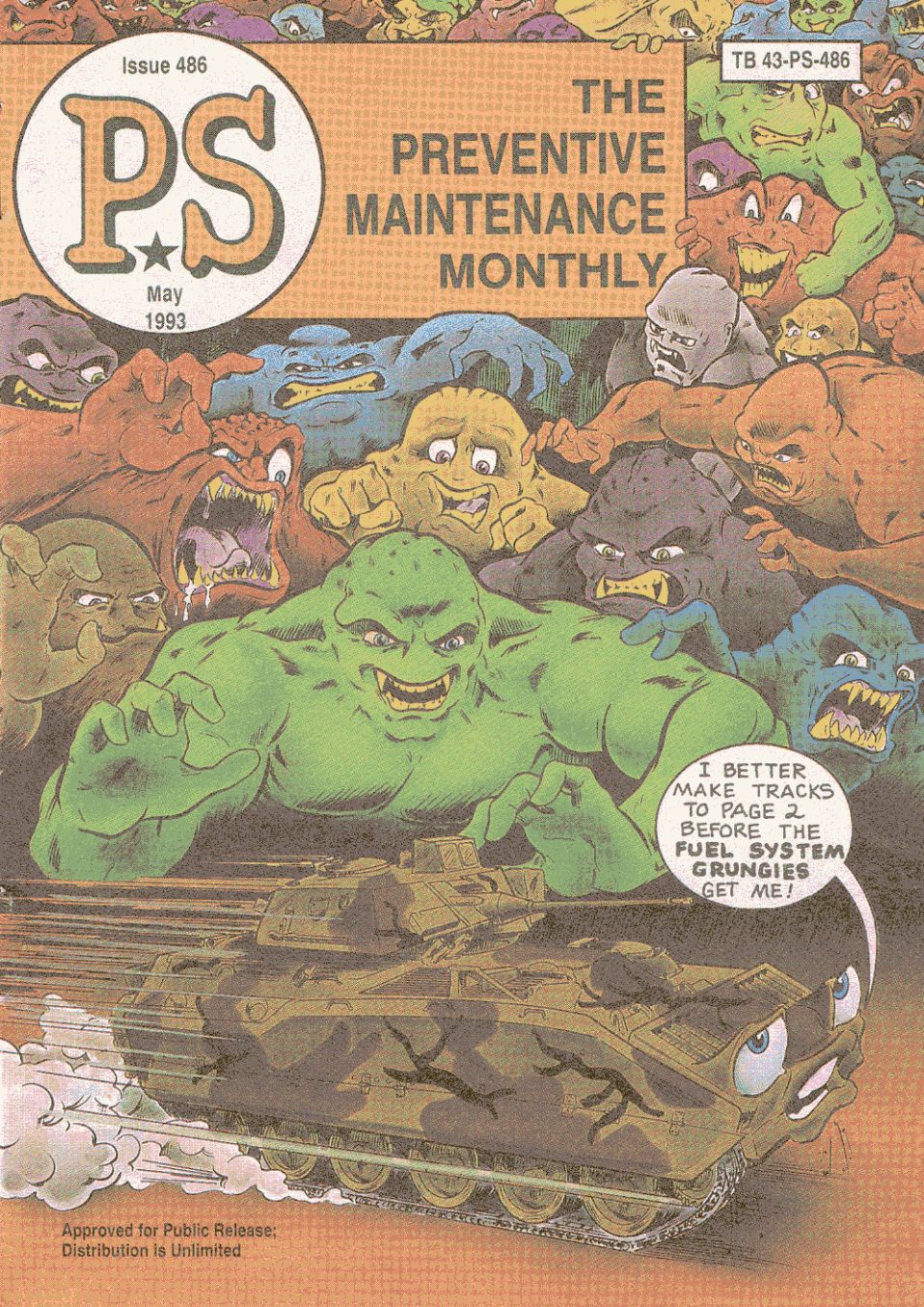
Issue 486

PS

May
1993

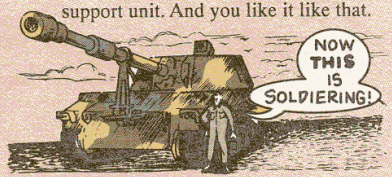
THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-486



A Reason to Welcome Visitors

Everyday you're training, maintaining, or taking part in some operation. That's life in a combat or combat support unit. And you like it like that.



What you don't like are the interruptions, especially those from "visiting firemen" who keep you from your mission.

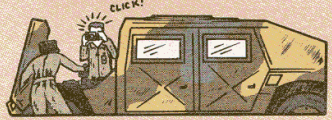
Of course you have to make time for IG and command inspections. But other visitors?

Most visitors come to find out what your problems are so they can help solve them. Some come to look at equipment, supply and maintenance procedures.

A couple of outfits send out individuals or teams to look at equipment, to talk to you and find out what's good about your equipment, what's bad, and what your ideas are for improving it. They figure that soldiers who work and live with the equipment have the best ideas for making it better.

One of these is the USAMC Logistics Support Activity (LOGSA). They look for ways to improve the maintenance of equipment, to make repair parts supply quicker, to make technical manuals better and easier to use, to make sure you get the right tools and test equipment, and to improve the design of your equipment.

Another is the Army Materiel Systems Analysis Activity (AMSAA) from Aberdeen Proving Ground. It tries to find out if the equipment you're using is performing properly and to get your ideas on how to improve it. If your idea works, they send it to field units to use.



So when you see any of these people in your area, give 'em all the scoop you can about your equipment.

PS THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-486, 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.

ISSUE 486 MAY 1993

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

MSG Half-Mast
The Preventive Maintenance Monthly
Lexington, KY 40511-5101

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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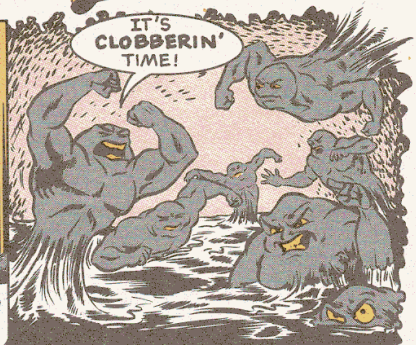
Fight Fuel System Grungies

Are you going through fuel filters by the dozens? Do clogged injectors and fuel lines keep your combat vehicle down more than it's up?

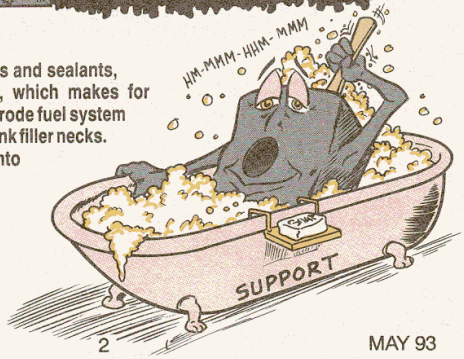


If so, then your fuel tanks may have a bad case of the grungies. Grungies are the sludge and slime that form in fuel tanks from gradual oxidation of fuel and microbial growth.

Water's the culprit. If a vehicle's been stored for a long time, or the fuel hasn't been properly rotated, water gets inside and those little microorganisms go quickly to work. They multiply, clumping together to plug up fuel lines, injectors, pumps and filters.

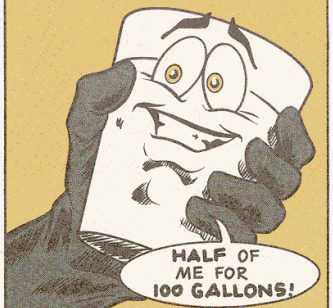
They attack fuel tank coatings and sealants, causing flaking and peeling, which makes for more clogs. They can also corrode fuel system surfaces, especially around tank filler necks.

Once the grungies move into your vehicle's fuel tanks, only a complete and thorough cleaning by your support will get rid of them.



When the system's clean, you can keep it that way with diesel fuel stabilizer additive. The stabilizer, which comes in a 5-gal can, NSN 6850-01-246-6544, and a 55-gal drum, NSN 6850-01-246-6545, slows fuel breakdown, kills microbial growth and inhibits corrosion.

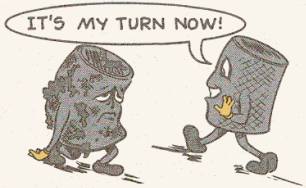
Use it at the rate of about three and a half ounces for every 100 gallons. A small foam coffee cup half-full is about right.



This additive will not remove existing sludge and microbial growth from a storage or fuel tank. It's to prevent more sludge from forming and to kill all microorganisms.

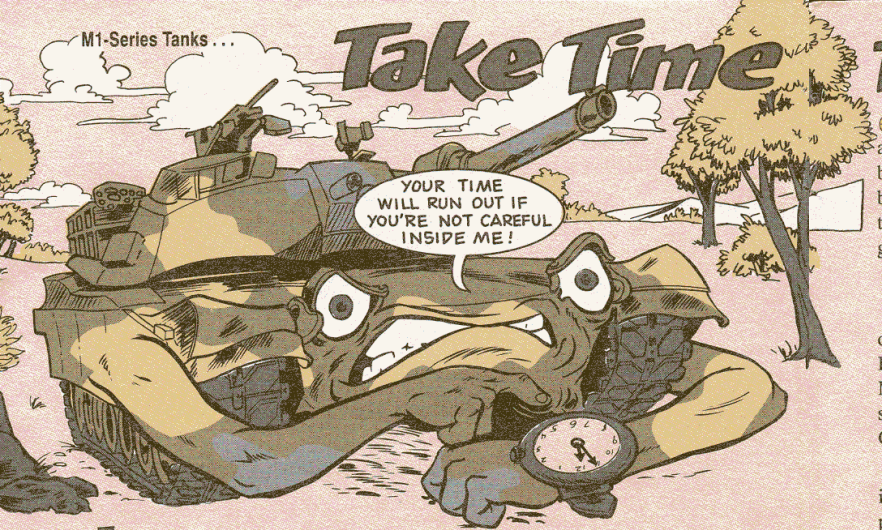
Never add the product to an empty tank. It's most effective when added to a half-full tank just before you finish filling it.

If you use the additive without first cleaning the fuel tanks, keep a close eye on your fuel filters. As the sludge and slime break loose, filters can plug up real quick. Clean or change them often until the grungies disappear.



Follow the instructions that come with the additive. Always use protective gloves and goggles when handling fuel additives.

Take Time to Be Safe



Just a few seconds. That's all it takes to be killed or seriously injured by the breech while moving around in the turret of your M1-series tank.

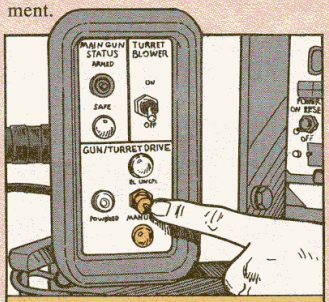
It only takes a few moments longer to keep yourself safe. Here's how:

Check all turret safety guards. Missing or improperly installed guards can't protect you when the turret is in operation.

Check the guard pads, too. You can still get bruised or cut if the pads are worn out. Replacement pads aren't available, so install new guards following the instructions in Chapter 5 of TM 9-2350-255-20-2-3 (for M1/IPM1 tanks) and TM 9-2350-264-20-2-3 (for M1A1s).

Never reach or lean over the breech—for any reason—during operation.

If you're a mechanic working on the gun, be sure ALL unnecessary power is off. Keep the turret and gun locked if possible. Use the GUN/TURRET DRIVE switch on the loader's panel. In MANUAL, it prevents sudden movement.



Keep GUN/TURRET DRIVE switch in MANUAL to head off sudden movement

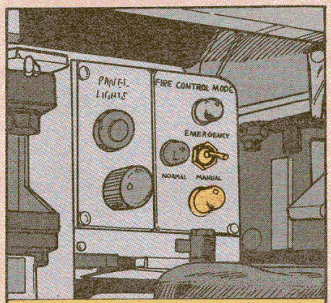
Alert the crew and make sure all areas around the turret, main gun, and breech are cleared before operation and before using palm switches. Depressing the palm switches can cause the main gun or turret to move suddenly if:

– The MRS lever is in the IN position.

– The GUN/TURRET DRIVE switch on the loader's panel is in the POWERED position and FIRE CONTROL MODE switch on the gunner's primary sight is in the NORMAL or EMERGENCY position.

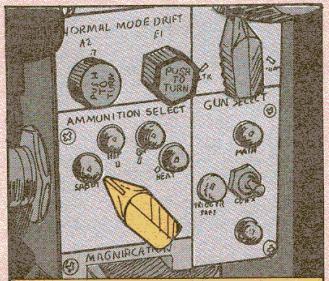
– The GUN/TURRET DRIVE switch is moved to or from the EL UNCPL position.

– The FIRE CONTROL MODE switch is in the NORMAL or EMERGENCY position and the main gun is over the rear deck and below zero degrees elevation.



Main gun may move if FIRE CONTROL MODE switch is not in MANUAL position

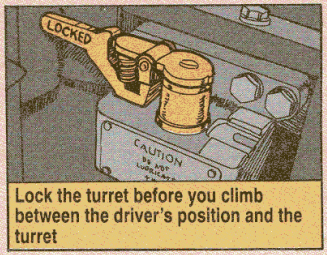
– The AMMO SELECT switch is moved from one ammo position to another.



Do not move AMMO SELECT switch while palm switches are depressed

– TARGET RANGE switch is changed.

Never move between the driver's position and the turret unless everyone in the turret knows you are moving AND you know the turret is locked.



Lock the turret before you climb between the driver's position and the turret

The list of soldiers killed or badly hurt in accidents caused by violating the rules is already too long. It's up to you to stay off that list, so think safety every minute you're in the turret.

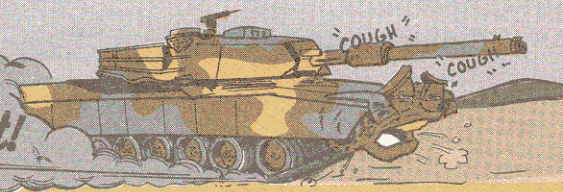
Hands Off TRU Cooler

Mechanics, it doesn't take big, clumsy hands to damage the thermal receiver unit (TRU) on an M1-series tank. Just grab it in the wrong place.

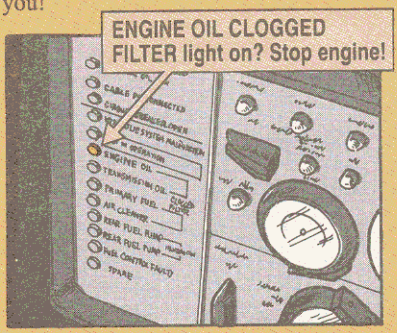
Nine times out of 10, you'll pick the TRU up by its most convenient handhold—the dewar/cryogenic cooler assembly—when removing or installing it in the gunner's primary sight.

The force can cause leaky seals. And that means you're stuck buying a brand new cooler assembly.

Another One Bites the Dust!



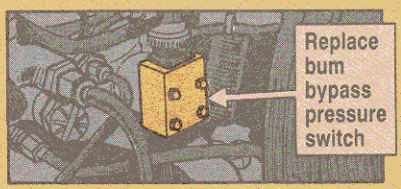
Drivers, shut down the engine—NOW—on your M1-series tank if the ENGINE OIL CLOGGED FILTER light comes on. If you don't, the dirt, sand and other gunk that's in the oil will do it for you!



When the filter is clogged, oil bypasses the filter, carrying dirt into the engine. This bypass feature saves the engine from seizing up on-the-spot. But dirty oil gets in engine parts.

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

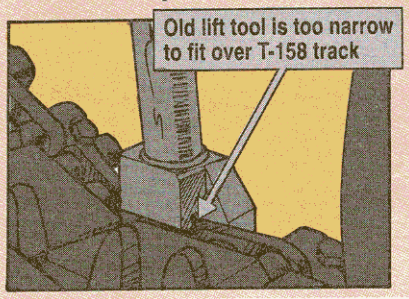
Mechanics, if the light stays on after changing the filter element, the problem is probably a bad by-pass pressure switch on the engine oil pump assembly. Replace the switch with NSN 5930-01-089-9142.



