



**THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY**

TB 43-PS-633, 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 633 AUGUST 2005**



**COMBAT VEHICLES**

- M1-Series Tank High-pressure Cleaning
- M88A1 Recovery Vehicle Air Filters
- Combat Vehicles Desert Maintenance
- M113A3 FOV Prop Shaft, U-Joint Bolt Caution
- M109A6 Paladin Breechblock Springs



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- Tailgate Chain Cover
- Corrosion Protection for Tactical Vehicles



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

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**PS, the Preventive Maintenance Monthly**  
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 5307 Sparkman Circle  
 Redstone Arsenal, AL 35898-5000

Or e-mail to:

**psmag@logsa.redstone.army.mil** or  
**half.mast@us.army.mil**

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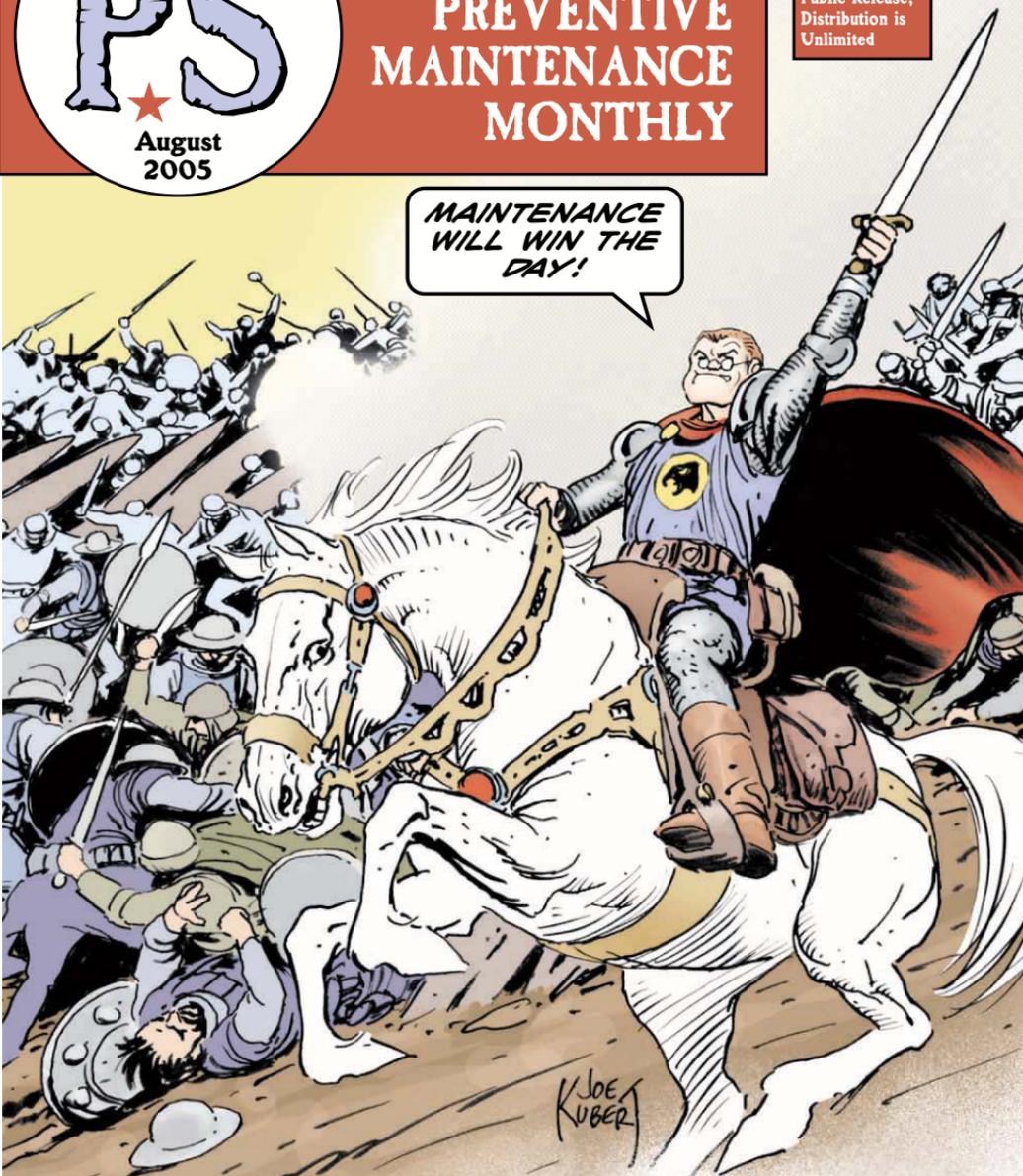
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August  
2005

# THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-633

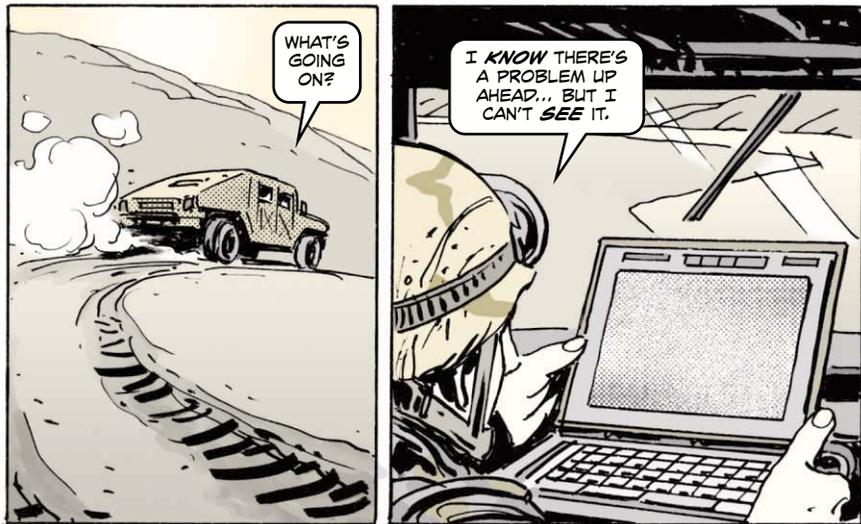
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*MAINTENANCE  
WILL WIN THE  
DAY!*



See Page 27

# DON'T BE CAUGHT UNAWARE



Heads were rolling and voices were yelling because situational awareness was lost. Icons were flickering, graphics were shot and overlays were blending into underlays.

Great minds were applied to the task. Hour after hour passed and still no resolution was found.

One force, two force, red force, blue force, but none could be tracked. Not even by MAJ Seuss.

But then a private, fresh-faced and green, used some compressed air and blew a little dust away.

Voila! Communication was restored. Situational awareness was regained. What needed to be tracked was tracked to perfection.

The cardinal rule of preventive maintenance is to keep your equipment clean.

The modern battlefield is a chaotic place. In order to calm the chaos, you must know where you are and where the enemy is at all times. This will only happen if you do timely PM on your equipment and that starts with keeping your equipment clean!





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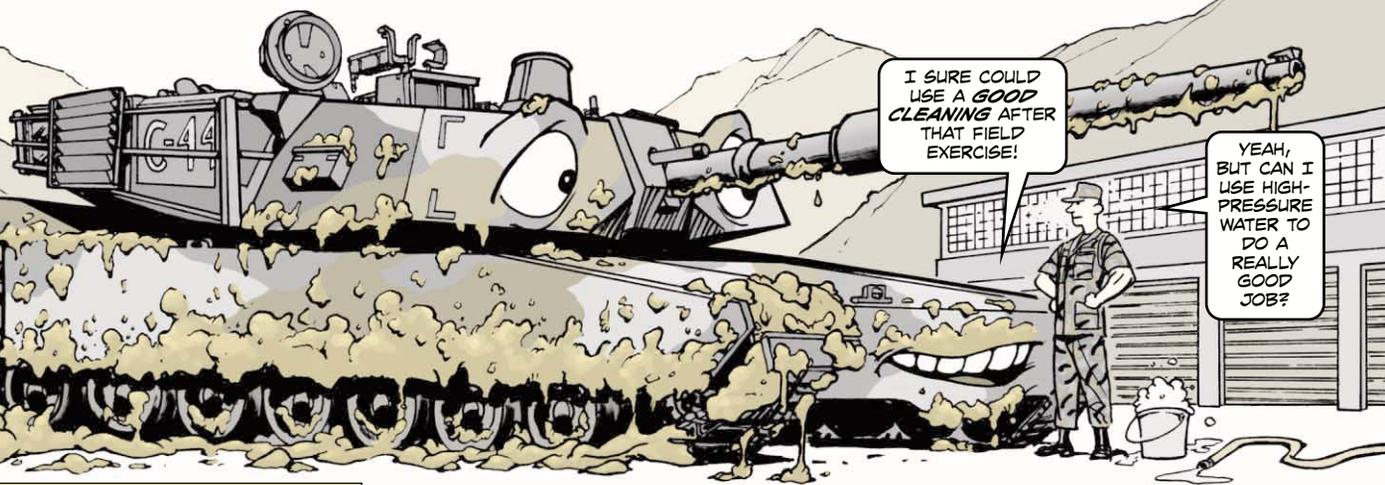
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# HIGH-PRESSURE WATER, YES OR NO?



Dear Half-Mast,

When cleaning our M1A1 tank after a field exercise, we've been told it's OK to use high-pressure water by some folks, while others say it's definitely off limits.

Can you give us the real low-down?

SSG P.S.J.,

Dear Sergeant P.S.J.,

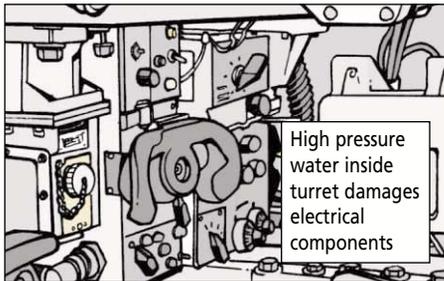
Sure can. The answer is yes...and no. Some parts of the tank are off limits while others are OK for high-pressure water or steam. Let me explain.

## Inside the Turret

You should **never** use high-pressure water or steam inside the turret or driver's station. It forces water inside high dollar line replaceable unit (LRU) components.

The water creates electrical shorts, corrodes connectors and receptacles, ruins circuit cards and generally causes all kinds of expensive havoc.

If the inside of your turret needs cleaning, use a nylon bristle brush and a bucket of soapy water to clean it. Rinse with clean water from a bucket and make sure the drain valves are open so water can drain out of the hull.



Use bucket of soapy water and brush for cleaning



Don't use the brush on electrical components. Instead, wipe them down with a damp—not soaking wet—cloth. Be careful not to get water into electrical connectors.

See Step 12 under Cleaning and Lubrication in your -10-1 TM's PMCS for more information.

## Outside the Turret

It's OK to clean the outside of the tank with steam or water as long as you follow the precautions spelled out in Step 13 under Cleaning and Lubrication in your -10-1 TM's PMCS.

Pay special attention to Item 13e, which says to close all open hatches, grilles, and access doors. Although not specifically stated, this means you should also activate the turret's inflatable seal to protect the race ring from water damage.

An uninflated seal allows water, dirt and other contaminants to be forced inside the race ring. Grease is washed away and corrosion starts. That leads to damage to the springs, ball bearings, and race ring.

The inflatable seal is found on most M1 and M1A1 tanks and on some M1A2 tanks. If your tank doesn't have the seal, **do not** use high-pressure water or steam around the race ring area.

Don't forget to grease the race ring monthly with WTR, too. That keeps corrosion away and the race ring turning smoothly.

*Half-Mast*



M88A1 Recovery Vehicle...

# DIRTY FILTERS ARE A NO-GO



WHAT'S WRONG? WE'VE GOT A RECOVERY MISSION TO COMPLETE!

COUGH! IF YOU DON'T CLEAN OUT MY AIR FILTERS...

KCOFF HACK HACK

... I'M GONNA NEED SHACKS RECOVERING!



Keeping your M88A1 gulping clean, fresh air is a tough job in the desert. All that sand and dust will plug the air filter faster than you might think.

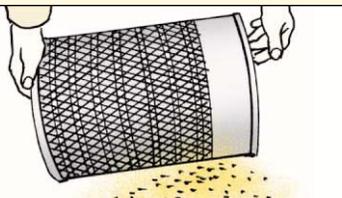
That means you'll need to pull and clean the filter as often as possible. If you don't, pretty soon it'll be your recovery vehicle that needs recovering.

## Shake It Out

Sometimes you only have a few minutes between missions. But even that's long enough to shake some of the sand out of the air filter.

Pull the filter from the canister and shake it gently. Then tap the sides with your hands to remove sand and dirt. Never hit the element against a hard surface. That'll ruin it.

Shake air filter gently to remove sand



After reinstalling the filter, take a look at the dust cover before you lock it in place. Sand has a tendency to get underneath the baffle, NSN 2940-01-378-9374. If you don't get it out, that sand falls right back into the air filter.

Sand gets under dust cover baffle



Unscrew the wing bolt in the center of the baffle and remove it. Pour out any accumulated sand and then wipe the inside of the dust cover with a clean, water-dampened cloth, NSN 7920-00-205-3570.

Use damp cloth to wipe out inside of dust cover



Make sure there's a washer, NSN 5310-01-378-8714, under the wing bolt when you put the baffle back in place. That keeps the baffle from vibrating loose.

## Blow It Out

A better way to clean the air filter is with compressed air. So if you have a little more time and an air hose is available, go this route.

When using compressed air, it's a must to wear goggles and gloves for protection.

Once you're ready, use the air hose to blow from the inside out to remove sand. Keep the air pressure at 30 psi or less to avoid tearing the filter.

