

Issue 612

PS

November
2003

THE
PREVENTIVE
MAINTENANCE
MONTHLY

TB 43-PS-612

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Public Release;
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Unlimited

GOOD THING
NOBODY
EVER TAUGHT
HIM ABOUT
GUN PM!

WHO'S THE
TURKEY NOW,
PILGRIM?

KLICK

BLIP

Will poor blunderbuss
PM **end** the First
Thanksgiving *before*
it can even begin!?
Find out on page 27.

(JOE
KUBER)



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All PM Great and Small

LITTLE GUYS DESERVE CARE, TOO!



We all know about preventive maintenance—performing checks and services on equipment, finding, fixing or reporting small problems before they become major headaches. Every time you replace a dirty air filter, or clean a rifle bolt and bore, or inspect SINGGARS connectors and cables, you're doing PM. You're making sure a vehicle rolls, a rifle fires, and a radio communicates.

It's only natural that the most attention, time and sweat is focused on PM for major systems: trucks, tanks, helicopters, missiles, small arms, commo and construction equipment.

But there's another side to PM, one we tend to overlook—preventive maintenance for troop support equipment, the small gear we're apt to neglect.

It makes no difference if it's tents, BDUs, ALICE, helmets, cots, first aid kits, flashlights, water cans or a hundred other common items. They all support you and your mission on the battlefield. If this gear suffers from lack of PM, you and your mission suffer as well.

So, next time you think about preventive maintenance, think small. Think troop support. Remember to wash ALICE and replace worn or broken parts. Change the air filter and the in-tank fuel filter in a modern burner unit. Inventory a first aid kit and replace items that have passed their expiration dates. Clean and dry the inside of a water can so bacteria don't breed and foul the water. While you're at it, order extra batteries and bulbs for flashlights.

PRACTICE PREVENTIVE MAINTENANCE ON ALL EQUIPMENT, GREAT AND SMALL.

TANK OR TENT, COMMO OR CANTEEN, THE SAME PM PRINCIPLES APPLY.



THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-612, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user. Masculine pronouns may refer to both genders.

ISSUE 612 NOVEMBER 2003



WHEELED VEHICLES

Machine Gun Ring Mounts for Trucks
HMMWV Oil Cooler Fins Protection
HMMWV Heater Motor, Washer Bottle Hose
M1000 HET Semitrailer Brakes



AVIATION

OH-58D M296 Machine Gun Cleaning
UH-60A/L Blade Boot Tool Modification
UH-60 Cockpit Door Handle Abuse
AH-64A/D Hoses and Hydraulic Lines
AH-64 Transmission Oil Filler Cup Drain Hole



COMBAT VEHICLES

New BDAR Kits Available
Stryker Cargo Nets
M1 Tanks Ammo Loading
M1 Tanks TMs
M109 SP Howitzer Air Cleaner
Personnel Heaters Remote Diagnostic Display



COMMUNICATIONS

Frequency Hopping Multiplexer
PLGR...the Next Generation
Antenna Tiedowns
SINGGARS Antenna Tip Caps
Night Vision Goggles Front Bracket Assembly
AN/CYZ-10 Updated Version
AB-1339/G Antenna Winder



MISSILES

Avenger Fuel and Oil Leaks
ITAS Battery Power Source Bumpers
Sentinel Radar System Painting
TOW 2 Missile System Transportation Tips



COMBAT ENGINEERING

M-Gator Driving Tips
HYEX Oil Level Reading
HYEX Fuel/Water Separator Draining
SEE Packaging and Cleaning Info
M9 ACE Steering Cautions



SMALL ARMS

M240 Cleaning and Lubing in the Desert



SOLDIER SUPPORT

M24 Binocular Basic Care
Combat Lifesaver Aid Bag



NBC

M157A2, M56/58 Smoke Generators Cold PM
M157A2 Smoke Generator Improvement Ideas



LOGISTICS MANAGEMENT

ULLS-S4 PBUSE Conversions
Supply Discrepancies Remedy

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

By order of the Secretary of the Army:

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0324710

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Or e-mail to:

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half.mast@us.army.mil

Internet address:

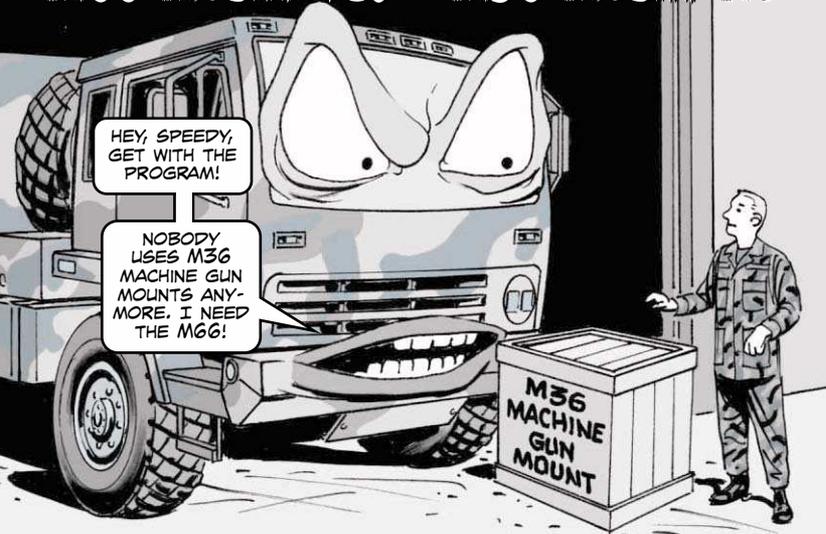
http://www.logsa.army.mil/psmag/pshome.html

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Trucks...

M66 MOUNT YES == M36 MOUNT NO



If any of your trucks have the M36 machine gun ring mount, they shouldn't have. The M36 is history—it's discontinued and should be turned in to your local demil facilities or reclassified as an M66 ring mount, depending on which version of the M36 you have.

If your M36s are NSN 1005-01-099-5205 or NSN 1005-01-099-5206, they should be reclassified on your property book as M66 ring mounts under LIN M74364. All other M36s should be turned in.

All trucks except the M939 should be using the M66 ring mount, NSN 1005-00-701-2810.

If you're unsure how to mount the M66, check your vehicles' -20P TMs. They list the parts and kits required for mounting the M66. Mounting instructions come with the kits.



HERE ARE THE KITS YOUR DIRECT SUPPORT NEEDS TO MOUNT THE M66 ON THE MOST COMMON LARGE TRUCKS...



M809-series 5-ton:
mounting kit, NSN 1005-01-226-4589, and cab reinforcement kit, NSN 2590-01-322-2694. See Fig 513 in TM 9-2320-260-34P-2 for info on the M809's three-post mount.



FMTV:
mounting and reinforcement kit, NSN 1005-01-381-5431

M35-series 2 1/2-ton:
mounting kit, NSN 1005-01-226-4589, is used on both the M35A2 and M35A3.



The cab reinforcement kit, NSN 2590-01-322-2694, is needed for the M35A2 only. The M35A3 already has cab reinforcement installed. See Fig 306 in TM 9-2320-361-34P for info on the three-post mount kit and Fig 318 for info on the cab reinforcement kit.

If you don't install the reinforcement kit when you install the M66, the mount's weight cracks the cab. The only exceptions are the HEMTT and M35A3, which don't need the reinforcement kit.



M977-series HEMTT:
mounting kit, NSN 2590-01-220-6377



M939 Truck



The M939-series 5-ton does **not** use the M66 ring mount. If your MTOE authorizes the M66 for the M939, LIN M74364, it's wrong. The M66 will damage the cab structure of the M939. The M939 uses the machine gun mount kit, NSN 1005-01-432-3339, a four-post lightweight weapon station. To mount the lightweight weapon station, you **must** install the cab reinforcement kit, NSN 2590-01-436-9144.

The only mounts that can be used with the **lightweight** weapon station are the MK64 Mod 9, NSN 1010-01-412-3159, or the MK93 Mod 1, NSN 1005-01-383-2757. The only weapons safety-certified to date for the M939 are the MK 19, M2, and M60 machine guns.

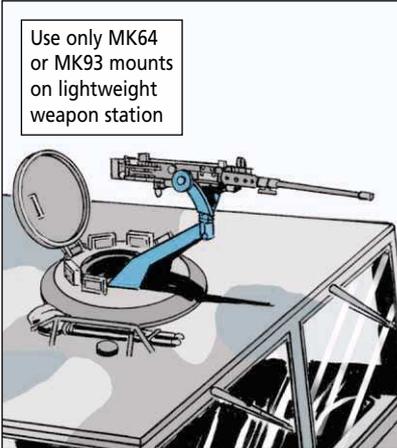
It's important to use a catch bag with the mounts to prevent spent casings and links from falling into the cab.

See Fig 620 in TM 9-2320-272-24P for info on the M939 truck ring mount.

The MK64 mount is covered by TM 9-1010-231-23&P and MK93 Mod 1 by TM 9-1005-245-13&P.

The M66 mount is covered by TM 9-1005-245-13&P, which contains M66 part replacements.

After any of the kits are installed, unit-level maintenance can replace most parts by using the NSNs in the -20Ps.



HMMWV...

SHIELD FINS FROM DAMAGE

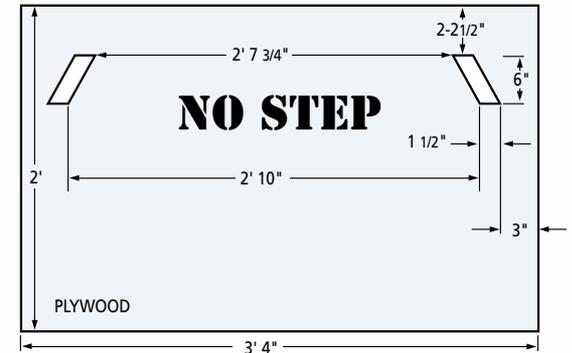


Nice, straight fins are what your HMMWV needs for the oil cooler to work right. Bent fins stop air flow through the oil cooler and radiator, overheating the engine and transmission.

The fins get bent because mechanics lean or crawl onto the oil cooler when they pull engine PM or adjust belt tension.

YOU CAN PUT A STOP TO FIN DAMAGE BY USING AN OIL COOLER SHIELD TO PROTECT THE FINS.

MAKE THE SHIELD OUT OF 3/4-IN PLYWOOD USING THE FOLLOWING DIMENSIONS...



HEY! IT DOESN'T FIT RIGHT!



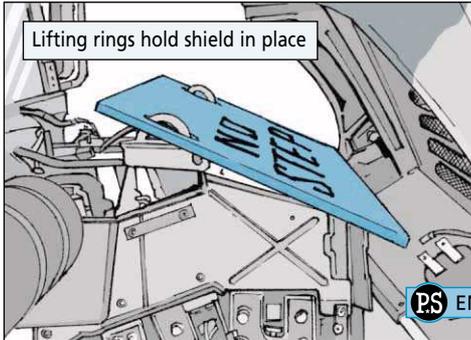
THE DIMENSIONS ARE APPROXIMATE, SO YOU MAY NEED TO ADJUST THEM TO YOUR HMMWV.

Round off the edges and paint the board to prevent splinters. Stencil NO STEP on each side of the board.

To use the shield, remove the eyehook seals and slip the shield over the two lifting rings, laying it flat on the oil cooler frame. The rings will hold the shield in place.

Never use the shield while the engine is running because it stops air flow and causes engine overheating.

Be sure to replace the eyehook seals after using the shield.



Need A Heater Motor?



Get the heater blower motor for the HMMWV with NSN 6105-01-463-5260. This NSN replaces the one shown as Item 13, Fig 333, of TM 9-2320-280-24P-2.

Or A Washer Bottle Hose?



NSN 4720-00-065-8682 gets the bulk rubber hose for the HMMWV windshield's washer bottle. The parts info shown in Fig 327 in TM 9-2320-280-24P-1 is wrong.

M1000 HET Semitrailer...

Them's the Brakes!

PEE-YEW! ARE YOU SMELLING THAT!?

UH-OH! I BET ONE OF THE BOGIES IS LOCKED UP!



If you haven't kept up with the changes to TM 9-2330-381-24P for your M1000, you may hear a loud CRUNCH! when you lower your semitrailer.

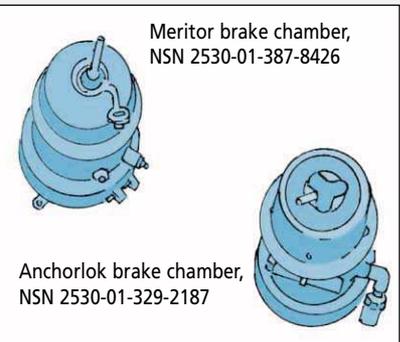
The original Anchorlok brake chamber, NSN 2530-01-329-2187, used in the M1000 is too big. It can hit the underside of the platform if the semitrailer is fully lowered. The brake chamber can even be dislodged, resulting in air loss great enough to lock up **all** the brakes on the semitrailer.

That leads to significant tire damage and, depending on road conditions, could result in your losing control of the vehicle.

To prevent this, a new Meritor brake chamber, NSN 2530-01-387-8426, was listed in Change 2 to the -24P TM. Unfortunately, some units without this change are continuing to order the old Anchorlok brake chamber.

So, right now, go check the brake chambers on your M1000. If you find any with Anchorlok printed on the top of the chamber, notify TACOM. You may even be eligible for a free-issue replacement of the brake chambers.

Check out TACOM Ground Precautionary Message 03-006 for more details.



New BDAR Kits Available



THE OLD VEHICLE-SPECIFIC BATTLEFIELD DAMAGE ASSESSMENT AND REPAIR (BDAR) KITS ARE **NO MORE**.

BUT THERE ARE NOW TWO NEW KITS AVAILABLE THAT ARE DESIGNED TO WORK WITH ALL VEHICLES.

The first kit, NSN 5180-01-502-9504, is designed for use by crews. The second kit, NSN 5180-01-502-9507, is set up for use by mechanics.

Here's what each of the kits contain:

For more information on BDAR kits, check out the Ordnance Center website at:
<http://www.goordnance.apg.army.mil/BDAR.htm>
 Or contact the BDAR Executive Agency at DSN 584-5300 or (410) 436-5300.

