

**PS****THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY**

TB 43-PS-685, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user. Masculine pronouns may refer to both genders.

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M2/M3-Series Bradley, MLRS Carrier Shocks  
M2/M3-Series Bradley Handstation Check  
M1-Series Tank Ammo Desiccant  
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AVLB Roadwheel Hub Lube Fittings  
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You are invited to send PS your ideas for improving maintenance procedures, questions on maintenance and supply problems and questions or comments on material published in PS.

Just write to:

**MSG Half-Mast**  
**PS, the Preventive Maintenance Monthly**  
**USAMC LOGSA (AMXLS-AM)**  
**5307 Sparkman Circle**  
**Redstone Arsenal, AL 35898**

Or email to:

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

Internet address:

**<https://www.logsa.army.mil/psmag/pshome.cfm>**

By order of the Secretary of the Army:

**GEORGE W. CASEY, JR.**  
General, United States Army Chief of Staff

Official:

*Joyce E. Morrow*

**JOYCE E. MORROW**  
Administrative Assistant to the Secretary of the Army

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# MERRY CHRISTMAS

Issue 685

# PS

December  
2009

## THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-685

Approved for  
Public Release;  
Distribution is  
Unlimited



WANNA BET? SEE "PM CHRISTMAS STORY" ON PAGE 27

# SERGEANT, TAKE A WALK!



MOTOR SERGEANTS, HOW LONG HAS IT BEEN SINCE YOU WALKED THE LINE OF VEHICLES IN YOUR MOTOR POOL?



WHEN UNIT PERSONNEL SEE YOU WITH YOUR HEAD UNDER THE HOODS OF THEIR VEHICLES, THEY'LL KNOW YOU MEAN BUSINESS.



## When you walk the line, keep an eye on these areas:

### Fan Belts

Operators know they're supposed to check the belts, but do they? Check some yourself. A loose belt causes unnecessary wear-and-tear on the engine because of overheating or power loss.

### Fluid Levels

Check the fluid levels. Engine oil and hydraulic and radiator fluids are the lifeblood of any vehicle. Over time, oil slowly loses its ability to lubricate and clean. Old, dirty oil in engines and hydraulic systems accelerates wear on bearings, gears and other expensive moving parts.

### Low-Use Machines

Check the hydraulic systems on low-use vehicles. As vehicles cool down after use, moisture can condense in the vehicle's hydraulic reservoir. Condensation can cause corrosion in the reservoir and the hydraulic system.



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Stryker...



SHUCKS!  
A LITTLE  
WATER CAN'T  
HURT ME!

WAIT 'TIL  
I GET  
INSIDE!

I CAN CAUSE  
ALL SORTS OF  
PROBLEMS!

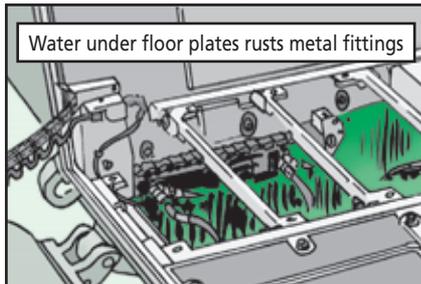
# WATER, THE ENEMY WITHIN

Crewmen, you wouldn't believe how much water can collect in the hull of your Stryker. It drips off wet boots and uniforms, trickles in through open hatches, is left behind after leaving the wash rack, and seeps in through loose hull drain plugs during fording.

## The Problem

There are at least three ways that water can damage your Stryker:

1. Water that collects under the floor plates will rust the ramp chains; connectors on the air, hydraulic and fuel lines; the ABS system; and pretty much anything else that's made of metal.
2. If you're in a cold-weather environment like Alaska, the water freezes. Water expands as it freezes, rupturing lines and fittings and causing even more damage.
3. As temperatures go up, the water evaporates and condenses on radios and other electronic gear. Enough moisture can short out electronic equipment.