Blow out filter from inside out



## Wash It Out

For more stubborn problems like heavy dirt, carbon or oil deposits, wash the filter element and use it again. Here's how:

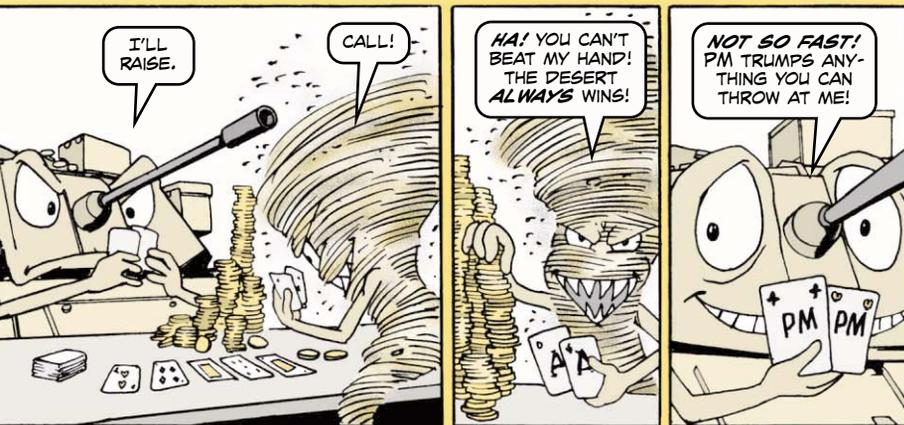
1. Gently rinse away dust and sand from the filter element with clean, low-pressure (no more than 10 psi) water.
2. Soak the filter element in lukewarm water using general purpose detergent, NSN 7930-00-282-9699. Follow the instructions that come with the detergent. Use a container large enough to completely submerge the filter element.
3. Very gently agitate the filter while it's still in the water.
4. Rinse the filter element with clean, low-pressure water from the inside out.
5. Set the filter aside in a dust-free area to dry completely.
6. After the filter element is dry, shine a flashlight from inside the element and look for tears or holes. If you spot any, scrap the filter. Holes can let dirt and sand directly into the engine.

Before reinstalling the filter element, wipe the inside of the air filter housing with a clean, water-dampened cloth.

Air filters can only be washed twice. When it gets dirty enough for a third washing, replace it.

[Click here for a copy of this article to save or email](#)

# Trump Desert Damage with PM



Desert environments can deal the track on your combat vehicle a deadly hand. Heat, sand, and rocks all combine to take a heavy toll—unless you're willing to play the PM trump card!

## Heat

Air temperatures of up to 120°F are bad enough, but sand absorbs the heat and can get as hot as 165°F!



Those temperatures are extremely hard on rubber parts. Heat makes track shoes soft and weakens their resistance to sharp rocks and plant spines. High temperatures also increase rubber/metal separation on roadwheels.

Pay special attention to shoes and roadwheels during PMCS. Replace pads that are severely damaged or worn down to the grouser.

Roadwheels with tread separation extending around 75 percent of the wheel that is 1 inch or wider for M1-series tanks, ¾ inch or wider for M113-series FOV, or ½ inch or wider for M2/M3-series Bradleys, M109-series howitzers and MLRS should be replaced. Also, replace roadwheels that have chunking extending across half the width or more of the outer rubber surface.

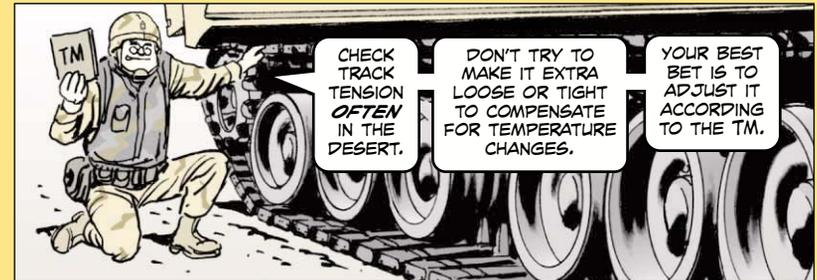
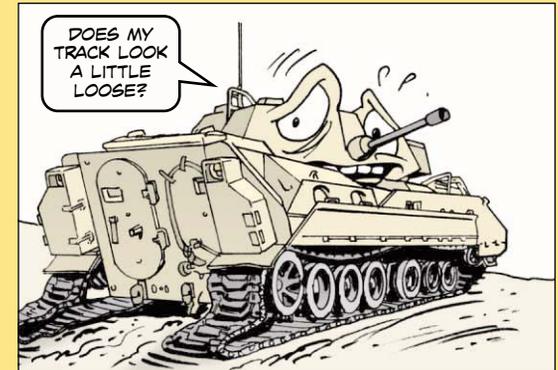
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## Track Tension

Since metal expands and contracts with the ups and downs of temperature, proper track tension is essential in the desert.

During the heat of the day, track parts expand and the track runs looser. That results in thrown track.

At night and early in the morning, it's much cooler. Track parts contract and the track runs tighter. The track can bind, causing bent road arms, damaged end connectors and more.



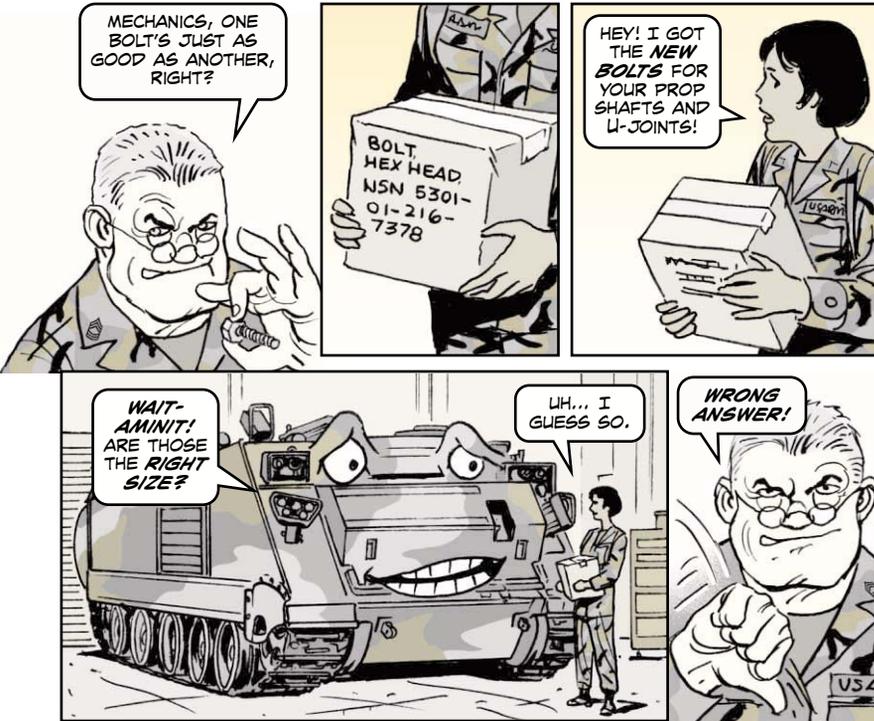
## Driving

Drivers, be wary of a lack of steering response. That indicates sand is building up between the treads and sprockets or idler wheels. If you allow the buildup to continue, the sand will throw the track.

Try "shaking" the vehicle with the steering or backing up to remove sand buildup. Remove accumulated sand by hand at your next stop.



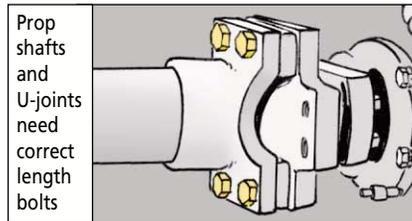
# BE BOLT AWARE!



When it comes to installing the propeller shaft and universal joints on M113A3 family vehicles, using just any old bolt can cause a lot of trouble.

For instance, some mechanics have been using bolt, NSN 5305-01-216-7378. That's the bolt that's supposed to attach the output flange to the transmission. Problem is, it's about an inch too long for securing the prop shafts and U-joints, so it damages the output housing on the transmission.

The one and only bolt to use is NSN 5305-00-719-5239. It's just the right length for securing the prop shaft and U-joints without damaging the output housing.



# Sprung Springs Are a Spoiler

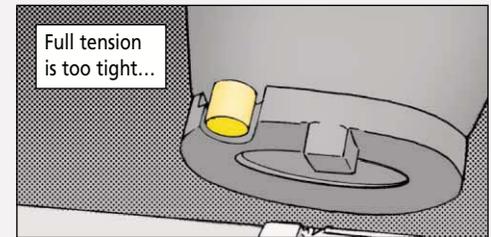


The breechblock on your Paladin is no lightweight, crewmen. That's why it's important to have good closing springs to help you swing it shut. Once those springs wear out, you've got a much tougher job closing the breechblock.

A lot of crewmen keep the springs under full tension. That lets the breechblock close firmly, but the constant pressure wears on the springs and leads to early failure. It can also close with enough force to damage the breechblock detent plunger and stop surface.

Your best bet is to apply only enough pre-load tension to the springs to securely close the breechblock at the loading elevation (less than 300 mils). Most times, that means adjusting the springs to half-tension.

Just push in the plunger and rotate the spring adjuster clockwise to release the tension. If the breechblock won't close at loading elevation, return the springs to full tension.

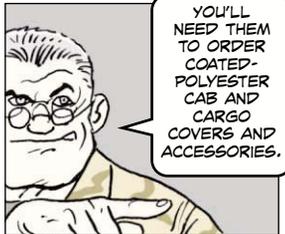


2½-Ton and  
5-Ton FMTVs...



KEEP THIS LIST  
OF NSNs WHEN  
YOU NEED 'EM  
FOR THE CARGO  
COVERS...

Word from the desert is that components for the FMTV's cargo cover kits are hard to come by. Keep this list of NSNs handy in the motorpool.



YOU'LL NEED THEM TO ORDER COATEP-POLYESTER CAB AND CARGO COVERS AND ACCESSORIES.

First, here are the complete cab and cargo cover kits:

Cargo Cover Kits		
Vehicle	NSN 2540-01-	Color
2½-Ton	459-0365	Arctic
	385-9462	Camo
	437-1463	Tan
5-Ton	459-6479	Arctic
	386-2952	Camo
	436-9658	Tan

Cargo Cover Kits		
Vehicle	NSN 2540-01-	Color
2½-Ton	460-3487	Arctic
	387-3987	Camo
	460-2337	Tan
5-Ton	460-0898	Arctic
	472-5091	Camo
	460-1075	Tan

Another Cargo Cover List

Here are the parts for the 2½- and 5-ton truck's soft-top cargo cover kits:

Item	NSN
Bow, front and rear	2540-01-466-1937
Strap tie-down, bow	5340-01-460-6627
Horizontal tube	4710-01-461-9274
Bow, soft-top center	2540-01-466-1938
Strap tie-down, bow	5340-01-460-6627
Strap support	5340-01-461-1429
Buckle spring	5340-00-297-6637
Socket, snap	5325-00-285-6250
Cap, snap	5325-00-359-6844
Stud, cap	5325-00-842-1879
Post, snap	5325-01-005-0600
Brace bow support	2540-01-461-0106
Tube horizontal	4710-01-461-9189
Strap webbing (Aluminum bows)	5340-01-451-8966
Strap webbing (tan)	5340-01-436-7619
Strap webbing (green)	5340-01-436-7620
Tube metallic	4710-01-391-3192
Extension snap	5325-01-460-7431

These are the parts for the 2½- and 5-ton truck's cargo cover kits:

Item	NSN
Ring, D	5365-01-438-2640
Socket, snap fastener	5320-00-285-6250
Cap, snap fastener	5325-00-359-6844
Stud, snap fastener	5325-00-842-1879
Post, snap fastener	5325-01-005-0600
Cord, fibrous	4020-01-475-9242
Cord assembly, fibrous	4020-01-444-9193
Cord assembly, elastic	4020-01-386-8148
Cord assembly, fibrous	4020-01-444-9254
Strap, tie-down	5340-01-460-6616

M1070 HET, M1074/M1075 PLS...

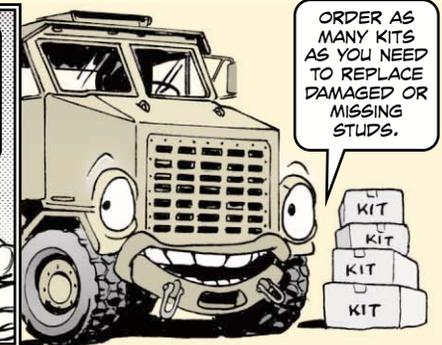
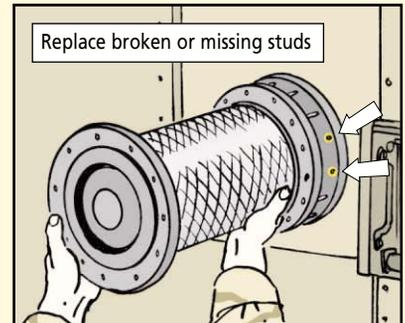
# STUD KIT SEALS THE DEAL



You're not talking "chump change" when it comes to buying a new air cleaner assembly for an M1070 HET or M1074 or M1075 PLS truck.

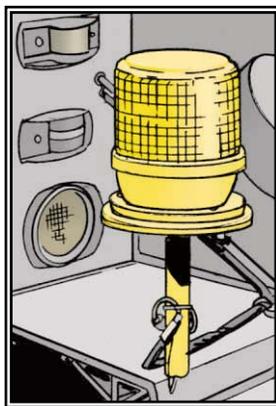
Since they're not cheap, it's tough to replace an assembly just because a mounting stud is damaged or missing.

Keep the seal between the air cleaner mount and the element container (housing) tight by using stud replacement kit, NSN 5307-01-456-6938.





If you're the first or last vehicle in a convoy, you're gonna need a convoy warning light (CWL) or rotating amber warning light (RAWL) to meet the requirements of Para 2-16G of AR 385-55, *Prevention of Motor Vehicle Accidents*.



IN MOST CASES, THE WARNING LIGHT KITS ARE LISTED IN YOUR VEHICLE TMS. IF NOT, YOUR CO CAN OK THE KIT.

HERE'S WHAT YOU NEED...



- **5-ton trucks.** The TMs tell you to use NSNs 6220-01-195-1791, 6220-00-947-7570, or 6220-01-219-7621, depending on your vehicle. Here's where to find 'em:
    - M809-series 5-ton trucks. Repair parts for the CWLs are in Figs 502-504 of TM 9-2320-260-24P-2. Installation instructions start on Page 14-96 of TM 9-2320-260-20.
    - M939-series 5-ton trucks. Repair parts are listed in Figs 611-613 of TM 9-2320-272-24P-2. Installation instructions start on Page 3-1104 of TM 9-2320-272-24-2.
  - **2 ½-ton trucks.** Use NSN 6220-01-195-1791.
  - **M747 semitrailer.** Use the RAWL, NSN 6220-00-947-7570, listed in Fig 11 of TM 9-2330-294-24P.
  - **CUCVs, HMMWVs and all M871 and M872 semitrailers.** Use NSN 2590-01-107-9696. Installation instructions for this light are printed in TB 9-2590-510-23.
  - **FMTV.** Use NSN 6220-01-423-2337.
- If you need an amber bubble light to go with the kits, use NSN 6220-00-947-7570.

# Tail-gate Chain Cover



**M**echanics, make sure you replace a missing or torn nylon cover, NSN 4030-00-594-0475, that fits over the truck's tailgate chain.