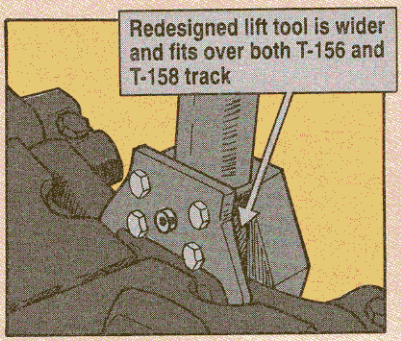
M1-Series Tanks . . .

NEW ROAD ARM LIFT TOOL

The end of the tool won't fit snugly over the end connector and track link. The tool can slip off.



Swap the old tool for one that fits both the T-156 and T-158 tracks.



To make the swap, just write:

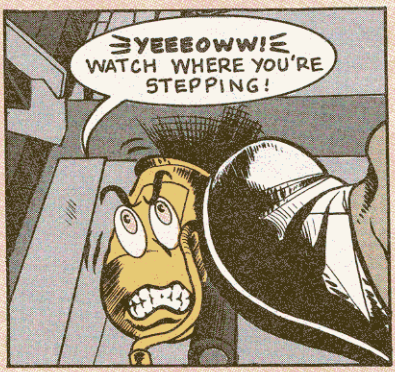
Tank-Automotive Command
ATTN: SFAE-ASM-AB-LR
Warren, MI 48397-5000

or call:

DSN 786-8204
or Commercial (313) 574-8204.

M113-Series FOV . . .

Keep Feet Off Fuel Pump



The personnel heater fuel pump on your M113-series carrier does its job when left alone — untouched, especially by human feet.

Problem is, some well-meaning mechanic pulls the plates for cleaning and steps on the pump. The pump's inlet and outlet elbows can't take all that strain.

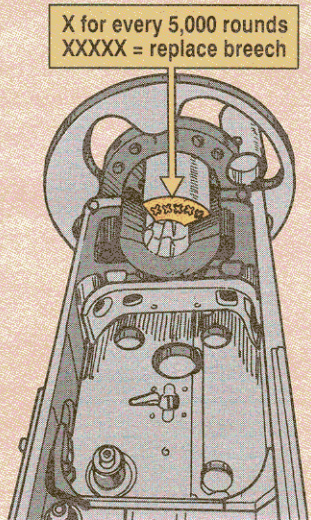
So-o-o-o, give the pump a break . . . and don't break it. Keep your foot off the pump when making repairs or doing maintenance.

Tracking Rounds

It's critical that you Bradley crews keep track of how many rounds you fire with your M242 gun. After 25,000 rounds, the breech assembly becomes unsafe and must be replaced.

The primary way to track rounds is on DA Form 2408-4, Weapons Record Data cards. After every mission, count how many rounds you've fired—include dry fires—and write it in on the 2408-4. Give the card to your armorer.

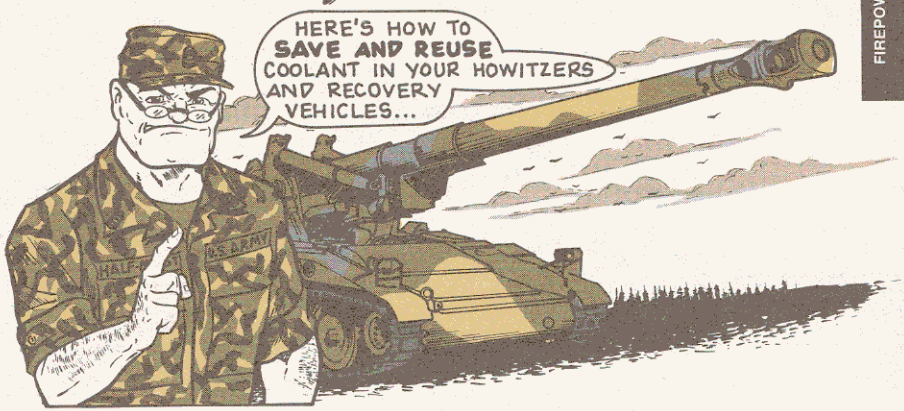
But as an extra safeguard, AMCCOM wants the breech itself marked with a rounds count: One 3/16-in X for every 5,000 rounds fired. The X should be stamped on the upper front face portion of the breech by your armorer, using stamp set NSN 5110-00-293-1904. When you're ready for the fifth X, it's time for a new breech.



So check your 2408-4 and ask your armorer to bring you up to speed on Xs.

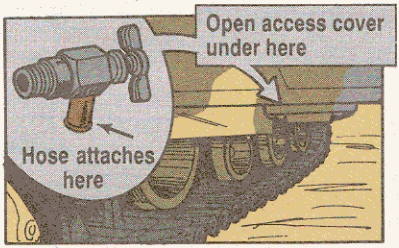
The word's in AMCCOM Maintenance Advisory 93-06. Your AMCCOM LAR can give you a copy.

Catching the Coolant



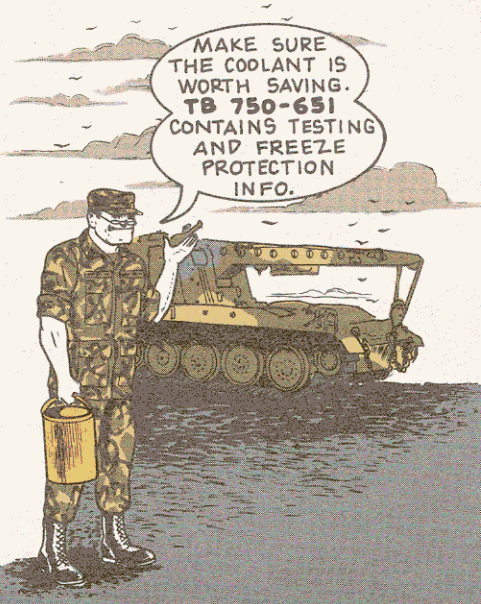
Saving and reusing coolant is the right thing to do on your M110A2 SP howitzer or M578 recovery vehicle. But it's impossible to do unless you know the secret.

Before you refill the coolant system next time, replace the old drain cocks with new ones, NSN 4820-00-845-1096.



The new drain cocks have spouts that allow you to attach 4- to 6-in pieces of 1/4-in hose. That means the next time you change the coolant, you can drain it through the access covers under both radiators and catch it in a clean container.

That way, coolant does not get contaminated as it splashes on the engine and hull.

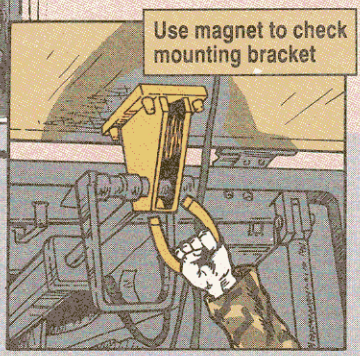


Aluminum Bracket Can't Hack It

When you open the upper rear door on your M992 FAASV, you assume it'll stay open, right? Wrong! If the door is held open by and aluminum mounting bracket, you're making a dangerous assumption.

Aluminum brackets crack under the strain of holding up the 300-lb door. That's bad, especially if you're standing in the way at the wrong time.

Get your mechanic to check the bracket with a magnet. If the magnet sticks, the bracket is steel. It's OK. If not, the bracket's aluminum.



Ask your mechanic to replace it with a steel bracket, NSN 5340-01-158-0825. And even if your door does have a steel bracket, don't stand around under it or pile anything on it while it's open.

M901A1 ITV . . .

Filter Stops Lasers

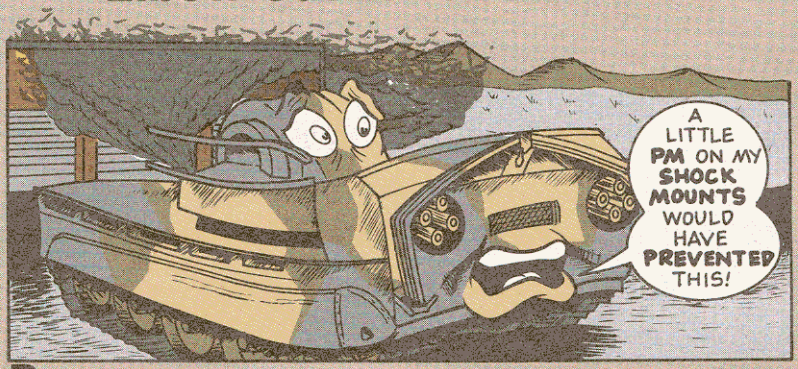
You M901A1 vehicle commanders can get a filter installed to protect your eyes from laser blasts while you're looking through the telescope.

Support installs the filter, NSN 1240-01-216-2678.

To check to see if your vehicle already has a filter installed, look at the lens window holder from the outside. If it has the filter, you can't see through the lens and the lens will be reddish. If you can see through the lens, there is no filter. Get one installed.

Chaparral Missile System . . .

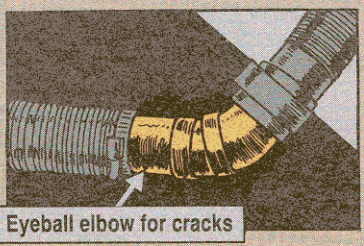
Elbow Out Exhaust Leaks

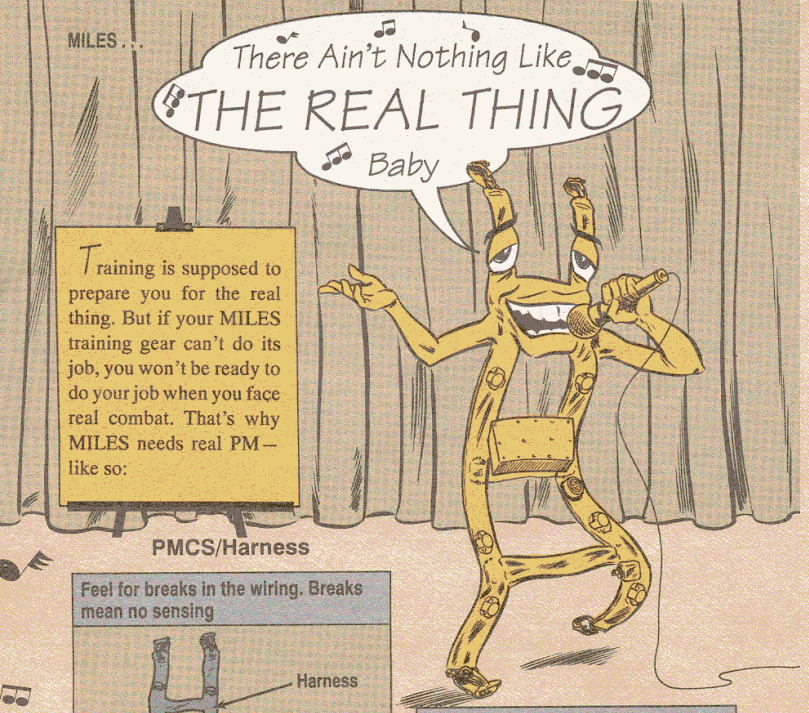


Bad shock mounts cause exhaust leaks. And exhaust leaks on the diesel power unit (DPU) make the Chaparral NMC.

That's why you repairmen need to eyeball the shock mounts during every oil change. If the mounts are worn, replace them.

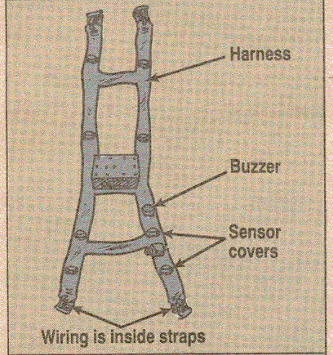
Look at the exhaust system elbow, too. If it's cracked, replace it.

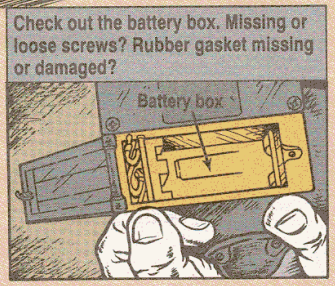

Eyeball elbow for cracks



Training is supposed to prepare you for the real thing. But if your MILES training gear can't do its job, you won't be ready to do your job when you face real combat. That's why MILES needs real PM—like so:

PMCS/Harness



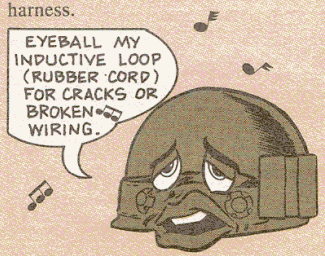


Moisture will get in and cause electrical shorts. Clean out any corrosion with a brush.

Clean out any dirt in the buzzer and key receptacle with a soft brush. Turn the key in its receptacle to make sure it works.

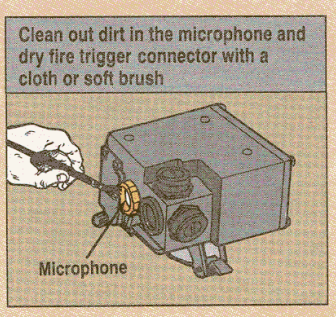
Never dunk the harness to clean it or spray it with high-pressure water. Clean the harness with a brush and damp cloth.

Make the same checks on the helmet harness. Also make sure the hook-and-pile is either sewed or riveted on the harness.

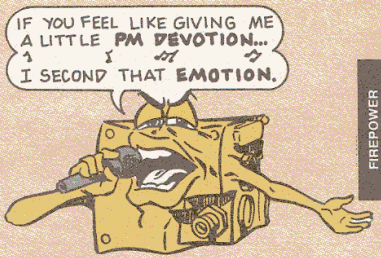


PMCS/Small Arms Transmitter

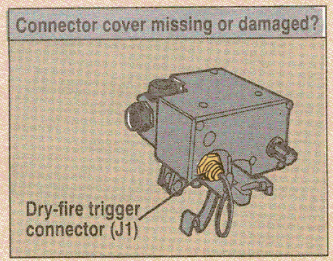
Rubber gasket in the battery compartment? Compartment door missing or damaged? Loose or missing screws? Clean out any corrosion in the compartment.



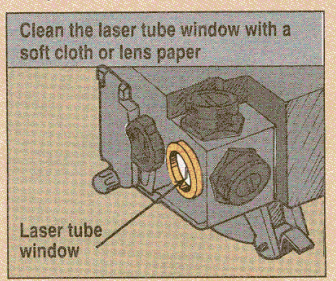
Dirt prevents the microphone from picking up the sound of fired blanks.



Eyeball the dry fire trigger connector.



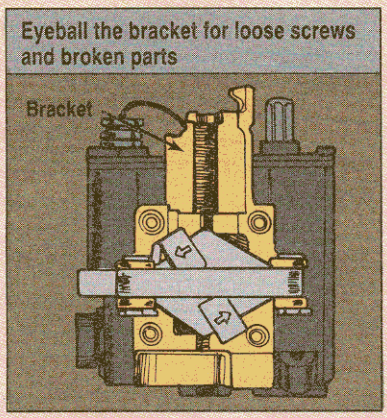
On the M16 rifle connector, look for dirt or damage in the connector. Clean out dirt with a soft brush. Dirt won't let you connect the dry fire cable when you zero your rifle to the transmitter.



A dirty window won't send the laser accurately.

Turn the key to ensure the key and receptacle are working.

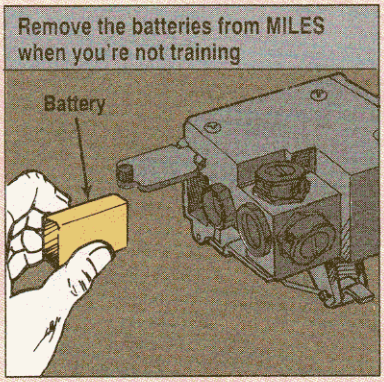
PS MORE



Install the transmitter on your weapon to be sure it fits securely when the latch is closed.

