already gone, spray the surface every 30 days with corrosion preventive compound, NSN 8030-00-938-1947.

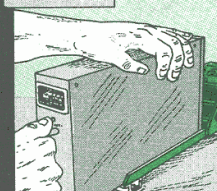
Seat the Black Hawk's CIP

You can't navigate around a poorly seated command instrument processor (CIP).

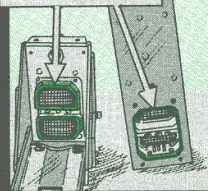
The CIP must be seated well in its chassis and its connector must be securely connected. Anything less means a navigational nightmare.

So after you pull maintenance on the CIP, use two hands to slide it in the chassis. Then give a firm push to connect the mount and mount plug.

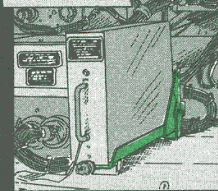
Using a two-hand slide...



...after lining up these connectors...



...results in a well-seated CIP



Organize that Hangar!

All jobs are made easier, safer and more efficient with organization.

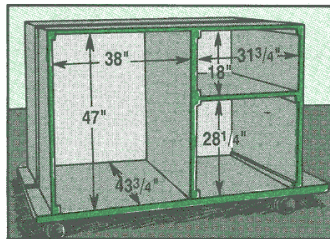
Knowing where your tools and equipment are when you need them, and knowing they are out-of-the-way when you don't need them, is the beginning of a successful maintenance job.

Let's take a walk around your hangar.

Are the aisles clear and walkways marked?

Stumbling and stepping over cowlings and parts is hazardous to your physical and mental health.

But finding a place to store cowlings and components in a hangar jammed with aircraft is a big problem. Solve it by making a portable rack. Here's one with 3 bins, using 3/4-in plywood, 2x4-in studs and 3 1/2-in casters.

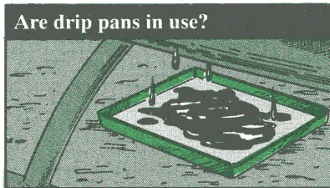


Make the dimensions of your bin fit your needs.



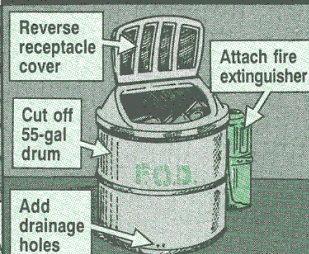
On this bin, aircraft seats are hooked to the sides and rear of the rack. Large cowlings are placed on top and secured with flexible cord.

Are drip pans in use?



Sure, oil spills can be and should be quickly cleaned using sweeping compound, but a pan takes care of the mess before it happens.

Do you have a metal container labeled FOD, and is it easy to get to?



Here's one that doubles as a fire extinguisher point as well as a FOD pod. Start with an empty 55-gal drum. Cut off the top with drum cutter, NSN 5110-00-426-9664.

Clean it.

Put about half an 80-lb bag of premixed concrete, NSN 5610-00-985-1800, in the bottom of the drum. Tilt the drum slightly while the concrete hardens. Drill drainage holes just above the low side of the concrete.

Reverse the push top on receptacle cover, NSN 7240-00-783-1044, so it has to be lifted open. That makes for easier access.

Use an old, topless 5-gal oil can to hold FOD-causing junk. Put it inside the drum. Even if you fill the can to overflowing, the junk stays safely inside the drum. NSN 4210-00-257-5343 gets a 20-lb fire extinguisher and mounting bracket for fire prevention.

Are oily rags in a self-closing metal can and is the can emptied daily?

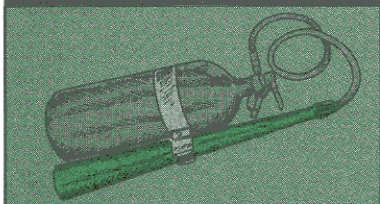


Chemical soaked rags can cause fires and produce fumes that make you sick. It's not enough just to keep them in a container. A self-closing lid is a must. You'll find out why after only one day without one.

Are weatherproof items, such as some shipping containers, outside the hangar?

Not everything needs to be inside. Create room by using outside space for those things that can resist bad weather and the environment.

Are the fire extinguishers ready?



While you're doing your walk-around, make sure all fire extinguishers are fully charged and the inspection date is current.

Have you prevented static electricity?

If there's a leak in an aircraft fuel system, a spark can ignite the fumes and ruin your whole day.

All aircraft have to be grounded. If the grounding wire causes tripping, add a few strips of red tape so it can be easily seen.

Is your powered ground support equipment parked in one place?

You can paint lines on the floor for this purpose. The same goes for jacks, maintenance stands and ground-handling wheels.

A CLEAN, WELL-ARRANGED SHOP IS MORE THAN A SAFE PLACE TO WORK. IT SHOWS YOU HAVE AN EFFICIENT, FIRST-RATE MAINTENANCE OPERATION.



Deep-Well Socket

The NSN for the 1/4-in drive, 5/16-in deep-well socket in the aircraft general mechanic's tool kit gets a bum tool. It won't hold up. To get a good quality socket use NSN 5120-01-380-9392.

Suck It Up!

Water trapped in those hard to reach places of your aircraft and you can't get it out with low pressure air?

Use a rubber siphoning syringe. NSN 6515-01-045-0029 brings a package of 50.