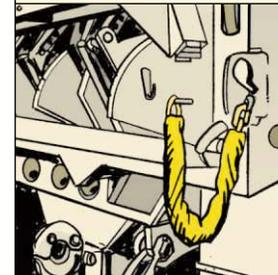
This cover, known as a guy protector, has several purposes, including sound deadening, rust prevention, and finger(s) protection!

But the cover is a little tricky to slip over the chain, which is one reason why it's not replaced when it gets damaged or deteriorates.

Make the job easier. Straighten a metal coat hanger and hook the end through the last chain link.

Some mechanics have used a battery hold-down bolt, NSN 5306-00-739-7754, hooked to the chain's last link, to thread it through the cover.

Get a nylon chain cover with NSN 4030-00-594-0475



Deployment...

# Getting There & Back

WANNA TAKE BETS ON WHICH UNIT'S STUFF GETS THERE INTACT?

LET'S MAKE THEM BOTH WINNERS BY HELPING THEM OUT.



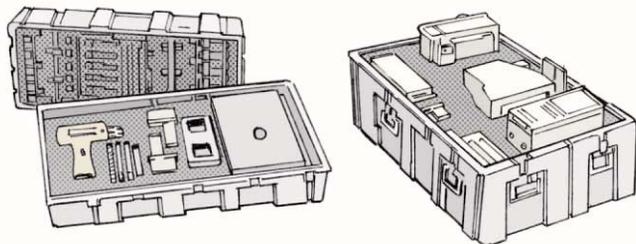
The day has finally come. You're going to the front lines of the global war on terrorism. You and your unit are ready, but will your equipment be fully mission capable when you get there?

It will if you take advantage of a new Army service. The Army has put together teams that provide on-site packaging and hazardous materials (HAZMAT) assistance to deploying and redeploying units. The team's know-how and hands-on help cover all classes of supply. Best of all, the team will help you free of charge.

They'll work with your unit and the mobilization station to get your equipment from home station to mobilization station, to theater, and back home. You avoid the problem of lost, slowed or misrouted shipments. Your gear arrives in country safely and fully mission capable. And deploy more quickly.

Packaging assistance includes:

- preparing items (including vehicles and aircraft) for transport

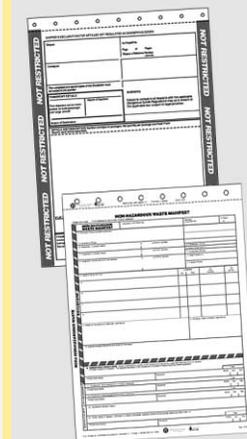


• load planning



• identification marking      • ISO-type container stuffing  
• blocking and bracing

• preparing transportation documents



HAZMAT assistance includes:

• choosing placards



• preparing certification documents  
• making sure that materials packed together are compatible (that they're a safe match and won't react violently to each other)  
• extending an individual's current HAZMAT certification for more time if conditions require it per DoD 4500.9-R, *Defense Transportation Regulation*, and TM 38-250, *Preparing Hazardous Materials for Military Air Shipments*.

FOR MORE INFORMATION CONTACT THE LOGSA PACKAGING, STORAGE AND CONTAINERIZATION CENTER AT THE FOLLOWING EMAIL ADDRESS AND PHONE NUMBER...



logsapt@logsa.redstone.army.mil  
DSN 795-7105 OR  
(570) 895-7105

# NEW GUIDELINES FOR DISCARDING FLAMELESS RATION HEATERS

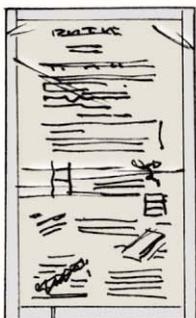


Forget what you've learned in the past about discarding flameless ration heaters (FRH). The Environmental Protection Agency has issued new guidelines for discarding FRH. Here they are:

## 1. Disposal of FRH issued to soldiers:

After it's issued to you, any used or unused FRH is considered non-hazardous waste. You may throw it out as regular trash.

After it's issued to you, FRH is non-hazardous waste



Units may collect previously issued FRH from soldiers to throw out as regular trash.

## 2. Disposal of FRH packaged inside of an intact MRE meal bag, whether issued to soldiers or stocked in bulk lots:

If the MRE has expired, the FRH is considered non-hazardous waste. You may throw it out as regular trash.

If the MRE's expired, FRH is non-hazardous waste

If MRE's expired, FRH is non-hazardous waste



## 3. Disposal of unused FRH stocked in bulk lots and packaged separately from MRE:

Dispose of as hazardous waste. Although the Army no longer issues bulk lots of FRH separately from MRE, it did in the past. Some installations may still stock cases of FRH. Case lots of unused FRH are considered hazardous waste. When stored in large quantities, they pose a fire hazard and should be turned in for disposal. Contact your local environmental office for details.



The Army encourages installations to collect unused FRH for return to the manufacturer through local Defense Reutilization and Marketing Service programs.

Keep in mind that individual states and OCONUS host nations may have tougher disposal rules than those listed here. Check with your installation environmental office to be sure.



As always, if you have any questions about hazardous materials, talk with your unit's HAZMAT officer or NCO or the environmental office supporting your unit or installation.



For more information, see the Update to Food Service Flasher Message #01-10, Waste Disposal of Flameless Ration Heaters (FRH):

[http://www.quartermaster.army.mil/aces/messages/fy05/frh\\_disposal.html](http://www.quartermaster.army.mil/aces/messages/fy05/frh_disposal.html)

Troop Support...



## Message in a Bottle

In the desert, bottled water is a real convenience. But it can quickly become a toxic weapon if it falls into the wrong hands. During distribution from the bottling plant to you, the bottled water won't spend every minute under the Army's watchful eye. That could give the enemy an opportunity to tamper with water supplies.

### Signs of Tampering

Tampering usually involves adding chemical or biological contaminants to water. Signs of tampering include:



- Broken seal around the cap

- Pin holes in the cap, neck or top of the bottle
- Unusual water color
- Bad or unusual tastes or odors



- Large amount of particles floating in the water

### Deal with Tampering

If you suspect that someone has tampered with your bottled water:

- Do not drink the suspected water.
- Report tampering to your superior.
- Identify and quarantine other bottles from the same batch or lot.



For more information, read the bottled water fact sheet on the U.S. Army Center for Health Promotion and Preventive Medicine website:

<http://chppm-www.apgea.army.mil/documents/FACT/31-006-0904.pdf>

Tents...

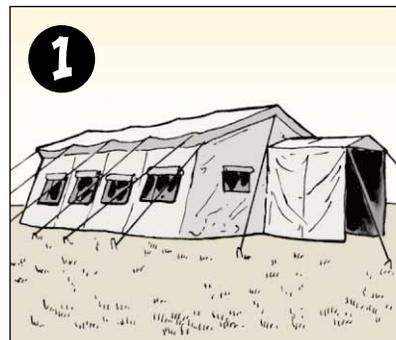
## ATTENTION, CAMPERS!

WHEN YOU HEAD OUT TO THE WIDE OPEN SPACES, MAKE SURE YOU TAKE ALONG FIRST-CLASS ACCOMMODATIONS.

HERE'S A ROUNDUP OF ARMY TENTS, WITH THEIR NSNs AND THE TMs THAT SUPPORT THEM...

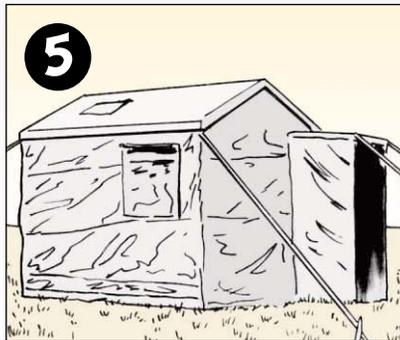
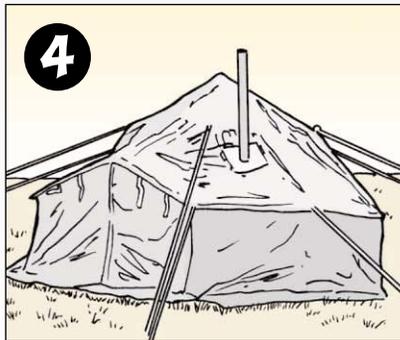
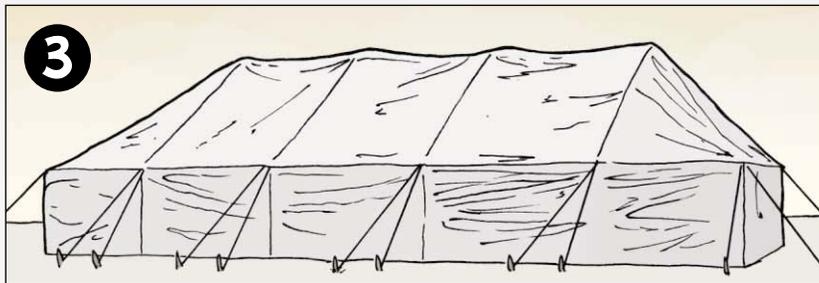


Tent	NSN	TM	FIG
Tent, extendable, modular, personal (TEMPER)	The TEMPER has more than 20 configurations. For NSNs, see the TMs.	10-8340-224-13 10-8340-224-23P	1
Complexing kit passageways. The passageways fit between an ISO shelter and a TEMPER.	The passageways come in 14 different styles and colors. For part numbers, see the TMs.	10-5411-203-13 10-5411-203-23P	
Soldier crew tent Type I, green/tan over-cover Type II, green/white over-cover	8340-01-359-0084 8340-01-359-1481	10-8340-227-13&P	2

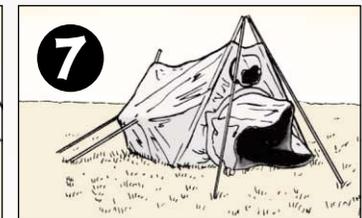
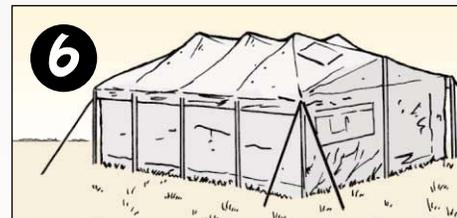


PS MORE

Tent	NSN	TM	FIG
General purpose tent		10-8340-211-13 10-8340-211-23P	3
Small green	8340-00-470-2335*		
Medium green	8340-00-482-3963*		
Large green	8340-00-470-2342*		
Medium tan	8340-01-329-7478		
Large tan	8430-01-329-7479		
Arctic 10-man tent	8340-01-059-4075	10-8340-222-10	4
Assembly tent M-1942	8340-00-262-2877	10-8340-222-10	
Command post tent M-1945	8340-00-269-1370*	10-8340-222-10	
Arctic 5-man tent	8340-01-026-6095	10-8340-222-10	
Modular command post system (MCPS)		10-5410-229-13&P	5
Green	8340-01-323-2454		
Tan	8340-01-334-7529		
Kitchen flyproof tent	8340-00-470-2341	10-8340-205-13&P	
Shelter half tent	8340-01-026-6096	10-8340-221-13	



Tent	NSN	TM	FIG
Standard integrated command post system (SICPS) boot walls. These are passageways that join a MCPS tent to a vehicle or shelter.		10-5410-230-13	
Type I, Class I	8340-01-378-8301		
Type I, Class II	8340-01-380-2241		
Type II, Class I	8340-01-364-4497		
Type IV, Class I	8340-01-364-4496		
Modular general purpose tent system (MGPTS)		10-8340-240-12&P	6
Small green	8340-01-456-3633		
Medium green	8340-01-456-3628		
Large green	8340-01-456-3674		
Small tan	8340-01-491-1507		
Medium tan	8340-01-491-1515		
Large tan	8340-01-491-1479		
Lightweight maintenance enclosure (LME)		10-5410-284-13&P	
Type I			
Green	8340-01-456-3637		
Desert Tan	8340-01-512-6865		
Type II (for laundry advanced system)			
Green	5410-01-512-6867		
Desert Tan	5410-01-512-6868		
Shelter half tent	8340-01-026-6096	10-8340-221-13	
Two-man mountain tent	8340-01-059-2430*	10-8340-221-13	7
Large area maintenance shelter (LAMS)	5410-01-334-3158	10-5410-232-14&P	
Large area vehicle maintenance shelter (LAVMS)	5410-01-333-9299	10-5410-231-13&P	



To get the full story on tents, visit the Defense Supply Center Philadelphia's (DSCP) Base Camp website at: <http://warfighter.dla.mil/special/basecamp/index.jsp>  
The site is devoted to tents and their accessories.

\*Those NSNs marked with an asterisk may not be available for ordering, but the tents are still in the field.



# Barrel Buffer Inspection Revised

WHAT AM I GOING TO DO, CONNIE? I NEED A NEW BARREL BUFFER, BUT THE ARMY'S RUNNING *SHORT!*

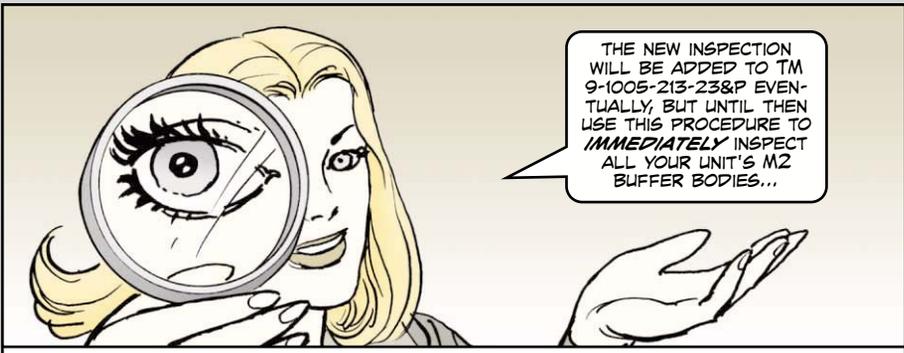
CHECK OUT THIS *NEW INSPECTION PROCEDURE!*

YOU MAY *NOT* NEED A NEW BUFFER.

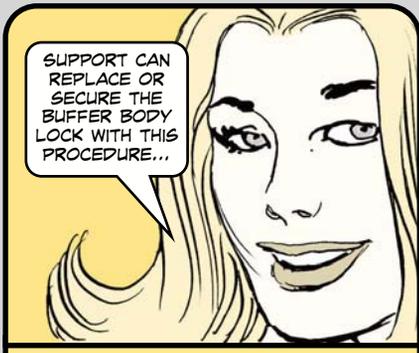


BECAUSE THERE HAS BEEN A HUGE DEMAND FOR REPLACEMENT BARREL BUFFER BODIES...