Water under floor plates rusts metal fittings

## The Solution

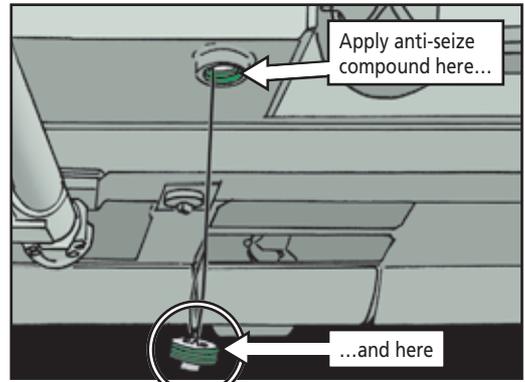
The only way to get that water out is to open the hull drain plugs on the bottom of your Stryker. There are 15 plugs, so make sure you open all of them or you'll leave water behind.

Make sure any water drained from the hull goes into a drip pan and is disposed of according to your unit's SOP.

Of course, you don't want water to get back in through the plugs, so make sure you reinstall 'em before operation. And do it right. Plugs that are too loose will vibrate free. Plugs that are too tight are hard to open and are more likely to be left closed when draining is needed.

Apply a little anti-seize compound, NSN 8030-01-087-8254, to the threads before installing the plugs. That lets you tighten the plugs enough to keep them from vibrating loose, but makes them easier to open when you need to.

Just make sure you put the compound on each plug's threads and the threaded portion of the hull. That way, all the threads are coated and the plugs won't stick.



M2/M3-Series Bradley...

# Aerial Sight Fix?

Dear Half-Mast,

If the Bradley's aerial sight can't be mounted or is broken, the Bradley is considered NMC. But the new armored commander's shield (ACS) makes it difficult to mount the sight and with the sight mounted you can't fully elevate the M242 gun. Is there any solution for this?

SGT H.H.

Dear Sergeant H.H.,

Yes. Turn in the aerial sight. The Army considers the protection provided by the ACS more important than the aerial sight. This removes the NMC criterion for the sight. Paragraph 8d of MWO 9-2350-294-55-23 authorizes you to remove the aerial sight and send it to:

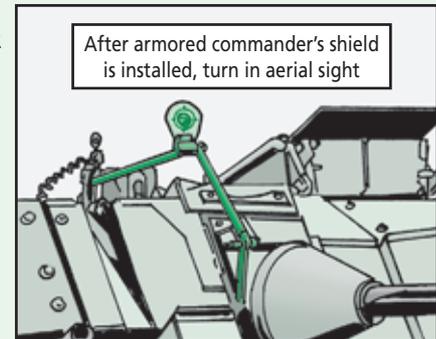
Red River Army Depot Munitions CTR  
Hwy 82 West CL V TPF  
Gate 44 Bldg 184  
Texarkana, TX 75507-5000  
DoDAAC W45G19

If you have questions about this, contact TACOM-RI at DSN 793-0722, (309) 782-0722, or email:

[@us.army.mil](mailto:@us.army.mil)

*Half-Mast*

After armored commander's shield is installed, turn in aerial sight



# Get a Charge Out of Shock PM

I SURE HOPE THEY DO SOME SHOCK ABSORBER PM WHEN WE GET BACK!

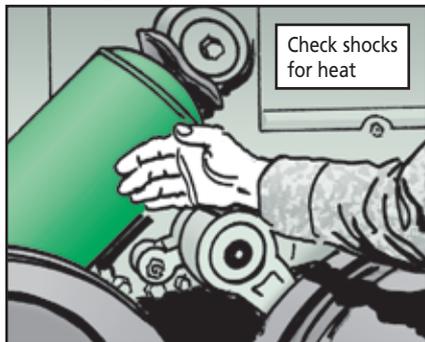
THEY'LL HAVE NO CHOICE AFTER THIS RIDE!

CREWMEN, YOU'RE IN FOR A SHOCKINGLY ROUGH RIDE IN YOUR BRADLEY OR MLRS IF YOU DON'T TAKE GOOD CARE OF ITS SHOCK ABSORBERS.

SO GIVE THOSE SHOCKS A GOOD ONCE-OVER AFTER EVERY OPERATION.

HERE'S WHAT TO LOOK FOR...

- Good shock absorbers generate heat during operation. If any of the shocks are cool or only slightly warm to the touch, report 'em. They aren't doing their job.