Getting Converted

Dear Windy,

We're converting to JP-8 jet fuel in FY95. FM 10-71, Petroleum Tank Vehicle Operations, does not cover a JP-8 conversion.

What does?

SFC R. S.

Dear Sergeant First Class R. S.,

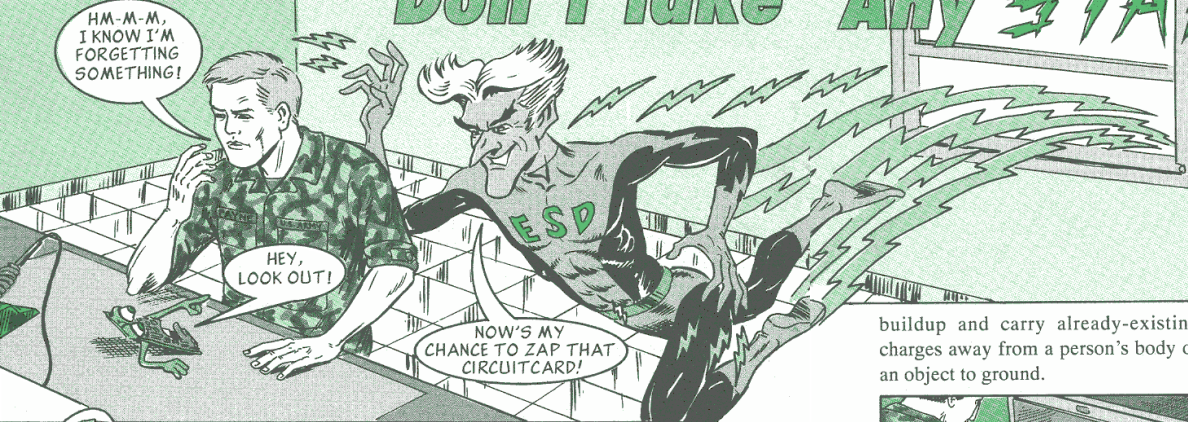
Table 1 of AR 715-27, the Petroleum Contract Quality Assurance manual, covers the conversion to JP-8. Here's a copy of the table.

LAST PRODUCT CARRIED	PRODUCT TO BE LOADED	AVGAS MIL-G-5572.	MOGAS MIL-G-3056.VV-G-76.U/L, VV-G-1690.	JET FUEL MIL-T-5624, JP-4, MOGAS, U/L, VV-G-1690.	JET FUEL MIL-T-5624, JP-5.	PETROLEUM SOLVENT OR PAINT THINNER.	JET FUEL ASTM 1655 JP-8/JETA	DIESEL FUEL MIL-F-16884 VV-F-800, NDF, MIL-F-24397.
NATURAL GASOLINE	Drain Empty	Drain Empty	Drain Empty	Drain Empty	Steam Dry	Steam Dry	Steam Dry	Steam Dry
AVGAS MIL-G-5572	Drain Empty	Drain Empty	Drain Empty	Drain Empty	Steam Dry	Steam Dry	Steam Dry	Steam Dry
MOGAS MIL-G-3056, VV-G-76, U/L, VV-G-1690.	Drain Empty	Drain Empty	Drain Empty	Drain Empty	Steam Dry	Steam Dry	Steam Dry	Steam Dry
JET FUEL MIL-T-5624, JP-4, MOGAS, U/L VV-G-1690.	Drain Empty	Drain Empty	Drain Empty	Drain Empty	Steam Dry	Steam Dry	Steam Dry	Steam Dry
JET FUEL MIL-T-5624, JP-5.	Drain Empty	Drain Empty	Drain Empty	Drain Empty	Drain Empty	Drain Empty	Drain Empty	Drain Empty
PETROLEUM SOLVENT OR PAINT THINNER.	Steam Dry	Drain Empty	Drain Empty	Drain Empty	Drain Empty	Drain Empty	Drain Empty	Steam Dry

The conversion info is also in Table IV of Military Handbook-200G. If you need a copy of the table, call the QM school at Ft Lee at DSN 687-6665/6098, Commercial (804) 734-6665/6098.

Windy

Don't Take Any **STATIC**



Electrostatic discharge (ESD). It's THE major threat to the sensitive components of circuit cards.

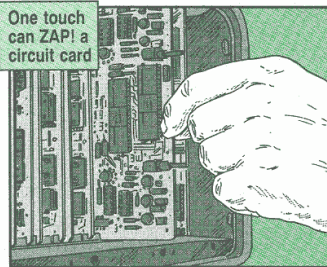
ESD strikes silently, destroying or degrading transistors, resistors and integrated circuits. It can strike anytime, anywhere — during packaging, shipping, handling or installation of circuit cards.

What Causes ESD?

In many cases, it comes from electrically charged objects in your work area: clothing, rugs, chairs, paper, ordinary packaging materials, the work surface itself.

But the prime source of ESD is you! You build up thousands of volts of static electricity by walking across the floor, combing your hair or slipping on a sweater. Just by touching a circuit card you'll discharge static electricity, often without realizing it.

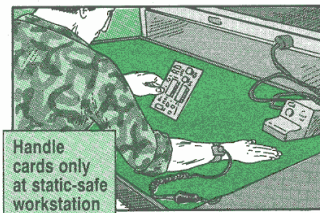
You may not feel the discharge, and you can't see the damage with the naked eye. The first sign of trouble is when the card fails in the field.