Crew Kit, NSN 5180-01-502-9504	
Item	Quantity
Carrying bag	1
Hose clamps, 3/4-in, 2-in, 3-in, and 4-in	2 each
Cloth tape, 2-in x 15-yds	1
Plastic cable ties	20
V-belt, 1/2-in by 8-ft	1
Wire brush, 2 1/8-in x 10-in	1
Tire plug applicator gun (includes 3/8- and 7/16-in tips, plug cement and reamer)	1 kit
Wire nuts (gray, blue, orange and yellow)	10 each
RTV silicone, blue	1 tube
RTV silicone, red, high temp	1 tube
Plastic box with dividers (used to hold small items such as wire nuts)	1
Electrical tape, 60-ft	1 roll
Safety wire, 937-ft	1 spool
Metal plug stick (Belzona 1291) (plugs shaped holes in oil pans and fuel cells)	1
Cleaner/degreaser, 1-lb (Belzona 9111)	1 can
Metal patching polymer (Belzona 1221) (two-part rapid curing polymer used for repairing and patching various types of metals)	2 kits
Release agent, 100-grams (Belzona 9411) (keeps metal patching polymer from adhering to whatever agent is applied to)	1 can
Elastomer (Belzona 2311) (two-part rapid curing elastomeric material used for repairing or rebuilding rubber components)	1
Elastomer conditioner, 165-grams (Belzona 2911) (aids in adhesiveness of the elastomer and keeps it from dry-rotting over time)	1 can
Spatula/spreader (to apply various polymers)	3
Reinforcement tape (Belzona 9341) (used as backing material for holes too large for standard repair)	1 meter
Electrical wire, 16-ga, 100-ft	1 spool
Radiator sealer	3
Fiberglass repair putty	1 bottle
Latex gloves	5 pair
Dust mask	5
Tape, stretch sealing (for repairing hoses, hydraulic lines, and fuel lines that do not exceed 1,200 psi)	1 roll
Aluminum tape, 2-in x 60-yd (for covering holes in exhaust manifolds and shielding wires from electromagnetic discharges)	1 roll
Battery clamps, positive and negative	1 each
Material Safety Data Sheets	1 set
DD Form 1577 BDAR tags (applied to any BDAR repair once the task has been completed)	5
Antiseize tape, 1/2-in x 20-ft	1 roll
Components list	1

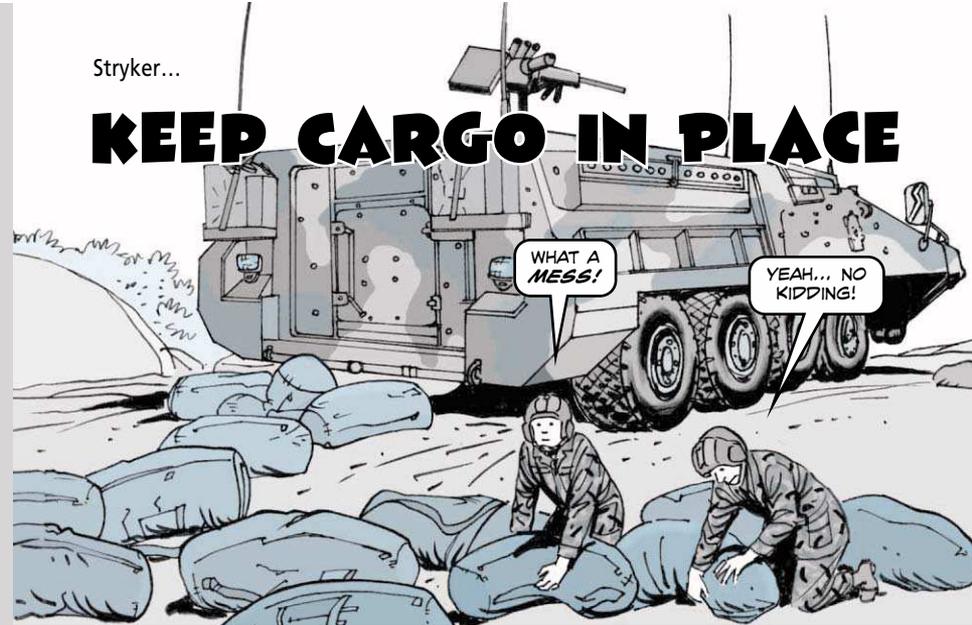
Mechanics's Kit, NSN 5180-01-502-9507

Item	Quantity
Box, tool	1
Hose clamps, 3/4-in, 2-in, 3-in, and 4-in	2 each
Cloth tape, 2-in x 60-yds	1
Plastic cable ties	20
V-belt, 1/2-in by 8-ft	1
Wire brush, 2 1/8-in x 10-in	1
Tire plug applicator gun (includes 3/8- and 7/16-in tips, plug cement and reamer)	1 kit
Wire nuts (gray, blue, orange and yellow)	10 each
RTV silicone, blue	1 tube
RTV silicone, red, high temp	1 tube
Plastic box with dividers (used to hold small items such as wire nuts)	1
Electrical tape, 60-ft	1 roll
Safety wire, 937-ft	1 spool
Metal plug stick (Belzona 1291) (plugs shaped holes in oil pans and fuel cells)	2
Cleaner/degreaser, 1-lb (Belzona 9111)	1 can
Metal patching polymer (Belzona 1221) (two-part rapid curing polymer used for repairing and patching various types of metals)	3 kits
Release agent, 100-grams (Belzona 9411) (keeps metal patching polymer from adhering to whatever agent is applied to)	1 can
Elastomer (Belzona 2311) (two-part rapid curing elastomeric material used for repairing or rebuilding rubber components)	1
Elastomer conditioner, 165-grams (Belzona 2911) (aids in adhesiveness of the elastomer and keeps it from dry-rotting over time)	1 can
Metal patching polymer (Belzona 1111) (two-part rapid curing polymer used for repairing and patching various types of metals)	3 kits
Spatula/spreader (to apply various polymers)	3
Reinforcement tape (Belzona 9341) (used as backing material for holes too large for standard repair)	1 meter
Electrical wire, 16-ga, 100-ft	1 spool
Electrical wire, 22-ga, 50-ft	1 spool
Radiator sealer	3
Fiberglass repair putty	1 bottle
Latex gloves	5 pair
Dust mask	5
Tape, stretch sealing (for repairing hoses, hydraulic lines, and fuel lines that do not exceed 1,200 psi)	1 roll
Aluminum tape, 2-in x 60-yd (for covering holes in exhaust manifolds and shielding wires from electromagnetic discharges)	1 roll
Antiseize tape, 1/2-in x 20-ft	1 roll
Battery clamps, positive and negative	2 each
Material Safety Data Sheets	1 set
DD Form 1577 BDAR tags (applied to any BDAR repair once the task has been completed)	5
Static discharge wrist ground	1
Hydraulic/fuel line fittings (3/16, 1/4, 5/16, 3/8)	2 ea
Components list	1



Stryker...

KEEP CARGO IN PLACE



Fallen cargo scattered on the road or trail is one of a driver's worst nightmares.

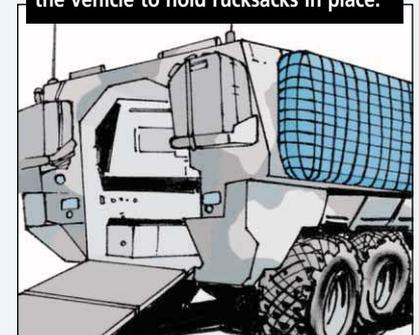
Two tailor-made nets to keep cargo in place are now available for the Stryker Interim Combat Vehicle. Both nets are easily adjustable for a snug fit. Each black nylon net is held in place with snap hooks.

A three-position molded nylon clamp locks a clinching rope, which goes around the entire net. Each net comes with a storage bag and attachment instructions.

NSN 3940-01-503-8210 gets a net for the top of the vehicle that restrains camouflage netting, poles and gear.

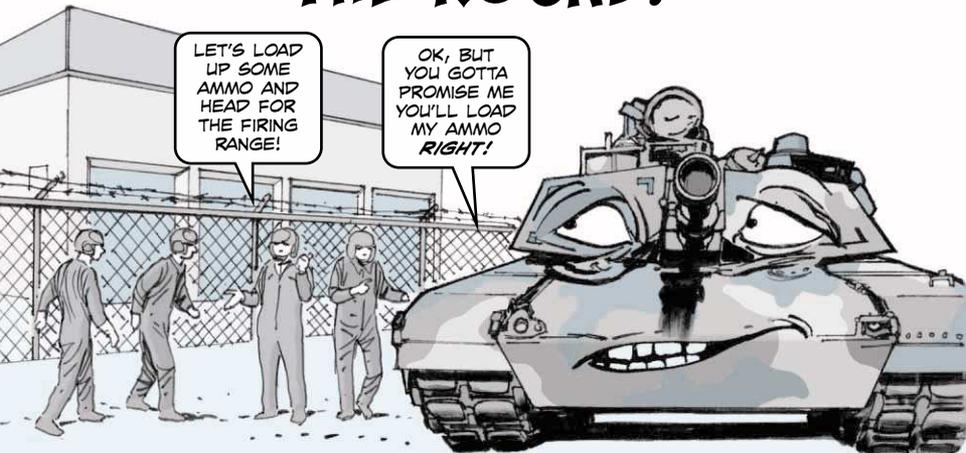


Use NSN 3940-01-503-8193 to get a cargo net that attaches on the side of the vehicle to hold rucksacks in place.



Make a note of these NSNs until they're added to the vehicle's -10 TM.

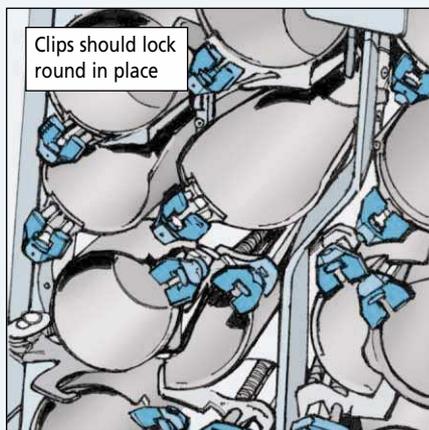
DON'T POUND THE ROUND!



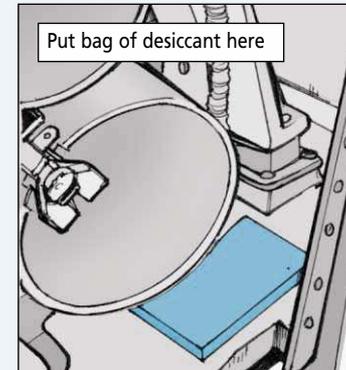
Depending on how it's handled, the ammunition for your tank's main gun can be deadly to you as well as the enemy, crewmen.

Ammunition that is improperly stored in the ammo ready racks can be damaged, resulting in an explosion or fire. So when placing ammo into the ready racks, follow these tips:

- Make sure the tapered part of the round is past the tube edge before pushing it into the rack. The round can be damaged if it snags on the rack edge.
- Push the round in with only enough force to allow the spring clip to engage. Too much force damages the round.
- Make sure the round is locked into the tube with the spring clip. Unsecured rounds may be hit as the ammo door slides open and closed. If the primer is hit, the round could fire inside the ammo compartment.



- Remove only one round at a time during a fire mission or when downloading ammunition from the tank.
- Place a few bags of desiccant, NSN 6850-00-264-6571, on the floor of the ammo compartment. That keeps down moisture that can lead to corrosion damage. Replace the desiccant when you begin seeing signs of moisture reappearing in the ammo compartment.
- Before operation, check the ammo door seals for cracks, breaks, tears or missing rubber. A damaged seal makes your tank NMC, so make a note until the info is added to your TM.



TRIED AND TRUE TMS

If you've got an '83 Escort with engine problems, the repair manual for a 2003 Escort won't do you much good. The same is true for M1-series tank TMs. There are several different tank configurations and each one uses a different series TM. To make sure your tank is properly operated and repaired, use the right TM series:

Configuration	TM Series
M1/IPM1	9-2350-255-series
M1A1	9-2350-264-series
M1A1-D	9-2350-367-series
M1A2	9-2350-288-series
M1A2 SEP	9-2350-388-series

AIR CLEANER UPs & DOWNs

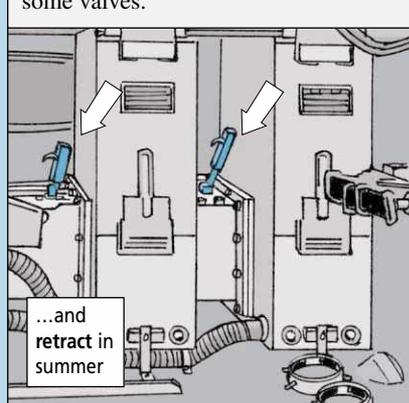
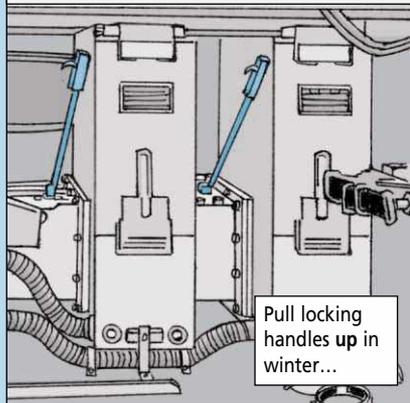


When the bottom drops out on the thermometer this winter, make sure your howitzer's air cleaners are set for the season.

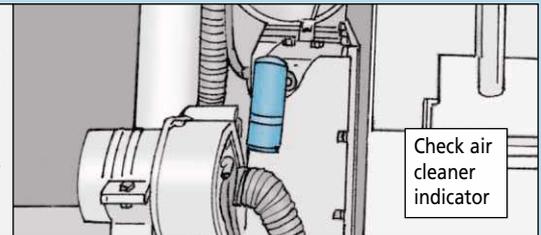
The air cleaner locking handles need to be pulled up and hooked in place when the temperature is below 25°F. If you leave 'em down, the air is too cold and your engine won't run properly.

For intermediate temperatures (25-40°F), start the engine with the locking handles in the winter position. Then, move the handles to the down position when the engine reaches operating temperature.

Remember, though, that when temperatures climb above 40°F, you must put the handles in the down position. Leaving the handles up in the winter position during the summer will overheat your engine and maybe burn up some valves.



While you're at it, take a close look at the air cleaner indicator. If the indicator reads 25-in H₂O or higher, the air cleaner element needs to be serviced. A reading of less than 25-in H₂O is OK.



Personnel Heaters...

RDD Saves the Day

WHEN YOU CAN'T SEE THE HEATER DISPLAY, I'M HERE TO SAVE THE DAY!!



In some combat vehicles, the digital readout located on top of the new A-20 personnel heater's doghouse is blocked from view. If you can't see the readout, you won't know when the heater has a component failure, error or fault.

The solution is a remote diagnostics display (RDD) for the heater. The RDD can be mounted to a more accessible part of the heater with screws, nuts and bolts, or a hook-and-pile fastening system.

The RDD costs \$377.49 and provides direct upload and download capability from a personal computer for troubleshooting. It meets the same electromagnetic interference and vibration requirements as the heater itself.

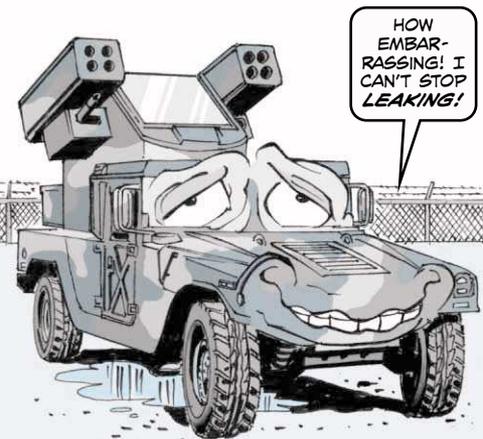
The RDD part number is 5000-30317. Order it from:

Hunter Manufacturing Co
ATTN: John Kennedy
30525 Aurora Road
Solon, OH 44139-2795

Installation instructions come with the RDD.

Avenger...

PLUGGING LEAKS IN YOUR AVENGER



FUEL AND OIL
LEAKS IN YOUR
AVENGER MISSILE
SYSTEM ARE **BAD
NEWS**. THEY HURT
PERFORMANCE AND
MAKE A MESS.

THE **GOOD
NEWS** IS THAT
THE TWO MOST
COMMON LEAKS
CAN EASILY BE
FIXED!