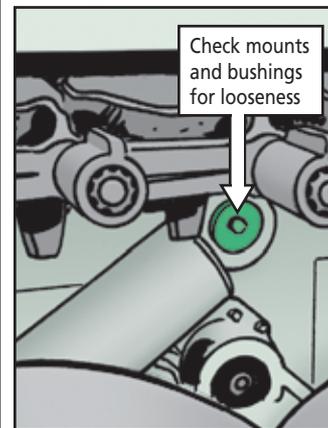


Watch your hand when making this check, though. Good shocks can get hot enough to burn you.

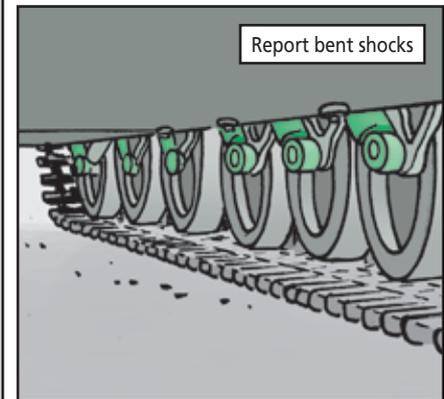
- Eyeball the shock absorbers for oil leaks. Report any that are leaking.



- Feel the shock absorber mounts and bushings. They should be nice and tight. Let your mechanic know about any loose ones.



- From the front of the vehicle, look straight down the track line at the shock absorbers. Checking from that angle makes it easy to find bent shocks. Report any shock absorbers that aren't straight.



# Old Cadillac Causes New Handstation Problem

A NEW COMMANDER'S HANDSTATION, PN 12976221-21, HAS BEEN FIELDIED FOR THE A3 BRADLEY.

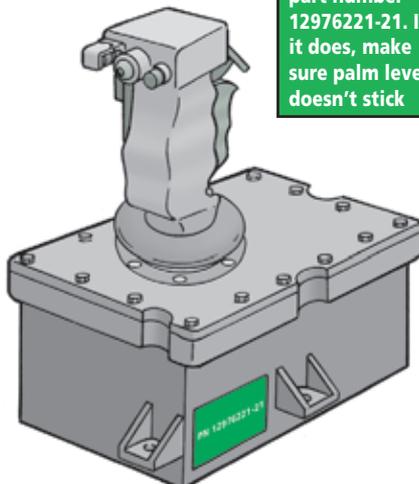
BUT FOR A WHILE THE OLD HANDSTATION, PN 12976221-20, WILL STILL BE IN THE FIELD.

AND THAT COULD CAUSE A SAFETY PROBLEM.

If the palm lever assembly (also known as the Cadillac) of the grip and gimbal assembly of the old handstation is installed in the new handstation, the turret or gun could move unexpectedly. That's a danger to your crew.

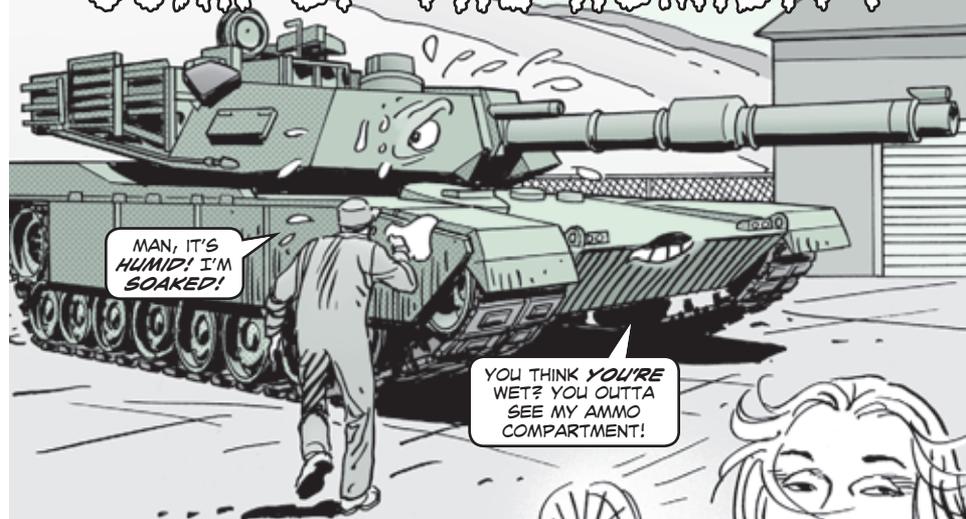
If your Bradley has a handstation with PN 12976221-21, make sure the palm lever (Cadillac) doesn't stick when it's depressed. This test can be done with the turret power on or off. But be careful doing it with the power on because the turret or gun could suddenly move. If the palm lever is sticking, get your repairman to replace it with the new lever assembly, PN 12976320-1. Don't use the handstation in the meantime.