Static-safe Workstation

Protect your circuit cards from ESD. Handle them only at a static-safe workstation that includes a grounded static-dissipative table mat, floor mat and wrist strap. They're designed to limit static

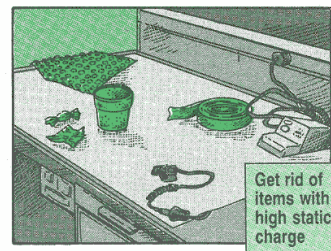
buildup and carry already-existing charges away from a person's body or an object to ground.



A few precautions and regular PM around your workstation will keep static electricity under control:

High Charge

These common items have a high static charge: candy wrappers, folders, paper, styrofoam cups, cigarette packs, plastic and masking tape, plastics, vinyl, heat guns with blowers and common packing material. Keep them away from the work site. If you must have technical manuals and paperwork at the workstation, store them in antistatic bags.

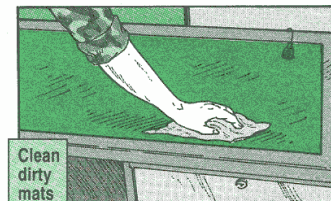


Things like magnets, radios, tape players and telephones can create an electromagnetic field. Keep them clear of the workstation.

If you must package an item in stretch or shrink-wrap, do it away from your workstation. Packaging an item with these materials generates static electricity.

Clean Means Safe

Dirt and dust on the table and floor mats act as insulators, making it harder for the mats to carry electrical charges to ground. Clean the mats with a soft cloth, or brush them with a whisk broom.

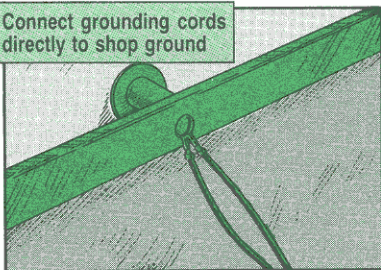


Never use wax or polish to clean the table or floor mats. They leave behind a residue that insulates the mats.

Grounding

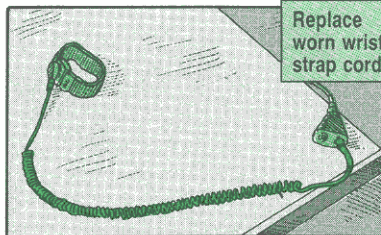
⚡ Connect table and floor mat grounding cords directly to shop ground. If you have more than one workstation in the same area, ground each one individually. Never connect workstations in series to ground them.

Connect grounding cords directly to shop ground



⚡ Make sure your grounding cords are firmly attached to bare metal, not paint. Replace your mat's or wrist strap's grounding cord if it's badly worn or cut.

Replace worn wrist strap cord



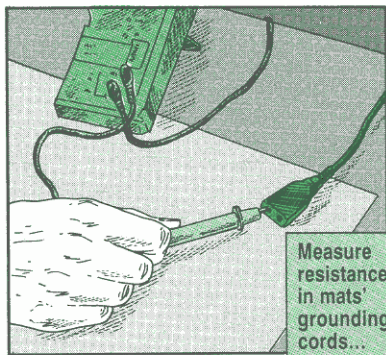
⚡ If you solder at your workstation, use only a grounded static-dissipative soldering iron and a low static solder extractor tool. Order these tools locally from commercial soldering equipment suppliers.

Resistance Checks

⚡ Follow the manufacturer's instructions and maintenance data for measuring resistance.

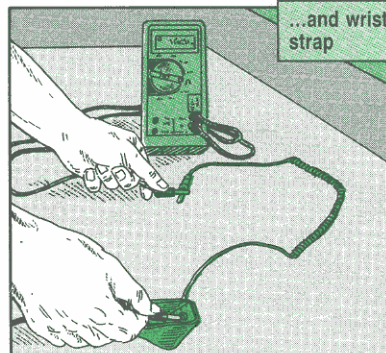
ing the resistance of your workstation components. That's the only way to be sure your workstation's doing its job of carrying static charges to ground.

⚡ Normally, you need to measure the resistance in the mats' grounding cords once a week with a ohmmeter or multimeter.



Measure resistance in mats' grounding cords...


⚡ Measuring resistance in the wrist strap is especially important. The strap suffers more wear and tear than any other part of your workstation. Measure its resistance at least once each day.



...and wrist strap

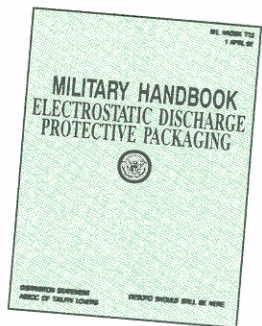
The wrist strap contains a resistor to protect you against high-voltage shocks. If the resistance is too low, the strap

can't protect you. Too much resistance means the strap can't draw static electricity away from your body. Either way, you'll need to replace it.

 You also need to have your workstation tested for resistance from the surface of the table or floor mats to ground. That takes special testing equipment and special support. Contact your local TMDE support folks or CECOM logistics assistance representative for help.

For more information on ESD protection, see these publications: MIL-HDBK 773, Electrostatic Discharge Protective Packaging; MIL-HDBK-263, Electrostatic Discharge Control Handbook; MIL-STD-1686, Electrostatic Discharge Control Program; and MIL-W-87893, Electrostatic Discharge Control Work Station.