...TACOM-ROCK ISLAND HAS REVISED THE INSPECTION CRITERIA FOR THE BUFFER.

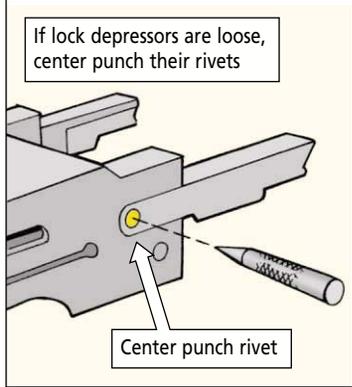


THE NEW INSPECTION WILL BE ADDED TO TM 9-1005-213-23&P EVENTUALLY, BUT UNTIL THEN USE THIS PROCEDURE TO *IMMEDIATELY* INSPECT ALL YOUR UNIT'S M2 BUFFER BODIES...



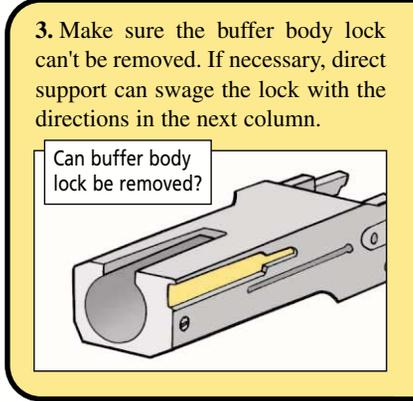
SUPPORT CAN REPLACE OR SECURE THE BUFFER BODY LOCK WITH THIS PROCEDURE...

1. Check that the lock depressors are securely attached to the buffer body. It's OK for the depressors to move as long as they don't move so much they interfere with the M2's functioning. If the lock depressors need to be retightened, use a center punch on the center of the depressor's rivets.

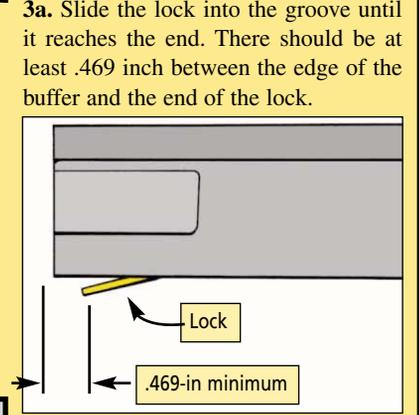


If lock depressors are loose, center punch their rivets

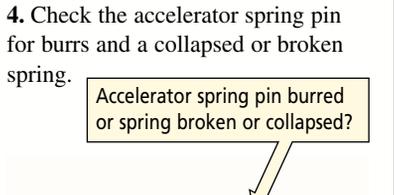
2. Never stake or swage the buffer body to prevent movement of the lock depressors. If the buffer body has been mistakenly staked or swaged already, it's OK to keep using the buffer as long as the staking or swaging doesn't interfere with the M2's functioning.



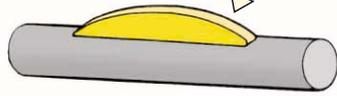
3. Make sure the buffer body lock can't be removed. If necessary, direct support can swage the lock with the directions in the next column.



3a. Slide the lock into the groove until it reaches the end. There should be at least .469 inch between the edge of the buffer and the end of the lock.

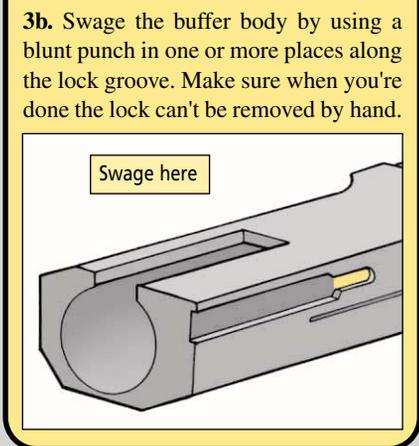


4. Check the accelerator spring pin for burrs and a collapsed or broken spring.



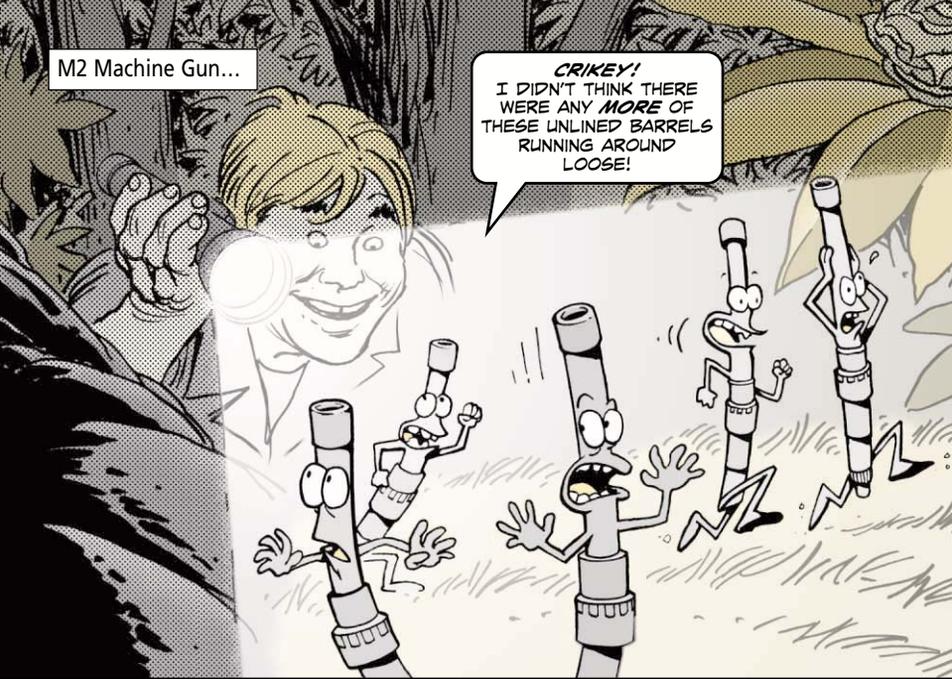
5. Check for any missing, damaged, or worn parts.

Any needed repairs to the barrel buffer assembly should be done by direct support with authorized parts.



3b. Swage the buffer body by using a blunt punch in one or more places along the lock groove. Make sure when you're done the lock can't be removed by hand.

**CRUIKEY!**  
I DIDN'T THINK THERE WERE ANY MORE OF THESE UNLINED BARRELS RUNNING AROUND LOOSE!



# LINE OUT UNLINED BARRELS

Some things just won't go away—like unlined barrels for the M2 machine gun for instance. The Army hasn't bought any unlined barrels in years, but they're still out there and still causing problems.

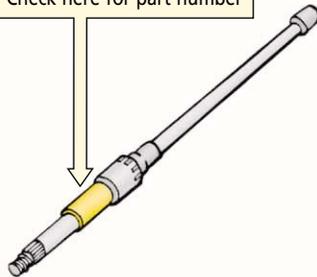
It's important for armorers to check if they have unlined barrels because they wear out 80 percent faster than lined barrels and fire sabot light armor penetrator (SLAP) ammo very inaccurately.

The easiest way to tell if a barrel is unlined is to check the part number on the outside of the barrel. A lined barrel has a part number of 7266131. Any other number means the barrel is unlined.

It's **NOT OK** to use unlined barrels for training! And never use an unlined barrel with M903 or M962 SLAP ammo. Besides wearing out the barrel quickly, SLAP ammo also causes jamming. Turn in all unlined barrels.

Order a lined barrel with NSN 1005-00-726-6131.

Check here for part number



# KEEPING YOUR GUN IN A SLING

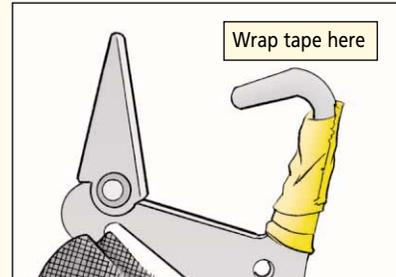
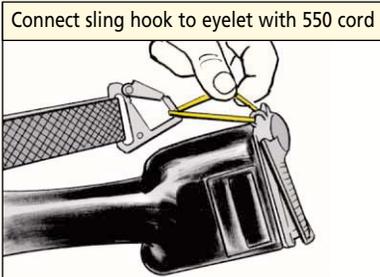


Dear Editor,

The M249 machine gun has an aluminum eyelet for the carrying sling to connect to on the buttstock. But the sling hook is steel, which we've found can sometimes break the weaker eyelet. Then you have nothing to connect the sling to.

We have two solutions to that problem:

- Connect the hook to the eyelet with a piece of 550 cord or something similar. If something breaks it will be the cord, not the eyelet.
- Wrap duct tape around the hook where it connects to the eyelet. The tape cushions the hook and keeps it from wearing out the eyelet.



PFC J L

Ft Drum, NY

**Editor's note:** Good ideas to hook onto! Thanks, Private. A new buttstock is coming that has a replaceable eyelet, so this problem will eventually disappear

# M66 RING MOUNT PARTS AND INFO?

JUST A FEW REPAIR PARTS AND YOU'LL BE READY FOR THE FIELD...

...BUT I CAN'T FIGURE OUT WHERE TO FIND 'EM!

TRY THE MOUNT TM. GET ME A COVER, TOO!



Dear Half-Mast,  
Where could I find a breakdown on the M66 ring mount and a cover for the mount?

WO H.A.

Dear Mr. H.A.,

Figs C-17 through C-21 in the older version of TM 9-1005-245-13&P, which covers all the ring mounts, is currently the best place to go for info on M66 ring mount parts. The new version of the TM that came out in April 2005 does not have any M66 info because the M66 will soon have its own TM, TM 9-1005-335-13&P. PS will let you know when the TM hits the field. The cover for the M66 comes with NSN 1005-00-707-0725.

Half-Mast

M249 Machine Gun...

# HOW DO I GET RAILS? AND A SHORT BARREL?

Dear Half-Mast,  
How do I get mounting rails for my M249 machine gun to install sights on? Also, is there an NSN for the M249 short barrel?

CPT M.A.

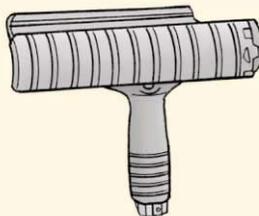
Dear Captain M.A.,

Both the forward rail system and the short barrel are being fielded through Rapid Fielding Initiative channels. That means eventually your unit will receive them for free. Your commander or local TACOM logistics assistance representative can probably tell you when. If you have already received the rail system or short barrel and need replacements, order the forward rail system with NSN 1005-01-490-9698 and the short barrel with NSN 1005-01-475-4296.

Hope this helps, Captain.

Half-Mast

Forward Rail System



# The Life of King Henry the Fifth

by William Shakespeare — First Draft

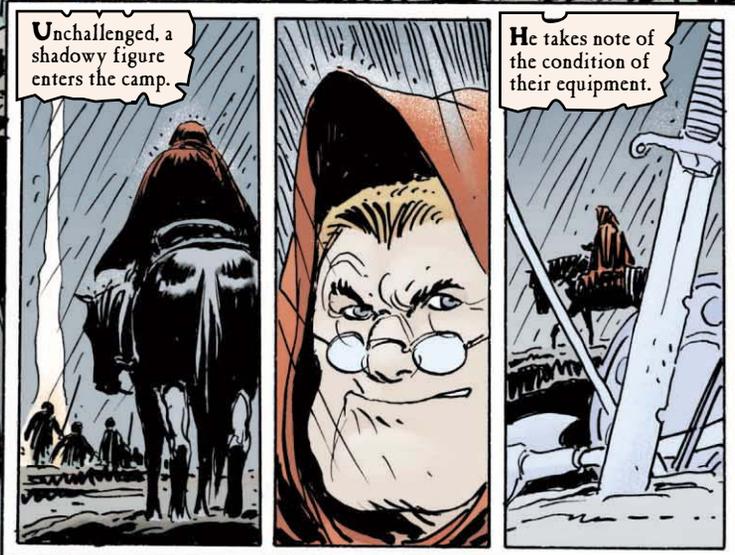
ACT IV  
SCENE II

The French Camp

Sixty thousand French soldiers await the battle.

Unchallenged, a shadowy figure enters the camp.

He takes note of the condition of their equipment.





Meanwhile, at the English encampment...

WHERE IS THE KING?

THE KING HIMSELF IS ROPE TO VIEW THEIR CAMP.



OF FIGHTING MEN THE FRENCH HAVE FULL **THREE SCORE THOUSAND**.

THERE'S FIVE TO ONE: BESIDES, THEY ARE ALL FRESH.

HOW CAN WE HOPE TO TRIUMPH ON THE MORROW?



GOOD SOLDIERS, I AM RETURNED.

**KING HENRY!**



WE HAVE HEARD THEIR NUMBERS, SIRE. WOULD THAT WE HAD TEN THOUSAND MORE ENGLISHMEN HERE WITH US THIS DAY.



I HAVE BEEN TO THE FRENCH CAMP AND I HAVE SEEN HOW THE FRENCH PREPARE FOR WAR... THERE IS NO EVIDENCE OF PM. WE DO NOT NEED ONE ADDITIONAL MAN.

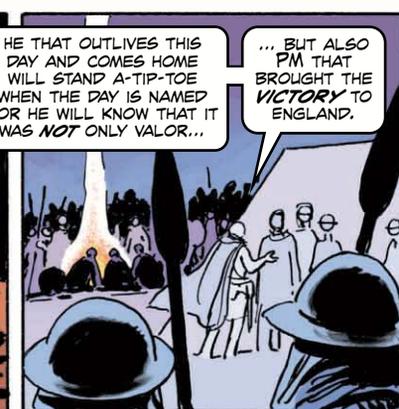
HOW, THEN, MY KING, SHALL WE VANQUISH OUR FOE?



LOOK AROUND— AT YOUR TASKS, EVEN AS YOUR KING SPEAKS. YOU DO NOT CEASE YOUR PREPARATIONS; **WHY** DO YOU CONTINUE? PM MARCHES WITH US AND 'TIS FEARFUL ODDS IN OUR FAVOR WHEN PM IS IN THE LINE OF BATTLE.



THIS DAY IS CALLED **THE FEAST OF CRISPIN**.



HE THAT OUTLIVES THIS DAY AND COMES HOME WILL STAND A-TIP-TOE WHEN THE DAY IS NAMED FOR HE WILL KNOW THAT IT WAS **NOT ONLY VALOR...**

... BUT ALSO PM THAT BROUGHT THE **VICTORY** TO ENGLAND.