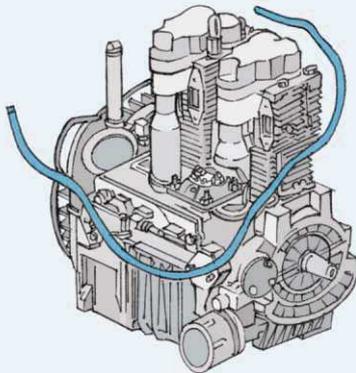


FUEL:

The hose that runs from the injector pump to the injector assembly and the bypass hose that runs from one injector to the other are often leakers. These hoses often crack from age and high temperature.

If either hose leaks on your Avenger, **don't** replace it with the hose listed for Items 31 and 35 in Fig 12 in TM 9-1440-433-24P (Sep 98). AMCOM has come up with a more durable hose that you can order with spec data SAE 30R7 3/16 inch and part number 2230-0187 from Abbott Rubber Co at (800) 852-1855. Or you can get the hose at your local auto supply. You will need an 18-in hose for Item 31 and a 6-in hose for Item 35. The new hose will be added to the TM 9-1440-433-24P.

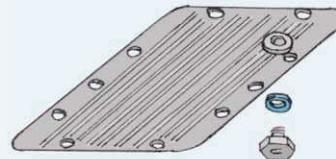
If injector or bypass hose is leaking, replace it with new, improved hose



OIL:

The Avenger often leaks where the oil pan plug screws into the engine oil pan. That's usually because the plug gasket wasn't changed when the oil was changed. The gasket cracks or tears and the plug starts to leak. Whenever you change oil, change the gasket, NSN 5330-01-101-8076. It's also a good idea to change the oil filter when you change the oil to keep the oil clean longer. Changing the gasket and filter are being added to the steps on changing engine oil in Para 19-43 in TM 9-1440-433-24-2.

Change oil plug gasket when you change oil

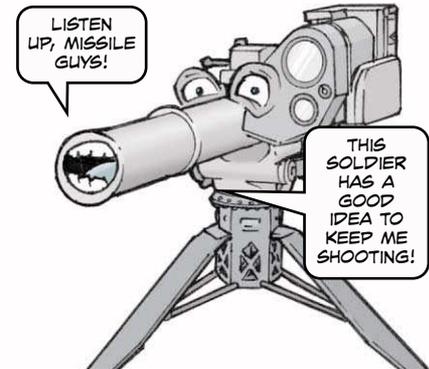


If a new gasket doesn't cure a leaking oil pan plug, the oil pan's threads have probably been stripped by the plug being cross-threaded.



Improved Target Acquisition System...

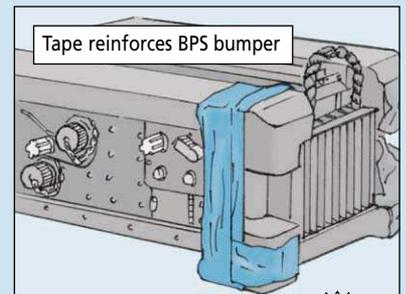
A BIT OF TAPE PROTECTS BATTERY



Dear Editor,

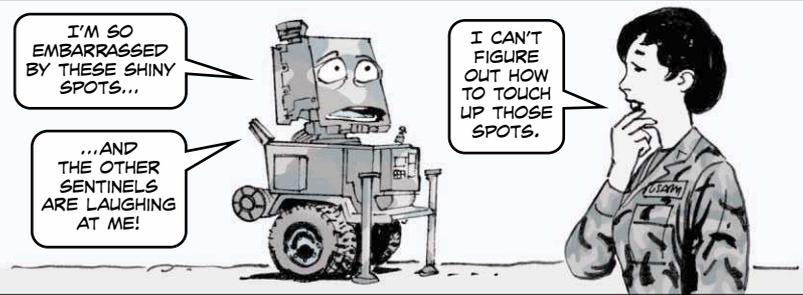
This suggestion will help missilemen keep their ITAS systems empowered.

The battery power source (BPS) bumpers get knocked off frequently and then the BPS has less shock protection. The BPS has to go to direct support for bumper replacement. I've found just wrapping 100-mph or duct tape over the bumpers top to bottom gives the bumpers more strength to withstand knocks.



SGT Joseph Nemeo
B Co, 407d FSB
Ft Bragg, NC





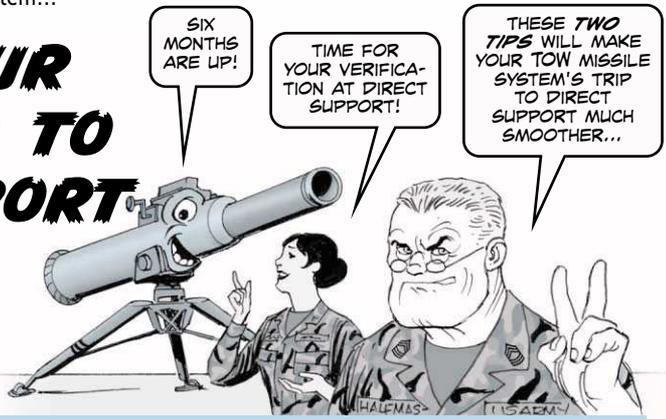
Dear Half-Mast,
Our Sentinels have developed shiny spots where the paint has worn off. The shiny spots make it easier for the enemy to spot us at night. But we can't figure out where to go for info on painting our Sentinels. Can you help?

SGT J.H.

Dear Sergeant J.H.,
You bet. You can touch up shiny spots on your Sentinel just like you would on your Army trucks or tanks. Follow the instructions in TM 43-0139, **Painting Instructions for Army Materiel**. Also see the special section on CARC in PS 598. Jobs bigger than touching up bare spots should be done by your local paint shop.

Half-Mast

YOUR TRIP TO SUPPORT



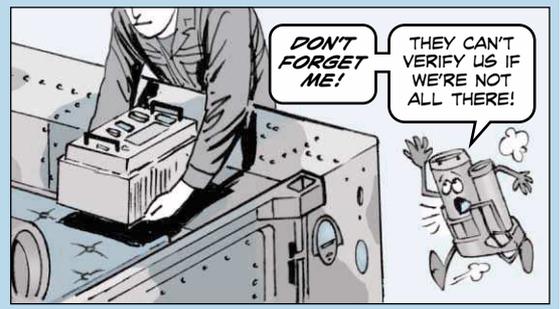
- Never, ever, put loose sights in the back of a truck. If sights are left to bounce around on their journey to support, they quickly suffer the kind of damage that costs thousands to repair. That won't make your CO happy. The best way to protect the sights during travel is to put them in their storage cases. The cases are designed to protect the sights. But even when the sights are in their cases it's still a good idea to tie down the cases on the truck bed to keep them from jumping around.

If for some reason you don't have the sight cases, pad the truck bed with something like a mattress and tie down the sights so they can't move.

Remember all this applies when you bring the sights **back** from support, too.



- **Take the whole TOW system for verification.** In order for DS to verify the TOW, they need all the components: tripod, TU, battery, MGS, both sights, and launch tube. If you bring just part of the TOW, you've wasted a trip.



BETTER WAYS TO CLEAN AND LUBE? NO WAY!



REPORTS ARE COMING BACK FROM SOLDIERS FIGHTING IN IRAQ THAT THEY HAVE FOUND BETTER WAYS TO CLEAN AND LUBE THEIR M240 MACHINE GUNS.

HERE'S WHAT IS BEING SAID AND, **MORE IMPORTANTLY,** THE FACTS...

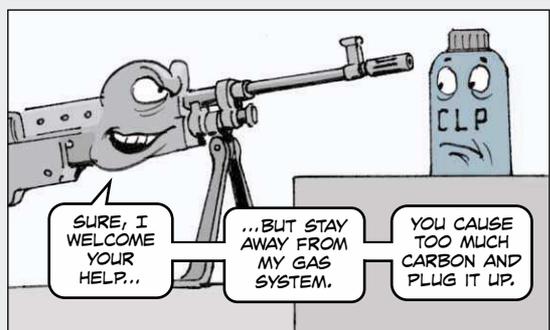


RUMOR—
"AVOID USING CLP ON YOUR M240-- CLP WILL TURN INTO CARBON. INSTEAD, USE 15W/40 OIL OR A GRAPHITE-BASED LUBRICANT."

ALL I NEEDED WAS A LITTLE CLP-- NOT THIS MOTOR OIL!

Fact—Graphite will eat up and destroy aluminum and other alloys. Motor oil is for your car, not your gun. It hardens and makes a mess of your gun. CLP, LSA-T, or LAW are what TM 9-1005-313-10 says to use for lubing and that's what you should use. Anything else either won't adequately lube moving parts or could damage the gun.

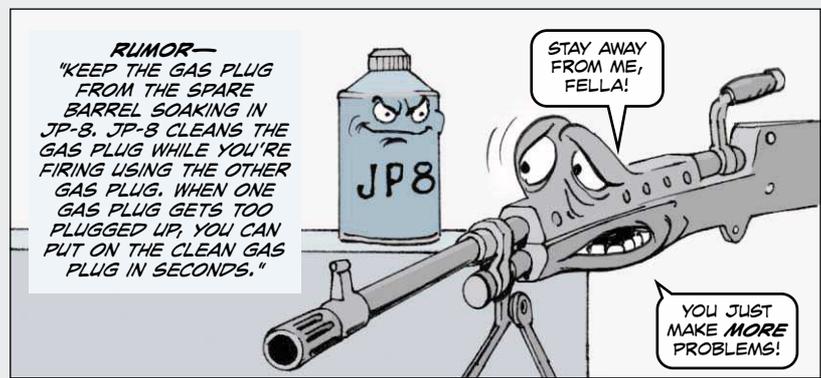
Of course, you don't want to get CLP or any lube in the gas system where it will quickly turn to carbon and plug up the gas regulator and plug. The gas system needs **no** lubing, so keep all lubricants away from the regulator and plug.



SURE, I WELCOME YOUR HELP...

...BUT STAY AWAY FROM MY GAS SYSTEM.

YOU CAUSE TOO MUCH CARBON AND PLUG IT UP.



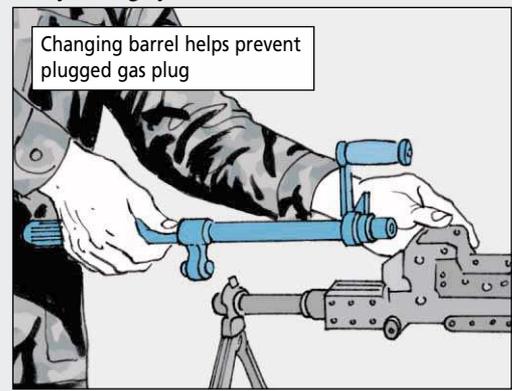
RUMOR—
"KEEP THE GAS PLUG FROM THE SPARE BARREL SOAKING IN JP-8. JP-8 CLEANS THE GAS PLUG WHILE YOU'RE FIRING USING THE OTHER GAS PLUG. WHEN ONE GAS PLUG GETS TOO PLUGGED UP, YOU CAN PUT ON THE CLEAN GAS PLUG IN SECONDS."

STAY AWAY FROM ME, FELLA!

YOU JUST MAKE MORE PROBLEMS!

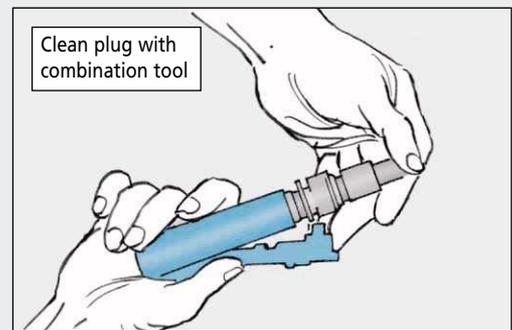
Fact—Soaking the gas plug in JP-8 and then using the plug without thoroughly rinsing off the JP-8 and letting the plug totally dry will make carbon buildup even more of a problem and could actually damage your M240.

Changing the barrel when you're supposed to will help keep the gas plug from plugging up quickly. Firing and firing with the same barrel ruins the barrel and plugs up the gas system. If possible, change the barrel every 10 minutes during sustained fire (100 rounds per minute) and every two minutes during rapid fire (200 rounds per minute) like TM 9-1005-313-10 says.



Changing barrel helps prevent plugged gas plug

Clean the gas plug with your combination tool the way TM 9-1005-313-10 shows. Remember, the sooner you clean the gas plug after firing, the easier it is to clean off the carbon. Your armorer is authorized to use dry cleaning solvent, NSN 6850-01-474-2319, to clean the gas plug if necessary.



Clean plug with combination tool

Firing in the Desert

THE RULES FOR ALL SMALL ARMS IN THE DESERT ARE...



- Lightly lube internal moving parts only. Put a VERY LIGHT coat on inner rails and on op rod bearing surfaces.
- Clean the gun often, paying special attention to moving parts.
- Keep the gun covered as much as possible.
- Wipe sand off ammo. Keep the ammo covered as much as possible.

Clean often!



Keep covered!



FOLLOWING THESE FOUR RULES WILL HELP YOUR GUN MUCH MORE THAN USING **MIRACLE** CLEANING AND LUBING SUGGESTIONS.

PS END

M157A2, M56/M58 Smoke Generators...

DON'T GO COLD TURKEY IN THE COLD

HOO! I DON'T THINK I CAN SMOKE IF IT'S THIS COLD!

MY FOG OIL'S TURNED TO SLUDGE!

WAIT! I THINK I'VE GOT SOME STUFF THAT'LL HELP US SMOKE!



Cold weather can cause the M157A2 and M56/M58 smoke generators to go cold turkey on smoking. Ice can form in the fog oil tank and block the fog oil lines unless you fortify your smoke generator with cold weather PM. Here are the cold facts:

M157A2

When it's below freezing, have your fuel supply folks add kerosene or diesel fuel to the fog oil to form a mixture that flows easier.

THEY SHOULD FOLLOW THIS TABLE FOR THE CORRECT MIXTURE...

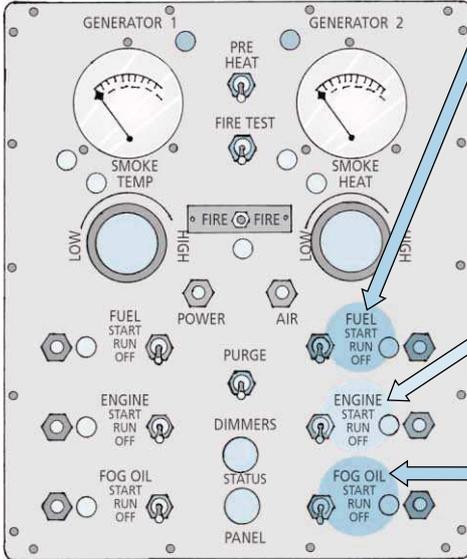
OPERATING TEMPERATURE	PERCENTAGE OF FOG OIL TO DIESEL/KEROSENE
Above 32°F	100/0
32 to -10	75/25
-11 to -25	60/40
-26 to -40	50/50

The fuel will also need help in the cold. Add 16 ounces of isopropyl alcohol, NSN 6810-00-286-5435, to each 5 gallons of untreated gasoline or add 2 ounces of icing inhibitor, NSN 6850-01-377-5075, to each 5 gallons of any other untreated fuel.