Read
up on
ESD



The School of Military Packaging Technology offers a free correspondence course on electrostatic discharge. The course title is Packaging and Handling of Electrostatic Discharge Sensitive Items, SMPT-6 (COR). For more information on the course, call the school at DSN 298-4898 or commercial (410) 278-4898. Or you can write to this address:

School of Military Packaging
Technology
ATTN: ATSZ-MPA
Aberdeen Proving Ground, MD
21005-5001



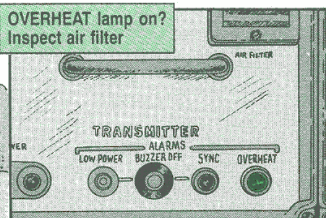
BUST DUST, BUSTER

Dust. It's a small nuisance that can lead to big headaches. Like when it clogs the transmitter's air filter on your AN/GRC-103 radio.

YIKES, HERE COME DUST DEVILS TO CLOG MY POOR FILTER!

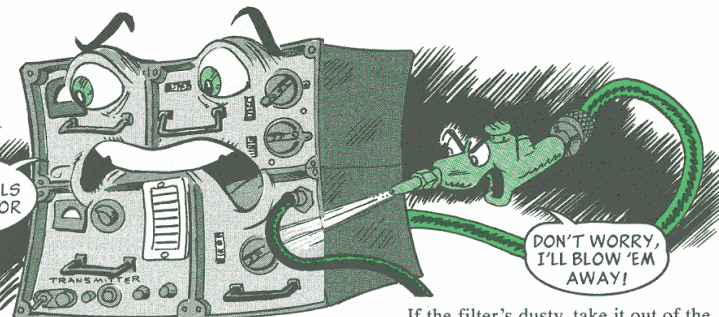
A clogged air filter makes the ventilation fan work harder. The transmitter overheats. Then the transmission signal weakens or the signal goes out altogether.

OVERHEAT lamp on?
Inspect air filter



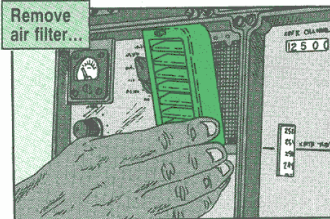
That's just for starters. Components begin to burn up — expensive things like driver tubes, the RF amplifier, frequency generating circuits and the transmitting section of the duplexer.

Save yourself costly headaches. Follow the advice in your operator's PMCS and look at the filter before and during operations to make sure it's clean. If you're in a real dusty place, look at the filter more often.

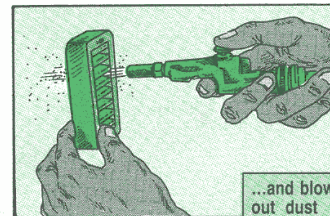


If the filter's dusty, take it out of the transmitter by loosening the screws. Use your 5-ton truck's built-in air hose to blow dust out of the filter.

Remove
air filter...

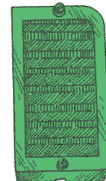


Make sure you attach an air gun, NSN 4940-00-333-5541, to your air hose. Direct the airflow from the inside of the filter to the outside.

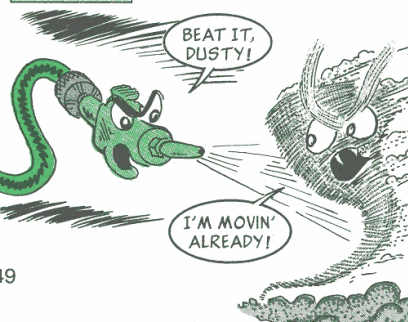
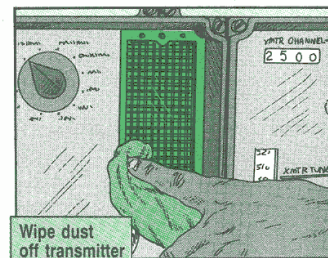


If you don't have an air hose, tap the filter against the heel of your hand — not a rock — or if the filter is very dirty, wash it in warm water and a mild detergent, NSN 7930-00-929-1221. Let the filter air dry until it is completely dry.

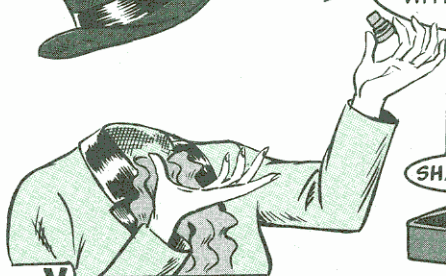
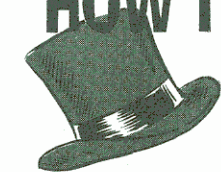
Order replacement
filter with NSN
4130-00-879-2280



Dust also collects on the recessed area and the metal screen where the filter fits on the transmitter. Use a cloth to wipe them clean.

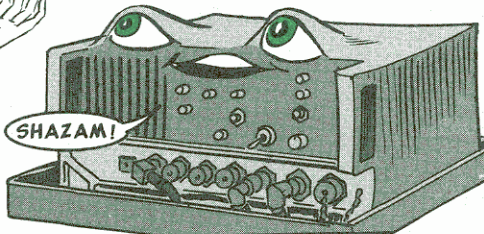


HOW TO HANDLE A BATTERY



FOR MY NEXT TRICK,
I WILL INSERT THIS BATTERY
WITHOUT DAMAGING THE
COMPARTMENT.

SHAZAM!



You don't need to be a master magician, but it does take a little sleight of hand to put the BA-1318/U hold-up battery in your RT-1539 receiver-transmitter's battery compartment.