ON THAT DAY, HE WILL STRIP HIS SLEEVES AND SHOW HIS SCARS AND HOLD HIS UNBLEMISHED EQUIPMENT ALOFT...



AND SAY, "THESE WOUNDS I HAD ON **CRISPIN'S DAY**, BUT FOR MY WELL-MAINTAINED EQUIPMENT, THESE WOUNDS MAY HAVE BEEN FATAL."



THIS STORY SHALL THE GOOD MAN TEACH HIS SON. AND CRISPIN SHALL NE'ER GO BY FROM THIS DAY TO THE ENDING OF THE WORLD. BUT IN IT, WE, AND PM, SHALL BE REMEMBERED.



WE FEW, WE HAPPY FEW, WE BAND OF PM BROTHERS. FOR HE TODAY WHO SHEDS HIS BLOOD WITH ME AND WHO HAS DONE HIS PM FAITHFULLY SHALL BE MY BROTHER.



AND GENTLEMEN IN ENGLAND NOW A-BED SHALL THINK THEMSELVES ACCUSED THEY WERE NOT HERE...



...AND HOLD THEIR MAN-HOODS CHEAP WHILE ANY SPEAKS OF THOSE THAT DID THEIR PM THIS NIGHT BEFORE AND FOUGHT WITH US UPON SAINT CRISPIN'S DAY.



BUT NOW, TAKE IT BRAVE GLOUCESTER, BEDFORD AND EXETER AND MARCH AWAY, AND HOW THOU PLEASEST, PM DISPOSE THE DAY!

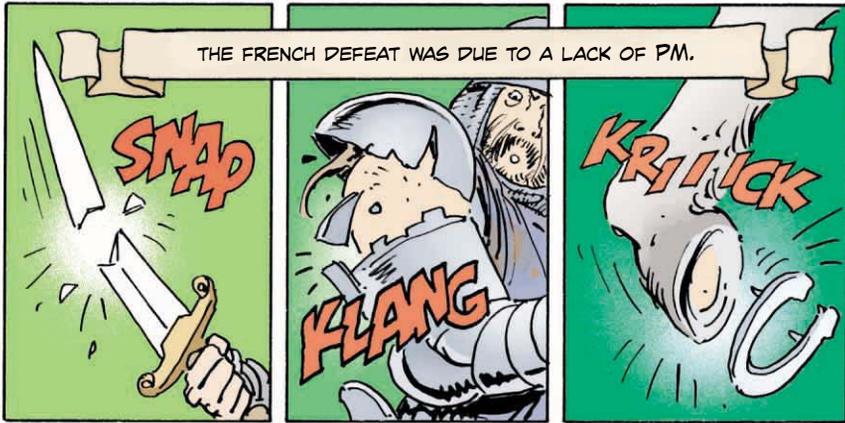
**HOOAH!**

In ancient days, it was always said,  
The more the men, the less the dead.  
But today what's true,  
Numbers just won't do,  
It's PM the enemy has come to dread.

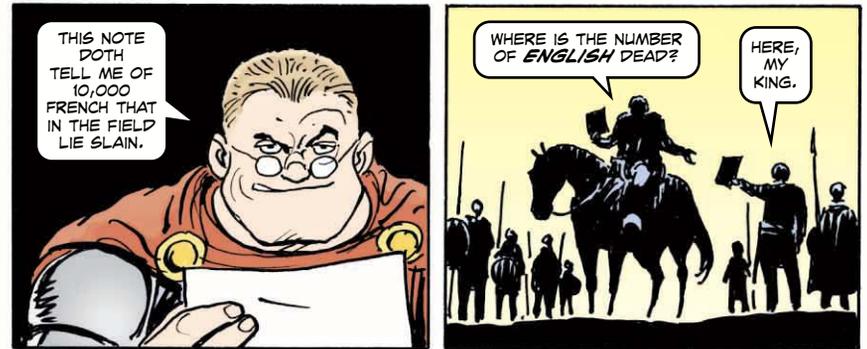


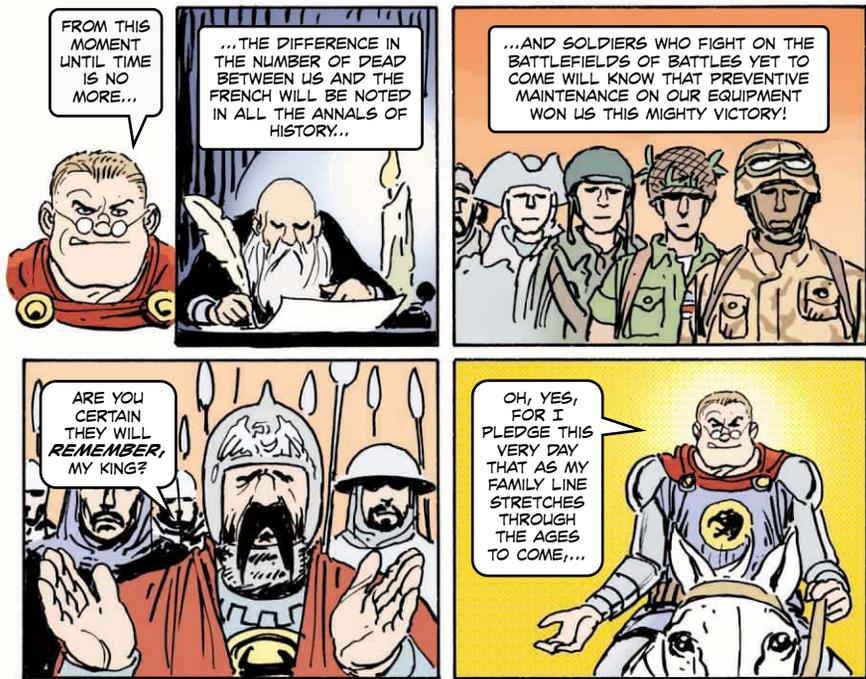
**WE HAVE THE WORLD'S BEST EQUIPMENT...**

**TAKE CARE OF IT!**

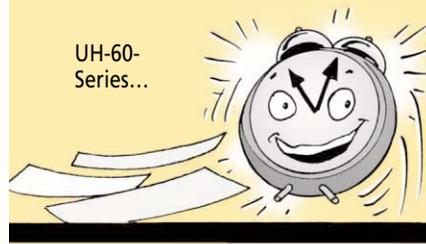


### Act IV Scene VI. The English Camp after the Battle





UH-60-  
Series...



# Blade Pins Need Curing Time!

**M**echanics, you know how important it is to inspect Black Hawk blade pins for proper tension and security during the 10-hr/14-day inspection.

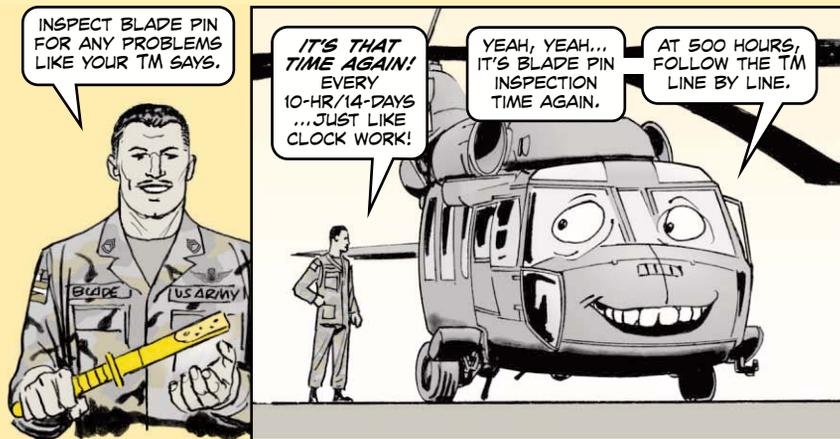
Well, it's just as important to allow enough time for the dry film lubricant to dry on those blade pins before you reinstall them during the 500-hour inspection. It usually takes about 6 hours for dry film lubricant, NSN 9150-01-260-2534, to dry at 70°F. Then place the pins back into the rotor head.



If you put the pins back in the blade cuff before the lube dries completely, it'll act like glue. The pins seize up and you won't be too happy spending extra time wrestling with a stuck blade pin at the next inspection.

To get a seized blade pin out, you'll have to use a 6-in extension, a squirt of WD-40 to loosen it, and a rubber mallet to tap it out. A blade pin that is seized in the blade cuff must be replaced only if it's damaged or disassembled for removal.

Pay attention and don't install blade pins in a rush just to get in some flight time.



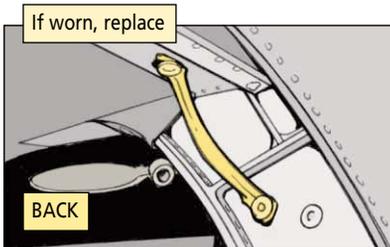
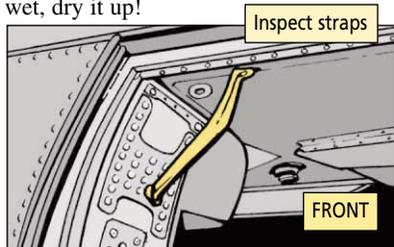
# GUNNER'S WINDOW STRAPS



**M**echanics, corrosion is a big problem around the front and rear strap attachment areas of the Black Hawk's gunner's window.

Corrosion begins when the cloth strap gets wet and water wicks down to the airframe.

Inspect the front and rear areas for water after flying in wet weather, if the area is wet, dry it up!



If you remove the strap to replace it, make sure the washer stack-up is correct when installing a new strap.

If the strap doesn't have the insulating washer against the airframe, corrosion occurs because of contact with dissimilar metals.

If you need a little extra protection, put a dab of proseal, NSN 8030-00-616-9191, between the insulating washer and the airframe. That adds extra protection against corrosion near the strap attachment points.



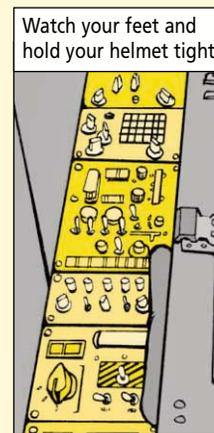
# Don't be in a Hurry

**T**he AH-64's radio console can't take a lickin' and keep on tickin' when big feet step on it or helmets are dropped on it.

At the end of the day, take your time and exit the bird without rushing. Hurrying leads to mistakes and a lack of attention to what you're doing. So don't rush when you exit the bird or while doing maintenance.

Some copilots are in such hurry to leave the bird that the IHADSS helmet slips from their hand and falls on the console. It breaks knobs on the UHF and VHF radio, which knocks out your ability to set frequencies.

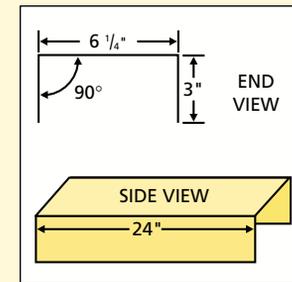
Don't forget the agony of de-feet either. Stepping on the radio console as you exit the bird can damage other avionics.



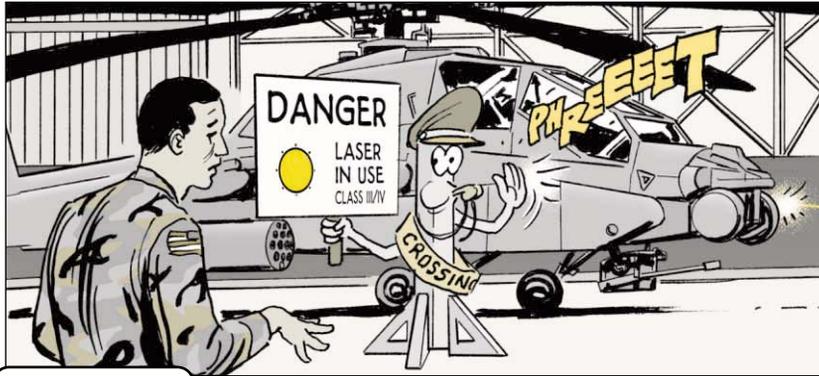
Once you bend or break knobs, switches or dials, communication is over and your bird is NMC.

To protect the console while it's not flying, have your AVIM shop make a protective cover.

Here are the plans with the dimensions. Have your sheet metal shop make the cover from .040-in aluminum sheet.



# CAN YOU SEE ME NOW?



THAT'S WHAT SOMEONE WILL ASK IF YOU MECHANICS GET CAUGHT IN THE PATH OF AN AH-64A OR D LASER DURING TESTING.

When a pilot or co-pilot does pre-flights or maintenance operational checks for the laser, stay out of harm's way. That means **never** stand near the nose of the bird during laser testing. Lasers can damage your eyes and cause eventual blindness. And that old song, "*I Can See Clearly Now*," won't apply to you if you're blinded by a laser.

Pay attention in the hangar and look for posted signs. If you see a search light shining on the ground, that's your cue a laser test is about to begin.

Keep away from the front of the bird and do not look in the direction of the laser. And, pilots, **always** inform soldiers in the hangar before you start laser testing.

When it comes to eyesight it's best to be safe rather than have you say...



**I CAN'T SEE YOU!**

# CORROSION TREATMENT Made Easier



MECHANICS, DA FORM 2410 DATA INDICATES CORROSION ON VARIOUS MAGNESIUM HOUSINGS IN AIRCRAFT.

THIS IS ONE OF THE TOP COST DRIVERS FOR AIRFRAME MAINTENANCE.



WHY IS THAT?

A **BIG** REASON FOR THE CORROSION IS LEAVING OFF THE PRE-PAINT TREATMENT-DOW 19 PROCESS-AT THE UNIT LEVEL BECAUSE IT'S NOT EASY OR USER-FRIENDLY.

IN MOST CASES, AFFECTED AREAS LIKE THE MAIN TRANSMISSION HOUSING, INPUT MODULES, ACCESSORY MODULES, INTERMEDIATE GEARBOXES AND TAIL ROTOR GEAR BOXES HAD RECEIVED A PRIMER AND A TOPCOAT, BUT **NOT** THE PRE-PAINT PROCESS.