♪ In the Field ♪

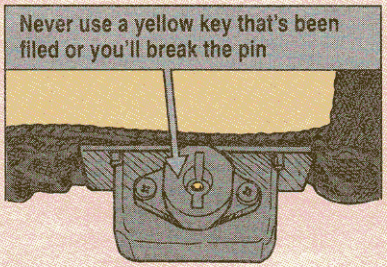
Weak batteries mean your MILES can't sense or send. Change the battery at least every three days.

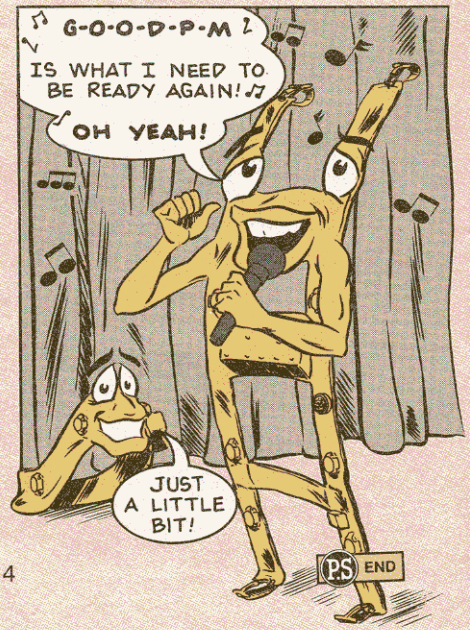


If the batteries are left in, they corrode and cause damage. MILES will also keep running, which runs down batteries.

The belt's heavy. If you drop it, sensor covers are knocked off and the buzzer's broken. Never hang anything — like your canteen — from the torso belt. You'll break the wires that run between the sensors and buzzer.

An altered key turns too far and breaks the pin in the key receptacle and your MILES can't be reset.



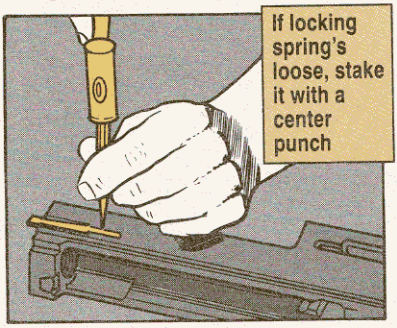


M2 Machine Gun . . .

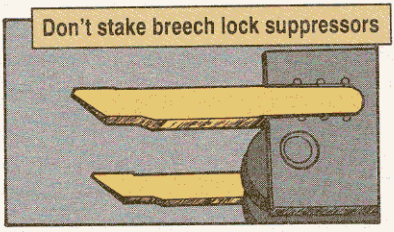
The Stakes Are High

Knowing how to stake M2 machine guns is a high stakes business, armorers. If you don't correctly stake the barrel locking spring, the M2 loses headspace. That leads to ruptured cartridges and maybe injury to the gunner.

Every week, feel the spring for looseness. If it's loose, stake it. But use a center punch, not a flat punch. The center punch spreads the metal and helps the spring stay tight. And always stake the same side. Staking in several spots weakens the spring.



But do not stake the breech lock suppressors. They are supposed to be loose so they can move up slightly when they hit the cam in the barrel extension.



M85 Machine Gun . . .

Blunt Advice

Sliding the M85 machine gun's retaining pin in and out of the feed and ejector assembly gradually sharpens the pin's point.

Eventually, the pin gets sharp enough to poke holes in gunners.

Armorers can prevent pokes by eyeballing all their M85 retaining pins for sharp points. If you find any, put the pin in a vise and blunt the point with a file. A couple of swipes with the file are enough — more filing makes it hard to get the pin in its hole.

Lowdown on Cleanup

There are a few tricky areas on your M16 rifle that require special tricks when it comes time for cleaning. For instance:

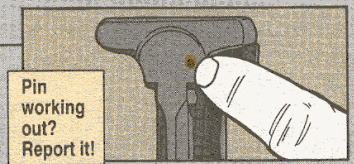
Slip ring—Take off the handguards. Gently push down the slip ring. Use a toothbrush to work out the dirt. Blow the dirt away. Repeat this step until the slip ring moves smoothly.


Use toothbrush to clean under slip ring

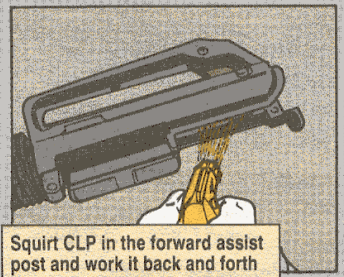
Charging handle—Remove the charging handle from the upper receiver and clean it with a clean cloth and CLP. Work a pipe cleaner dipped in CLP in the area where the handle moves in and out of the receiver until all the grit's gone.


Use a rag, pipe cleaner and CLP to clean the charging handle

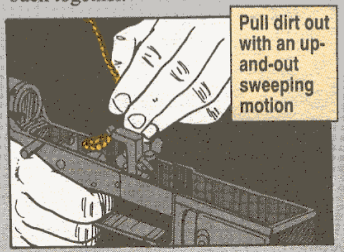
Eyeball the pin that holds the handle latch in place. If it's working out, tell your armorer. A loose pin makes it difficult to push the handle back in the receiver.


Pin working out? Report it!

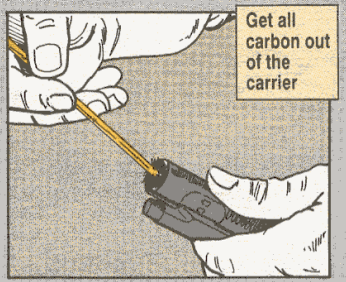
Forward assist—Squirt one shot of CLP on the forward assist port inside the upper receiver. Work the forward assist back and forth until all dirt is forced out.


Squirt CLP in the forward assist post and work it back and forth

Trigger assembly—Clean gently—so you don't bend springs—around the trigger assembly with a pipe cleaner and CLP. Twist the end of the pipe cleaner into a circle so you can sweep out dirt. If the pipe cleaner can't get out all dirt, blow it out with your own lung power. But do not try to take apart the trigger assembly. It's hard to put back together.


Pull dirt out with an up-and-out sweeping motion

Bolt carrier—Carbon collects and hardens inside the carrier. The only way you can get it out is with CLP, an old bore brush, and lots of your own elbow grease. Even that may not be enough. If you can't get rid of all the carbon, tell your armorer.


Get all carbon out of the carrier

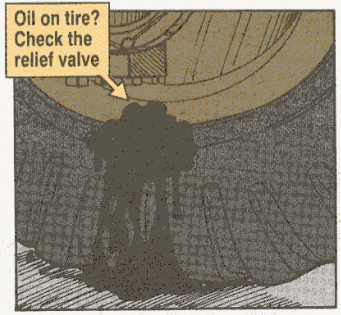
LEAKY SEALS

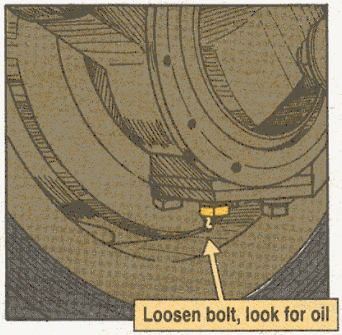
Tired of spending your days replacing blown inner axle seals on your M44-series, M39-series and M809-series trucks?

Well then, after you replace the next one, spend a few minutes checking the pressure relief valve on the axle housing.

That liquid dripping down the inside of your front tires is probably 90-weight oil from the differential, not GAA from the steering knuckle.

You can check by removing one of the bolts from the bottom of the steering knuckle boot guard.





If oil is leaking, there should be some held in the boot.

NEED RELIEF

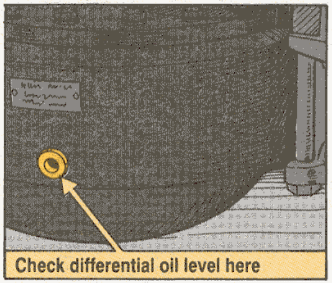
Heat buildup in the differential creates a lot of pressure. Sand, dirt, paint or grit in the valve keeps it from venting. Result—blown seals.

If the relief valve is not cleaned and working properly, any new seal will blow, too. Then it's two more hot, sweaty hours replacing a seal and retainer.

Here's how to check the relief valve to make sure it's working:

- ☐ Twist the cap to loosen any dirt inside. Tap the valve. It should depress and spring right back.

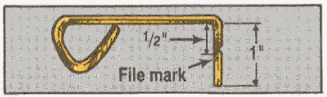
- ☐ No? Remove and clean it. Be sure to brush away any dirt around the hole before you remove the valve.



It's right when you can touch it with the first joint of your little finger hooked over the lip of the hole, ½ inch or so down. That's a cold check, of course. Don't try a hot check. The oil or axle housing can burn you.

Of course, not all fingers are created equal. Some won't even fit the hole.

Make an equalizer:



- ☐ Cut an 8-in piece of ⅛-in welding rod.
- ☐ Bend a finger loop in one end and a 1-in leg on the other.
- ☐ Measure down ½ inch from the inside angle and mark a line.
- ☐ File a notch on the outside, so it's easy to see.

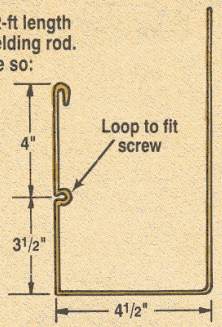
Guidelines for Bumper Guide

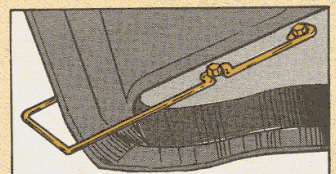
It's hard to judge the distance between the front bumper of your big truck or HMMWV and an obstacle when you can't see the bumper. It's even tougher on 2½- and 5-ton trucks with front winches, because the bumpers stick out a couple of feet.

What you need is a bumper guide rod on the curb side of your truck. First, get your commander's OK. Then, have your mechanic install the guide rod.

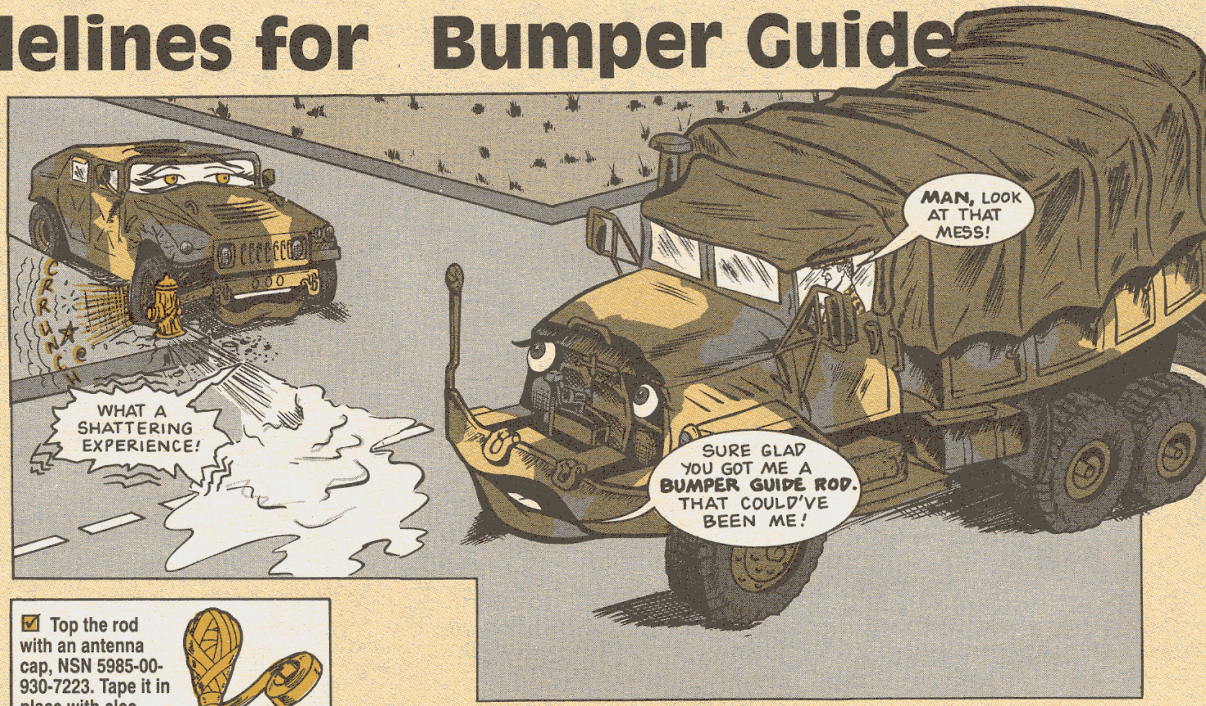
HERE'S HOW TO MAKE AND INSTALL IT ON THE HMMWV:

☑ Get a 2-ft length of 1/8-in welding rod. Bend it like so:





☑ Take the nuts off the inside of the right fender reflector. Put the small loops over the screws and replace the nuts.



☑ Top the rod with an antenna cap, NSN 5985-00-930-7223. Tape it in place with electrical tape, NSN 5970-00-816-6056.

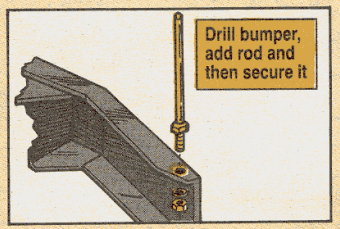
The cap keeps anyone who might fall on the rod from getting speared.

INSTRUCTIONS FOR THE M44-, M39- AND M809-SERIES TRUCKS:

☑ Get a 3-ft long piece of 3/8-in rod, NSN 9510-00-189-0652.

☑ Thread about 3½ inches of one end with a 3/8-16 die, NSN 5136-00-189-3217. The die is in the No. 2 Common shop set.

☑ Drill a 7/16-in hole about two inches from the right end of the bumper.



☑ Run a nut, NSN 5310-00-989-5956, all the way up on the threads.

☑ Put the rod in the bumper hole. Secure it with a lock washer, NSN 5310-00-984-7042, and a second nut.

☑ Cover the rod tip with an antenna cap. Tape it just like the HMMWV.

INSTRUCTIONS FOR THE M939-SERIES TRUCKS:

Use the above instructions with these changes:

☑ Add six inches to the rod so you'll be able to see it from the driver's seat.

☑ Offset the guide rod about two inches so you'll be able to open the hood.

2½ & 5-ton Trucks . . .

A Turn for the Better

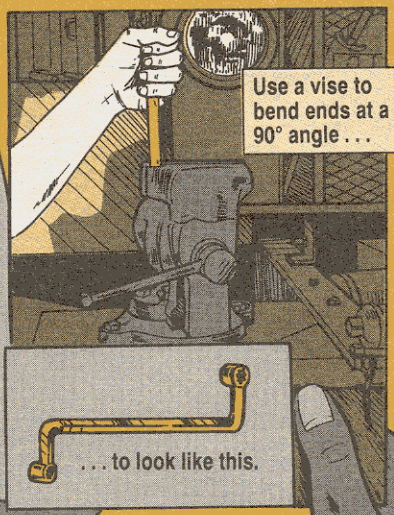
Dear Editor,

We find that we can't get a 3/4-in wrench around the cab mount bolts on our M52A2 trucks. The wrench is too long.

We solved the problem by bending the ends of a 3/4-in wrench to make it shorter and easier to work with. We bent one end back at a 90° angle and the opposite end forward at a 90° angle.

Either end can be used as a grip while the other end turns the cab mount bolts.

SPC David Ullom
Ft Campbell, KY



FROM THE DESK OF THE Editor

Sounds like a good way to give yourself more elbow room. Good show!