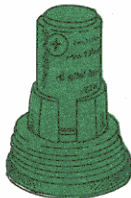
If you try to insert the battery and its cover at even a slight angle, you invite these pesky problems:

- ✓ Worn battery compartment threads.
- ✓ Poor battery contact.
- ✓ Poor cover seal that lets moisture in the compartment.

A little care and a bit of skill are all it takes to install the battery the correct way. Here's how:

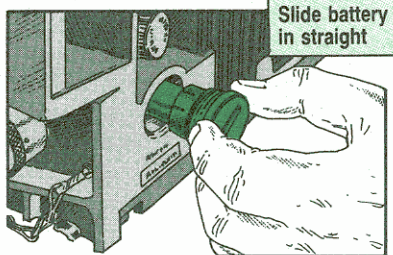
- ✓ Put the battery in the cover with the positive (+) terminal facing up.

Positive (+)
terminal up

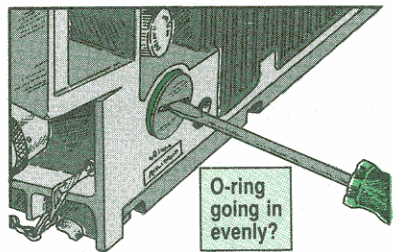


- ✓ Slide the battery and cover straight into the battery compartment. Push

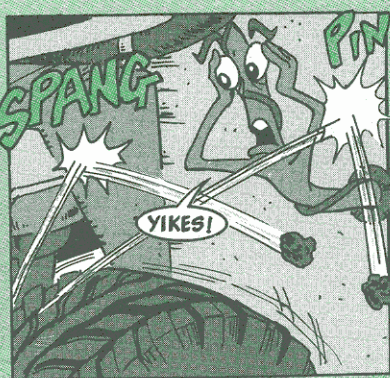
against the cover so that it doesn't shift out of place.



- ✓ Use a screwdriver to snug up the battery cover. For a tight fit, make sure the red O-ring enters evenly into the battery compartment. Once the battery's installed correctly, the O-ring won't be visible.



Cable Shooting Gallery



Zing. Ding. Bam. Look out! Here comes another rock!

That's what your antenna's coaxial cable faces each day in the wheel well of your HMMWV. The rear tire picks up rocks and hurls them full speed at the cable, cutting insulation and exposing the wires to dirt and moisture. It's a regular shooting gallery.

Protect the cable by wrapping it several times with insulation tape, NSN 5970-00-240-0620. Or cover it with plastic spiral wrap tubing, NSN 9330-00-980-1419.

Trailer-Mounted Generators . . .

Ask the Right People

Got a maintenance question concerning your trailer-mounted generator? If you've exhausted all your local sources, such as MAIT, DS/GS, DOL or LAO, and still can't find an answer, here are two places you can go:

For the **generator**, write to:

US Army Aviation-Troop Command
ATTN: AMSAT-I-MPTP
4300 Goodfellow Blvd
St. Louis, MO 63120-1798

For the **trailer**, write to:

US Army Tank-Automotive
Command
ATTN: AMSTA-MT
Warren, MI 48397-5000

RL-39 Reel . . .

Straps Replaced

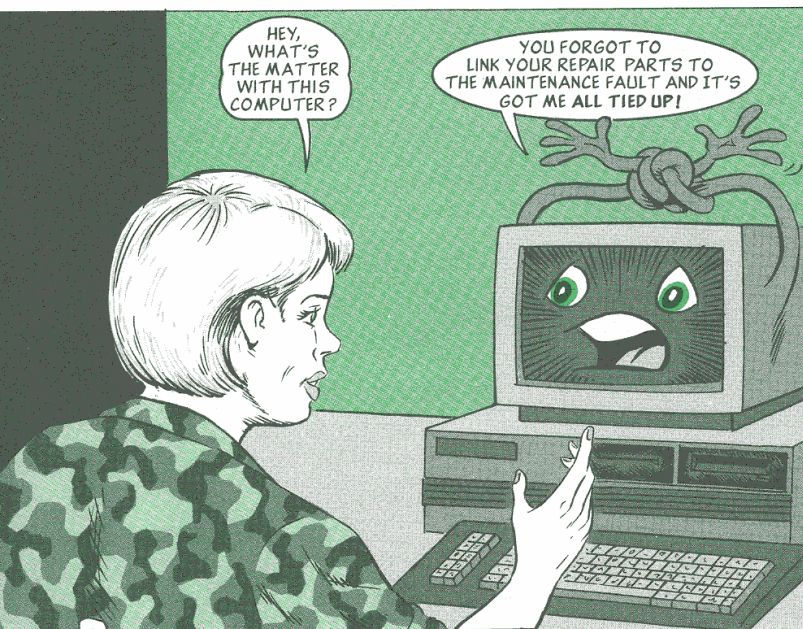
Don't be suprised if your new RL-39 reel arrives without the usual ST34 or ST35 straps. They're being replaced by sling strap, NSN 8465-00-269-0682, which is also what you'll order as a replacement item for older RL-39s.

The new strap is 2 inches wide and 48 inches long. It's made of all cotton or olefin webbing, with swivel snaps at each end to attach to the reel.

Crank NSN

Lost the hand crank for your RL-39 reel? Order a new one with NSN 5340-01-142-9478. Make a note of the NSN.

THE TIE THAT BINDS



If you're operating under ULLS Software Change Proposal 04 (SCP-04), you'll find there are a number of changes.