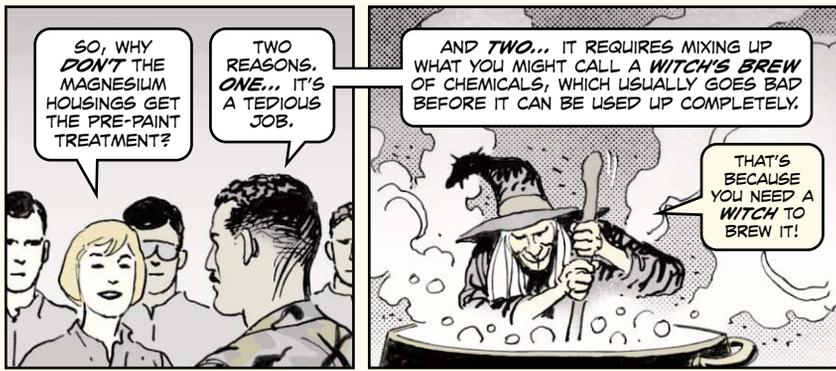


APPLYING THE PRIMER AND TOPCOAT IS BETTER THAN DOING NOTHING, BUT THE **BEST CORROSION PROTECTION** REQUIRES THE PRE-PAINT PROCESS.



CHAPTER 5 OF TM 1-1500-344-23 SPECIFIES A MIXTURE OF ONE GALLON OF CHROMIUM TRIOXIDE AND CALCIUM SULFATE.



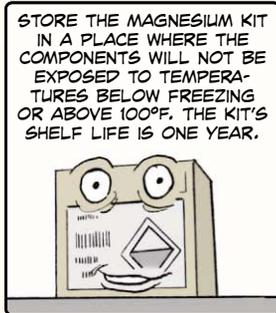
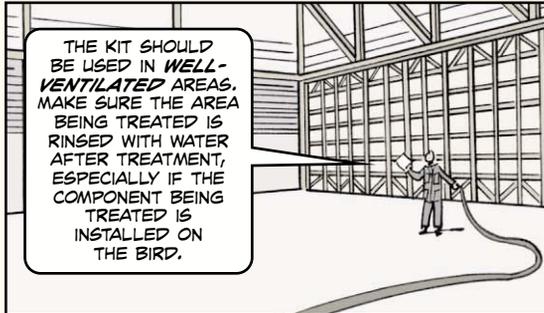


NOW THERE'S AN **ALTERNATIVE:**

GET A PRE-PACKAGED CORROSION KIT THAT'S AVAILABLE IN THE SUPPLY SYSTEM, NSN 8030-01-512-2416.



IT COMES WITH A COMMERCIAL TECHNICAL BULLETIN. THE ITEMS IN THE KIT ARE HIGHLY CAUSTIC AND FLAMMABLE.



IF USED PROPERLY, THE TREATMENT WILL INCREASE YOUR BIRD'S CORROSION PROTECTION AND PRIMER ADHESION, AS WELL AS EXTEND THE SERVICE LIFE OF THE COMPONENTS.

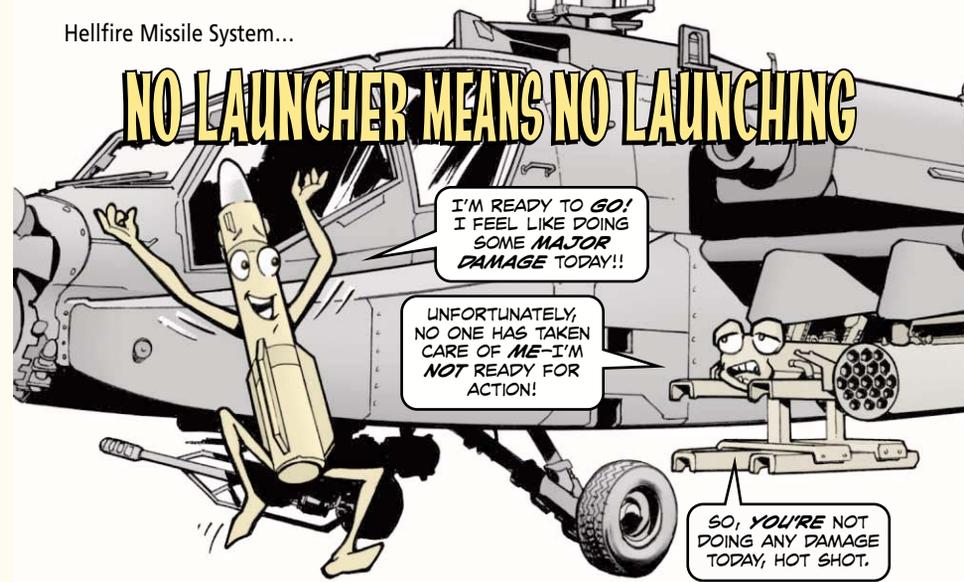


WHEN DOING THE TREATMENT, WEAR **GOGGLES**, PROTECTIVE GLOVES AND HAVE CLEAN WIPING RAGS HANDY.

**ALWAYS** CONSULT THE MATERIAL DATA SAFETY SHEETS (MSDS), TOO.

**COURSE, ALWAYS PROTECT YOURSELF AND YOUR FELLOW SOLDIERS BY FOLLOWING ALL WARNINGS, CAUTIONS AND NOTES IN THE TECH BULLETIN.**

Hellfire Missile System...



A Hellfire missile is only as good as its launcher. If the launcher's in bad shape, you're in bad shape when it comes to knocking out the enemy, since a missile that can't be launched can't do much damage. Here's how to stay out of the lurch when it comes to launching:

### Be Gentle

The No. 1 reason launchers have problems is that crews slam missiles in place. That often bends the slide stops, which causes the missiles to hang up when you try to slide them on the launcher rails. Eventually, you can't load the missile at all and the stops have to be replaced. That won't make you popular with your repairman, since replacing stops is difficult. The pins for the stops don't come out easily.

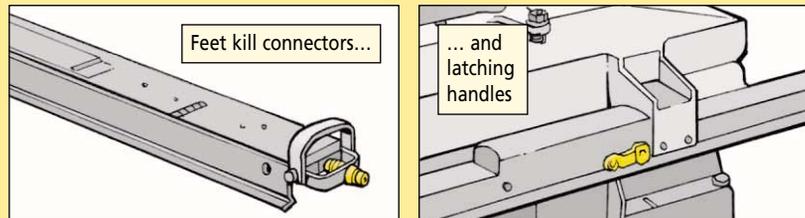
Slide the missiles in place firmly, but don't force them. If a missile's hanging up, reposition it and try again. No luck? Try a different missile. Still no luck? Tell your repairman. Just don't try to muscle it on.





### Keep Feet Off Launcher

It's not meant to be a step and it doesn't take much to break an environmental protective cover's connectors or the latching handle.

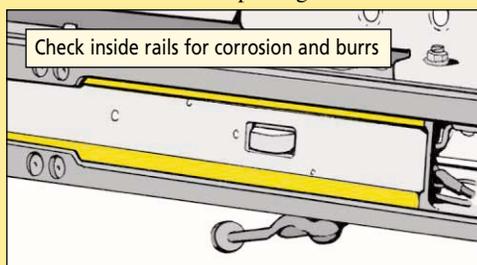


### Check for Burrs and Corrosion

What often causes missiles to hang up during loading are burrs and corrosion on the inside of the launcher rails. As part of your weekly PMCS, check the rails for burrs and corrosion. There is no fix for burrs other than replacing the rail.

Corrosion can be rubbed out with the cleaning procedure in TM 1-1520-238-23-1. Never file or sand the launcher. The plating residue can be dangerous if it gets in your lungs.

Never lube inside the rails. Lube attracts dirt that will make it harder to load missiles.



### Use Shotgun Connector Covers

When the missiles aren't loaded, the covers keep sand and dirt from filling connector holes and causing poor electrical connections. But just don't flip the covers down and move on. Get down and make sure the covers are completely sealing the connectors. If the covers won't close completely, tell your repairman. He can adjust them using the procedure in Para 2.42 in TM 9-1425-475-23&P for the M272 launcher. For the M299 launcher, the procedure is in TM 1-1520-longbow IETM EM 0126.



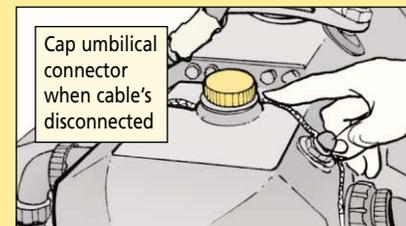
### Clean Out Shotgun Connectors

Even if you faithfully use the connector covers, dirt will sometimes get in the connectors. Before you go on a mission, use a flashlight to check all four sets of connectors for dirt. If you spot any, clean the connector with an acid-swabbing brush and a water-detergent solution. Use detergent, NSN 7930-00-282-9699. Rinse the connector with clean water and let it air dry.



### Cap Umbilical Connector

If you disconnect the umbilical cable, put a cap on the launcher connector to keep dirt and sand from clogging the connector. If the umbilical connector gets plugged, you'll have firing problems for sure. If you've lost the connector cap, a cap from a sports drink bottle makes a good substitute.



### Store Launcher

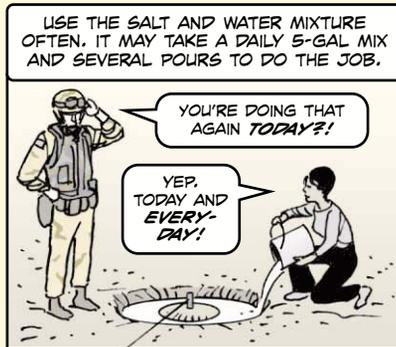
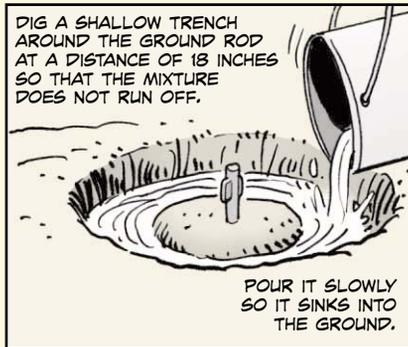
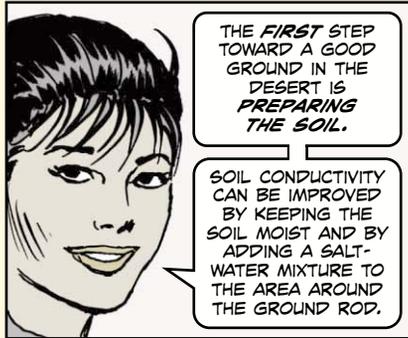
If you're not flying missions, the best place for the launcher is stored inside away from rain and cold. But don't store the launcher standing on its end. It will take a fall, which breaks end caps. And don't store it on its side. That can break locking handles. Store it flat on its rails.



# GROUNDING RIGHT IN THE DESERT



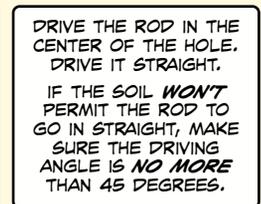
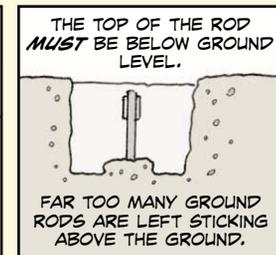
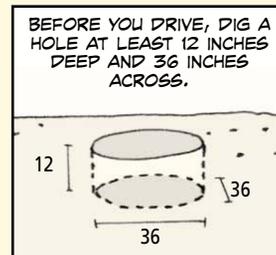
## Soil Preparation



## Reaching the Water Table



## Before You Drive



WHEN ADDING ROD EXTENSIONS MAKE SURE EACH SECTION IS TIGHTLY CONNECTED TO THE PREVIOUS ONE.



IF THEY'RE **NOT** TIGHT, WHEN YOU DRIVE IN THE ROD, YOU'LL **DAMAGE** THE COUPLING SLEEVE THREADS.

**DON'T** HIT THE THREADED END OF THE ROD WITH THE HAMMER.

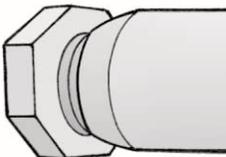
THIS WILL DAMAGE THE **THREADS**, TOO.



**DON'T** DAMAGE THE **THREADS**, MAN!

USE A DRIVING BOLT ON THE TOP SECTION AND MAKE SURE IT'S **TIGHT**.

A LOOSE BOLT WILL BREAK OFF.



IF POSSIBLE, USE A **SLIDE HAMMER** WHEN INSTALLING A SECTIONED GROUND ROD.



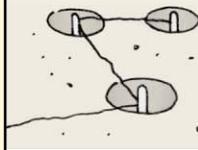
SLIDE HAMMER, NSN 5120-01-013-1676, MAKES IT EASIER TO DRIVE RODS, AND EASIER TO GET THEM OUT, TOO.

FOR DRIVING RODS INTO VERY HARD DESERT GROUND, USE A 12-LB SLEDGE HAMMER, NSN 5120-00-293-0887.

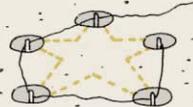
IF YOU CANNOT REACH THE WATER TABLE WITH A SINGLE GROUND ROD OR ONE WITH EXTENSIONS, USE MULTIPLE GROUNDS AND THE SALT-WATER MIXTURE.

DRIVE IN THE ADDITIONAL RODS TWO TO FOUR ROD LENGTHS APART.

IF **THREE** RODS ARE USED, DRIVE THEM IN A **TRIANGLE PATTERN**.



IF **FOUR OR MORE** RODS ARE USED, PUT THEM IN A **STRAIGHT LINE** OR A **STAR PATTERN**.

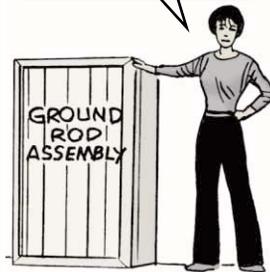


WHEN USING MULTIPLE RODS **ALWAYS** CONNECT ALL THE RODS TOGETHER, THE FINAL ROD BEING CONNECTED TO THE EQUIPMENT TO BE GROUNDED.



IF YOU **CAN'T** DRIVE A GROUND ROD MORE THAN 4 FEET, BURY THE ROD HORIZONTALLY 1½ FEET DEEP. THEN ADD THE SALT-WATER MIXTURE.

ORDERING THE GROUND ROD ASSEMBLY, NSN 5975-00-878-3791, GETS YOU THE FOLLOWING...



Rods 5975-01-123-9103

Couplings 5975-00-794-2523



No.6 AWG wire 6145-00-395-8799

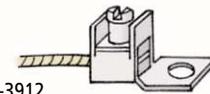
Drive/head stud 5975-00-924-9927

Terminal lug 5940-00-271-9504



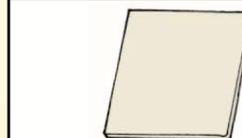
Clamp

5999-00-186-3912



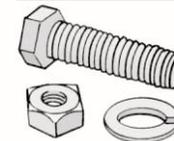
### Grounding Plates

SINCE SAND IS **EASY** TO MOVE, **GROUNDING PLATES** CAN BE A GOOD IDEA IN THE DESERT.