There is no safety problem with using the new grip and gimbal assembly, PN 12976231-1, with the old handstation as long as the new lever assembly, PN 12976320-1, is installed.



Check to see if handstation has part number 12976221-21. If it does, make sure palm lever doesn't stick

# SOAK UP THE HUMIDITY



MAN, IT'S HUMID! I'M SOAKED!

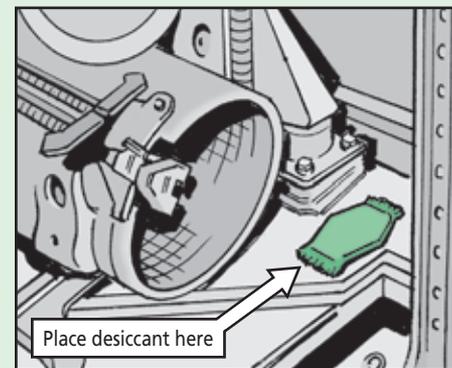
YOU THINK YOU'RE WET? YOU OULTA SEE MY AMMO COMPARTMENT!

HUMIDITY IN THE AMMO COMPARTMENT WILL RUST AND CORRODE ONBOARD AMMO, WHETHER YOUR TANK STAYS UNLOADED ALL THE TIME OR ONLY DURING EXERCISES.

Sure, you can slow the damage by occasionally wiping away any condensation in the ammo compartment. But to really put the brakes to corrosion, you've got to stop moisture.

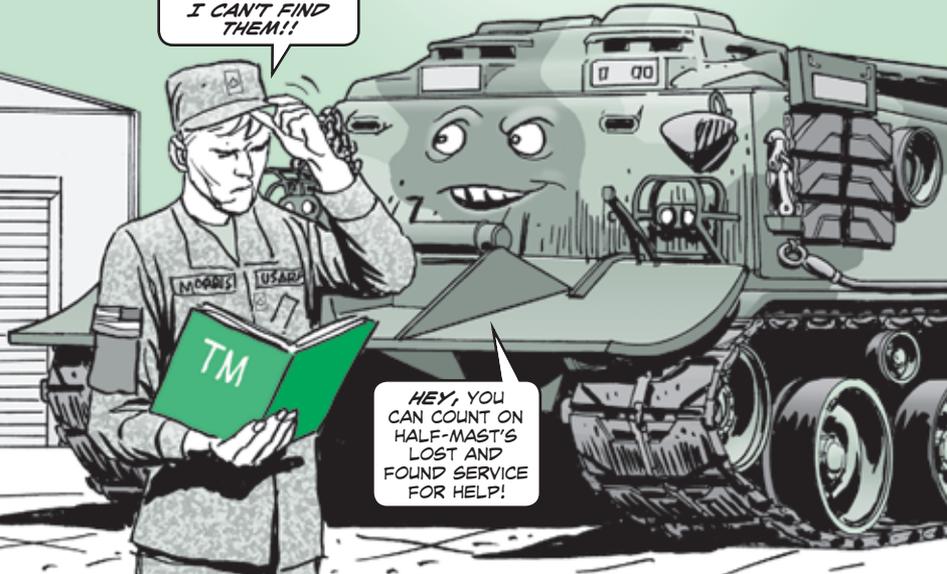
A few bags of desiccant will do the trick. Just open each ammo drum and put a bag or two on the floor between the ammo tubes and the compartment wall. NSN 6850-00-264-6571 gets a drum of 300 bags of desiccant.

When it's time to pull PMCS on the hull ammo compartment, check the desiccant bags. If they're moist to the touch or if the compartment walls are wet again, it's time for new desiccant.