One big change is that you cannot order the repair part without putting a fault on the end item. You must connect the repair part request to the maintenance fault.

Here's how it works:

ADD THE FAULT

If a fault cannot be corrected immediately, it's entered into ULLS. Be sure to key in the correct fault symbol.

You no longer have to enter a document number/NIIN in the "Corrective Action" field. However, the computer requires that something be put in this field. Some suggestions are "awaiting parts", "ordered", or you can even key in the nomenclature of the part requested.

REQUEST THE PART

The next step is to request the repair part. If the item being requested is not on-hand, the system lists all the faults against that particular admin number. You must then CHOOSE the fault that agrees with the part being requested.

PRINT THE WORKSHEET

After entering the fault and requesting the part, you can print a Maintenance and Inspection Worksheet (DA Form 5988-E).

As you can see in this example, every part on order **MUST** be tied to a maintenance fault.

Each part on order here...	PARTS REQUESTED							
	FAULT	DOC NUM	NIIN	QTY	STATUS	DATE	DATE	COMP PRI DLC
	0001	4024 0001	012206169	00001 00000				
	0003	4040 0013	012037721	00001 00000				
	0006	4041 0015	013141188	00001 00000				
	0006	4041 0016	013141189	00001 00000				

...must be tied to a fault here	MAINTENANCE FAULTS					
	ITEM NUM	FAULT DATE	FAULT STATUS	FAULT DESCRIPTION	CORRECTIVE ACTION	INITIALS
	0001	24-JAN-94	/	TARP ZIPPER BROKEN	AWAITING PARTS	
	0002	4-FEB-94	/	PASS DOOR HANDLE	NEXT SERVICE	
	0003	9-FEB-94	/	PASS DOOR INOP	ORDERED	
	0006	10-FEB-94	/	MIRROR BROKEN	MIRROR/ARM	

If you look at fault #1 — tarp zipper broken, — you'll find a document in the "parts requested" portion that's tied to this fault. A document number and the NIIN are printed along with the fault sequence number. This satisfies the requirement to show the document number and NIIN for any parts on order (DA Form 2408-14).

More than one part request may be tied to the same fault. In the example, Fault #6, which is a broken mirror, has two parts ordered against it: the mirror and the mirror arm. Remember, add the fault first, then order the part. That way your ULLS system won't get tied up in knots!

Same Old Thing



If you see the same entries every time you do an ULLS-G Query By Example (QBE), you probably need to delete the data from your initial report.

The first time you browse or print a QBE report, the ULLS computer creates a dataset. This information shows up every time you look at this report, no matter what changes you make to the database.

To get the correct information for your next report, you'll need to delete the dataset. If the first report was created in the QBE Base View portion, be sure you're in the base view before you try to delete this data.

Here's how to delete the dataset:

- ① Press the <ALT>-<U> keys to display the Utilities menu.
- ② Select the "Delete Datasets" option. Once the dataset menu is displayed, each report shows the date and time of the current dataset or shows the no dataset prompt.
- ③ Highlight the report containing the dataset you wish to delete and press the key.
- ④ Key in [Y] and press <ENTER> when you get the warning screen that asks if you want to continue.

This deletes the current dataset and allows you to access the data from the report file(s).

Light Ribbon Fix

Dear Pablo,

If you cannot read your ULLS printouts because the ALPS 1000 printer ribbon prints too light, you cannot do your job. But if a replacement ribbon's not available through supply channels, you might as well shut down shop!

To keep our ULLS printer in operation, we found a quick way to temporarily revive the ribbon. Here's how:

- Remove the ribbon from the printer.
- Pry the right side plastic housing off with a jeweler's flat tip screwdriver.
- Lift out the felt roller.
- Soak the felt roller in ink, NSN 7510-00-161-4237, for a few minutes.
- Reinstall the roller in the housing.
- Snap the housing together and put the ribbon back into the printer.

You won't be able to use the first couple of pages. After printing out a few pages, the print will be dark enough to read.

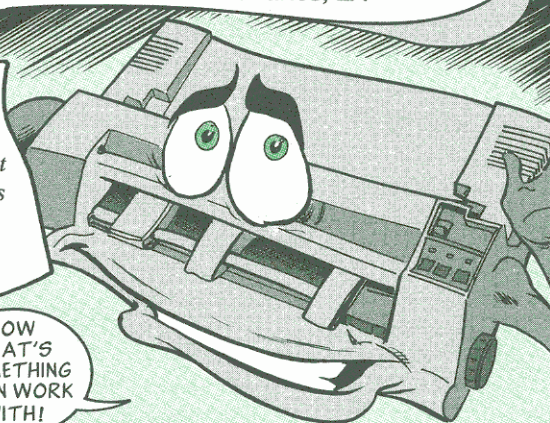
CW2 Chris Kircher
Lake Charles, LA

Dear CW2 Kircher,

You've found a way to blot out light printouts until new ribbons are available.

Pablo

NOW
THAT'S
SOMETHING
I CAN WORK
WITH!





An M17 decon that won't spray is about as good as a rifle that won't shoot. Spray freely, repairmen, with this PM:

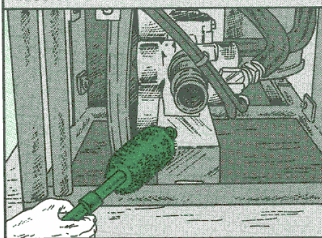
Descaling Scaling

TM 3-4230-228-23&P makes it very clear you need to check the outlet assembly of the heat exchanger coil for scaling during PMCS. That's fine... except that water with lots of minerals also causes scaling in the inlet assembly. If the scaling gets bad enough, it locks up the water pump.