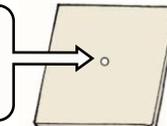


TO MAKE A GROUND PLATE, START WITH A CLEAN, BARE METAL PLATE OR SHEET 1/4 INCH THICK.

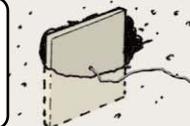
ALONG WITH THE PLATE YOU'LL NEED A **METAL BOLT**, **NUT** AND **LOCK WASHER** TO ATTACH THE GROUND WIRE.



DRILL A HOLE IN THE CENTER OF THE PLATE JUST LARGE ENOUGH FOR THE BOLT.



DO NOT USE ALUMINUM. THE PLATE SHOULD HAVE AT LEAST 3 SQUARE FEET OF SURFACE CONTACT WITH THE GROUND. THE LARGER THE PLATE, THE LOWER THE RESISTANCE AND THE BETTER THE GROUND.



THEY ALSO GIVE YOU A LARGE, METALLIC AREA THAT IS IN CONTACT WITH THE SOIL.

THE GROUND PLATES—USE TWO TO FOUR—SHOULD BE SPACED AT LEAST 10 FEET APART.

DIG A HOLE SO THAT THE PLATE CAN BE BURIED VERTICALLY; THE TOP EDGE ABOUT 5 FEET BELOW THE SURFACE.

IT'S EASIER TO BURY THE PLATE VERTICALLY AND STILL ENSURE GOOD SOIL CONTACT ON BOTH SIDES OF THE PLATE.

POUR YOUR MIXTURE OF WATER AND SALT INTO THE SOIL AROUND THE PLATE TO FURTHER INCREASE CONDUCTIVITY.



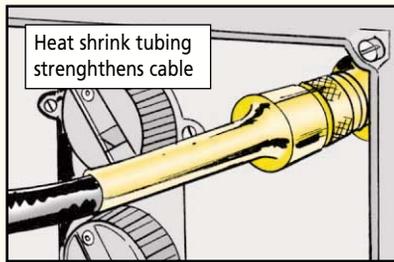
The RF cables on your AN/GRC-103 radio stick out about six inches from the radio. That puts the cables in the line of foot traffic inside your commo shelter. That means you could snag them when moving gear around.

If those cables get snagged hard enough, you'll pull the wiring away from the connectors. Then you have to send them off to DS for repair. That costs your unit time and money.

Heat-shrink tubing, NSN 5970-00-926-2571 or 5970-00-959-6336, strengthens the cable where the insulation and connector meet.

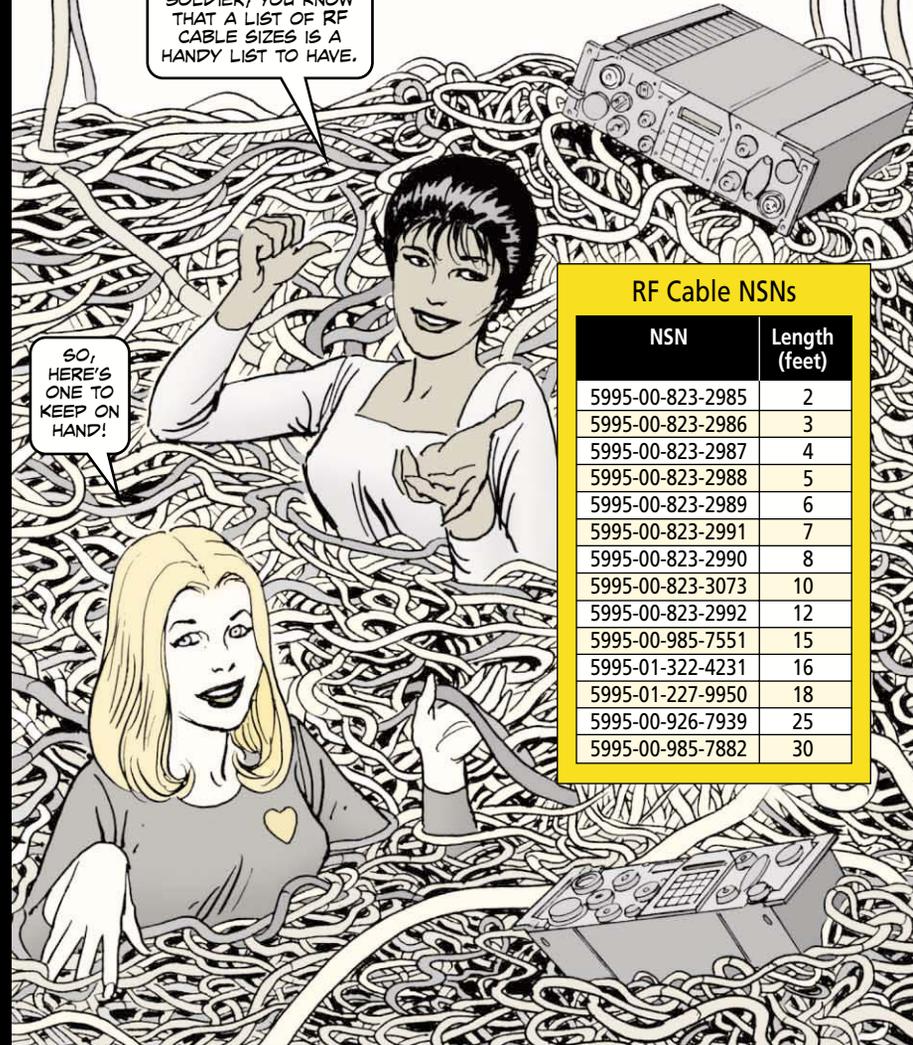
Cut off a 3-in length of tubing. Slip it over the cable so that two inches of tubing cover the insulation and one inch covers the first section of the connector. Then shrink the tubing with a heat gun or blow dryer.

The tubing tightens around the cable and reinforces it. The tubing also helps protect the cable against moisture.



# RF Cable NSNs

IF YOU'RE A COMMO SOLDIER, YOU KNOW THAT A LIST OF RF CABLE SIZES IS A HANDY LIST TO HAVE.



RF Cable NSNs	
NSN	Length (feet)
5995-00-823-2985	2
5995-00-823-2986	3
5995-00-823-2987	4
5995-00-823-2988	5
5995-00-823-2989	6
5995-00-823-2991	7
5995-00-823-2990	8
5995-00-823-3073	10
5995-00-823-2992	12
5995-00-985-7551	15
5995-01-322-4231	16
5995-01-227-9950	18
5995-00-926-7939	25
5995-00-985-7882	30

# OUTFOXING FOX PROBLEMS

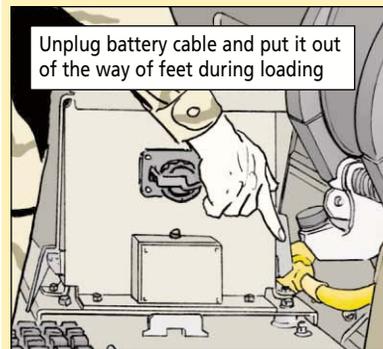


Dear Editor,

We have suggestions on batteries, brakes, probes and swimming that can help crews keep their Foxes on the NBC trail:

## --Batteries--

The NBC battery cable tends to be stepped on and broken when crews are loading equipment in the back of the NBC compartment. Then you're out of business until the cable and its connector are replaced. Prevent that by disconnecting the cable and putting it out of way of feet before loading or unloading stuff. Once you're finished, reconnect the cable.



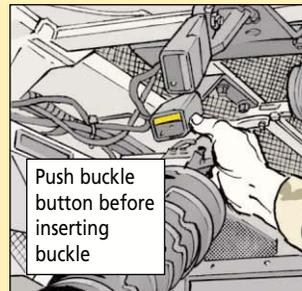
## --Brakes--

If you're driving along and suddenly it seems like the engine loses power, check the auxiliary brake (jake brake). If you've stored items next to the auxiliary brake, a bump in the road can throw stuff against the brake and activate it. You think you have a serious engine or transmission problem when it's just the brake. Of course, the best course is not to store anything next to the brake.



## --Probe--

The probe has a buckle that holds it in place in both the stow and monitoring positions. Fox crews often ram the buckle in place like they would a car seat belt, instead of pressing the buckle's button before inserting the buckle. That breaks the button and then the probe won't stay in position, which makes sampling difficult. Just remember to press the button before inserting the buckle.

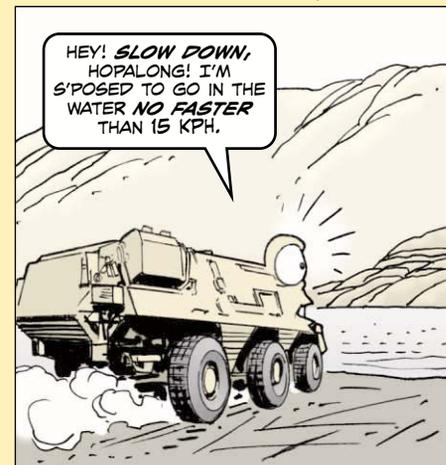


SSG T G  
SGT B H

SGT M E  
SPC D B

## --Swimming--

Be careful to swim the way your Fox is supposed to: Enter the water no faster than 15 kph with the brow plane open and the propellers turning. We've found if you enter the water too fast, water can get in the exhaust and then into the engine, where it causes all sorts of problems.



# GOT CORROSION?



**R**ain, salt and sand are deadly culprits that lead to corrosion.

Corrosion attacks Army equipment relentlessly. Its cost is staggering.

Your best weapon against that corrosion is rust inhibitor. Just wipe or spray on the inhibitor every 8 months or so to the inside and underneath your vehicles. It will slow the spread of new rust and clean up old rust.

It won't harm paint surfaces, plastics, rubber, glass or wiring, but it will make 'em shine for a week or two. If that ruins your camouflage efforts, keep it off the outside of your equipment.

The inhibitor works by eliminating moisture that holds salt, dirt, and other pollutants that eat up metal. It also lubes moving parts and penetrates existing rust.

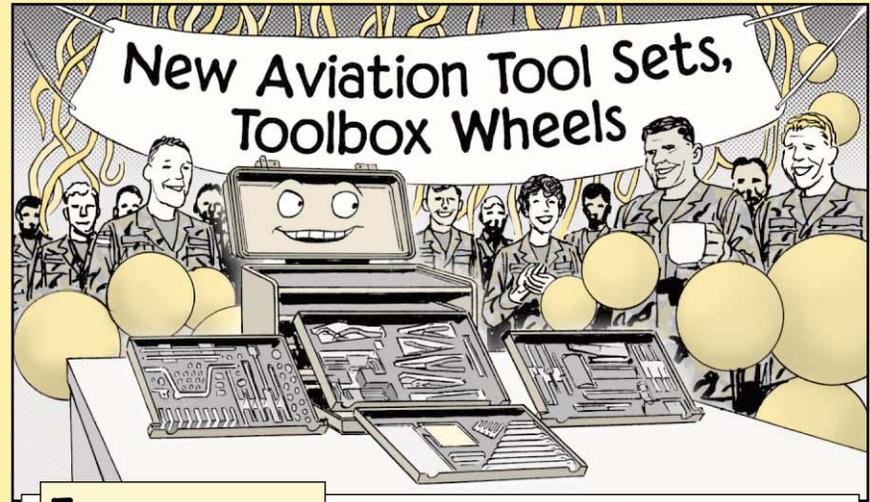
The inhibitor is petroleum-based and contains no silicones, solvents, or anything else classified as hazardous material. Even though the inhibitor contains no hazardous material, the headshed recommends that you wear a respirator, goggles and gloves when applying it because of possible irritation to your respiratory tract or skin.

Order the amount of inhibitor you need:

Quantity	NSN 8030-01-414-
16-oz bottles (12)	7423
5-gal container	8947
55-gal drum	7430

NSN 8030-01-389-1413 brings a 55-gal drum of inhibitor, a spray head and an instruction video. You can get a copy of the video by itself for free by calling (800) 856-6798.

As a rule of thumb, it takes about 2 gallons to treat a HMMWV and up to 3 gallons for a 2 1/2-ton or 5-ton truck.



**T**he new aviation tool sets-armament (NATS-A) have been updated and improved to form the individual aircraft armament repairman's set (IAARTS), NSN 5180-01-516-0223, and team aircraft armament repairman's set (TAARTS), NSN 5180-01-517-6129.

SO, WHAT'S THE BIG DEAL? HOW ARE THEY IMPROVED, SERGEANT BLADE?

GOOD QUESTION! THE NEW TOOL SETS HAVE...



- tough weather-resistant plastic tool chests
- industrial quality tools, many with a lifetime warranty
- foam inserts or trays that make inventory easy

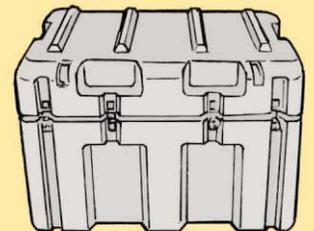
The IAARTS also has attached wheels and a handle to make it easier to move the toolbox.

For more info on and pictures of the two tool sets, go to

<http://tri.army.mil/LC/Ct/ctt/ctts/modsko.htm>

There are also all-terrain accessory wheels now available from Kipper Tools for both the IAARTS and the general mechanic's tool set. For more info, contact Kipper at 1-800-295-9595 or email:

[info@kippertool.com](mailto:info@kippertool.com)



OPERATORS,  
HOIST UP THESE  
PM POINTERS  
BEFORE THE  
DAY'S RUN.

YOUR  
22-TON  
CRANE WILL  
BE GLAD  
YOU DID.



IT'S TIME TO  
HOIST UP ON  
THESE PM  
PROBLEMS!

**Use the Handholds**

The crane's swing/auxiliary hoist control lever, known as the joystick, is no handhold for climbing into and out of the cab.

The joystick is not strong enough to support your weight. A busted joystick puts your crane out of action until a new one is installed. With that new joystick comes a \$140 bill!

Instead, use the handholds attached to either side of the cab door.

**Use Stowage Box**

Remind yourself to do some housekeeping after the day's run.

That is, never leave the crane's lifting slings, cables, chains or pile drive attachments on the vehicle's superstructure when you're done with them. Anything left behind can get lost when the crane moves, or cause you to slip and fall off the vehicle.

Put the items where they belong—in the stowage box next to the cab carrier—so they're out of the way, won't get lost, and you'll know where to find them.

**Hook Block Lube**

Without lube, the block's sheaves, trunnion and thrust bearings can seize up. That causes excessive wear and tear on the crane hoist cables and hook block sheaves.