Tactical Trucks . . .

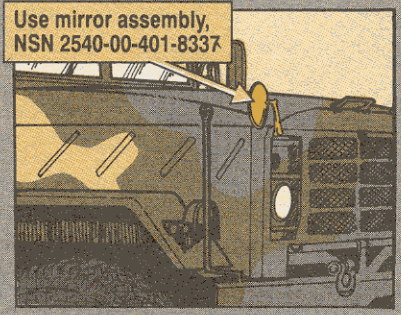
Don't Get Blind Sided

Most trucks—like your M939-series 5-tonners—have a big blind spot on their right side.

Protect yourself and your trucks by mounting a mirror on the front right fender.

Get your CO's OK to order mirror assembly, NSN 2540-00-401-8337. That NSN brings the mirror and all mounting parts.

If you need just the mirror, order it with NSN 2540-01-165-4677.



Cap Off Valve Stems

Dear Editor,

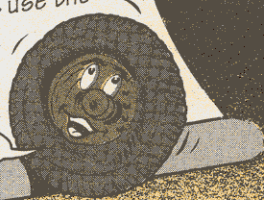
As a maintenance supervisor, I have seen too many inside tires ruined because of improper inflation.

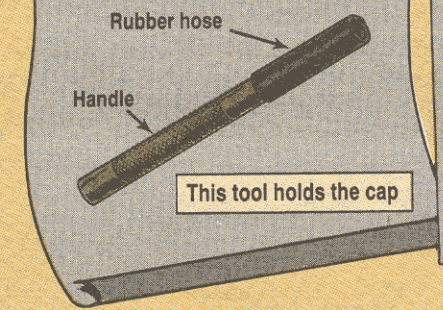
Operators often can't get to the valve cap to remove it and check tire pressure.

You can make a handy tool to remove valve caps with a handle of your choice (I bought mine) and a short length of rubber hose. The hose's inside diameter should be 5/16 inch.

The hose will fit over the valve cap, let you twist it off, and then hold it while you air the tire. When you're through, just use the tool to twist on the cap.

SSG Rodney Woody
ALARNG





FROM THE DESK OF THE *Editor*

Sounds like a new twist to an old problem. Thanks for the tip. Another tip: Use a screwdriver-style valve cap, NSN 2640-00-060-3550. You can remove it with a screwdriver. Then, don't overtighten the cap. Finger tight is good.

HEAVY DOES IT WITH PM

Your HET will never be an easy rider. Its job is to carry the heavy loads. Liberal doses of PM, though, makes the job easier for the trailer.

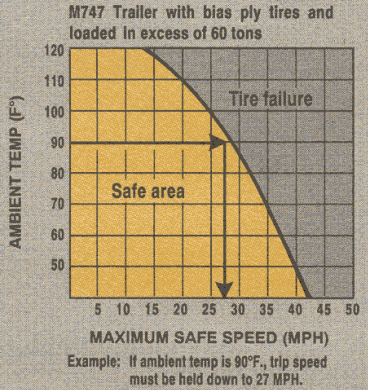
TIRES

Keep air pressure up to snuff. Too much or too little air is a tire killer. The tire pressure shown in your TM is wrong. For bias ply tires, use 80-85 PSI. For radials, use 110-120 PSI.

Mark air pressure above tires

Heat kills bias ply tires, too. To lessen heat damage when you've got a heavy load, slow down.

Here's a chart to help you figure the best safe speed:



Example: If ambient temp is 90°F., trip speed must be held down to 27 MPH.

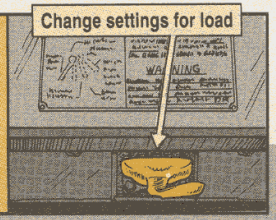
Keep speed up and tire damage down by switching to radial tires, NSN 2610-01-332-8985. These tires have a higher load rating, stand up better to heat, and will last longer. But never mix bias and radial tires on the same trailer.

Radials are more expensive, so don't just dump good bias ply tires. Change to radials on one trailer at a time. Use the good bias ply tires on other trailers.

AIR SUSPENSION

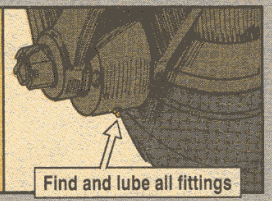
Another trailer saver is the air suspension system. It reduces wear and tear on the trailer's suspension when the trailer's fully loaded.

Change settings according to your load. If the control handle is broken or missing, get it replaced — pronto.



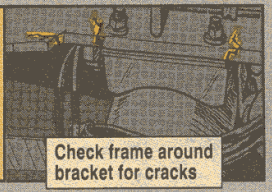
LUBING

Lube fittings need lube. Every one of them. Check out the lube chart in your TM to make sure you find each one. Look out for fittings that won't take grease or that are painted over. Clean off the dirt or paint before you lube.



WALKING BEAM BRACKET

While you're lubing, look for cracks on the walking beam saddle bracket. Compare your trailer to Fig 6-21 in TM 9-2330-294-14. If your trailer doesn't match, report it. Get it fixed.

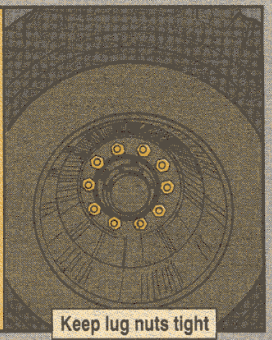


WHEELS AND NUTS

Look at your trailer's wheel lug nuts, too. If your trailer has cap nuts to hold the wheels on, look again.

See a gap between the cap nut and the wheel, or rust or shiny spots? That means a loose nut. Loose nuts let wheels wobble. Stud holes get bigger, wheels crack and studs break off. You can lose a wheel.

Get your mechanic to torque loose nuts. For cap nuts, torque to 450-500 lb-ft. For regular nuts, torque to 575-600 lb-ft.



HANDLING HAZARDOUS WASTE

Before you go to the field with a week's worth of service supplies, be sure to read TB 43-0244, Unit Level Procedures for Handling Service Supplies, Hazardous Materials and Waste. This TB gives you information on handling, storing, using, transporting and disposing of every day motorpool supplies, hazardous materials and waste.

Pull United Tires Now

Bias ply tires made by United Tire of Canada for heavy trucks and trailers are not safe. Get them off your vehicle. Do not use those in stock. For turn-in and credit info, get ahold of your TACOM LAR. The word is in TACOM Safety-of-Use Message 92–31. United was not bought for CUCVs, HMMWVs, HEMTTs, M939A1s, M939A2s, M915s or M915A1s. When ordering new tires and tubes, put "ESR" in card columns 55-57 of your supply request. That tells TACOM you're replacing United tires.

CUCV...

Handle Spring Break?

Dear Editor,

The small spring inside our M1009's endgate window handle assembly is hard to get through the supply system and seems to break often.

While waiting for the spring to come in, I repair the handle with the spring from an unserviceable, old-style Army pen.

This spring seems to be a little more flexible than the original spring and doesn't break as often.

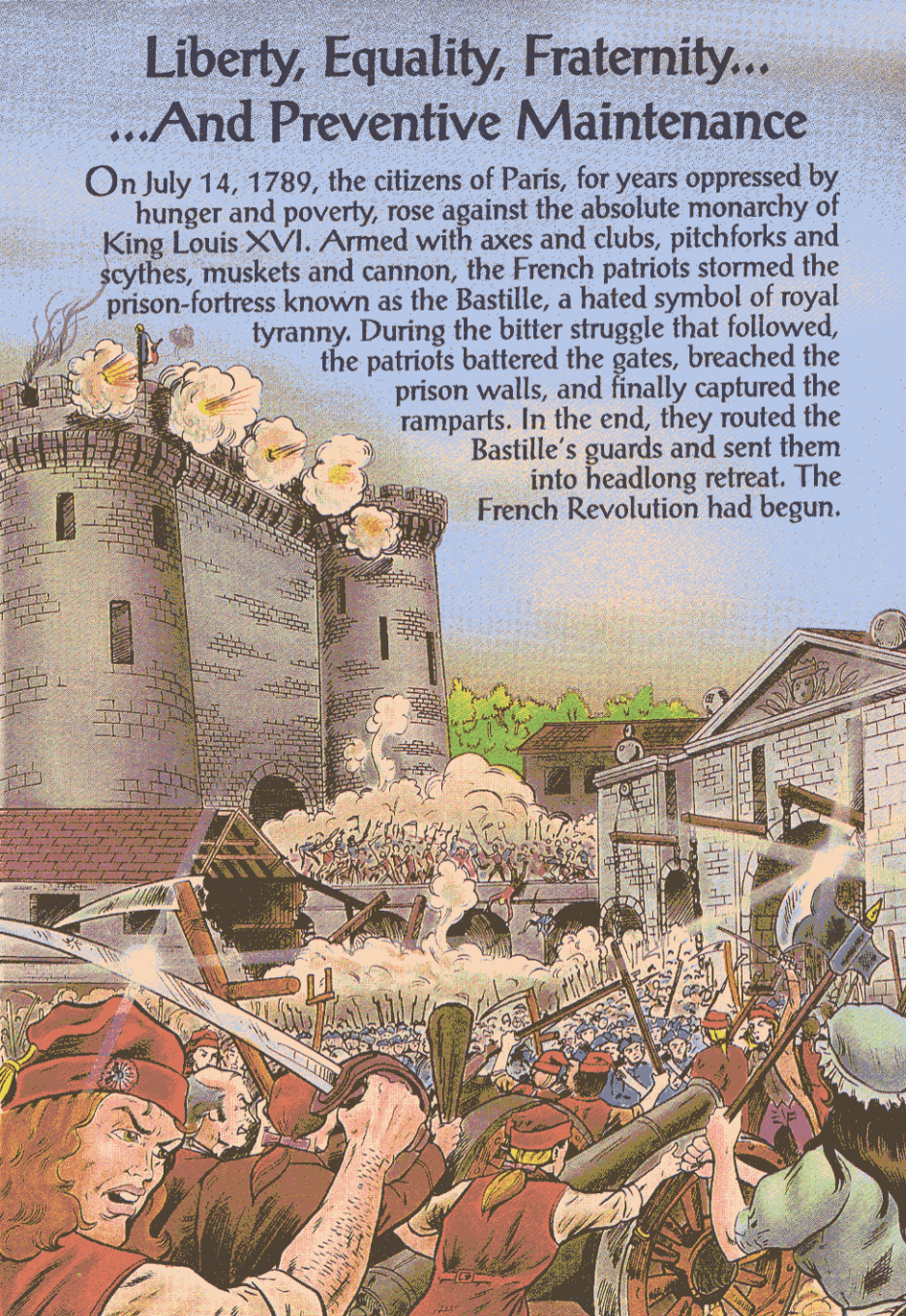
SSG Steven Johnson
Ft Benjamin Harrison, IN

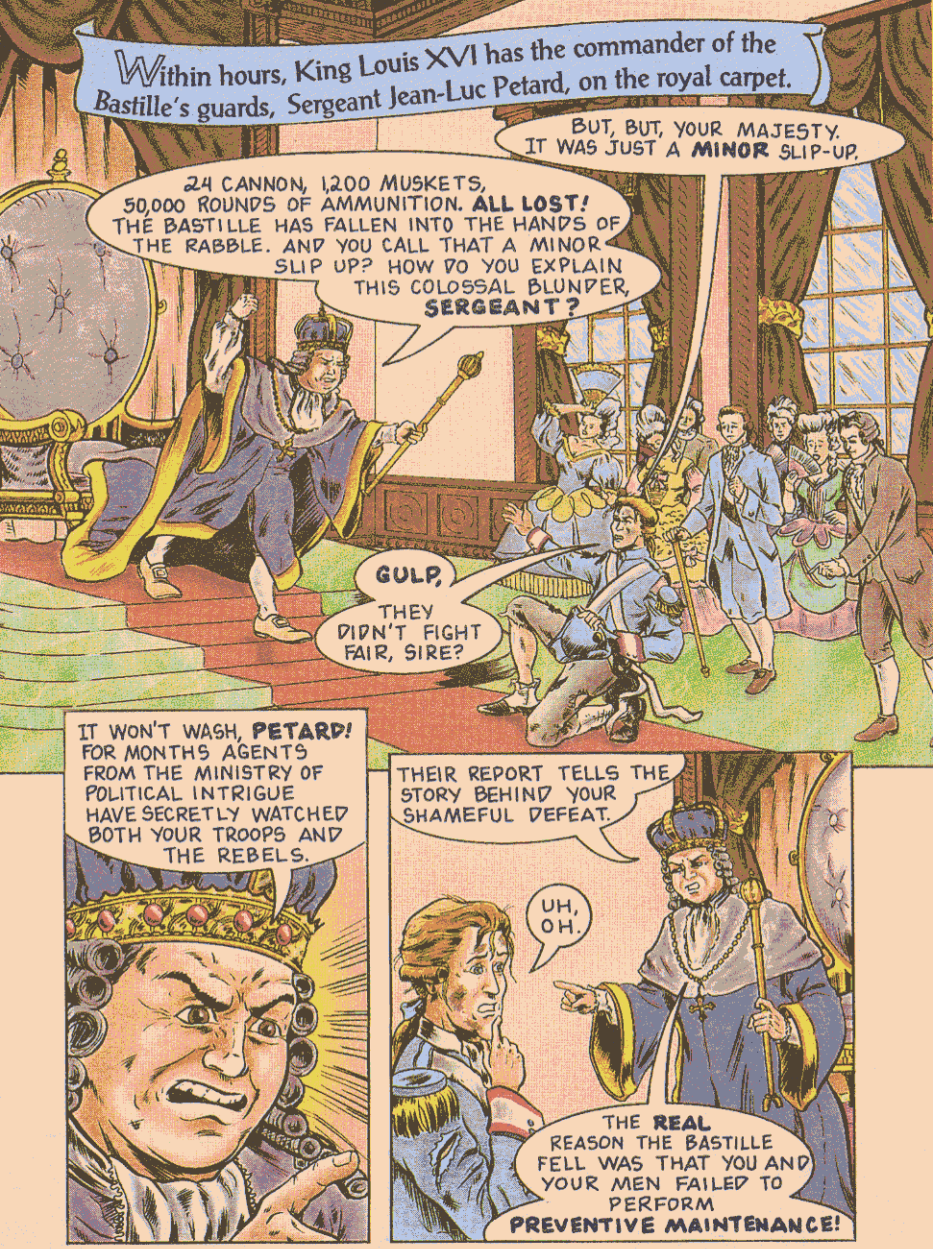
FROM THE DESK OF THE *Editor*

Thanks for the tip. Other mechanics springing for this fix should get their CO's OK first.