Solution: When you eyeball the outlet for scaling, check the inlet too.

If the scale buildup is 1/16 inch or more, do the descaling procedure in the TM. You can scale down descaling if you and your unit use the wire brush that's part of your BII in both the inlet and outlet after every operation.

Brush out inlet and outlet after every mission



Fuel Filter

There are two fuel filters for the M17. One has two gaskets, the other only one. Changing the fuel filter with two gaskets can be a confusing job. It's easy to get the top and bottom filter gaskets switched. Then you won't get enough fuel pressure. The bigger gasket—the

Spray Freely with PM

one with the blue dot—goes on top. If the gaskets don't seem tight, you've probably got them switched.

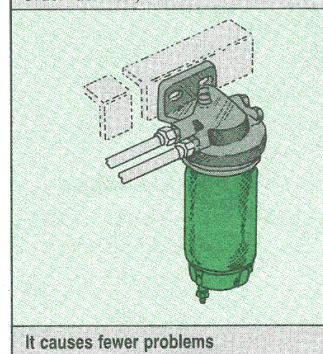
Put bigger gasket on top



If during troubleshooting you find an M17 won't hold the proper temperature or there are lots of bubbles in the fuel filter bowl, suspect switched filter gaskets.

When you need a new fuel filter, order the filter with one gasket.

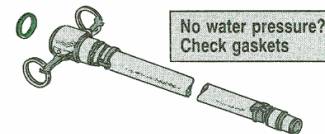
Order fuel filter, NSN 4330-01-366-5661



It causes fewer problems

One other troubleshooting tip: Not enough water pressure? Look for the gaskets, NSN 5330-01-294-9309, at the

ends of the pressure hose. A missing or damaged gasket drains pressure.

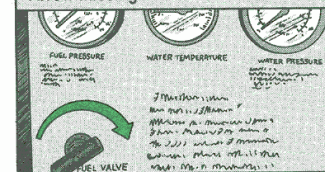


No water pressure?
Check gaskets

Fuel Valve

Some M17s never had an arrow for the burner fuel valve... or the arrow's worn off. Crews get confused about which way to turn the valve. They think they're giving the burner fuel when they're not. They call you because they think something's wrong. End confusion by painting an arrow by the valve going clockwise.

Arrow missing? Paint one on



Fuel Hoses

Route burner fuel hoses so they go between the water hose and water pump.

And make sure the water hoses do not touch the frame. The M17's extreme vibration during operation can quickly ruin misrouted hoses. Check hose location when M17s come back from support, too. They sometimes make mistakes.

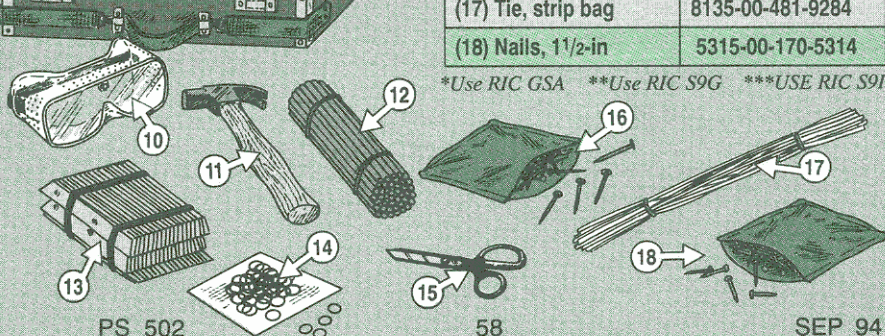
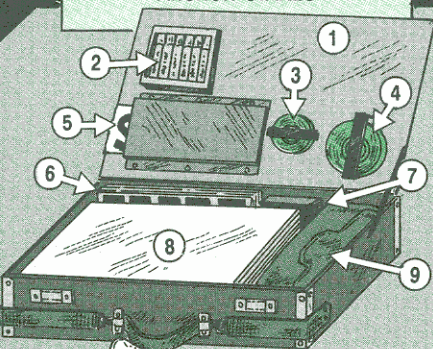
SIGN LANGUAGE

UNTIL SC 3610-97-E31
IS PRINTED, USE THIS LIST TO
ORDER REPLACEMENT
COMPONENTS FOR THE PORTABLE
SIGN MAKING KIT,
NSN 3610-01-219-6780.



BE SAFE!

WEAR GOGGLES WHEN
HAMMERING NAILS &
ANCHOR STAKES



Item	NSN
(1) Case, wood	9905-01-337-6572
(2) Markers, black	7520-01-336-2856
Markers, red	7520-01-336-2857
Markers, blue	7520-01-336-2858
Markers, green	7520-01-336-5170
(3) Tape, reflective	9390-00-656-1186
(4) Tape, double-sided	7510-00-181-7551
(5) Numbers	9905-01-B97-6063*
(6) Letters	9905-01-335-2660*
(7) Arrows	7690-01-388-8953**
(8) Sign board	9905-01-335-2659
(9) Storage bag	9905-01-337-6573
(10) Goggles, Industrial	4240-00-052-3776
(11) Hammer, hand	5120-01-112-8349
(12) Anchor tubes	4710-01-212-0814
(13) Anchor stakes	4030-01-389-0133***
(14) Flat washers	5310-00-938-8387
(15) Shears, straight trimmer	5110-00-161-6909
(16) Nails, 2-in	5315-01-330-7651
(17) Tie, strip bag	8135-00-481-9284
(18) Nails, 1 1/2-in	5315-00-170-5314

*Use RIC GSA **Use RIC S9G ***USE RIC S9I

PS 502

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SEP 94

Talcum Powder's the Answer, Baby!