THEN USE THESE PREHEAT CYCLES ACCORDING TO THE FUEL YOU'RE USING...

FUEL	PREHEAT CYCLE
MOGAS	0
JP-1	1
JP-4	1
JP-5 turbine	3
JP-8 turbine	4
Diesel fuel-arctic	4
DF-1 diesel	4

After setting the PREHEAT, hold the FUEL switch in START until the FUEL indicator comes on. Release the FUEL switch and let it flip to RUN.



After the AIR indicator lights and the PREHEAT indicator goes off, hold the ENGINE switch in START for 1 to 2 seconds and then release it. Wait 3 seconds. Hold the ENGINE switch in START until the ENGINE indicator lights and the SMOKE TEMP indicator reaches the green band. Release the ENGINE switch and let it flip to RUN.

Wait until the engine temperature reaches 800° F. Hold the FOG OIL switch in START until the FOG OIL indicator lights, then let the switch flip to RUN. You're ready to smoke.

For more information, see Pages 2-29 through 2-34 in TM 3-1040-283-10.

M56/M58

Add 2 ounces of icing inhibitor, to every 5 gallons of turbine fuel to prevent ice forming in the fuel. JP-8 already contains icing inhibitor and doesn't need treatment.

How you mix fog oil and turbine fuel to prevent freezing depends on how the visual pump is calibrated. If it's calibrated normally, use a fog oil/turbine fuel mix of 100/0 for 0° F and above and a mix of 80/20 for -25 to 0. If it's calibrated to maximum, the fog oil/turbine fuel mix should be 100/0 for -25 to 0 and 90/10 for -25 to -10. Below -10, 90/10 will yield better smoking.

When it's below 0, you also need to set the ejector air gap for 1 3/8.



M157A2 Smoke Generator...

SMOKING JUST GOT BETTER

HEY M157 SMOKERS! THESE GUYS HAVE COME UP WITH SOME GOOD IDEAS FOR BETTER SMOKING!



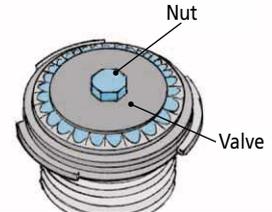
THEY DESERVE YOUR ATTENTION.

Dear Editor,

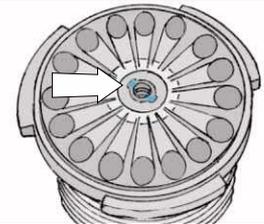
Through years of working with the M157A2 smoke generator, we've come up with some sure fire tips for better smoking. Believe me, we've found these suggestions will save operators and repairmen lots of trouble.

- If the smoke generator suddenly shuts down or great clouds of smoke come out the engine head opening, make the flutter valve your first check. Usually the valve has slipped or the nut holding the valve in place is loose. Reposition the valve and tighten the nut and see if that helps. A good PMCS check is to eyeball the grooves in the head that help hold the valve in place. If they're worn, you probably need a new head. The valve will not stay in place.

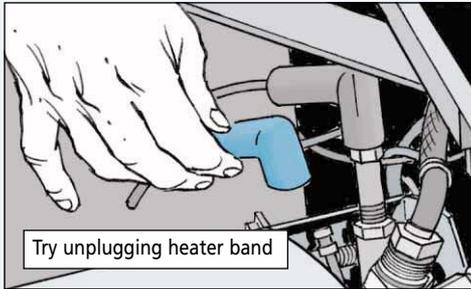
Valve slipped or nut loose?



Grooves badly worn?

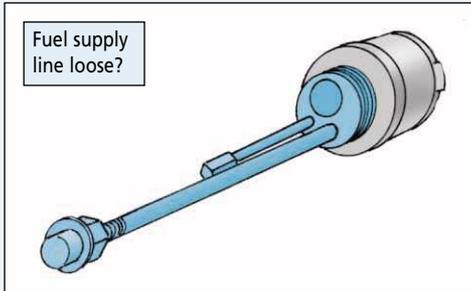


● A bad band heater will shut down the control panel when you turn on the panel. Then you can't smoke. If you suspect that's the problem, unplug the band heater. That lets you turn on the control panel and smoke. The generator should still start, although it may have more trouble doing so. Then get the band heater fixed as soon as possible.



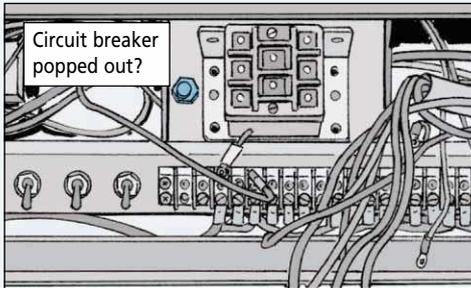
Try unplugging heater band

● If you're not getting fuel or the smoke generator stops when you hit the fog oil switch, check the supply line inside the fuel can. Sometimes the line can work loose and fall in the can. One smoke unit spent 1 1/2 days figuring out why their generator was shutting down before they discovered the supply line had worked loose.



Fuel supply line loose?

● If the fuel pump won't keep running after you release the FUEL switch, have your mechanic check its circuit breaker. The breaker is right above the circuit board and has 5 written on it. If the breaker has popped out, push it back in and try the fuel pump again.



Circuit breaker popped out?

● Sometimes when it's very cold, the elbow for the air line freezes. No air means no smoking. You can thaw out the elbow with a hair dryer or hot water. If you smoke often in the cold, it's a good idea to wrap some pipe insulation around the elbow.

SGT Phillip Wilson
SSG Jeffrey Obermuller
SSG Raul Palomo
69th Chemical Co
Hanau, Germany

From the desk of the Editor

Those are hot smoking ideas. You guys are really on your toes. Thanks.

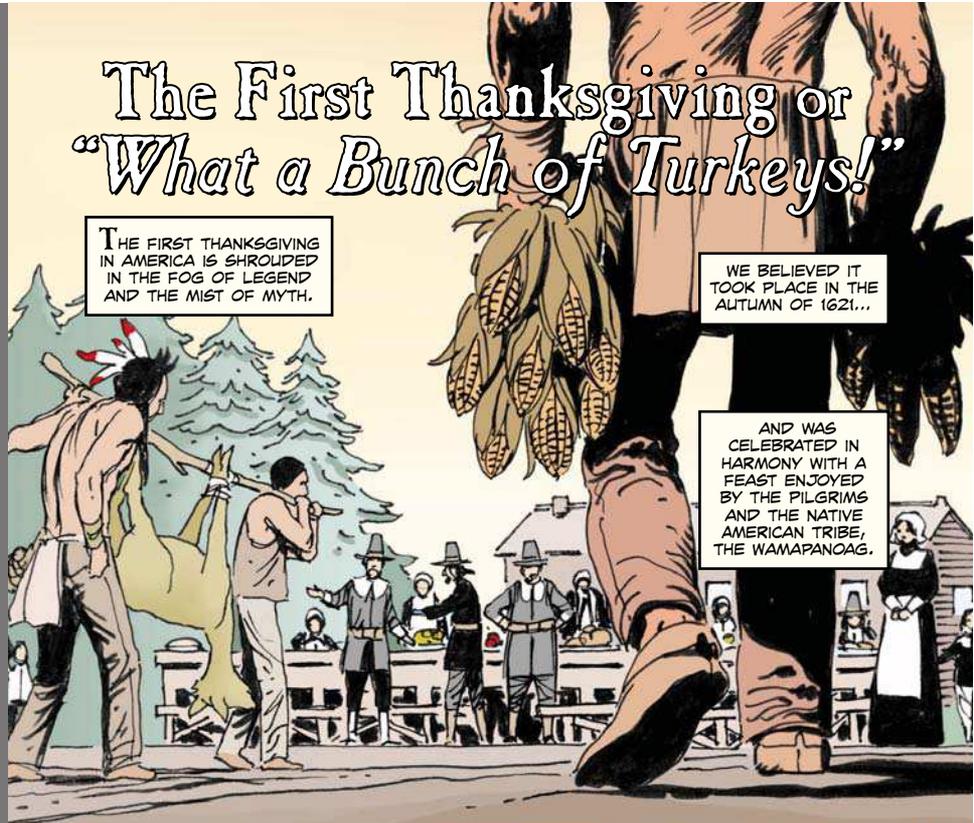
PS END

The First Thanksgiving or "What a Bunch of Turkeys!"

THE FIRST THANKSGIVING IN AMERICA IS SHROUDED IN THE FOG OF LEGEND AND THE MIST OF MYTH.

WE BELIEVED IT TOOK PLACE IN THE AUTUMN OF 1621...

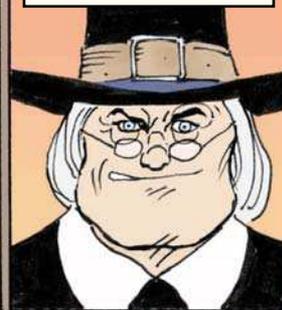
AND WAS CELEBRATED IN HARMONY WITH A FEAST ENJOYED BY THE PILGRIMS AND THE NATIVE AMERICAN TRIBE, THE WAMAPANOAG.



HOWEVER, A RECENTLY DISCOVERED DOCUMENT HIDDEN BEHIND A BRASS BUCKLE ON A BLACK BOOT...



...BELIEVED TO HAVE BEEN WORN BY A PARTAKER OF THAT FEAST, BARTHOLOMEW "HALF-MAST" ALLERTON, REVEALS THAT ALL WAS NOT WELL...



...THE HARMONY HAD A SOUR NOTE.





THANK YOU FOR INVITING US TO YOUR THANKSGIVING DINNER, WILLIAM BRADFORD.



WE HAVE BROUGHT VENISON TO GRACE YOUR TABLE.

DEER?



THAT'S SWEET, BUT YOU CAN CALL ME CHIEF.

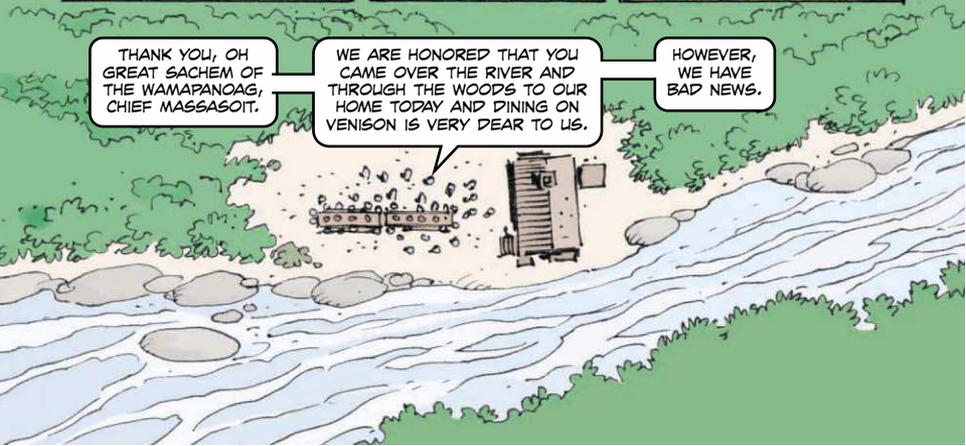


?

THANK YOU, OH GREAT SACHEM OF THE WAMAPANOAG, CHIEF MASSASOIT.

WE ARE HONORED THAT YOU CAME OVER THE RIVER AND THROUGH THE WOODS TO OUR HOME TODAY AND DINING ON VENISON IS VERY DEAR TO US.

HOWEVER, WE HAVE BAD NEWS.



NO STUFFING!?

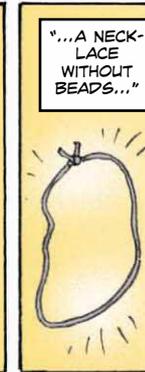
NO TURKEYS.



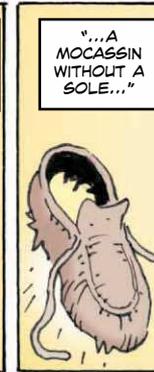
THIS IS UNACCEPTABLE.



"THANKSGIVING WITHOUT TURKEY IS LIKE A BOW WITHOUT ARROWS..."



"...A NECKLACE WITHOUT BEADS..."

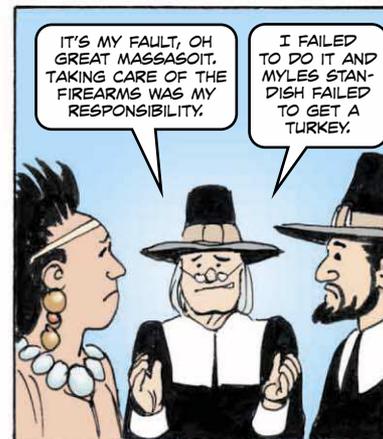


"...A MOCCASIN WITHOUT A SOLE..."



"...PEANUT BUTTER WITHOUT JELLY-

THEY GET IT, CHIEF.



IT'S MY FAULT, OH GREAT MASSASOIT. TAKING CARE OF THE FIREARMS WAS MY RESPONSIBILITY.

I FAILED TO DO IT AND MYLES STANDISH FAILED TO GET A TURKEY.



"I HAD A FAT FOWL IN MY SIGHTS."



"I PULLED THE TRIGGER, BUT THE BALL DID NOTHING BUT TRICKLE OUT AND FALL TO THE GROUND."

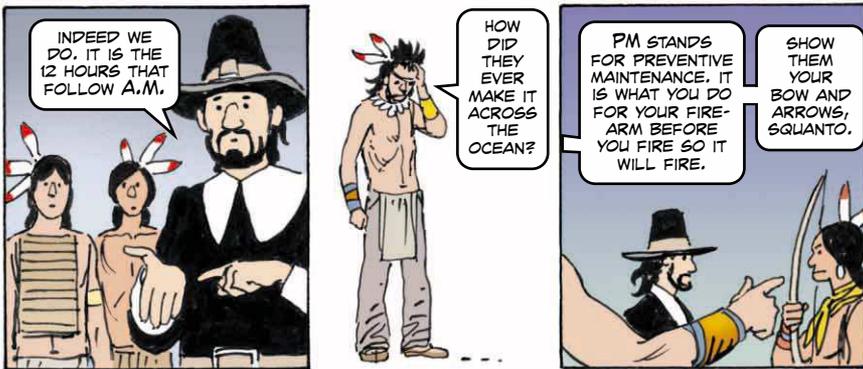
BLIP



"THE TURKEYS LOOKED AT ME AND GOBBLED WITH GREAT GLEE, AND PRISCILLA LOOKED AT ME AND LAUGHED."

"I WAS SO EMBARRASSED, I TURNED TO SHOOT HALF-MAST ALLERTON ON THE SPOT, BUT, WELL, YOU KNOW THE REST."

DO YOU KNOW ABOUT PM?