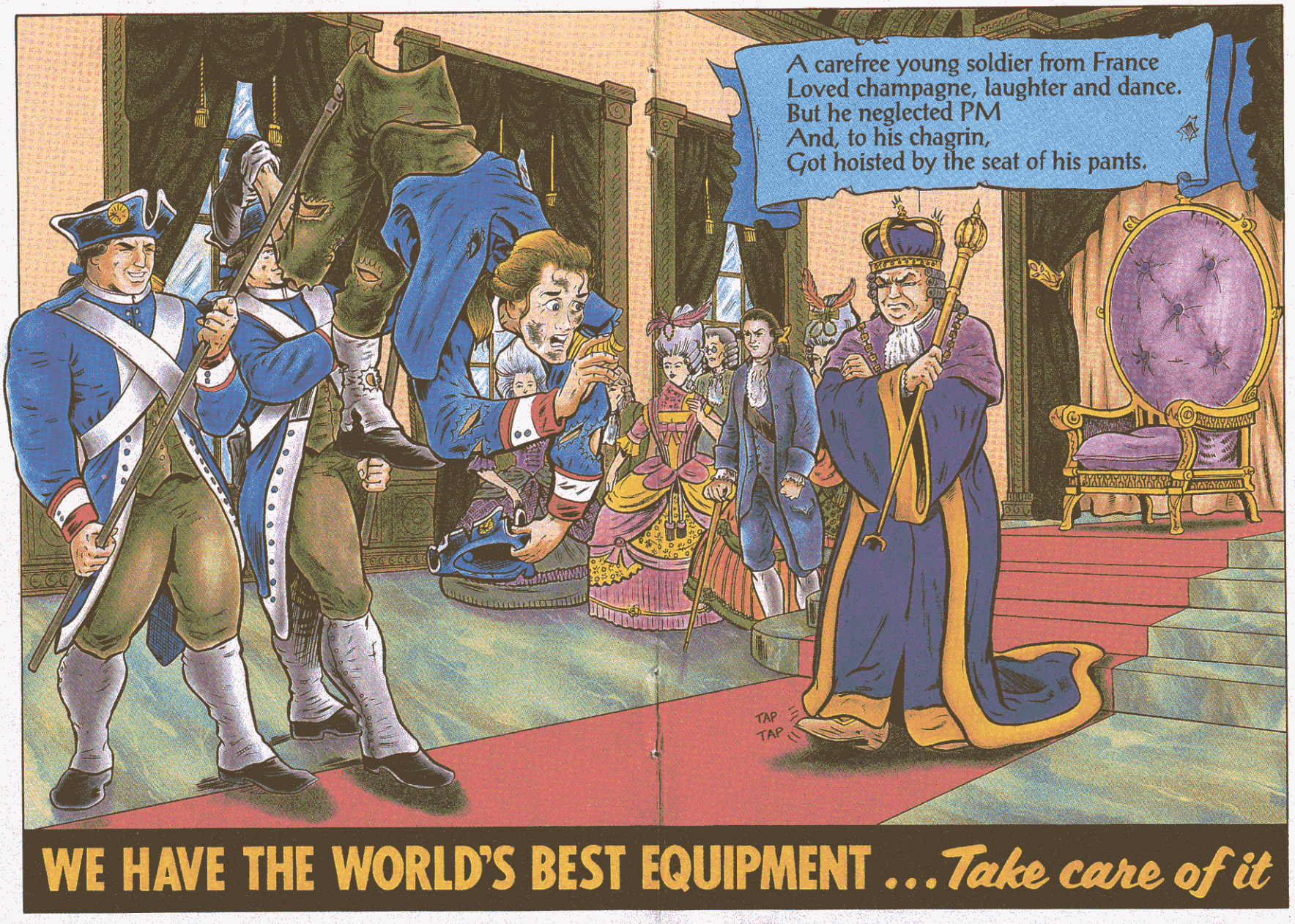
Liberty, Equality, Fraternity... ...And Preventive Maintenance

On July 14, 1789, the citizens of Paris, for years oppressed by hunger and poverty, rose against the absolute monarchy of King Louis XVI. Armed with axes and clubs, pitchforks and scythes, muskets and cannon, the French patriots stormed the prison-fortress known as the Bastille, a hated symbol of royal tyranny. During the bitter struggle that followed, the patriots battered the gates, breached the prison walls, and finally captured the ramparts. In the end, they routed the Bastille's guards and sent them into headlong retreat. The French Revolution had begun.



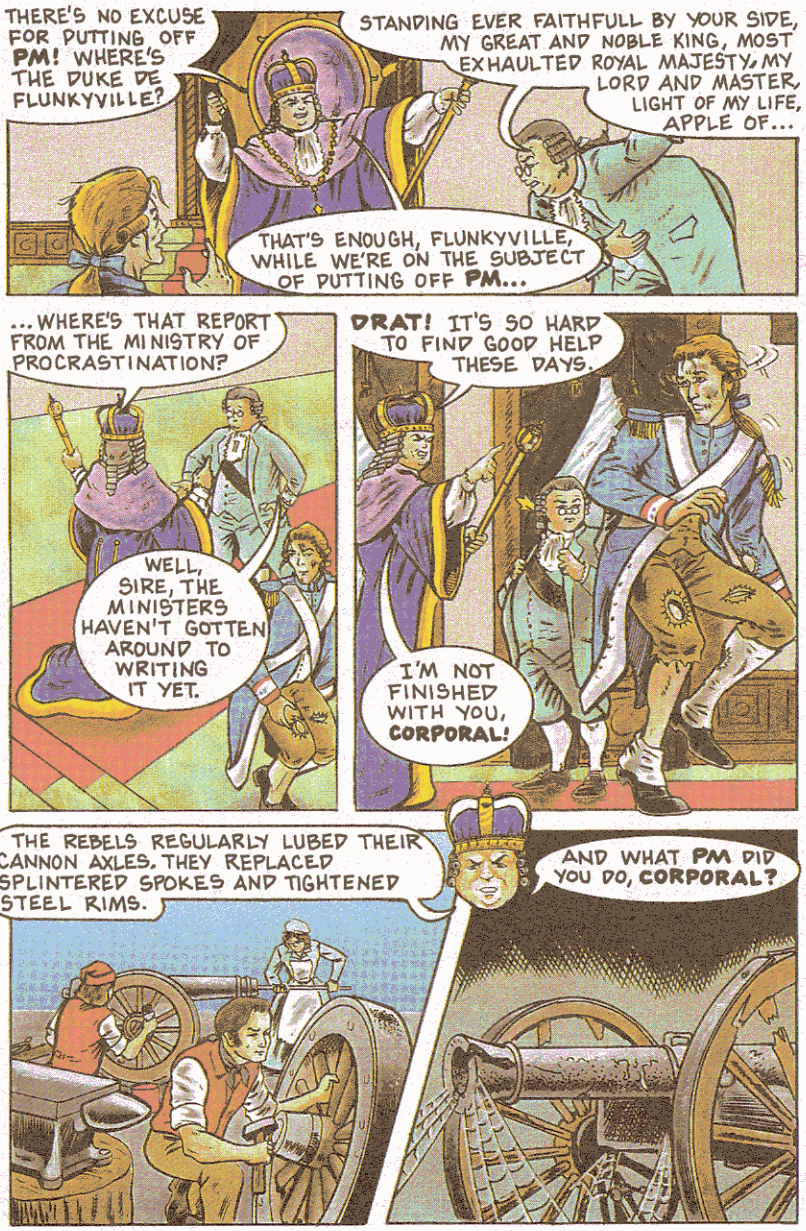

Within hours, King Louis XVI has the commander of the Bastille's guards, Sergeant Jean-Luc Petard, on the royal carpet.
BUT, BUT, YOUR MAJESTY. IT WAS JUST A MINOR SLIP-UP.
24 CANNON, 1,200 MUSKETS, 50,000 ROUNDS OF AMMUNITION. ALL LOST! THE BASTILLE HAS FALLEN INTO THE HANDS OF THE RABBLE. AND YOU CALL THAT A MINOR SLIP UP? HOW DO YOU EXPLAIN THIS COLOSSAL BLUNDER, SERGEANT?
GULP, THEY DIDN'T FIGHT FAIR, SIRE?
IT WON'T WASH, PETARD! FOR MONTHS AGENTS FROM THE MINISTRY OF POLITICAL INTRIGUE HAVE SECRETLY WATCHED BOTH YOUR TROOPS AND THE REBELS.
THEIR REPORT TELLS THE STORY BEHIND YOUR SHAMEFUL DEFEAT.
UH, OH.
THE REAL REASON THE BASTILLE FELL WAS THAT YOU AND YOUR MEN FAILED TO PERFORM PREVENTIVE MAINTENANCE!


ALL THESE MONTHS THE REBELS FAITHFULLY PERFORMED PM ON THEIR MUSKETS. THEY CLEANED THE BARRELS AND REPLACED BENT RAMRODS. THEY SHARPENED THEIR FLINTS AND CLEARED THE BARREL VENTS OF CARBON. AND THEY OILED THE HAMMER MECHANISMS AND CHECKED FOR LOOSE SCREWS AND WEAK SPRINGS.
OIL
MEANWHILE, YOUR TROOPS PILED THEIR MUSKETS IN AN OPEN COURTYARD. THEY LAY THERE NEGLECTED AND SOON BECAME AS FILTHY AS THE SEWERS OF PARIS!
I GUESS WE KINDA PUT OFF DOING OUR PM, SIRE.



WE HAVE THE WORLD'S BEST EQUIPMENT ... *Take care of it*

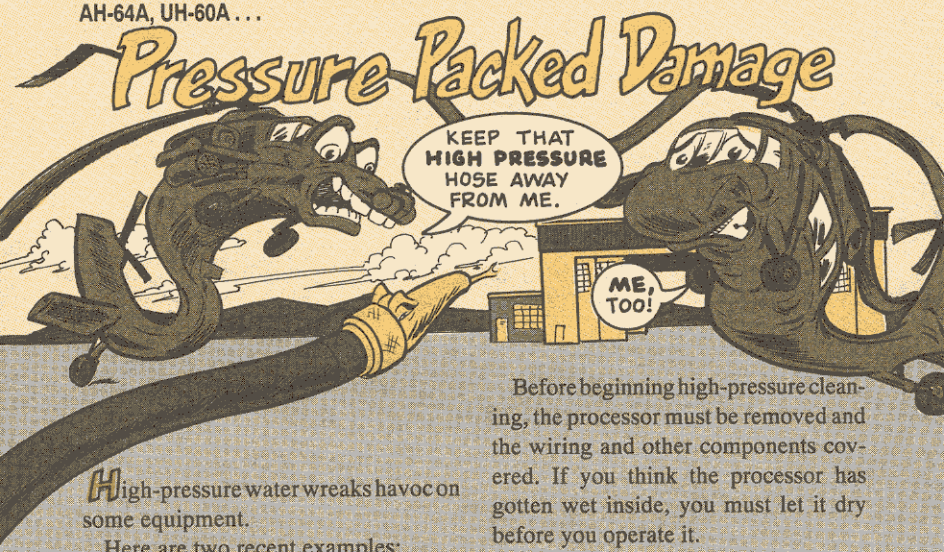
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.


THERE'S NO EXCUSE FOR PUTTING OFF PM! WHERE'S THE DUKE DE FLUNKYVILLE?
STANDING EVER FAITHFULL BY YOUR SIDE, MY GREAT AND NOBLE KING, MOST EXHAULTED ROYAL MAJESTY, MY LORD AND MASTER, LIGHT OF MY LIFE, APPLE OF...
THAT'S ENOUGH, FLUNKYVILLE, WHILE WE'RE ON THE SUBJECT OF PUTTING OFF PM...
...WHERE'S THAT REPORT FROM THE MINISTRY OF PROCRASTINATION?
WELL, SIRE, THE MINISTERS HAVEN'T GOTTEN AROUND TO WRITING IT YET.
DRAT! IT'S SO HARD TO FIND GOOD HELP THESE DAYS.
I'M NOT FINISHED WITH YOU, CORPORAL!
THE REBELS REGULARLY LUBED THEIR CANNON AXLES. THEY REPLACED SPLINTERED SPOKES AND TIGHTENED STEEL RIMS.
AND WHAT PM DID YOU DO, CORPORAL?


WHAT A ROYAL PAIN.
WHAT'S THAT!?
I SAID, "I'M AS LOYAL AS A GREAT DANE," SIRE.
AND WHAT ABOUT YOUR SWORDS AND BAYONETS?
THE REBELS PUT THEIRS TO THE GRINDSTONE UNTIL THEY WERE SHARP AND BRIGHT.
THEY INSPECTED THE HILTS TO MAKE SURE THE GUARDS WERE STRONG AND THE GRIPS FIRM.
YOUR SWORDS AND BAYONETS GREW DULL FROM MISUSE AND NEGLECT!


AND DON'T FORGET THE GUNPOWDER. IT DOES YOU NO GOOD IF IT'S WET. GUESS WHO KEPT THEIR POWDER DRY?
LE GUNPOWDRE
LE GUNPOWDRE
...AND GUESS WHO DIDN'T?
WHAT DO YOU HAVE TO SAY FOR YOURSELF, PRIVATE PETARD?
I GUESS WE NEGLECTED OUR PM, SIRE.
NEGLECT OF PM IS A ROYAL OFFENSE! FLUNKYVILLE, REFER THIS MATTER TO MINISTRY OF NEGLIGENCE.
BUT, SIRE, THE MINISTERS HAVEN'T BOTHERED TO SHOW UP FOR WORK.
DOESN'T ANYONE AROUND HERE WORK ANYMORE?! WE'VE STILL GOT A MONARCHY TO RUN!
LET THE ROYAL DECREE GO FORTH. FROM THIS DAY FORWARD ALL MY SUBJECTS WILL PERFORM ALL REQUIRED PREVENTIVE MAINTENANCE.
OR I PROMISE YOU, HEADS WILL ROLL!
Epilogue: But it was too late for PM. The monarchy fell!

Pressure Packed Damage

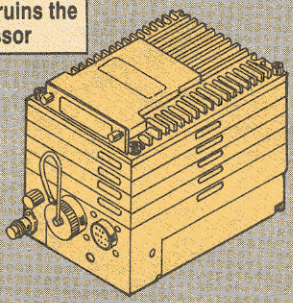


High-pressure water wreaks havoc on some equipment.

Here are two recent examples:

While washing the Apache, high pressure water is often sprayed into the tail rotor shaft bearing compartment. That compartment holds the processor for the radar signal detecting set, AN/APR-39A(V)1. That high pressure forces water inside the processor.

Water ruins the processor



If that processor is operated when it is wet inside, you can flush 16 grand. That's how much money it will take to replace it.

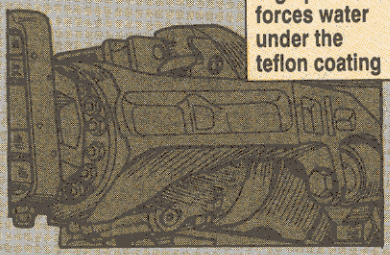
Before beginning high-pressure cleaning, the processor must be removed and the wiring and other components covered. If you think the processor has gotten wet inside, you must let it dry before you operate it.

The Black Hawk's spindle assembly, NSN 1615-01-209-1759, is also a victim of high-pressure wash.

High pressure forces cleaning compounds or water under the teflon coating around the spindle area of the hub assembly of the main rotor head. This causes the teflon coating on the sleeve bearing to become loose and bind on the spindle liner.

The only way to solve this problem is to prevent it. Don't high-pressure wash around the spindle area.

High pressure forces water under the teflon coating



UH-60A Black Hawk . . .

Righting Wrong Rotation

If the lower step on your Black Hawk's tail rotor pylon rotates forward under pressure, you could take a header.

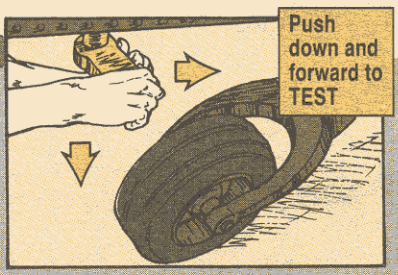
Also, when the step rotates forward instead of aft, the spring attached to the step tube inside the pylon gets mashed against the tail rotor cable guard. Then the guard mashes against the tail rotor control cable. Soon, the guard frays the cable.

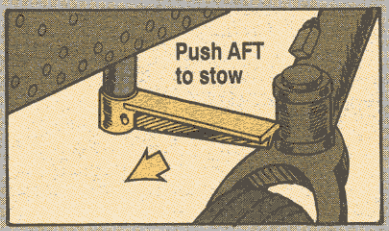
Keeping the step from rotating forward is a tough job. Normal use alone puts a whole lot of weight pressing down and back on the step. The best you can do is to check it and keep an eye out for trouble.