# Clamp Lost and Found

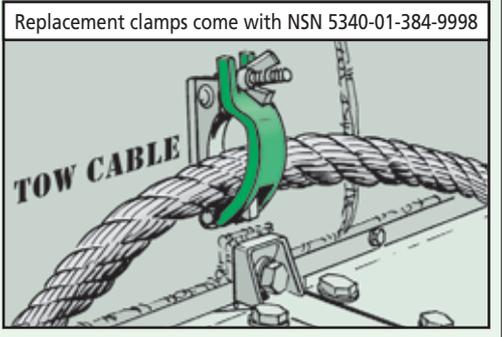
THE NSN FOR THE CLAMPS YOU NEED MUST BE LOST! I CAN'T FIND THEM!!



HEY, YOU CAN COUNT ON HALF-MAST'S LOST AND FOUND SERVICE FOR HELP!

Dear Half-Mast,  
I need help! We can't find an NSN for the stay line holddown clamps or the tow cable mounting clamps for our M88A1 recovery vehicles. The clamps for both locations look like they're the same, but we can't find them in the parts TM.  
Mr. J.C.P.

Dear Mr. J.C.P.,  
The clamp you need comes with NSN 5340-01-384-9998 (PN 6208845, CAGE 19207). The original NSN was cancelled by DLA and had to be reprovisioned. It'll be included in the next update to TM 9-2350-256-24P-1.  
*Half-Mast*



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AVLB...

# LUBE FITTINGS ARE HAPPIER APART

HEY, MY ROADWHEEL HUB LUBE FITTINGS ARE TOO CLOSE TOGETHER!  
TRUST ME, IT'S NOT A MATCH MADE IN HEAVEN!



How much lube an AVLB roadwheel hub gets depends a lot on how you install its cover plate, mechanics.

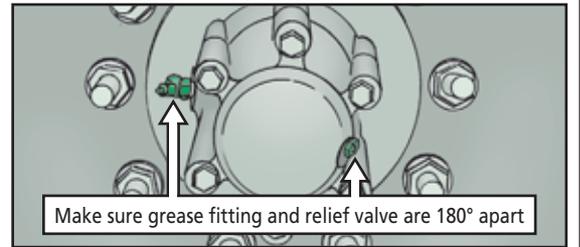
There are two types of roadwheel hub cover plates still in use. The first cover plate, NSN 5340-00-736-4254, has a plunger-type relief valve in its center. The second cover plate has the relief valve located on the side. Though it's no longer in the supply system, the second cover plate is still in use on some AVLBs.

THERE'S NO PROBLEM WITH THE FIRST COVER PLATE.

IT'S THE SECOND ONE YOU HAVE TO BE CAREFUL WITH.

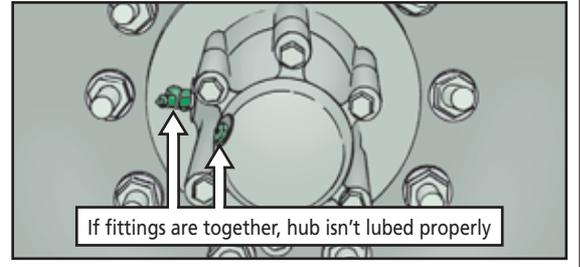


To ensure that all the hub gets grease during lubing, make sure the cover plate is installed with its relief valve positioned opposite the grease fitting on the hub.



Make sure grease fitting and relief valve are 180° apart

If the fittings are close together, only part of the hub gets new grease before new lube comes out of the relief valve. The dirty grease doesn't get pushed out and that can lead to burned-out bearings.



If fittings are together, hub isn't lubed properly

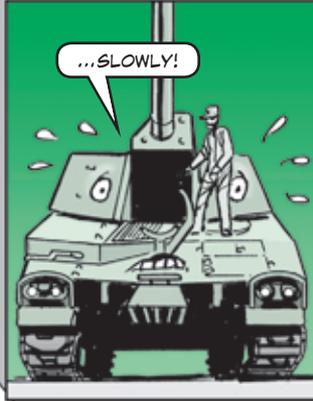
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# PUT AWAY THE PIN

DON'T FORGET TO STOW MY QUICK RELEASE PIN AND LOWER MY GRILLE...



...SLOWLY!