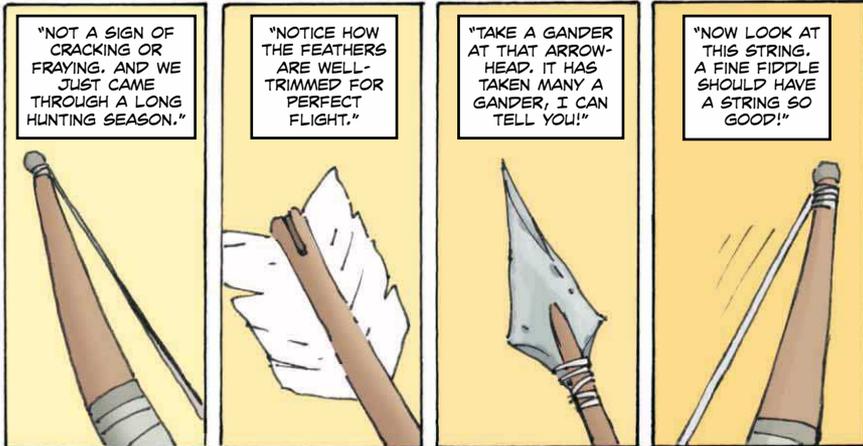


INDEED WE DO. IT IS THE 12 HOURS THAT FOLLOW A.M.

HOW DID THEY EVER MAKE IT ACROSS THE OCEAN?

PM STANDS FOR PREVENTIVE MAINTENANCE. IT IS WHAT YOU DO FOR YOUR FIREARM BEFORE YOU FIRE SO IT WILL FIRE.

SHOW THEM YOUR BOW AND ARROWS, SQUANTO.



"NOT A SIGN OF CRACKING OR FRAYING, AND WE JUST CAME THROUGH A LONG HUNTING SEASON."

"NOTICE HOW THE FEATHERS ARE WELL-TRIMMED FOR PERFECT FLIGHT."

"TAKE A GANDER AT THAT ARROW-HEAD, IT HAS TAKEN MANY A GANDER, I CAN TELL YOU!"

"NOW LOOK AT THIS STRING, A FINE FIDDLE SHOULD HAVE A STRING SO GOOD!"

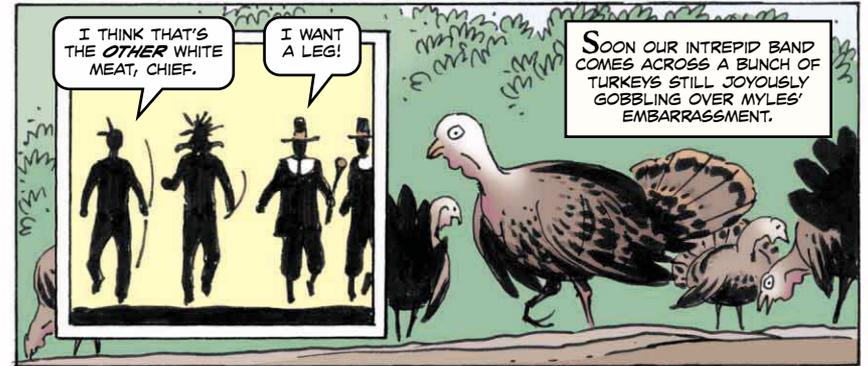


AND THIS PM WILL WORK ON A FIREARM, TOO?

OF COURSE, PILGRIM!

THERE IS NOTHING THAT MOVES, SHOOTS OR COMMUNICATES THAT *DOESN'T* NEED PM.

COME, WE WILL FIND THAT BUNCH OF TURKEYS AND SHOW YOU HOW GOOD PM CAN BRING HOME THE BACON!



I THINK THAT'S THE *OTHER* WHITE MEAT, CHIEF.

I WANT A LEG!

SOON OUR INTREPID BAND COMES ACROSS A BUNCH OF TURKEYS STILL JOYOUSLY GOBBLING OVER MYLES' EMBARRASSMENT.

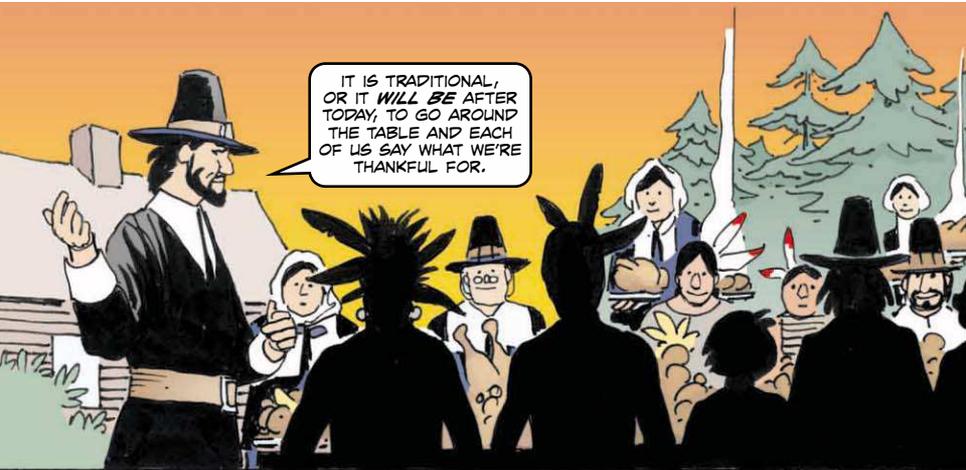


GOBBLE GOBBLE DID YOU SEE THAT BULLET FALL OUT OF THE BARREL OF THAT GUN? GOBBLE GOBBLE

I THOUGHT I WOULD LOSE A TAIL FEATHER I LAUGHED SO HARD, GOBBLE GOBBLE

MAKE A WISH, TURKEY!

GULP, GULP! MAYBE WE GOBBLED TOO SOON!



IT IS TRADITIONAL, OR IT *WILL BE* AFTER TODAY, TO GO AROUND THE TABLE AND EACH OF US SAY WHAT WE'RE THANKFUL FOR.



I'M THANKFUL FOR P.M. AND THE MACY'S PARADE.



AH, HERE THEY COME NOW!



SACHEM MASSASOIT, WHAT ARE YOU THANKFUL FOR?

I AM THANKFUL FOR THE BLUE SKY...



...FOR THE GROWING CORN... FOR THE CLUCKING DUCK... FOR THE HOOTING OWL...

THEY GET IT, CHIEF



I'M THANKFUL FOR MYLES.



IT'S MASTER AND MISTRESS MACY... AND THE MACY KIDS!



GOSH, PRISCILLA. I'M THANKFUL THAT NEXT THANKSGIVING WE'LL HAVE FIREARMS THAT'LL FIRE...

...AND I MIGHT HAVE A WIFE.



NO MORE FETCHING WATER FOR PRISCILLA. SHE'LL HAVE MYLES TO GO.

AND HE'LL NEVER GET TO SLEEP.



AND, YOU, BARTHOLOMEW "HALF-MAST" - WHAT ARE YOU THANKFUL FOR?



AND YOU, WILLIAM BRADFORD?

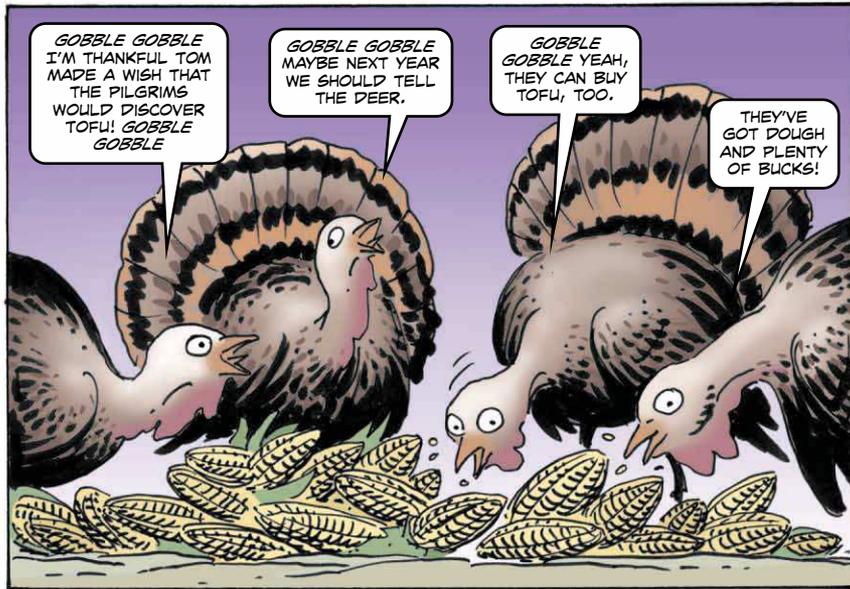


YOU HAVE YET TO TELL US WHAT YOU ARE THANKFUL FOR.



I AM THANKFUL THAT THE READERS OF PS MAGAZINE HAVE A SENSE OF HUMOR EVEN ABOUT OUR GREAT HERITAGE...

...AND I WISH THEM A YEAR OF TROUBLE-FREE EQUIPMENT BECAUSE OF THEIR PREVENTIVE MAINTENANCE.



GOBBLE GOBBLE I'M THANKFUL TOM MADE A WISH THAT THE PILGRIMS WOULD DISCOVER TOFU! GOBBLE GOBBLE

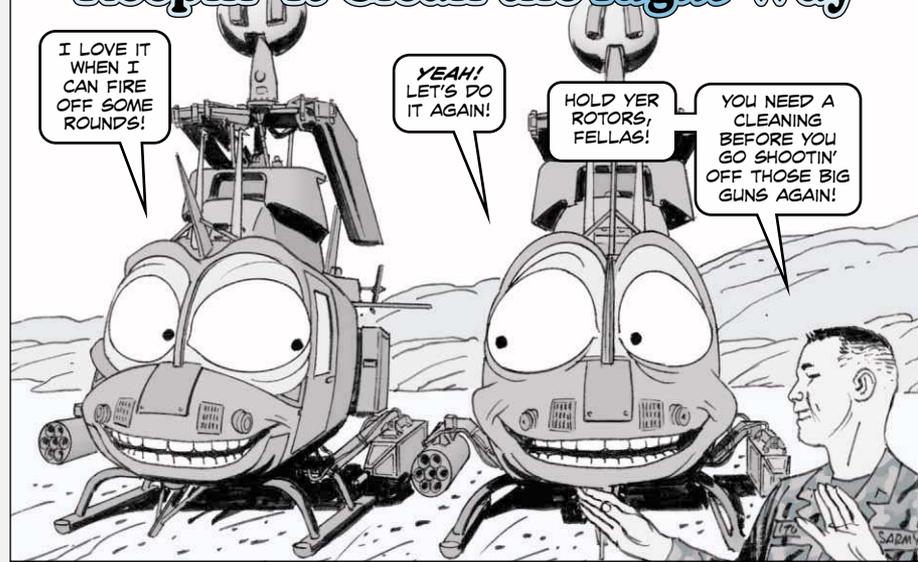
GOBBLE GOBBLE MAYBE NEXT YEAR WE SHOULD TELL THE DEER.

GOBBLE GOBBLE YEAH, THEY CAN BUY TOFU, TOO.

THEY'VE GOT DOUGH AND PLENTY OF BUCKS!

OH-58D...

Keepin' It Clean the Right Way



I LOVE IT WHEN I CAN FIRE OFF SOME ROUNDS!

YEAH! LET'S DO IT AGAIN!

HOLD YER ROTORS, FELLAS!

YOU NEED A CLEANING BEFORE YOU GO SHOOTIN' OFF THOSE BIG GUNS AGAIN!

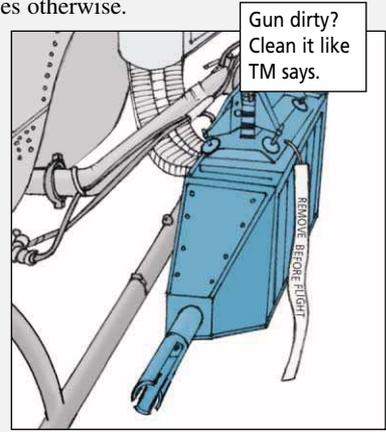
Crews, using the incorrect cleaning materials on your Kiowa Warrior's M296 .50-cal machine gun after firing makes smooth firing rough.

After firing, clean the gun with the cleaning materials in the PMCS chart and Paragraph 4-3 of TM 9-1090-214-23&P. A clean, dry cloth and a soft bristle brush will get the job done, unless the TM specifies otherwise.

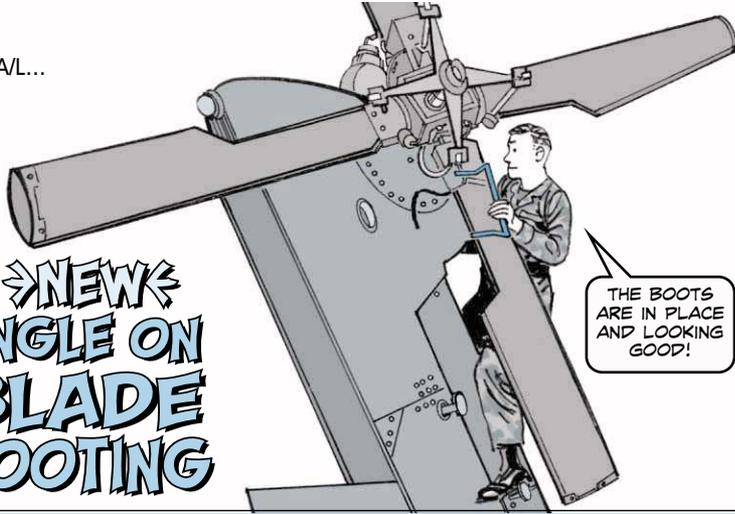
The .50-cal machine gun produces lots of carbon. Dirt, grit and sand are also partners in crime that help foul up the gun's internal parts.

So when cleaning time arrives, don't use any files, scrapers, or abrasive materials, such as sandpaper, to remove the gunk from the internal gun surfaces. Use only TM approved materials.

That rough stuff removes the protective coating. The coating allows the gun to fire more efficiently and it makes it easier to clean. Plus, a gun without protective coating is ripe for corrosion and rust.

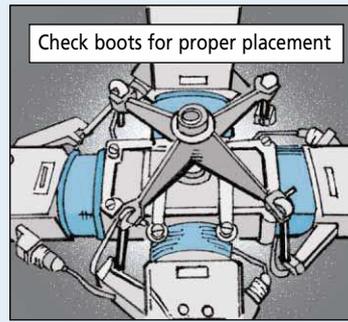
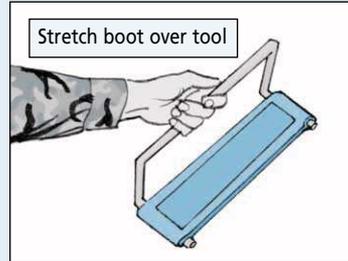


A NEW ANGLE ON BLADE BOOTING



THE BOOTS ARE IN PLACE AND LOOKING GOOD!

To install the rubber boot on the new tool, just slip it over the 4-in sections of the tool. Follow the procedures in Para 5-4-42 and slide the tail rotor boot down the blade to its position and remove the tool.



Pilots, crew chiefs, maintenance personnel, and flight crews, listen up! Closing Black Hawk cockpit doors wrong causes cracks around the door and handle mechanism.

The proper way to close cockpit doors is to grasp the handle and slightly push it to make the door lock.

If you've been locking the door handle latches from the inside by slapping or punching the door handle latch mechanism, then **Stop!** Slapping, punching or otherwise hitting the door handle from the inside to lock or secure the cockpit doors causes cracks or holes.

Don't slap, punch or hit door handle to secure door

Once a crack is too big, the door is considered unserviceable. Then your bird is NMC until the door is replaced or repaired.

Slapping, punching or hitting may be a quick and easy way to follow the DOOR SECURE step in the TM checklist, but it's not good for the cockpit doors.