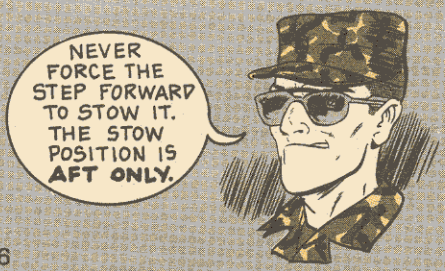
Check the cable to make sure it isn't fraying.

If the detent pin on the step tube inside the pylon is worn to the point it won't keep the step from being forced forward, get the tube assembly replaced.

Test the pin by pulling the step out and locking it in position. Then, with both hands, push down and toward the nose of the aircraft. If it holds, it's okay. If it slips forward, replace it.



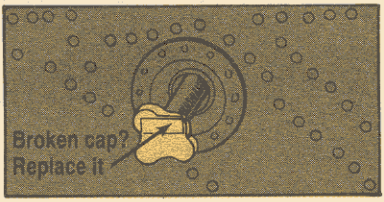




Give Pylon Steps a New Cap

Cracked skulls and busted arms are awaiting mechanics who don't replace the caps on their Black Hawk's pylon steps.

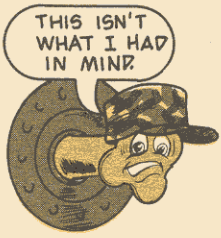
Those caps serve as a guard to keep your foot from slipping off the step, but they wear out and break.



That means you could be heading for a fall or a bad cut on a ragged, busted cap edge.

Some of you are smoothing out the edge with a file. That solves the cut problem, but increases the likelihood of a fall.

The only good solution is to replace the cap. You'll find it as Item 8 in Figure 190 of TM 55-1520-237-23P. There's no stock number, so order by CAGE 78286 and part number 70207-06051-109 on a DD Form 1348-6 from RIC B17. It's not a stocked item, so it will take time to get it. In the meantime, plant your foot firmly and step slowly!



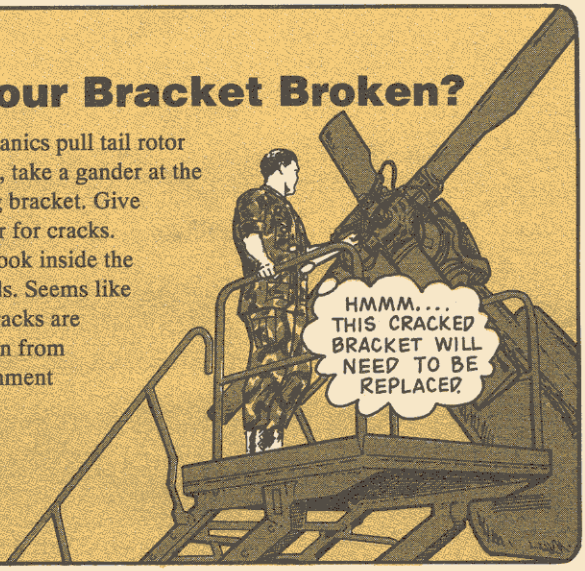
UH-60A . . .

Is Your Bracket Broken?

When you mechanics pull tail rotor blade maintenance, take a gander at the de-ice cannon plug bracket. Give it a good once-over for cracks.

Make sure you look inside the bracket at the bends. Seems like more than a few cracks are showing up that run from the outboard attachment hole toward the inboard edge.

If the bracket is cracked, get it replaced.

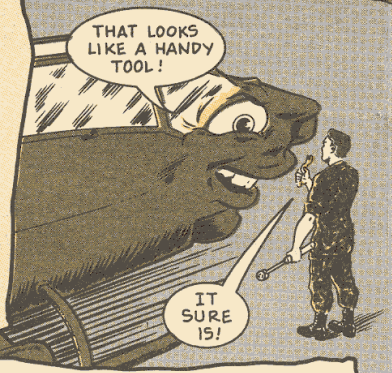


Tool to Install Bolts

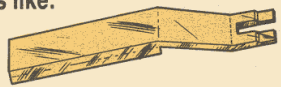
Dear Windy,

While torquing the top of the front and rear main transmission mount bolts, the bolts spin. None of the manuals show how to hold the bottom of the bolts. I've seen several things tried, but often mechanics cause damage which ruins the pylon damper assembly, NSN 1615-00-070-1130.

I've made a tool that solves the problem by holding the damper.

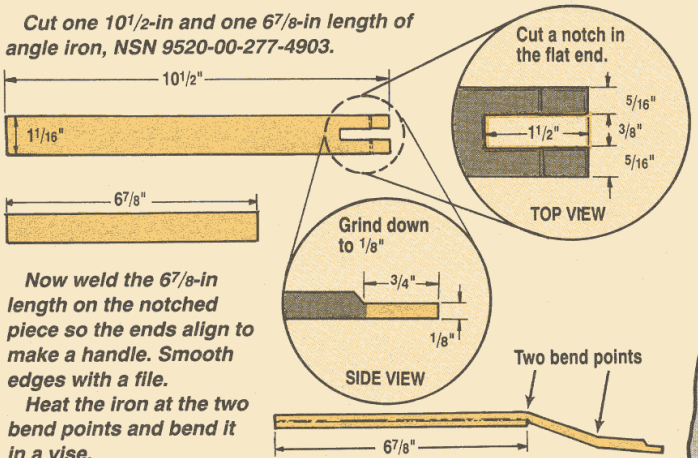


Here's what it looks like:



Here's how to make it:

Cut one 10 1/2-in and one 6 7/8-in length of angle iron, NSN 9520-00-277-4903.

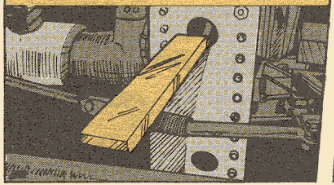


Now weld the 6 7/8-in length on the notched piece so the ends align to make a handle. Smooth edges with a file.

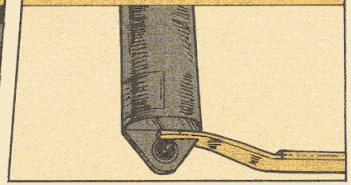
Heat the iron at the two bend points and bend it in a vise.

Here's how to use the tool:

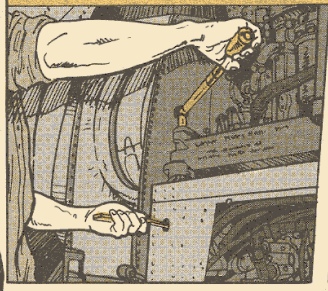
1. Insert the tool through the access hole and slip it on the damper



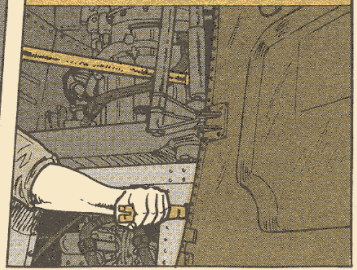
2. The tool fits around the damper like so



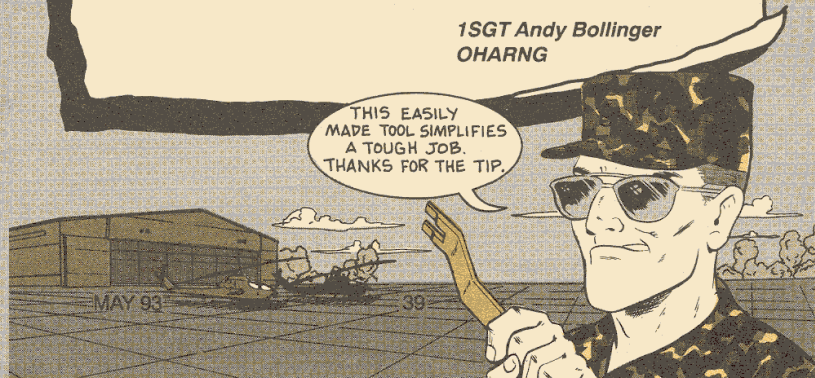
3. Hold the damper through the right hand rear access hole while torquing the upper retaining bolt



4. Use the rectangular end of the tool in the forward right hand access hole to hold the clevis end of the mount bolt



1SGT Andy Bollinger
OHARNG



The Confused Coupling Caper

NSN Update

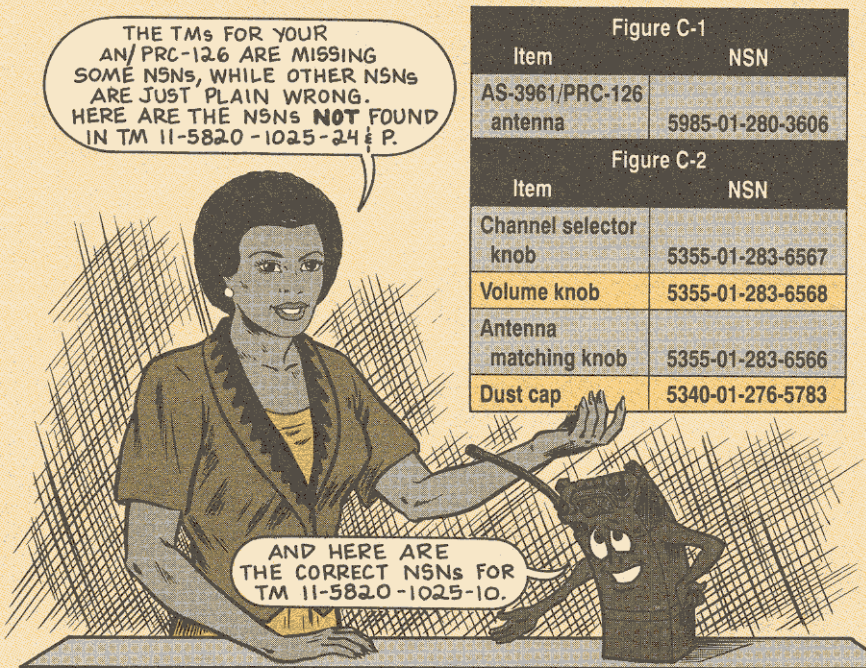


Figure C-1	
Item	NSN
AS-3961/PRC-126 antenna	5985-01-280-3606

Figure C-2	
Item	NSN
Channel selector knob	5355-01-283-6567
Volume knob	5355-01-283-6568
Antenna matching knob	5355-01-283-6566
Dust cap	5340-01-276-5783

Page	Illus No.	NSN	Item
B-4	1	5985-01-254-9576	AS-4094/PRC-126 Short antenna
B-4	2	5985-01-280-3606	AS-3961/PRC-126 Long antenna (This is the correct long antenna to use with AN/PRC-126.)
B-4	3	5820-01-255-4069	Battery housing
B-4	4	5820-01-255-4068	Carrying pouch
B-7	1	6135-01-088-2708	BA-5588/U battery
D-3	1	6135-01-088-2708	BA-5588/U battery
D-3	2	6135-01-094-6536	BA-1588/U battery

Electrical Connectors . . .

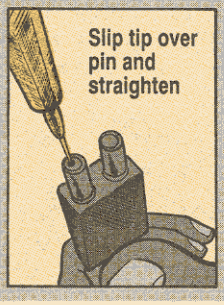
Keep Pins on the Straight and Narrow

It's so-o-o-o easy to bend pins when an electrical connector is lined up wrong. But it's darn near impossible to get them straight again.

In the past, straightening bent pins meant delicate "surgery" with a not-so-delicate pair of needlenose pliers. The slightest slip either broke the pin or bent others around it. Then you had to replace the connector.

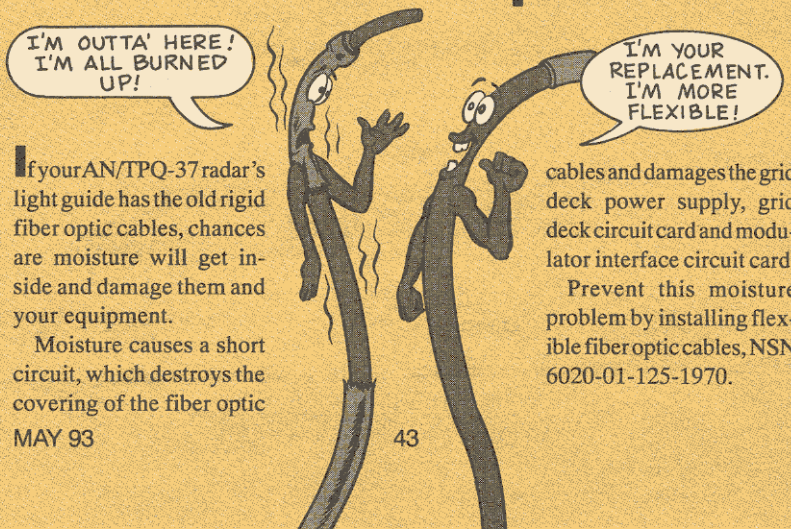
Put those pliers away and use contact removing tool kit, NSN 5120-00-765-3688, instead. The kit's designed to remove contact pins, but it's great for straightening them, too.

The kit comes with four tips to adjust different pin sizes. Just slip the right tip over the pin and carefully bend it back into shape. Appendix A of CTA 50-970 is your authority for ordering.



AN/TPQ-37 Firefinder Radar System . . .

Get Newer Fiber Optic Cables

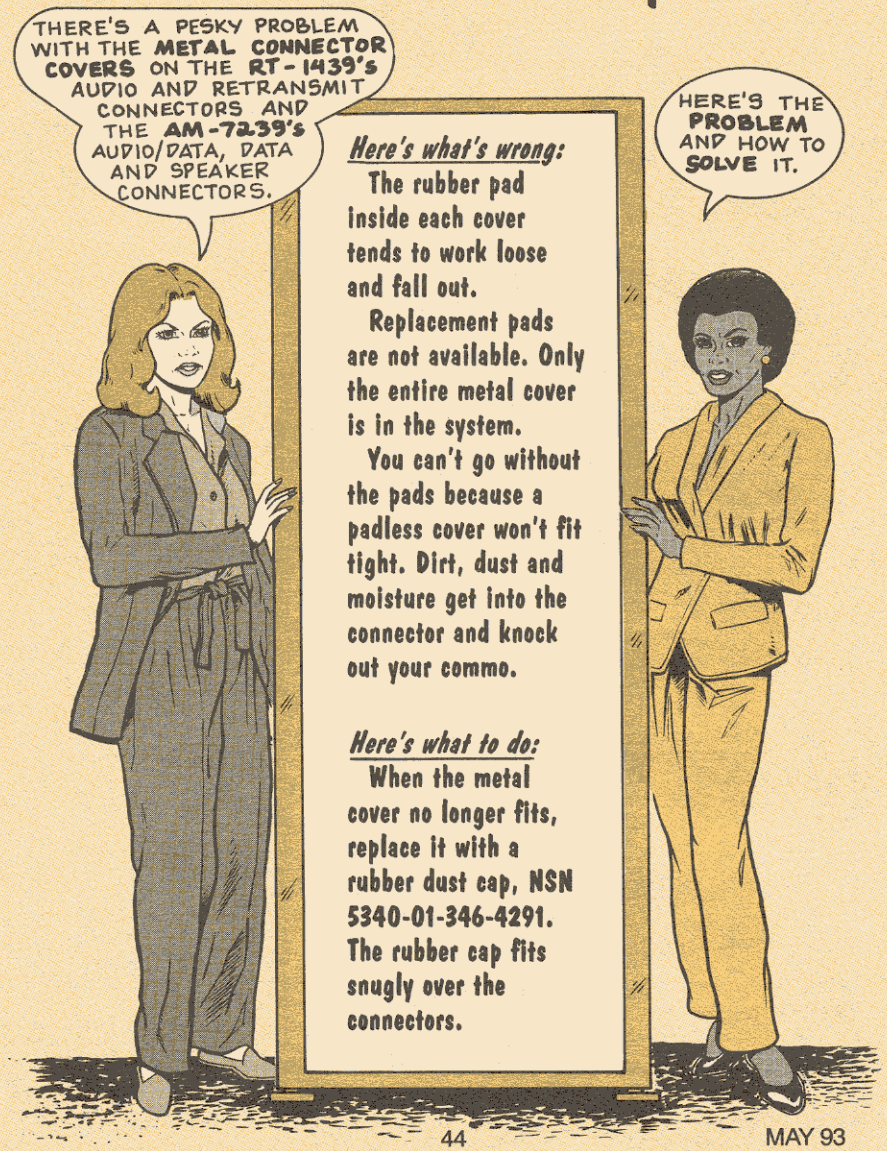


If your AN/TPQ-37 radar's light guide has the old rigid fiber optic cables, chances are moisture will get inside and damage them and your equipment.