For smooth crane operation, lube the hook block with GAA monthly or every 100 hours like it says on Page 1-4-9 of TM 5-3810-307-24-1-1.

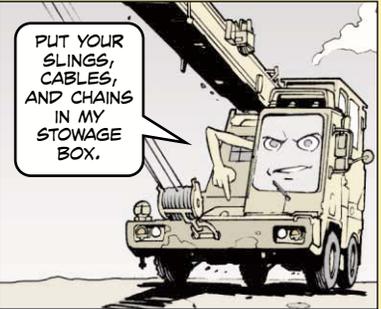
**Grease Fitting Caps**

What's a good idea? How 'bout using protective caps on the hook block's grease fittings?

These caps keep the fittings clean and unclogged. It's easier to take the cap off when it's time to lube than it is to replace the fittings because they won't take grease. You can order protective caps with NSN 4730-00-289-8148.

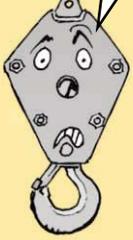
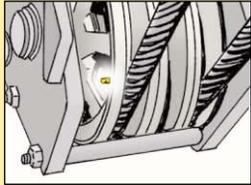
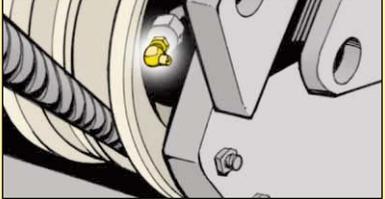
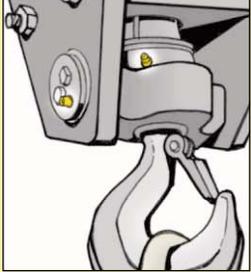


Use handholds,  
not joysticks



PUT YOUR  
SLINGS,  
CABLES,  
AND CHAINS  
IN MY  
STOWAGE  
BOX.

FOUR  
GREASE  
FITTINGS ON  
THE CRANE  
GET OVER-  
LOOKED  
BECAUSE  
THEY'RE ON  
ME-THE  
HOOK  
BLOCK.



# SHRED YOUR TAMMS PUB,



# READ YOUR TAMMS PUB!

It's time to get rid of the venerable DA Pam 738-750, *The Army Maintenance System (TAMMS) Users Manual*. It's been replaced and renumbered as DA Pam 750-8, *TAMMS Users Manual*, (25 Feb 2005).

Among its major changes, this key maintenance publication:

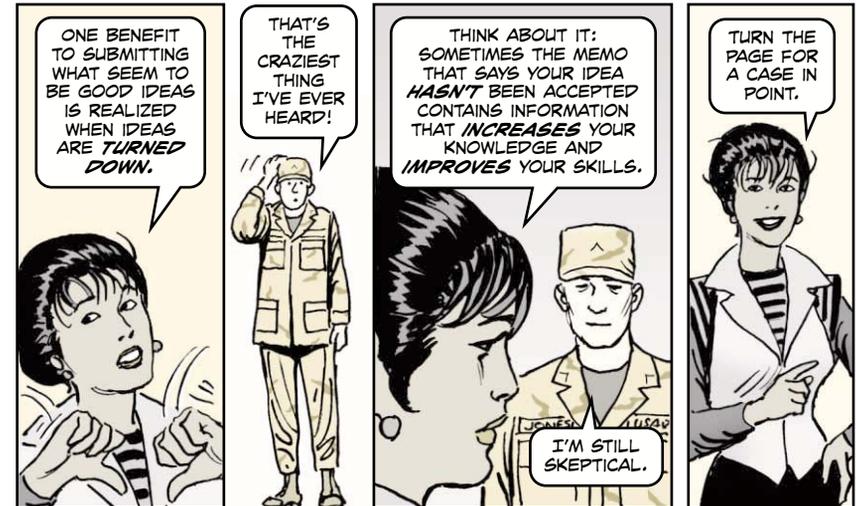
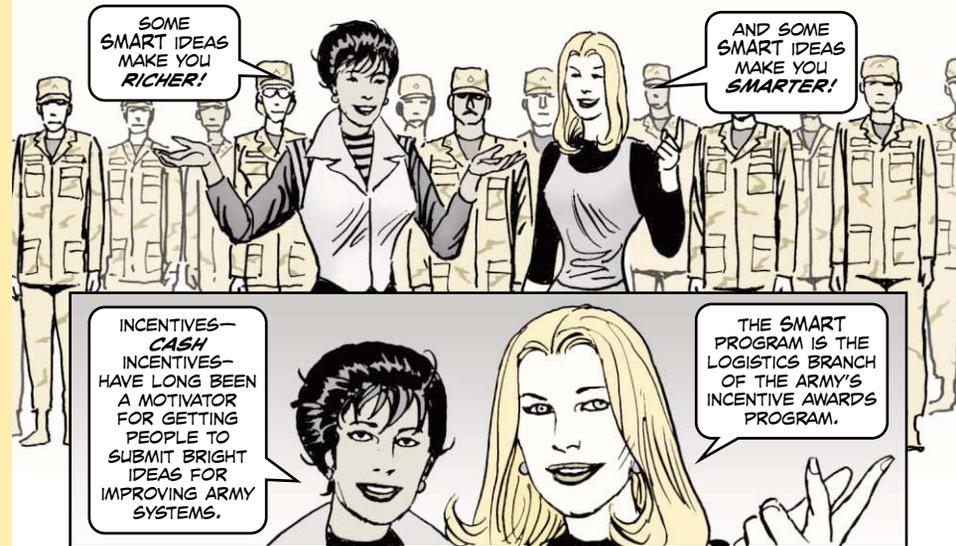
- Revises DA Forms 2401, 2402, 314, 2405, 2408-5, and 5587.
- Updates most examples of completed forms.
- Adds guidance to administratively deadline equipment when past-due services exceed the 10-percent variance.
- Synchronizes the 10-percent variance for automated and manual procedures.
- Revises low-usage criteria.
- Moves AOAP sampling intervals and instructions to TB 43-0211.
- Updates procedures for reporting QDRs.

The new pamphlet can be found on the Army Publishing Directorate website at:

<http://www.army.mil/usapa/epubs/index.html>



# Sharing Ideas the SMART Way

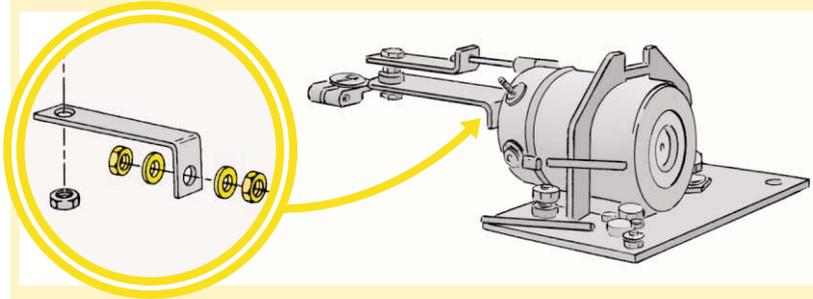


### Problem

The HEMTT shutoff solenoid is constantly under vibration causing the nut to back off the threads or completely come off, forcing the shutoff not to work.

### Recommended Solution

Double nut the engine shutoff solenoid actuation stud to the lever to prevent it from vibrating loose.



### Evaluation

The design of this bracket and stud arrangement is already of the double nut fashion and should not vibrate loose when properly installed and torqued.

An engineer evaluated the hardness of the solenoid stud, bracket attaching nuts, and washers and found them to be correct. The bracket when properly installed with one nut and one washer on each side of the bracket as shown in the exploded view in the TM will provide the desired jam nut effect to prevent the nuts from working loose due to vibration. Check the exploded view of figure 47 in TM 9-2320-279-24P (see page 58) to be sure the bracket is installed on the solenoid stud with a nut and washer on each side of the bracket to produce the jam nut effect.

Make sure that the nuts and washers are the ones listed in the repair parts manual. It is possible that uninformed personnel may have replaced nuts and washers with inferior pieces.

Once the bracket is adjusted to the correct position for engine shut-off, torque the jam nuts against each other to 6 lb-ft as shown in Appendix E, Table E-1, for a grade-2 dry fastener 1/4-in by 28 threads per inch.

If the problem persists, loosen the nuts and apply a small amount of thread locking compound to the threads and re-torque. Note that the adhesive thread locking compound listed in the TM is obsolete. You will need to order sealing compound with NSN 8030-01-104-5392. The NSN gets you a box with ten 10cc bottles. This should solve the problem and the nuts can be easily loosened at a later time if another adjustment is necessary.

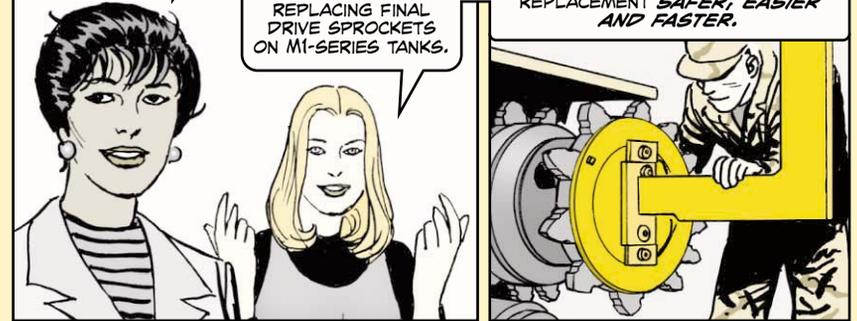
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Name/Location	Approved Suggestion	Recommended Award
MSG Denver Meyers, Ft Wainwright, AK	Relocation of HEMTT harness bracket	\$250
SSG Christopher Sobkowiak, Mannheim, Germany	Modification of PMCS for HEMTT rear wheel assembly removal	\$2,685
1SG Thomas Eckerson, Helena, MT	Blade lifting tool for helicopters	\$700
SFC Eric Wade SGT Donnie Parker, Ft Polk, LA	Fabricated tool for safer removal & replacement of final drive sprocket & hub on M1-series	\$2,000
CW2 Danny Taylor, Schofield Barracks, HI	Provide better material protection for the PLS hydraulic filter cover & housing base	\$500
Gary Ward, Taegu, Korea	Include torque converter adjustment procedure in TM 9-2320-280-20-2	\$250

To submit your ideas, use the AEPS website at:

<https://aeps.ria.army.mil/smarthome.cfm>

More info is available at the website or by calling (804) 734-0485/0595 or e-mailing: [SMART@lee.army.mil](mailto:SMART@lee.army.mil)

## Submit Your SMART Ideas!



## New PATS Power Supply Free

There is a new power supply available that lets NBC NCOs run the M41 PATS on cheap D-cell batteries instead of expensive lithium batteries. And, temporarily, the power supply, NSN 6130-01-521-2555, is free if you're willing to answer a survey about it. To get a free power supply send your shipping and email addresses, unit designation, and phone number to [david.may3@us.army.mil](mailto:david.may3@us.army.mil) or [gerald.p.young@us.army.mil](mailto:gerald.p.young@us.army.mil)

## Supplies for the LADS

Units who have the laundry advanced system are now authorized to order detergent, NSN 7930-01-506-7081, and anti-foam solution, NSN 6850-01-506-6533, through normal supply channels. Not sure how much to use in each laundry cycle? You'll find the answers in WP 0009 00-5 of TM 10-3510-221-10.

## M1000 Dust Shields

Use NSN 2530-01-445-9205 to get the dust shields (backing plates) for the brake shoes on the heavy equipment transporter (HET) semitrailer. This NSN gets both shields shown as Items 4 and 4a in Fig 17 of TM 9-2330-381-24P.

## M1A1D Tanks Gone

The entire fleet of 95 M1A1D tanks have been taken out of service. There will be no more unique spare parts procurements, LSA documentation, engineering changes or TM updates. All TM 9-2350-367-series manuals are obsolete and should be disposed of following the destruction notice on the front cover of each manual.

## NO UNAUTHORIZED WEAPONS MODIFICATIONS ALLOWED

Reports are coming in that soldiers are modifying their rifles, pistols, and machine guns to try to improve how they work or to make them easier to handle in combat. That's a big no-no! The only time a weapon can be modified is if the Army has approved a modification work order (MWO).

Para 3-1e in AR 750-10, *Army Modification Program*, makes this very clear: "Commanders will not allow their equipment to be modified unless there is an official MWO." If you modify your weapon without authorization, you risk making it non-mission capable and you can be held responsible for any damage to it or to your fellow soldiers.

## M1A1 Weapon Mount Nut

Use NSN 5310-01-056-2966 to order a new self-locking nut for the M1A1 tank's weapon mount assembly. The NSN listed as Item 31 in Fig 6 of TM 9-2350-264-24P-2 brings the wrong nut.

## DA Form 2408-4 Help

The AMC Gun Card homepage on the Army Electronic Product Support (AEPS) website has added two hotlinks to publications that help in filling out the DA Form 2408-4, *Weapon Record Data Card*. To access the hotlinks for DA Pam 750-8, *The Army Maintenance Management System*, and TM 9-1000-202-14, *Evaluation of Cannon Tubes*, go to: <https://aeps.ria.army.mil/aepspublic.cfm> Once there, click on the Enter AEPS button of your choice to log in. Then select the Gun Card Firing Data button under Popular Applications.

## Bradley Bolt-on Armor

The PN and NSN information for the M2A2/M3A3 Bradley's personnel and ramp door inner plates, shown as Items 86 and 87 in Fig 67 of TM 9-2350-284-24P-1, is reversed. Item 86, the personnel door inner plate, should be PN 12334344 and NSN 5340-01-206-3887. The ramp door inner plate should be PN 12334342 and NSN 9515-01-206-3888. Make a note until the TM can be updated.

## M2A3/M3A3 Bradley Telescope

Need a replacement elbow telescope, NSN 1240-01-490-5099, for your Bradley's 12X boresight kit? Order a new kit, NSN 4920-01-490-5100, to get the telescope. The telescope is not individually available in the supply system.

## A2 Bradley Generator

Use NSN 6115-01-458-0096 to order a replacement 300-amp generator for your M2A2/M3A2 Bradley. NSN 2920-01-204-4470, shown at Item 208 in Fig 99 and Item 207 in Fig 100 of TM 9-2350-284-24P-1, is no longer available.

## A3 Bradley 1W98 Cable

Use NSN 6150-01-497-2058 to order a new 1W98 cable for your M2A3/M3A3 Bradley. NSN 6150-01-465-7748, shown as Item 34 in Fig 123 of TM 9-2350-294-24P-1, is no longer available.

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**TWO TYPES**  
OF GROUNDING.

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TO DO THE  
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