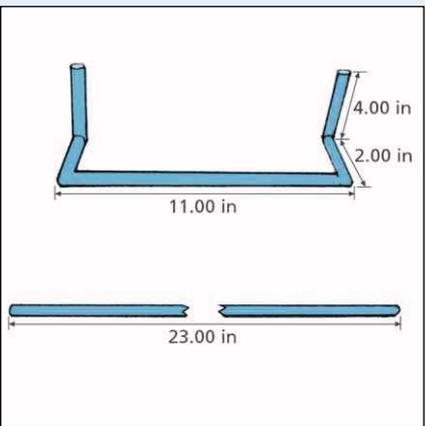
THIS IS A GREAT IMPROVEMENT ON THE TOOL LISTED IN THE TM.



IT'LL PREVENT DAMAGE TO THE ROTOR BLADE.

Squeezing your foot into an old boot can be a tough job. Removing or installing a tail rotor boot on a Black Hawk tail rotor can be a tough job, too, with the current boot tool.

The current tool scrapes and scars the blade as you slide the boot down the blade. Modifying the tool shown on Page H-327 of TM 1-1520-237-23-11 to add clearance between the blade and the boot tool is an easy way to avoid tail rotor blade damage.



To make the modified tool, you need a 23-in piece of 3/8-in rolled steel rod. Measure six inches from each end and bend the rod 90°. Measure four inches from each end and bend 90° as shown in the illustration to the right.

AH-64A/D...

RUBBED THE WRONG WAY

LOOKS LIKE YOUR HYDRAULIC HOSES ARE OK.

ARE THEY ROUTED AWAY FROM MY GUN WIRE STRIKE?

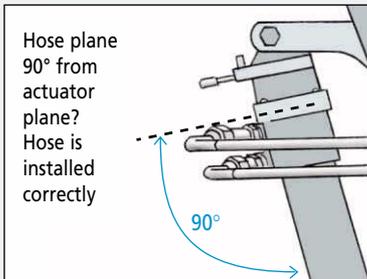
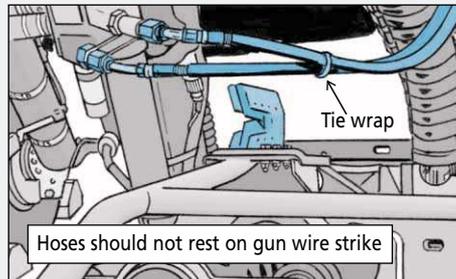
When a situation rubs you the wrong way, you take action. Armament crews, when your Apache's 30mm gun's braided hydraulic lines and hoses rub the wrong way against each other or against the wire strike, take action to prevent chafing.

During your Before Flight PMCS, in Paragraph 4-5-1 of TM 9-1090-208-23-1-1, make sure the gun's hydraulic hoses are installed correctly and are not touching or resting on the wire strike.

If the hoses rest on the wire strike during gun firing, aircraft vibration and gun recoil will chafe and wear through the pressure and return hoses. That will cause hydraulic leaks. The gun will lose elevation control and the ability to fire. Then the gun is NMC.

When the hoses are installed correctly (the plane of the hose bends 90° to the plane of the actuator), touching should not be a problem.

As an added measure, tie the lines together—but not too tight—with tie wraps, NSN 5975-00-985-6630, to protect them from chafing.



CLEAR OIL DRAIN HOLE

LOOKS LIKE WE'VE GOT AN OIL FILLER CUP DRAIN HOLE CLOG!

COOL YOUR ENGINES! CLOG BUSTERS ARE HERE TO TAKE CARE OF YOU.

HEY! I'M SMOKIN' OVER HERE!!!

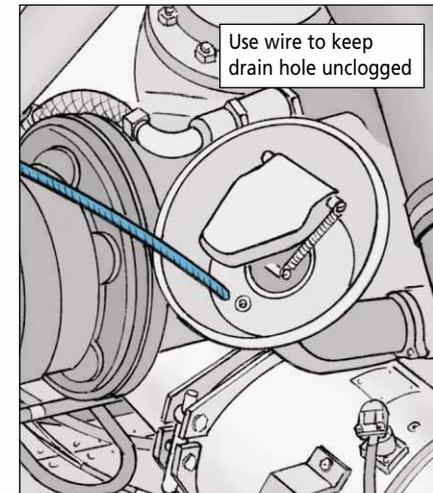
Who you gonna call when your Apache main transmission oil filler cup drain hole plugs up? Clog Busters!

Mechanics, you're the drain clog busters to eyeball the bird's oil filler cup drain hole when you perform your 10-hour/14-day inspection like it says in TM 1-1520-238-PMS.

So don't forget to make sure excess oil, fluid, bugs, dirt, and condensation runoff haven't clogged the hole and backed up in the cup. Just because the oil drain hole is out of sight, don't put it out of mind.

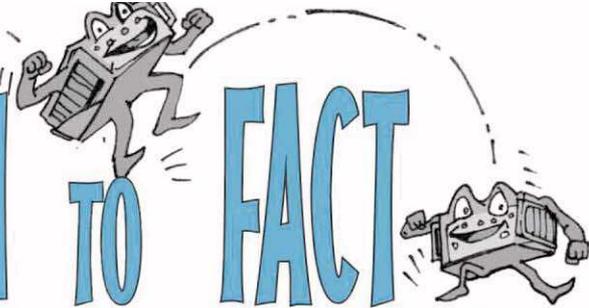
If the drain hole gets clogged with gunk and overflows the cup, it can spill over on a hot generator. You could end up with a fire or lots of smoke and without generator power.

To unclog the oil drain hole, use a 6-ft long, 1/16-in diameter wire. Attach a "Remove Before Flight" streamer, NSN 8345-00-673-9992, and swedge, NSN 4030-00-960-1654. Smooth out all the burrs with a piece of crocus cloth and lightly coat the wire tip with RTV and let dry. Snake the oil drain hole with the wire to push the crud out. When the drain is clear, remove the wire to prevent a FOD problem.





FICTION TO FACT



There's a love/hate relationship going on with the frequency hopping multiplexer (FHMUX). Some units won't deploy without the FHMUX. Others don't want a thing to do with it!

The reason for the two views is the garbage being churned out by the rumor mill.

SO LET'S SET THE RECORD STRAIGHT AND MAYBE EVERY UNIT WILL BE SENDING THEIR FHMUX A VALENTINE!



Rumor One

We lose range and power when using the FHMUX.

Okay, it's true you don't get the same RF power out of the antenna connector on the front of the FHMUX as you would at the AM-7238 power amplifier.

But, you do get optimum range and that's what you're after! Using multiple active radios and antennas produces less range than using a FHMUX with a single antenna.

Suppose you're using four OE-254/GRC antennas located around your command center. You're going to get interference and "frequency collisions." Down goes the range of your radios. The FHMUX range will be greater with no interference or "collisions"!

Rumor Two

We can only transmit on one radio at a time through the FHMUX.

Not even an okay, here. This rumor is not true!

You can receive and transmit on all four radios at any time through the FHMUX. The FHMUX switches between radios hundreds of times per second. The switching is so fast you won't know it's happening.

Rumor Three

The FHMUX can only operate for up to 24 hours, then it must be shut down or it will fail.

This is garbage, folks. True, some early FHMUXs had an overheating problem, but that's ancient history. Now they can operate until the cows come home—and leave again in the morning!

Rumor Four

FHMUX doesn't always work.

If the FHMUX does not work, the problem is probably with the cables. You've connected them wrong! When the repair guys are called in to troubleshoot, that's usually what they find.

Make sure you have the needed FHMUX manuals to get it up and running. You'll need: TM 11-5820-890-10-8, *SINCGARS Operator's Manual*; TM 11-5820-890-23P, *Unit and Direct Support Maintenance Repair Parts and Special Tools List for FHMUX TD-1456/VRC and Mount MT-6845/VRC*; SB 11-131-2, *Supply Bulletin Vehicular Sets and Authorized Installations, VOL II, SINCGARS, FHMUX, and EPLRS*; TM 11-5820-890-30-6, *Direct Support Maintenance Instructions for the TD-1456/VRC Multiplexer*.

Rumor Five

There is no advantage gained by using the FHMUX.

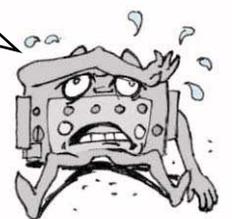
That's a rumor that is way off base. Using the FHMUX provides several advantages.

1. The FHMUX reduces your visual target signature. Fewer antennas means you're less likely to draw the enemy's attention. That increases your odds of surviving on the battlefield and that's an advantage you definitely want.
2. The FHMUX has improved radio range. The use of the FHMUX and one antenna reduces the interference and frequency collisions that degrade your radio net ranges.
3. The FHMUX reduces setup and takedown time. A unit takes about two hours to erect four OE-254 antennas and about 30 minutes to set up the one OE-254 antenna using the FHMUX.

THE FHMUX WORKS, SO GIVE IT A CHANCE.

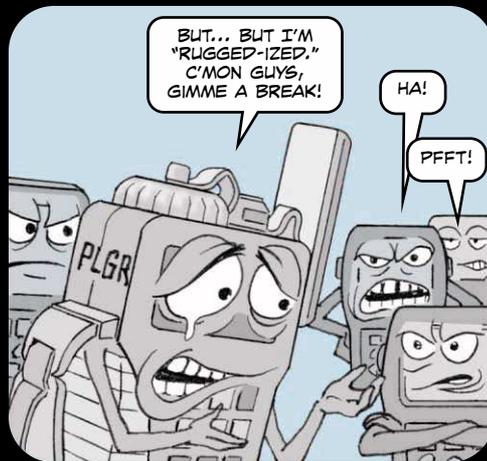
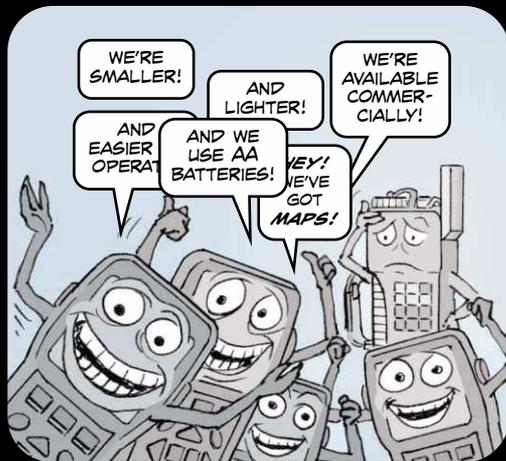


IF IT DOESN'T DO THE JOB FOR YOU, WRITE HALF-MAST AND LET HIM KNOW WHY.





IS IT TIME FOR A COMMERCIAL BREAK?



SOLDIERS AND PLGRS WILL SOON HAVE A NEW FRIEND: THE DAGR!



Dear Half-Mast,

When we were in the big sandbox, we used some commercial GPS receivers and they seem to have several advantages over the PLGR—smaller, lighter, easier to operate, included maps and used AA batteries.

Now that we're back in the States, do we have to go back to the PLGR or can we get those commercial GPS receivers and use them?

SGT I.J.W.



I'LL BE HERE NEXT YEAR!



Dear Sergeant I.J.W.,

The PLGR is the only GPS receiver approved for military use, because it is the only one that meets the "ruggedized" standards of the Army, including a signal chip that protects your signal reception. And, if operated correctly, it will do the job better than any commercial receiver.

However, starting next year, the PLGR will be replaced by the Defense Advanced GPS Receiver (DAGR). The DAGR will have all the "bells and whistles" that the commercial GPS receivers have.

Also, the DAGR will have signal protection not found in commercial GPS receivers.

Until the DAGR is fielded, the PLGR is still the way to go.

You can use AA batteries in the PLGR. Just get the AA battery holder, NSN 6160-01-385-4358.

The DAGR will use AA size batteries for main power instead of the larger BA-5800!

Stay current on the DAGR by reading Pathfinder, the GPS newsletter. You'll find it on the web at:

<http://army-gps.robins.af.mil>

Half-Mast

Antenna Tiedowns

Tie down the AS-1729/VRC antenna with tiedown kit, NSN 4020-00-908-6416. Tie down the AS-3916/VRC antenna with assembly, NSN 4010-01-381-1581.

SINCGARS Antenna Tip Cap

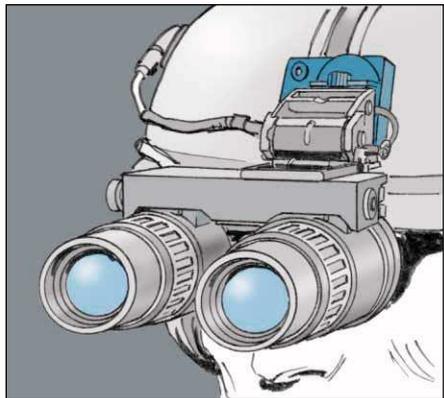
If your vehicle is packing a SINCGARS radio and AS-3900A antenna, order the tip cap with NSN 5999-01-313-0458. It stays on tight without tape.

A Mounting Repair



Dear MSG Half-Mast,
 The universal mount, NSN 5855-01-457-2953, that holds the night vision goggles in place on the Kevlar helmet costs more than \$100.
 If anything breaks on the mount, you have to order an entire mount. There are no repair parts.
 The thing that breaks the most is the front bracket assembly. It sure would be nice to get just that assembly in the supply system at a lower price.

SGT T.O.

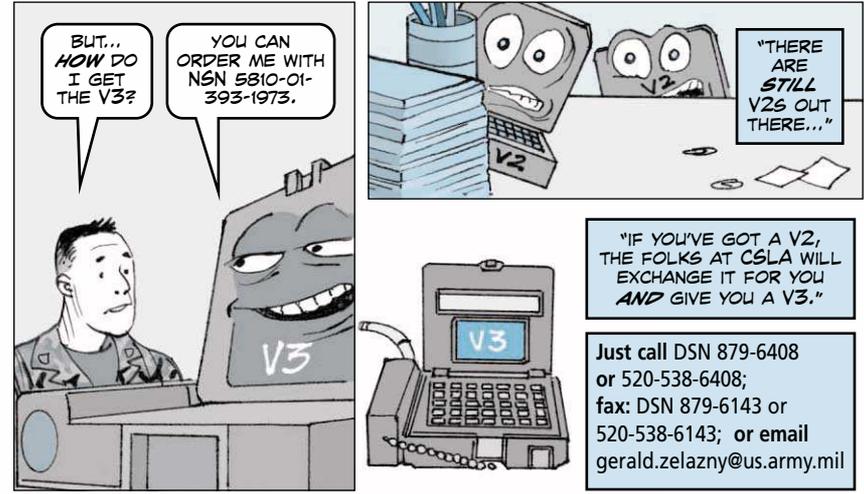
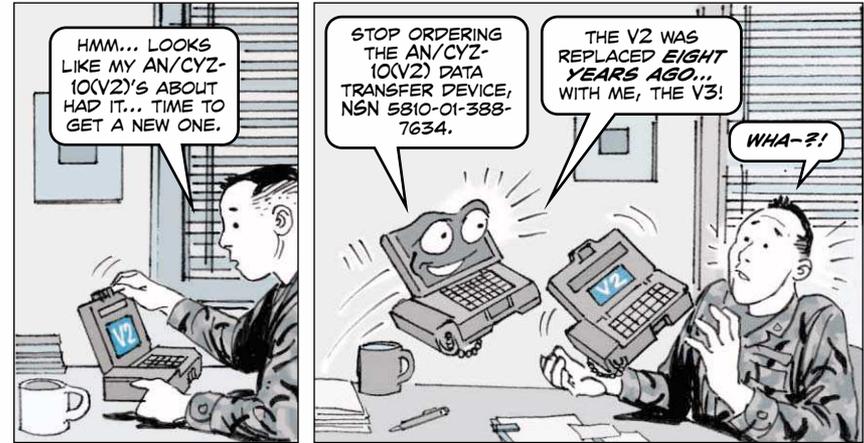


Dear Sergeant T.O.,
 No sooner asked for than done. Order the front bracket assembly for the universal night vision device mount with NSN 5340-01-505-5835. It will run you about \$30.