Moisture causes a short circuit, which destroys the covering of the fiber optic cables and damages the grid deck power supply, grid deck circuit card and modulator interface circuit card.

Prevent this moisture problem by installing flexible fiber optic cables, NSN 6020-01-125-1970.

A Better Cover-up



Here's what's wrong:

The rubber pad inside each cover tends to work loose and fall out.

Replacement pads are not available. Only the entire metal cover is in the system.

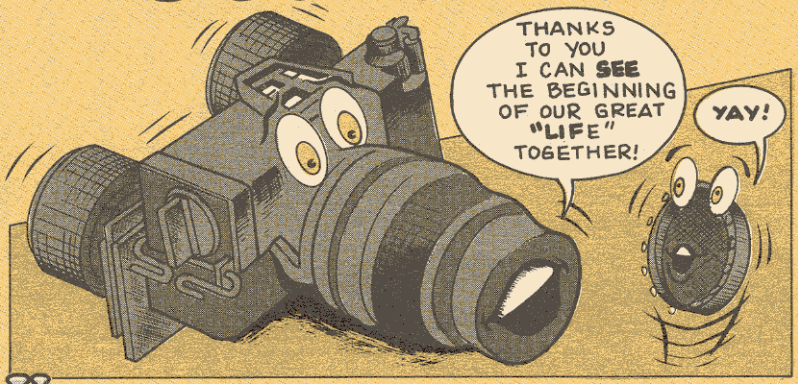
You can't go without the pads because a padless cover won't fit tight. Dirt, dust and moisture get into the connector and knock out your commo.

Here's what to do:

When the metal cover no longer fits, replace it with a rubber dust cap, NSN 5340-01-346-4291. The rubber cap fits snugly over the connectors.

AN/PVS-7A, -7B . . .

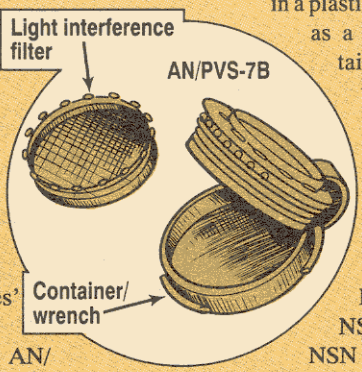
Get a LIF



Use a light interference filter (LIF) to protect your AN/PVS-7A and AN/PVS-7B night vision goggles from laser range finder damage.

You'll find the threaded filter tucked in the inside pocket of the goggles' carrying case.

The filter for the AN/PVS-7A comes in a plain plastic container for safe storage. The filter screws on by hand to the end of the objective lens housing.



The filter for the AN/PVS-7B comes in a plastic container that doubles as a wrench. Use the container/wrench to tighten the filter.

Complete instructions for installing the filter are included with the item.

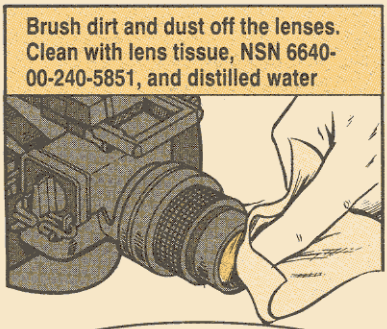
If you need a replacement filter for your AN/PVS-7A, order it with NSN 6650-01-321-2905. NSN 6650-01-328-5134 gets a LIF for your AN/PVS-7B. Appendix A of CTA 50-970 is your authority to order. The -7A and -7B filters are not interchangeable.

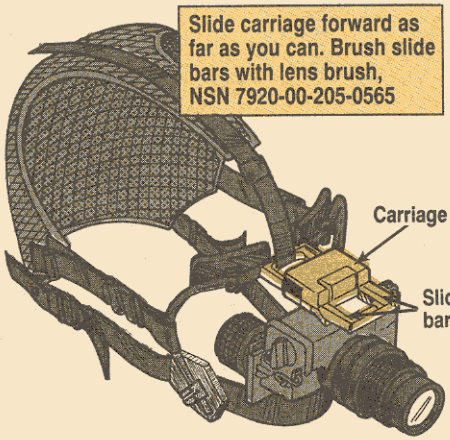
AB-1339/G Antenna Grease NSN

There's a better silicone grease than the one listed in Appendix E of TM 11-5985-384-12&P. Use NSN 9150-01-197-7693 to get a 14-oz can of the better lube. Make a note until your TM is updated.

Clean 'em to See 'em

Turn the focus rings until the objective and eyepiece lens assemblies are completely extended. Using the brush, sweep the exposed plastic clean.





Shake out sand and dirt. Wash the case by hand in a bucket of warm water and mild detergent, NSN 7930-00-929-1221. Rinse it in clean, warm water. Hang the case up inside or outside in the shade so it can drip-dry. Never machine dry, and keep it away from direct sunlight, heat or open flame.

AN/PSM-13 Test Set . . .

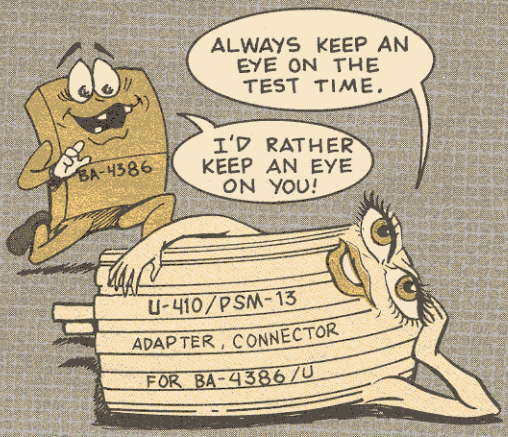
Not Much Time

Timing is everything when you test the BA-4386 battery on the AN/PSM-13 test set.

It takes just 15 seconds to tell if your battery's good. Test for 30 seconds or more and you'll burn up the test set.

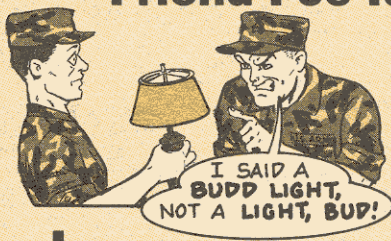
For an accurate reading on the BA-4386, use the U-410 adapter, NSN 5935-01-083-0688.

Never use the AN/PSM-13 tester to test the BA-5598 lithium battery used in the AN/PRC-77 and -25 radios in cold weather operations. The lithium battery might explode.



Budd Light . . .

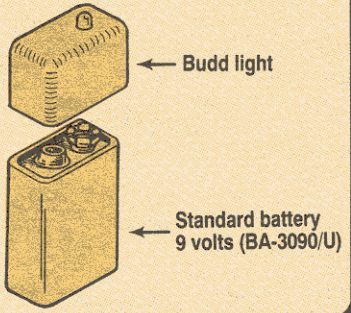
Friend-Foe Identification



In the dust and smoke and sometimes darkness of the battlefield, it's hard to tell friend from foe. Get the Budd light, NSN 6240-01-275-8080, to help identify friendly forces in combat.

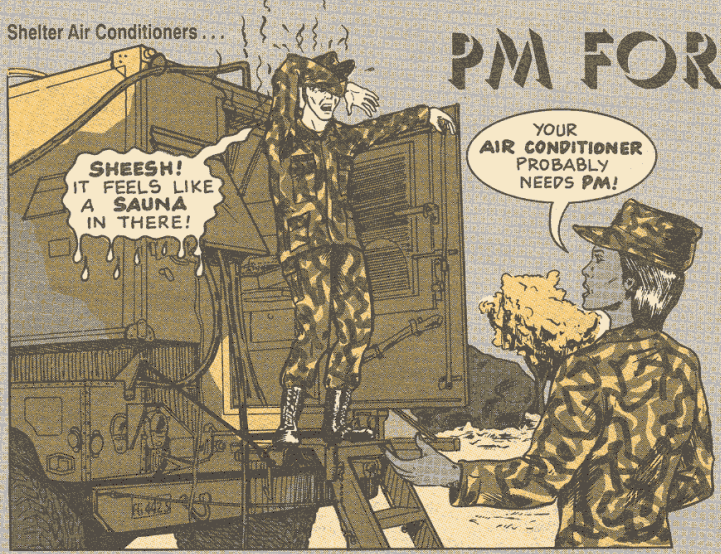
The Budd light mounts on combat or tactical support vehicles. It emits a constant infrared beam that can be seen only with night vision devices. It operates on a BA-3090/U battery.

The light can also be used to mark aircraft landing zones, drop zones, minefields, obstacles and vehicular routes.



Shelter Air Conditioners . . .

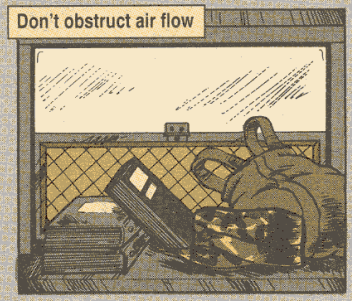
PM FOR STAYING COOL



Operators, without a little air conditioner PM, your shelter can turn into a hothouse. Besides doing your Before-Operations checks like it says in your TM, here are some other ways to keep your cool:

INSIDE THE SHELTER

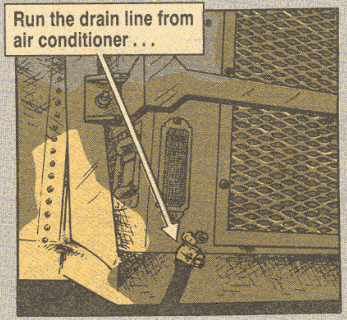
If the filter's dirty, it'll restrict airflow. Rinse it in water and let it air dry before you reinstall it.



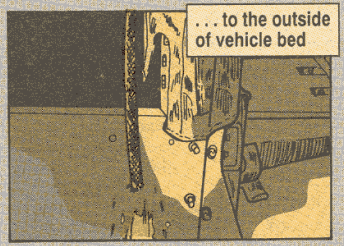
Keep clothing and other gear away from the front of the air conditioning vent. They block the air.

OUTSIDE THE SHELTER

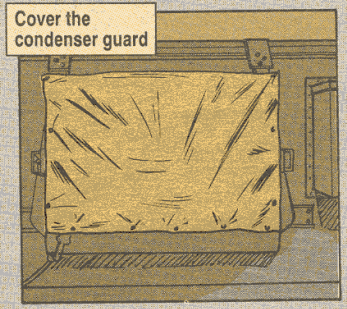
Look to make sure a ground wire is installed between the air conditioner and a ground rod or the vehicle chassis. Tighten ground connections if they appear loose. If there's no ground wire, have your unit install one.



Connect the drain line to the air conditioner so that condensation will drain away. Thread the line down through the shelter's retaining rings and off the side of the vehicle. Keep the line out of the vehicle's bed so that water won't collect there.

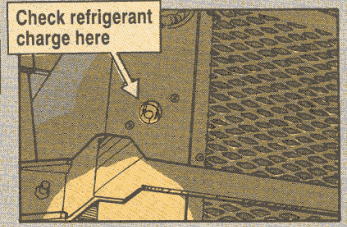


Roll the canvas cover down over the condenser guard when you're not running the air conditioner. Snap it in place.



The cover helps keep sand and dirt out of internal parts.

Look into the liquid sight indicator to see if there's enough refrigerant in the cooling system. Clear liquid indicates a good refrigerant charge. Yellow means there's moisture in the system. A milky liquid or bubbles mean a low refrigerant charge.



If you find moisture or a low charge, report it to your support.

Shelter Air Conditioners . . .

The Cold Facts

Mechanics, when you pull scheduled maintenance on your air conditioner, be alert for these signs of trouble:

LISTEN

Is the compressor short-cycling (constantly going on and off)? Leaking refrigerant gas could be the cause.

LOOK

Frost on the components? Again, it's a sign of leaking gas.

FEEL

Hold your hand close to the compressor. Does it feel hot? The refrigerant may be overcharged, and that means added pressure that could blow a line.

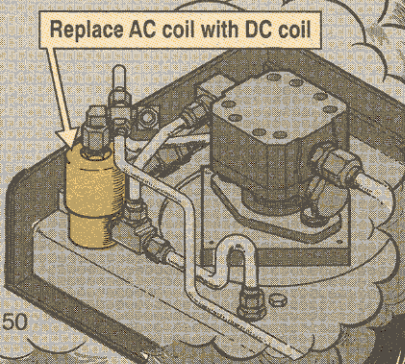
If you find any of these problems, report them to DS.

M157 Smoke Generator . . .

AC to DC

If the M157's solenoid valve (Item 20, Fig F-3, TM 3-1040-279-12&P) goes out, you've got two problems: First, your smoke generator won't work; second, the TM says the solenoid's NSN is *4810-01-233-8961*, but that brings an *AC solenoid valve*, not the DC you need.

Solution: Order a DC coil, NSN *5950-00-435-4032*, and replace the solenoid valve's AC coil. Now you've got a solenoid valve that will work.



IM-93/UD Dosimeter . . .

Cap It

If the IM-93's charging end is left open to dirt and moisture, you may not know if you've been exposed to radiation.

That's why it's important to keep the charging end capped any time it's not being charged.

If you lose the cap in the field, seal the charging end with clear plastic tape. Anchor the tape by wrapping it several times around the IM-93 barrel.

Replace the cap with a commo binding post boot, NSN 5999-00-869-6263. Your commo folks should have plenty. There is no NSN for the cap. The boot must be removed for reading or charging the dosimeter.

If, despite your best efforts, dirt or moisture does get in the charging end, clean it using the procedures in TM 11-6665-2140-10. Blowing in the charging end causes bad readings. Cleaning it with something sharp damages the charging contact.

M12A1, M17 Decons . . .

Finding A Shower

If you're stuck out in the boondocks and you would give a week's pay for a shower, help is as close as your friendly chemical company.

Both the M12A1 and M17 decons have shower attachments . . . with hot water. Most chemical companies have either the M12A1 or M17 and can give your unit a good wash with little trouble.

Clean for Good Breath

If you don't clean your M17 mask, you soon could suffer bad breath—the kind you get from lack of oxygen. If your mask is not cleaned thoroughly after use, dirt and grease do a number on inlet valves and the faceblank. The mask will be hard to breathe through, a mess to wear when you need it and eventually ruined by dry rot.

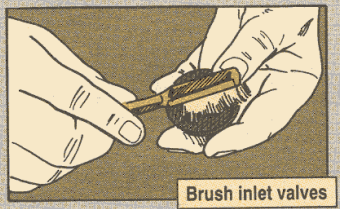
Paragraph 3-5 in TM 3-4240-279-10 gives the basics on cleaning and Para 2-16 in TM 3-4240-279-20&P the basics on sanitizing. (Sanitizing's done under the supervision of your NBC NCO.)

Here are some points to make the job easier:

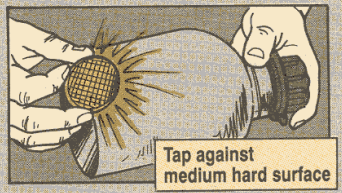
Use only cheesecloth to clean. Paper can tear off in the valves and clog them. Coarse cloth scratches the eyelenses and makes it hard to see.

Alcohol and cheesecloth are the best way to get rid of grease and greasepaint. Dip the cheesecloth in alcohol, NSN 6505-00-655-8366, and rub it on the grease spots. Wipe off the alcohol with a dry, clean cheesecloth.