Dear Editor,

Rubber, vinyl, and plastic items like mask hoods and chemical gloves and overshoes have pores just like your skin. If the pores are left open, the material sticks to itself—like the way a poncho sticks to itself after it's been folded up for a long time.

Plus, open pores lead to dry rot. Once dry rot gets started, your equipment's soon ruined. That can be expensive, especially with NBC equipment.

The remedy is talcum powder.

Fill the toe of an old wool sock with talcum powder. Tie a loose knot halfway up the sock.

Tap the toe on the area to be powdered until the powder has covered the surface. Use the sock's top to rub the powder in the pores and wipe away excess powder.

It's a good idea to keep rubber, plastic, and vinyl equipment powdered all the time. But it's especially important during storage. That's when dry rot gets a start.

SFC Wayne S. Melton
Hayes Center, NE

BABY YOUR
NBC GEAR WITH SOME
TALCUM POWDER!



FROM THE DESK OF THE Editor

All we can say is "sock it to 'em". One caution: Keep powder off NBC masks, themselves. They're treated with preservatives that the powder will interfere with. Never, ever use baby powder. What makes it good for babies doesn't make it good for rubber masks.

24-Hour Clocks . . .

Time for a New Timepiece



There are three 24-hour clocks available from GSA to time your workday. All have quartz movement, use AA batteries and have round, brown plastic casings.

They come in two sizes—8-in and 12-in diameters—and two face styles.

Order the clocks with:

Item	NSN 6645-01-342-
Type B, 8-in	5313
Type B, 12-in	5314
Type C, 12-in	8199

High-Visibility Belt . . .

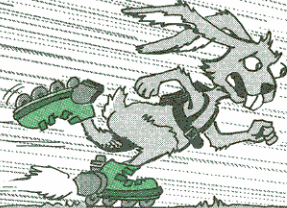
Use These NSNs to Get You Seen

If you are on foot and want to make sure you're seen by drivers, wear high-visibility reflective clothing. You can wear it over your PT clothes, or when you're in combat gear.

Here is the reflective gear the Army authorizes:

NSN 8415-00-177-	Item	Price
4974	Vest	\$20.18
4978	Band, Helmet	1.32
4975	Leg Bands	5.88
4976	Sleevelets	6.88
4977	Armbands	5.81
8465-01-163-		
8835	Belt	5.90





Reduce M747 Tire Pressure

Take note, if you have radial tires on your M747 heavy equipment transporter semitrailer. The tire pressure for radial tires is 90 PSI. Pay no never mind to the 115 PSI max stamped on the sidewall. That's too much pressure. Stencil 90 PSI above each tire so you won't forget.

Terminal Cleaning Tool

The battery terminal cleaner shown on Page 19 of PS 498 is NSN 5120-00-926-5175, not -5775. It replaces NSN 6140-00-831-3449, listed on Page B-6 of TM 9-6140-200-14.

Better M916A1/M920A1 Tire Chains

The tire chains listed in the AAL of the -10 TM for these big tractor trucks are too flimsy to do the job. They break, come loose or fall off. To get a He-Man set of chains, order by CAGE 80535, PN 002-2749 on a DD Form 1348-6 from RIC 59C. Those chains will keep those big brutes on the road.

Ladder Rung Down

Oops—that two-step ladder we showed on Page 10 of PS 501, for access to 2 1/2- and 5-ton truck engine compartments, has not been safety-tested by Tank-Automotive Command.

M747 Shocking News

Woe—or Whoa—be to you HET operators hauling the Abrams tanks, and other heavy equipment. Current shock absorbers on these semitrailers don't hold up to all that weight. But your mechanic can solve that problem by putting on heavier duty shocks, with your CO's OK, of course. Use NSN 2510-01-028-8573.

Switchboard Battery NSNs

TM 11-5805-262-20P shortchanges you on a few SB-22 switchboard battery NSNs. Here they are:

Item	NSN
Battery box	6160-00-635-5223
Battery retainer	6160-00-284-0249
Electrical contact	5999-00-305-0008

Are You Certified for AC?

As of 14 Nov 94, all air conditioning/refrigeration technicians are required to have certification cards if they work on and service air conditioning/refrigeration equipment. If you're not certified, get in touch with your local ATCOM LAR.



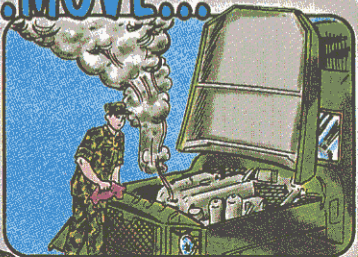
Distribution: To be distributed in accordance with DA Form 12-34-C-R for TB-43-series

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

DIRTY FILTERS CAN LOSE A BATTLE!

IF YOU CAN'T...

...MOVE...



...SHOOT...



...OR COMMUNICATE...

...YOU COULD BECOME
A LIABILITY TO YOUR UNIT.
YOU OR YOUR UNIT COULD
GET WIPED OUT.