Half-Mast



UPDATE YOUR VERSION



AB-1339/G Antenna Winder

NSN 5120-01-343-3326 brings the plastic winder stay assembly for your 15-meter mast antenna, AB-1339/G.

TIPS FOR DRIVERS



THE M-GATOR IS A TWO-PASSENGER, SIX-WHEELED, ALL-TERRAIN VEHICLE THAT'S POWERED BY A THREE-CYLINDER DIESEL ENGINE.

IT HAS A PAYLOAD CAPACITY OF 1,000 POUNDS, INCLUDING THE WEIGHT OF THE DRIVER AND PASSENGER, AND A MAXIMUM GROUND SPEED OF 17 MILES PER HOUR.

Like any workhorse, the M-GATOR is very stable, but accidents can happen... most often because the driver was in too much of a hurry or not paying attention.

Before heading out, take time to read these driver tips. They can mean the difference between a completed mission, an accident, or a fatality!

Here's the lowdown:

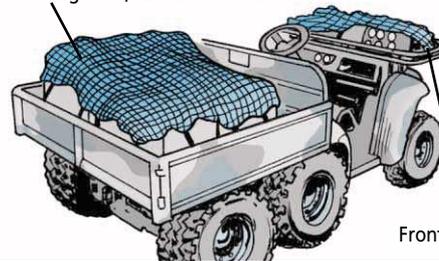
Do not use the M-Gator to evacuate litters or casualties. The vehicle could roll over—crushing the personnel.

SORRY. WE CAN'T TAKE YOU GUYS. WE ALL MIGHT END UP IN THE HOSPITAL.

Do not drive the M-GATOR on public (hardtop) roadways. The only time you can drive the vehicle across a roadway is at a designated crossing point or with a road guard.

The M-GATOR is not towable—plain and simple. Towing the vehicle will damage its chain drive, transaxle and tires. Also, do not use the M-GATOR to tow trailers.

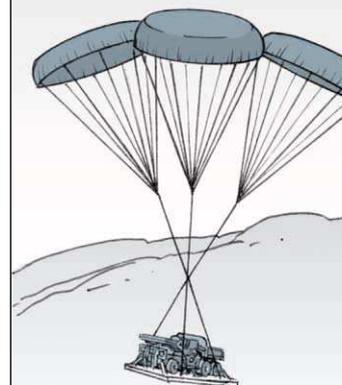
Rear cargo net, NSN 3940-01-477-6758



Front cargo net, NSN 3940-01-477-7095

All loads over fifty pounds must be strapped to cargo tie-downs in the back of the vehicle, and the cargo shelf up front. To keep cargo in place, use cargo net, NSN 3940-01-477-6758, for the rear and cargo net, NSN 3940-01-477-7095, for the front.

Make sure you inspect the M-GATOR after an air-drop operation. Eyeball the vehicle for fluid leaks and any loose or damaged components.



Only the driver and passenger can occupy the vehicle in the front seats. Do not pick up any hitchhikers.



SORRY. NO CAN DO.

PUT PUTPUTPUT PUTPUT

Make sure you wear a helmet and eye protection (goggles).



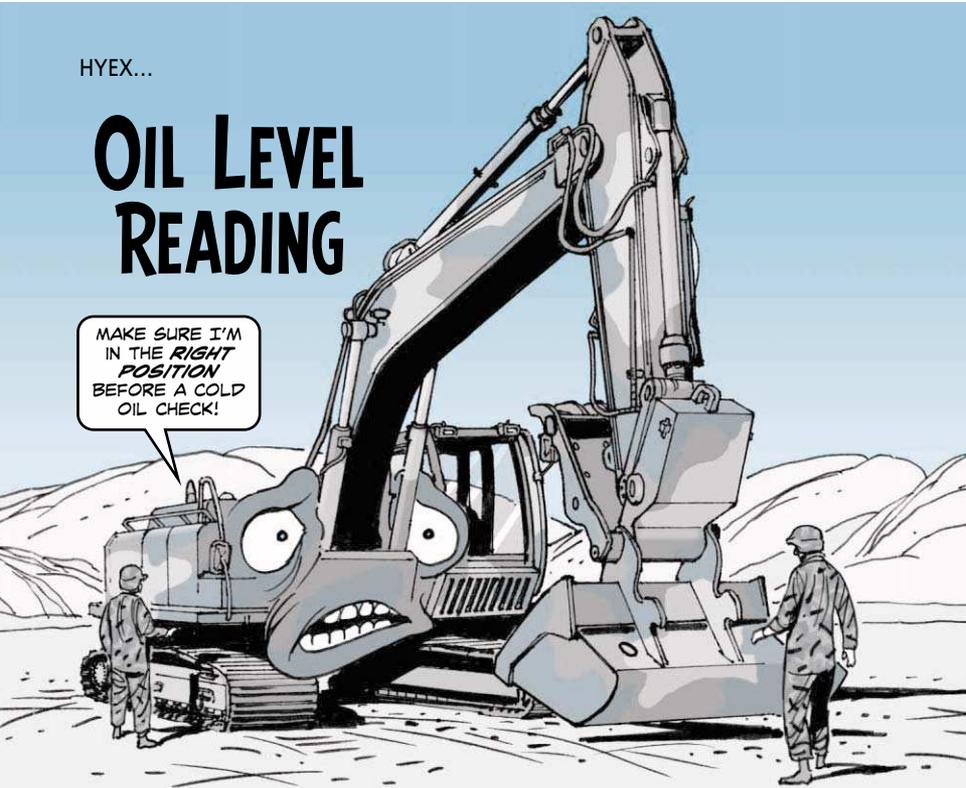
Ammunition must be on a pallet and strapped down in the vehicle's rear cargo area.



HYEX...

OIL LEVEL READING

MAKE SURE I'M IN THE RIGHT POSITION BEFORE A COLD OIL CHECK!



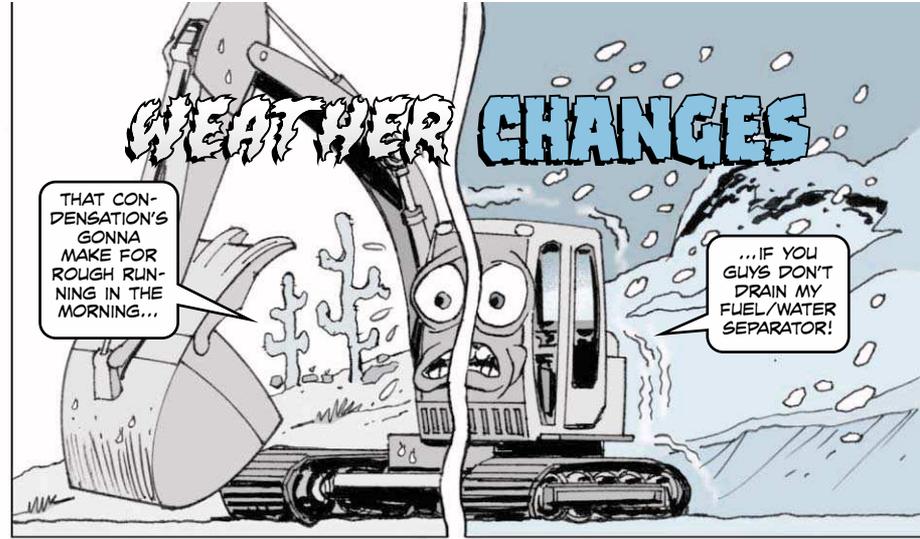
Read and heed the placard next to the hydraulic oil tank's sight gauge on your HYEX excavator. You'll find it inside the curbside engine access door. In other words, do the cold oil check with the arm cylinder fully retracted and the bucket cylinder extended. Lower the boom so the bucket is on the ground.

Leaving the excavator up (in the stowed position) during an oil level check will give a false reading.

The hydraulic oil is in the cylinders, causing low readings in the reservoir. Overfilling the tank puts a strain on the excavator's hydraulic system and may cause leaks.

So play it safe. Make sure the excavator's arm is in the proper position before you eyeball the oil in the hydraulic oil tank's sight gauge.

Read placard next to hydraulic oil tank's sight gauge



THAT CONDENSATION'S GONNA MAKE FOR ROUGH RUNNING IN THE MORNING...

...IF YOU GUYS DON'T DRAIN MY FUEL/WATER SEPARATOR!

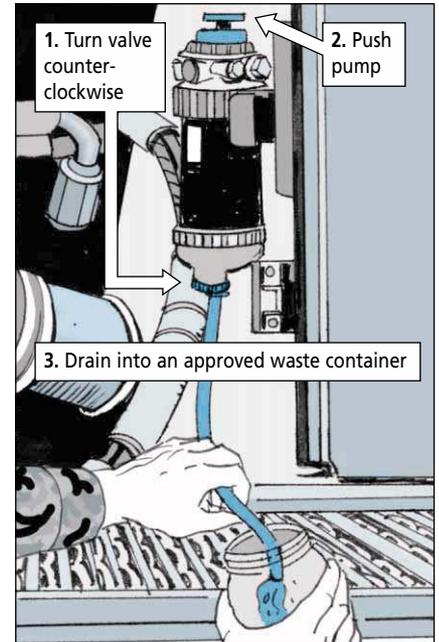
Warm days and cool nights cause condensation to form in the hydraulic excavator's fuel tank.

That means you operators may have to drain the fuel/water separator before each day's operation. Not draining the separator will leave water and crud in the excavator's fuel system. Then the engine runs rough.

Drain the separator—located behind the curbside engine access door—by turning its drain valve counterclockwise and pressing the pump on top. Collect drained fuel in an approved waste container. Never dump it down a drain or let it run on the ground from the separator's drain hose.

If the fuel is clear, you're OK. If the fuel doesn't run clear after you've drained half a pint or so, close the valve and report it to your mechanic.

Also, make sure your mechanic replaces the fuel filter at the quarterly service.



SEE...

STOP RUSTY COLLAR



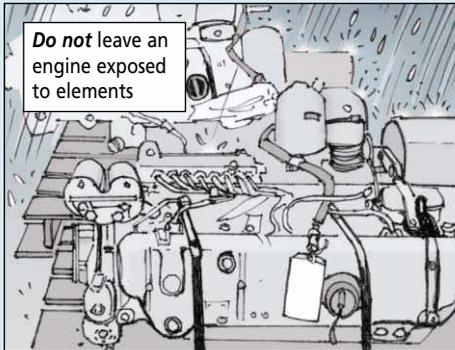
OPERATORS AND MECHANICS, HERE ARE TWO PM POINTERS TO KEEP IN MIND TO KEEP WATER OUT OF WHERE IT'S NOT NEEDED.

Packaging Info

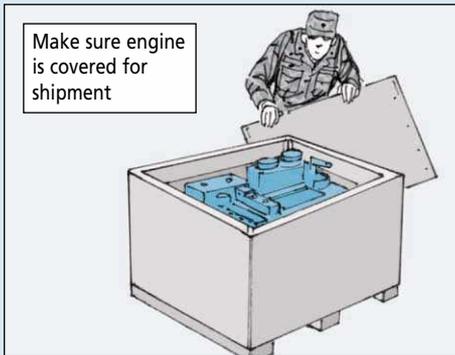
The excavator's engine and transmission suffer unnecessary damage when they're not packaged right.

With the engine removed, do not leave the transmission exposed to the elements. That's because water collects in the housing. During low temperatures the housing can crack when the water freezes. Also, water rusts the input shaft's collar.

The engine can also suffer damage if left exposed to the elements. All that's needed during packaging is a little TLC. Pack the engine and secure it in a wooden crate if possible. If the engine is secured (strapped down) to a wooden pallet, do not leave it exposed to the elements. Make sure it's covered with plastic wrap. It's the smart way to save your unit unnecessary repair bills down the road.



Do not leave an engine exposed to elements



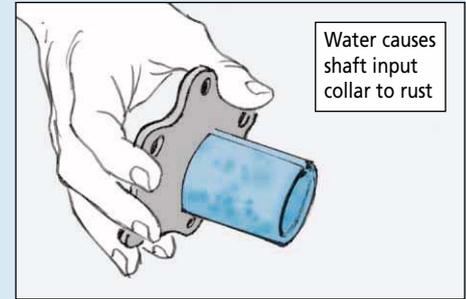
Make sure engine is covered for shipment

Ban the Birdbath

Do not run the excavator through the birdbath for cleaning. When water sits in the clutch group, it rusts the collar on the input shaft.

Eventually, the throwout bearing seizes and the clutch won't work. Then you're stuck with a vehicle that won't shift gears.

Next time your excavator needs a bath, spray it with a high-pressure hose instead.



Water causes shaft input collar to rust

M9 ACE...

Don't Throw a Track!



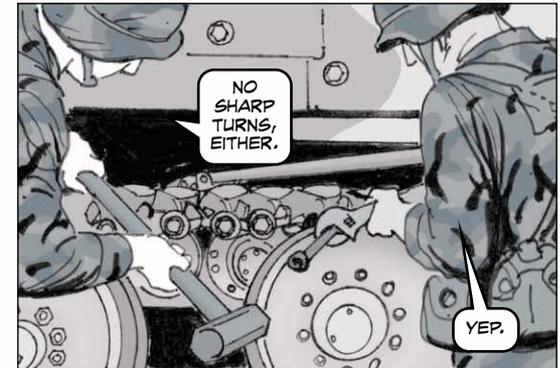
GEEZ! WE SHOULDN'T HAVE STEERED!

YEP! THAT THREW THE TRACK!

Some have found out the hard way, the importance of the words on Page 2-69 of TM 5-2350-262-10.

Never steer the ACE during dozing operations! Turning the wheel while dozing puts so much stress on the track that it can be thrown. Thrown track can crack road wheels, bend road arms and rip actuators from the hull.

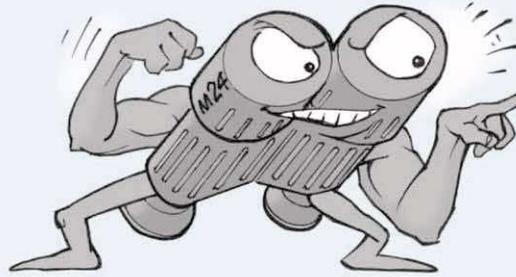
And during operations, forget sharp turns. You can throw a track that way, too.



NO SHARP TURNS, EITHER.

YEP.

Basics of Binocular Care



I MAY NOT BE AS BIG AS YOU, M22...

BUT I'M JUST AS POWERFUL!