Use the small brush in your cleaning kit to clean the inlet valve assemblies. Lightly brush the valves' mesh. Hard brushing tears off the mesh.

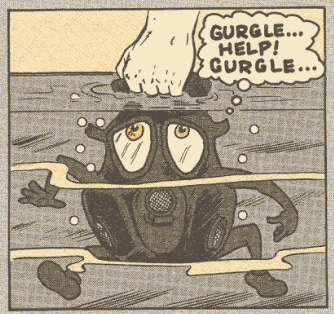


Never bang the valves against a hard object to shake loose dust and sand. That bends the sides of the valves. Remove the disks and tap the disk side of the valve against a medium-hard surface like your canteen. Brush away any resulting gunk with your fingers.



Wipe dirt from the mask with a moist, clean cheesecloth. When the mask is clean, dry it with a dry cheesecloth. Keep water away from the filter elements. Water ruins them.

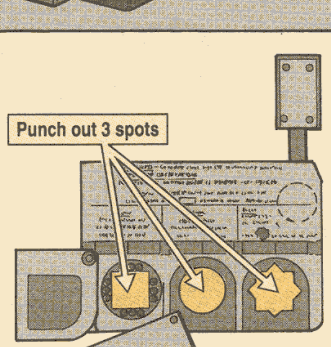
If you sanitize the mask, rinse it for two to three minutes twice after washing and again after sanitizing. That's the only way to totally remove the cleaning and sanitizing agents.



Never turn the mask inside-out for cleaning. That can pull the nose cup loose and ruin the mask.

Detector Disposal . . . the Right Way

1. Get two drum containers, one for the samplers and one for M8 paper. A 7-gal container comes with NSN 8110-00-254-5714.
2. Open the kits and remove the M8 paper pads. M8 paper is not hazardous waste. You can keep the M8 paper for unit use or seal it in a drum and turn it in to your DRMO as excess under the paper's NSN of 6665-00-050-8529.
3. Remove the samplers. Open and punch out the three test paper spots on each sampler. Tear or cut up the spots. Throw the spots, the foil covers and instruction cards in the trash.



Sign the statement and have it witnessed by your CO.

Put a tag on each drum with this info:

- Number of samplers
- "Each sampler contains 2.25 milligrams of mercuric cyanide."

Report the drum to your DRMO as hazardous waste, using codes D009, D001 and P030.

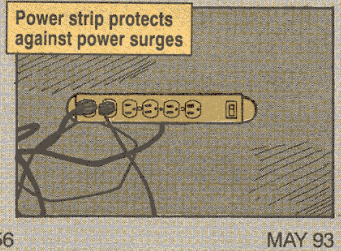
Hold the drum until your DRMO picks it up.

TACCS Collection

You depend on your AN/TYQ-33(V) Tactical Army Combat Computer System (TACCS) to process supply and maintenance data. And your TACCS depends on you for regular doses of PM.

Power Strip Protection

Protect your TACCS by using a multi-outlet power strip with a surge protector. Your Logistics Automation System Support Office can help you identify a power strip to use with your system.



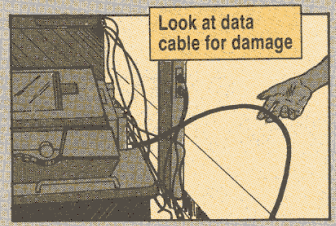
Printer Problems

Stumped by a problem with your TACCS printer at either a master or remote workstation? Before you send the printer to DS for repair, make sure you do these tests.

Troubleshoot the printer using the fault check list in Table 3-3 of TM 11-7010-213-12. If you find the fault, try to correct it with the solutions in the table.

If you find no fault, run the printer self-test. If the fault appears during the self-test, the printer is bad. Turn it in for repair.

But if the fault does not appear during the self-test, look at the data cable for damage. That's the cable between the logic module or remote logic module and the printer. Make sure the cable connections are tight at both ends. Replace the cable if it has cracks or breaks, or if the connector pins are bent, loose or corroded.

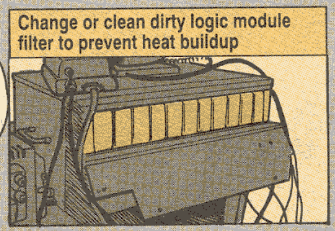


Cable not damaged? Make sure the option switches are set correctly. Para 3-8.1.1 tells you how.

Turn in the printer for repair if these steps don't fix the problem.

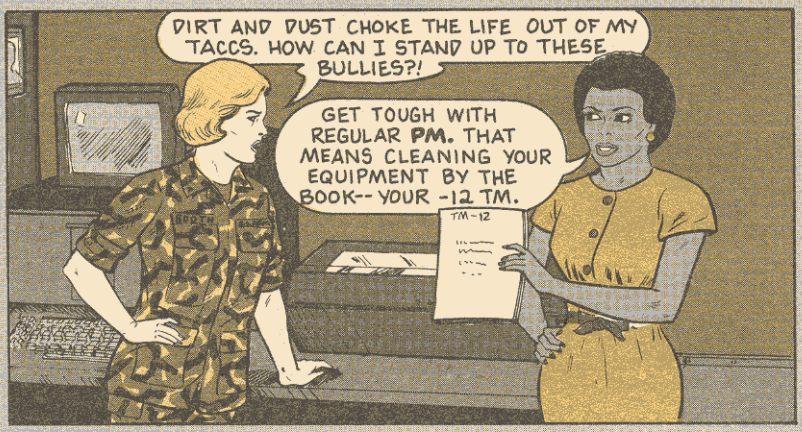
Filter Fix

Your TACCS needs to breathe clean air to do its job. Air filters in the printer, logic module and remote logic module must be free of dirt and dust.

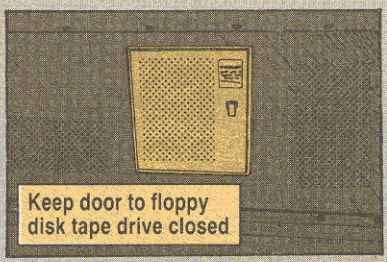


If you don't have a replacement filter, rinse out a dirty one with warm water. Air dry the filter thoroughly before putting it back in the equipment.

P.S. MORE



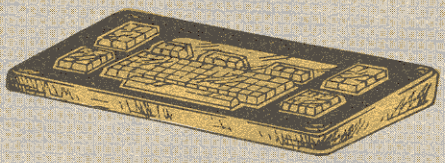
Close the door to the floppy disk and tape drives. Dirt on the heads of these drives will damage the floppy or tape. Worse yet, dirt prevents the computer from reading your files.



Get the floppy disk drive cleaning kit with NSN 7045-01-154-1315 and the tape drive cleaning kit with NSN 7035-00-348-1864.

Keep the dust cover on the KY-903 keyboard. It protects the keyboard from dust and dirt damage.

Keep dust cover on keyboard



Never press the keys with a pencil or sharp object. You'll poke holes in the cover and let in dust.

If the cover's worn out and needs to be replaced, put the keyboard and its parts in the transit case and turn them over to DS for exchange. Put all floppies in a storage box. Here's how to order storage boxes:

Storage box NSN	Number of disks box holds
7520-01-239-1504	100
7045-01-192-7002*	80
7045-01-179-2980	50
7045-01-196-7227 (box with key lock)	50
7045-01-195-5260*	25
7045-01-218-0494*	10

**Order on DD 1348-6 and put "NSN not on AMDF" in REMARKS block.*

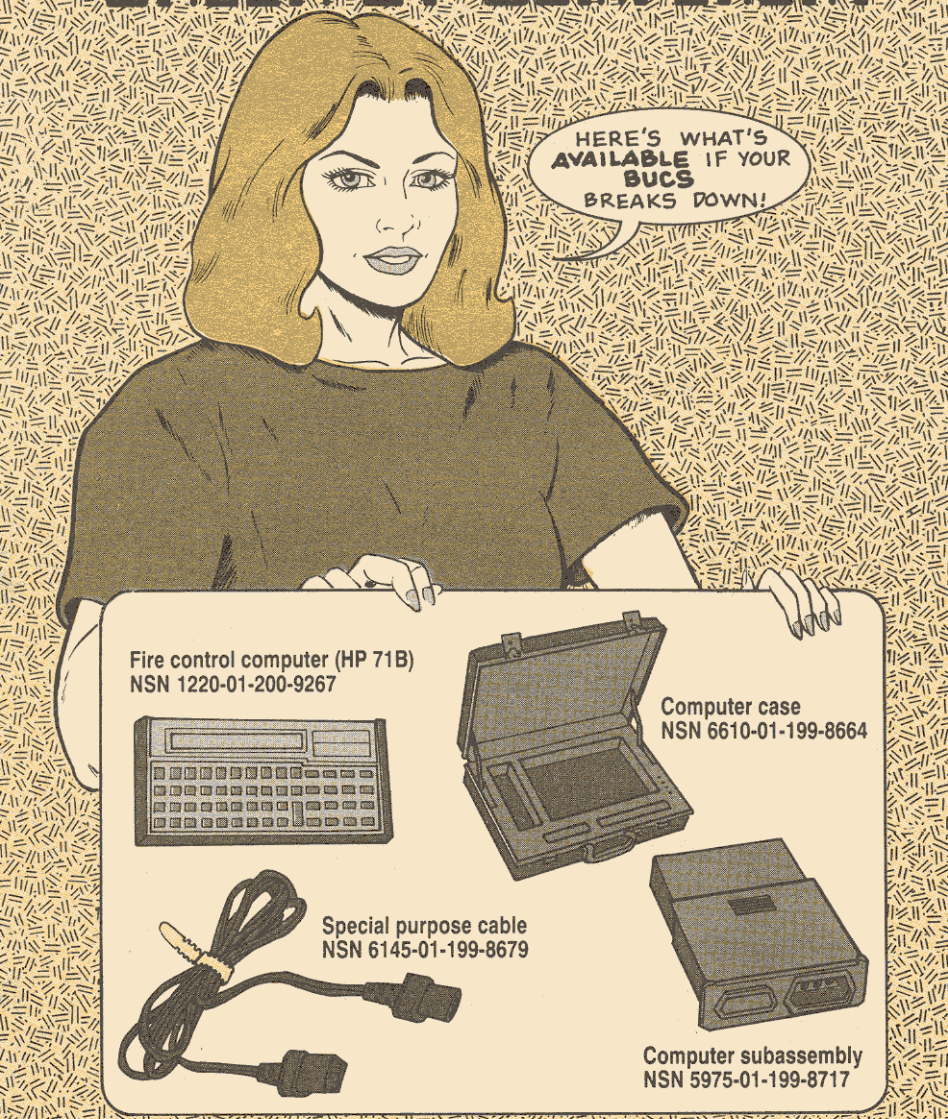
Save the storage boxes the tape cartridges come in. Keep the cartridges in their boxes when not in use.

Disk NSN

Use only high quality double sided, high density, 5 1/4-in floppy disks, NSN 7045-01-173-4574. If you order another type of disk, it may not work in TACCS.

BUCS . . .

Order by Component



Fire control computer (HP 71B)
NSN 1220-01-200-9267

Computer case
NSN 6610-01-199-8664

Special purpose cable
NSN 6145-01-199-8679

Computer subassembly
NSN 5975-01-199-8717

Operator Needs -10 TM

The operator of a high density item such as a rifle or gas mask needs a personal copy of the -10 TM in order to perform PMCS. Some units have the NBC NCO or armorer keep the TMs with the equipment so the TM can be issued with the item. On Page 30 of PS 482, we might have led you to believe that only the maintainer needs a copy of the operator's TM.

M24/M25A1 Mask Inserts

There are two types of M24/M25A1 mask cannisters. Some require filter inserts, some don't. The ones that don't need inserts say so on the cannister. All others should have a black line painted down the side. The line means the insert's been installed. No line? Get your NBC NCO to install insert, NSN 4240-01-177-2675, and paint a black line on the cannister.

M1009 Exhaust Pipes

Early and late model M1009s now use the same exhaust pipes. Get the right- side pipe with NSN 2990-01-147-4290 and the left with NSN 2990-01-231-2938. Make a note until TM 9-2320-289-20P is updated.

Flashlight Bulbs/Filters

Here are some hard-to-find NSNs for flashlight bulbs:

Bulb	NSN 6240-00-
2-cell	155-8675
2-cell	984-1887
3-cell	155-7915
4-cell	299-6767
*5-cell	940-7085
*6-cell	940-7084

*The NSN is not on the AMDF. Order the bulb on a DD Form 1348-6 using the NSN and state in the REMARKS column that the "NSN is not on the AMDF."

Here are the filter NSNs for your MX-991, -992 or -212 flashlights:

Filter	NSN 6230-00-
Red	111-0190
Opaque (blackout)	128-2464
Diffusion	356-4825
Green	504-8341
Amber	504-8342

The blue filter is no longer available.

HMMWV Wiper Motor Bolt

There is no wrench in your tool sets to remove the bolts holding the windshield wiper motor on your Humvee--so use locking pliers. Then replace the odd bolt with a hex-head cap screw, NSN 5305-00-071-2505.

Distribution: To be distributed in accordance with DA Form 12-34-E, Block 0312, for TB-43-Series

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

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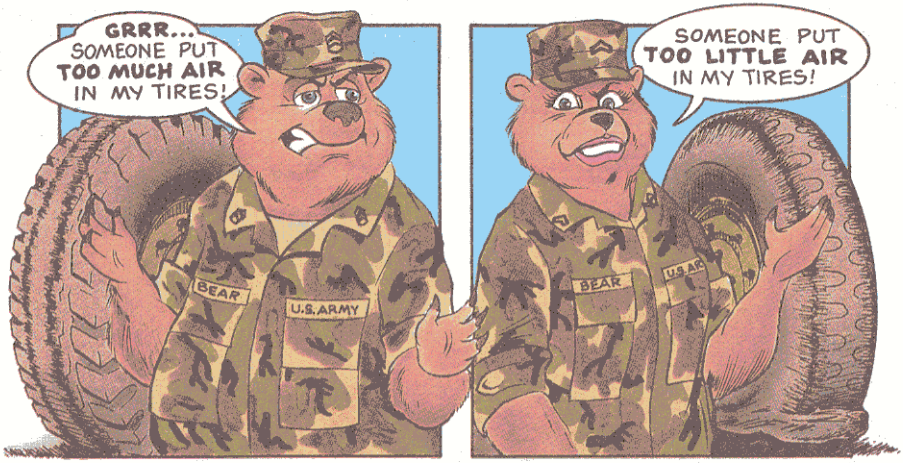

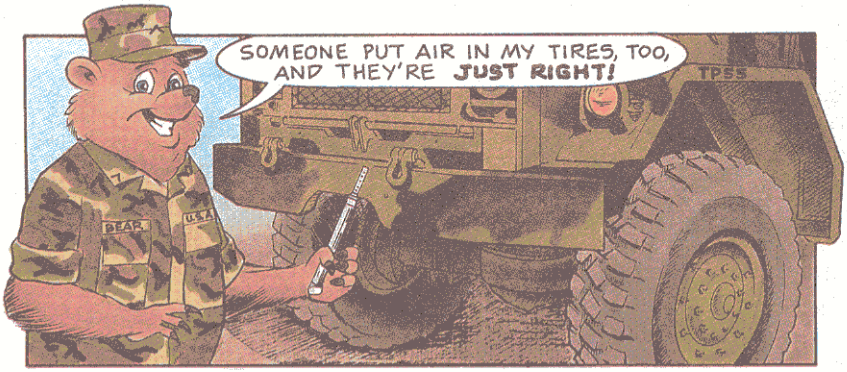

EVERY DRIVER SHOULD HAVE A TIRE GAUGE, NSN 4910-00-204-3170.

SEE YOUR VEHICLE'S –10 TM FOR PROPER AIR PRESSURE

PIN: 064836-000