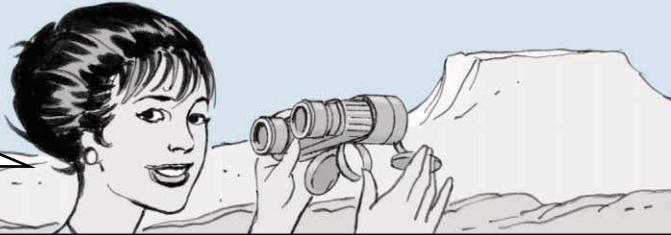


CAN'T WE ALL JUST GET ALONG?

The M24 miniature binoculars are lightweight and small enough to fit in your BDU pocket. But they're every bit the equal of the larger M22 binoculars when it comes to magnification, laser protection and reticle features.

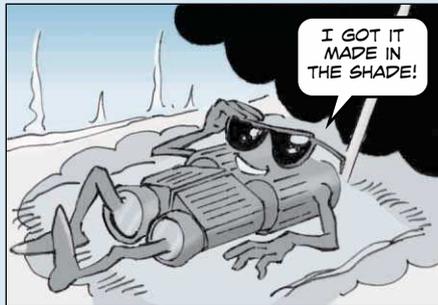
NSN 1240-01-430-6944 gets you the M24. CTA 50-909 is your authorization for ordering.

SOME BASIC CARE WILL HELP YOUR M24S SEE LONGER AND FARTHER...



Save Your Sight

- It's OK to breathe directly on the lens for cleaning. Just wipe the moisture off right away, especially in freezing weather. If the moisture freezes, it'll obstruct your vision. Also, you might damage the lens trying to scrape off the ice.
- Use lens covers when you take your binoculars from a warm area to a cold area. That way the lenses cool gradually and you avoid condensation.
- Never let the binoculars lie uncovered in direct sunlight. Heat lets gas escape from inside and can break down the adhesive that holds the optical elements in place.
- If you're in sandy, dusty areas, keep the lens covers on and the binoculars in your pocket and out of the elements. Blowing sand and dust scratch the lenses and dirty the adjusting mechanisms.



I GOT IT MADE IN THE SHADE!

Your M24 should never go without lens covers. They're too important for protection. Get the eye lens cover with NSN 6650-01-433-3048 and the objective lens covers with NSN 6650-01-433-3056.

Neat 'n' Clean

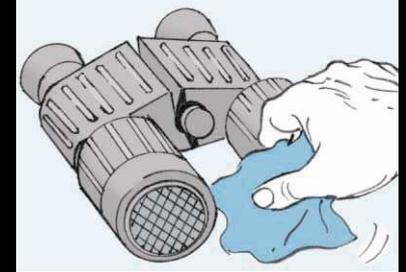
Wipe the outside of your M24 with a lint-free cloth, NSN 8305-00-267-3015, to remove dust. Use a cloth dampened with soap and water to get rid of grease, oil and fingerprints.

Afterwards, dry the binoculars with another lint-free cloth.



LENS CLEANING IS A BIT TRICKIER. YOU NEED A GENTLE TOUCH. DO IT LIKE THIS...

- Softly blow away dust and dirt.
- Use lens tissue, NSN 6640-00-663-0832, like a little broom to sweep off the lens. Just don't rub. That will scratch the glass.
- Blow on the lens again.
- Moisten a clean piece of lens tissue with water or glass cleaner. Gently wipe the lens.
- Dry the lens with still another clean piece of lens paper.



Anti-reflection Device

The glint from your lenses can give away your position. Remain undetected by using an anti-reflection device (ARD) with your M24 to get rid of glint. NSN 6650-01-456-6516 gets you the ARD, a carrying bag and instructions.



THERE HE IS!

OOPS!

RESUPPLY FOR AID BAG



HANG IN THERE, SOLDIERS. THE MEDIC'S ON HIS WAY.

AFTER ALL THIS, I'LL NEED TO RESTOCK THIS BAG, ASAP!

COMBAT LIFE-SAVERS, YOU'RE RESPONSIBLE FOR KEEPING YOUR AID BAG, NSN 6545-01-254-9551, WELL STOCKED.



When you're issued your bag, make sure:

- It's stocked according to the prescribed packing list.
- All stocked items are serviceable.
- Items have not passed their expiration dates.

If items are missing or have passed their expiration dates, see your medical support folks to get them replaced.

One thing to keep in mind about resupplying the bag: Whoever orders the items will receive the unit of issue (UI). The UI may get you more individual items than the number listed in the Qty Per Bag column.

HERE'S WHAT YOU NEED FOR EACH BAG...



Item	Qty Per Bag	NSN
Povidone-iodine ointment	9 packets	6505-00-148-7096
Pseudoephedrine hydrochloride tablets	1 bottle of 24	6505-00-149-0098
Acetaminophen tablets	2 bottles of 50	6505-01-017-1625
Ringer's injection	2 bags of 500 mls	6505-01-312-7873
Elastic gauze bandage	4	6510-01-164-2694
Tourniquet	1	6515-01-146-7794
Field dressing, 4-in x 7-in	6	6510-00-159-4883
Triangle bandage, 37- in x 37-in x 52-in	4	6510-00-201-1755
Adhesive bandage 3/4-in x 3-in	18	6510-00-913-7909
Surgical adhesive tape, 1-in x 10-yd	1 roll	6510-00-926-8882
Scissors, bandage	1	6515-00-935-7138
Exam glove	6	6515-00-226-7692
Pharyngeal airway, child size	1	6515-00-958-2232
Pharyngeal airway, adult size	1	6515-00-687-8052
Atropine injection, syringe with needle	5	6505-00-926-9083
Diazepam injection, syringe with needle	5	6505-01-274-0951
Catheter and needle set	2	6515-01-315-6227
Intravenous injection set	2	6515-01-472-1863
Povidone-iodine pad	12	6510-01-010-0307
Universal splint	1	6515-01-225-4681
Case	1	6545-00-912-9870

PREPARING PBUSE CONVERSIONS



ULLS-S4 is now included in the property book unit supply enhancement (PBUSE) program. PBUSE provides close to real time, accurate visibility of your property book account. The old program only provided snapshots of the account when it was last updated.

Before you convert your standard property book system-redesign (SPBS-R) to PBUSE, you must have the info in your property book validated. The validation allows PBUSE to start working for you with the right info, right away.



First, save your property book ALV03 computer data to ASCII format. When saved the ASCII file must have a file extension of ".rsm" or ".txt".

Then go to the Logistics Support Activity (LOGSA) WebLOG webpage at:

<http://weblog.logsa.army.mil>

Click on the PBUSE icon in the right column. Login and enter your password. If you don't have a Login ID and password, return to the WebLOG page and fill out the System Access Request (top center of the screen).

Once in PBUSE, click on FILE UPLOAD and enter your installation code, unit description, name, rank, area code, phone number, and email address. Browse your computer to find the ASCII file you've already prepared listing all your property book items.

Click on **UPLOAD FILE**. When you get a message that says "File Successfully Loaded" you're done—for an hour.

PBUSE Data Validator Upload

This form is for validating PBUSE data in GCSS Army modules. Just browse your local PC directories to locate an ASCII file to upload. All fields are required.

Please note: This form will accept only flat ASCII files with an extension of ".rsm". Binary files such as Word, Excel and Zip files will not work.

Installation Code: _____
 Unit Description: _____
 Name: _____
 Rank/Grade: Choose a Rank Here --
 Area Code + Phone: _____
 Email: _____

Request LOGSA Objective Analysis? Yes No

File to Upload:

Give the system an hour to process your request, then check the File Validator for PBUSE.

PBUSE Data Validator Results

This form is for retrieving validation results from files previously uploaded. Enter either an Installation Code or an Owning UIC (either the first 4 or the full 6 characters).

INS CD: UIC: Reportable By: _____

TEDB
 RIDB
 UIT

Click on your installation code or unit identification code (UIC), enter the appropriate code, and then click on **REVIEW VALIDATION**. You should see your records. If not, wait another hour.

PBUSE Data Validator - Microsoft Internet Explorer provided by LOGSA

Address: [http://c44\(logsaarmy\)/pr/datavalidator/processValidation.cfm?requestTimeout=500](http://c44(logsaarmy)/pr/datavalidator/processValidation.cfm?requestTimeout=500)

File Validation Results for Installation Code bqc, UIC

Convert to an Excel Spreadsheet

Inst Code	UIC	LIN	NSN	SN	Reg Num	ReqNum	TEDB Rptb?	RIDB Rptb?	UIT Rptb?	Error Message
BQC	WAPGAA	A3300	6665014386963	Y14D21571Y14M21571		NO			YES	SN not recorded IAW NETT Plan
BQC	WAPGAA	A3300	6665014386963	Y14D21127Y14M21127		NO			YES	SN not recorded IAW NETT Plan
BQC	WAPGAA	A3300	6665014386963	Y14D16761Y14M16761		NO			YES	SN not recorded IAW NETT Plan
BQC	WAPGAA	A3300	6665014386963	Y14D21332Y14M21332		NO			YES	SN not recorded IAW NETT Plan
BQC	WAPGAA	A3300	6665014386963	Y14D21733Y14M21733		NO			YES	SN not recorded IAW NETT Plan
BQC	WAPGAA	C09541	6895012772680	004536A		NO			YES	
BQC	WAPGAA	C09541	6895012772680	004543A		NO			YES	
BQC	WAPGAA	C09541	6895012772680	004547A		NO			YES	
BQC	WAPGAA	C09541	6895012772680	004537A		NO			YES	
BQC	WAPGAA	C095701	6895011924153	Z16C40324Z16M05230		NO			YES	
BQC	WAPGAA	C095701	6895011924153	Z16C40383Z16M04511		NO			YES	
BQC	WAPGAA	C095701	6895013578502	Z16C13350Z16M12398		NO			YES	
BQC	WAPGAA	C095701	6895013578502	Z16C12205Z16M11185		NO			YES	
BQC	WAPGAA	C115234	235001097527	NS1112929W112449370		YES	YES		YES	Missing Reg No Potential SN/Reg
BQC	WAPGAA	D11538	2350010984088	SJ00479MA12875671		YES	YES		YES	

STILL NO RECORDS? CALL KENNETH COLBURN OR MARSETTA BEARDEN AT DSN 645-9751 OR 645-0532.

THEIR COMMERCIAL NUMBERS ARE (256) 955-9751 OR -0532.

OR YOU CAN EMAIL THEM AT:

kenneth.colburn@logsa.redstone.army.mil
 or
marsetta.bearden@logsa.redstone.army.mil

CORRECTING SUPPLY DISCREPANCIES



Dear Editor:
 Since the implementation of Milestone-3 of the Single Stock Fund (SSF), DLA supply centers have been getting more and more Supply Discrepancy Reports (SDRs)—formerly called Reports of Discrepancy (RODS)—on non-Army managed parts released from SSF sites.
 It appears the Army Master Data File (AMDF) is being used to identify the Source of Supply to address the SDR. Consequently it goes to DLA, where it's marked N/R (no record) and rejected.
 Before you submit an SDR, you must research the shipping status of your document. Checking document history files and/or web Visual Information Processing System (VLIPS) at:
https://www.daas.dla.mil/daashome/daasc_webvlips.htm
 should help you determine who shipped your materiel. The important thing to remember—if the discrepancy involves shipment of a non-Army managed part from a SSF site, submit your SDR to RIC AJZ.

You can submit your SDR online using the Army Electronic Product Support (AEPS) website. You can obtain a user ID/password by logging into:
<http://aeps.army.mil>

If you already have a password, you can link to the information at:

https://aeps.ria.army.mil/services/supply/sdr/Main/sdr_home.cfm

You do not have to have an AEPS userid to submit an SDR but you do need the userid to check the status in AEPS. Also, submitting your SDR through AEPS is more efficient and provides quicker response for getting due credit.

R. W. Holley
 Supply Logistics
 Assistance Representative
 AMC Field Support Center



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HMMWV WEAPON SHIELD

NSN 2510-01-498-4996 gets a gunner's weapon shield kit for the M1114 uparmor HMMWV. It can also be used on the: M966/A1, M1025/A1/A2, M1026/A1, M1036, M1043/A1/A2, M1044/A1, M1045/A1/A2 and M1046/A1. The kit includes a shield, bracket, adapter, hardware and installation instructions.

- You'll need turret stop ring, NSN 2510-01-501-2691, when you install the shield on the M1114.
- Use the improved turret lock ring, NSN 2590-01-192-4525, when you install the shield on HMMWV variants with a serial number prior to 189936.
- The weapon shield weighs 116 pounds and must be considered as part of the vehicle's payload.
- Until the kit is available in supply, order by calling DSN 786-8398 or (586) 574-8398, or by emailing:

vasonia@tacom.army.mil

You can also get the kit directly from the manufacturer O'Gara Hess, by calling Don McDaniels, 1-800-697-0307, or emailing:

dmcdanie@ogara-hess.com

CONVECTIVE SPACE HEATER CYCLING

Does your convective space heater, NSN 4520-01-431-8927, cycle on and off a lot when outside temps change a lot? Here are two ways to reduce cycling:

- Open the tent door and cool the inside.
- Disconnect the air supply duct from the tent's air duct opening. Allow the heater to draw cooler outside air until the cycling stops.

SPACE HEATER CLEANING BULLETIN

JP-8 is the preferred fuel to use in the convective space heater, NSN 4520-01-431-8927. You're allowed to use diesel fuel. Just remember, diesel promotes carbon build-up, shortens burner service life and leads to frequent burner cleaning. If you use diesel, get the *Simplified Burner Cleaning* service bulletin (Instruction Sheet PN 5-13-5647). It's available online at

<http://www.huntermfgco.com/military/bulletins.htm>

If you prefer a hard copy, phone (440)248-6111, Ext 222, or DSN 256-5592.

TENT MOD KIT

The convective space heater, NSN 4520-01-431-8927, efficiently heats your modular command post shelter (MCPS) as long as there's a free flow of air into and out of the shelter. Problem is, the earliest versions of the MCPS were fielded without air duct openings. If your MCPS doesn't have duct openings, you need to order the tent wall modification kit, NSN 4520-01-493-3215. The kit allows you to cut openings in the shelter wall so that air flows freely.

NEW AR 750-1 PUBLISHED

The Army has formally published AR 750-1, *Army Materiel Maintenance Policy*. It is available in PDF format at the U.S. Army Publishing Directorate's new website at:

<http://www.apd.army.mil>

The regulation was published Aug 18, 2003 with an implementation date effective Sep 18, 2003.

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h.(1) Office Use	1062	854
i. Total	91,175	88,541
Percent Req'd	99.01%	98.98%

Submitted by: STUART A. HENDERSON, Production Manager

Make Desert Ideas SMART!

Soldiers returning from the deserts of Iraq can profit from their experience. The Army's Supply and Maintenance Assessment and Review Team (SMART) is looking for suggestions on how to improve the wide range of logistics activities. Approved suggestions may make soldiers eligible for cash awards. Send your ideas to SMART at:

<http://aeps.ria.army.mil/smart/smarthome.cfm>

BATTERIES FOR SAVI RF ID TAGS

To order new batteries for your Savi 410 or 412 radio frequency (RF) tags use NSN 6135-01-301-8776. The nomenclature is battery non-rechargeable lithium, sealed size AA. For information on other Automatic Identification Technology (AIT) parts and equipment use the AIT website at:

<http://www.eis.army.mil/AIT/index.asp>

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

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