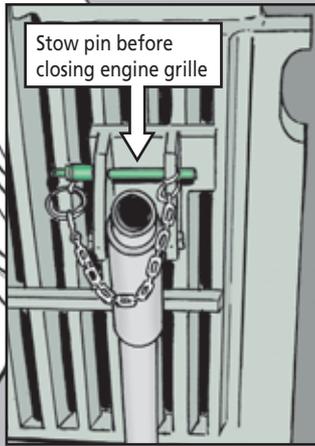


CREWMEN, WHEN CLOSING THE ENGINE ACCESS GRILLE ON YOUR HOWITZER OR AMMO CARRIER, MAKE SURE YOU PUT AWAY THE GRILLE SUPPORT ARM'S QUICK-RELEASE PIN FIRST.

IF THE PIN, NSN 5315-00-878-5269, AND CHAIN HANG FREE, THEY CAN BE BROKEN OR CRUSHED WHEN THE GRILLE IS CLOSED.

THE NEXT TIME YOU OPEN THE GRILLE, THERE'S NO WAY TO SAFELY ATTACH THE SUPPORT ARM TO HOLD UP THE GRILLE.

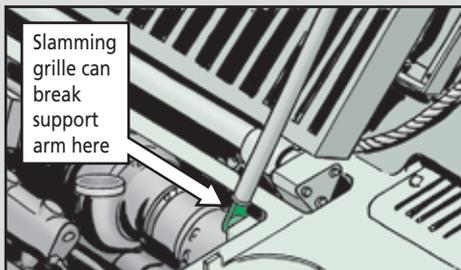
Stow pin before closing engine grille



ONCE YOU'VE SECURED THE PIN, MAKE SURE YOU LOWER THE GRILLE GENTLY.

LETTING IT SLAM CLOSED IS A SURE WAY TO LOOSEN OR BREAK THE SUPPORT ARM WHERE IT ATTACHES TO THE HULL.

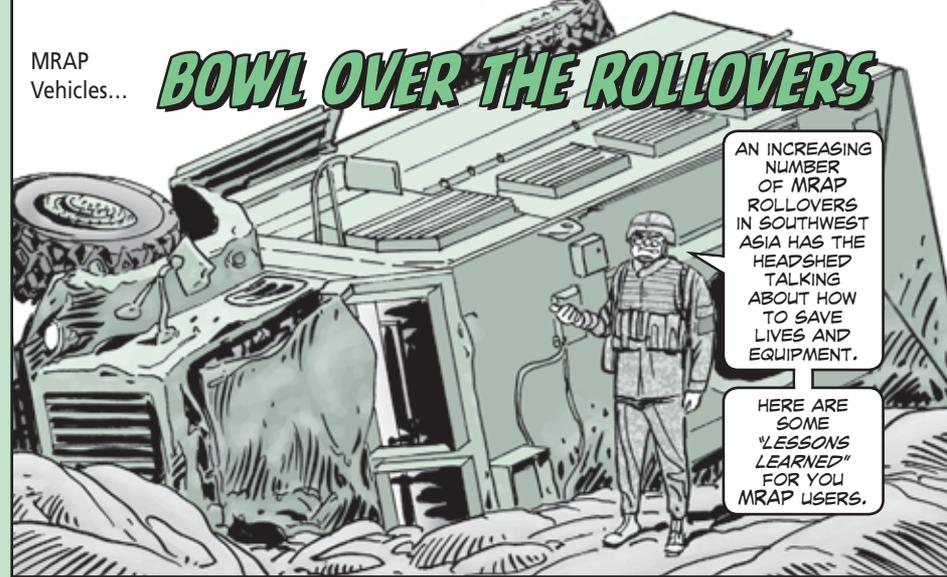
Slamming grille can break support arm here



# BOWL OVER THE ROLLOVERS

AN INCREASING NUMBER OF MRAP ROLLOVERS IN SOUTHWEST ASIA HAS THE HEADSHED TALKING ABOUT HOW TO SAVE LIVES AND EQUIPMENT.

HERE ARE SOME "LESSONS LEARNED" FOR YOU MRAP USERS.



BEFORE YOU HEAD OUT ON THE DAY'S MISSION...



- Perform rollover drill rehearsals with the gunner and crew prior to all missions.
- Stow all mission equipment properly.
- Make sure your crew are using their seat belts and that the gunner is using the gunner restraint system (GRS).
- Maintain an appropriate speed for the road condition.
- Use a ground guide when tactical procedures permit.
- Unlock combat door locks in a non-conflict situation. That way, rescuers can enter an unlocked vehicle if needed.

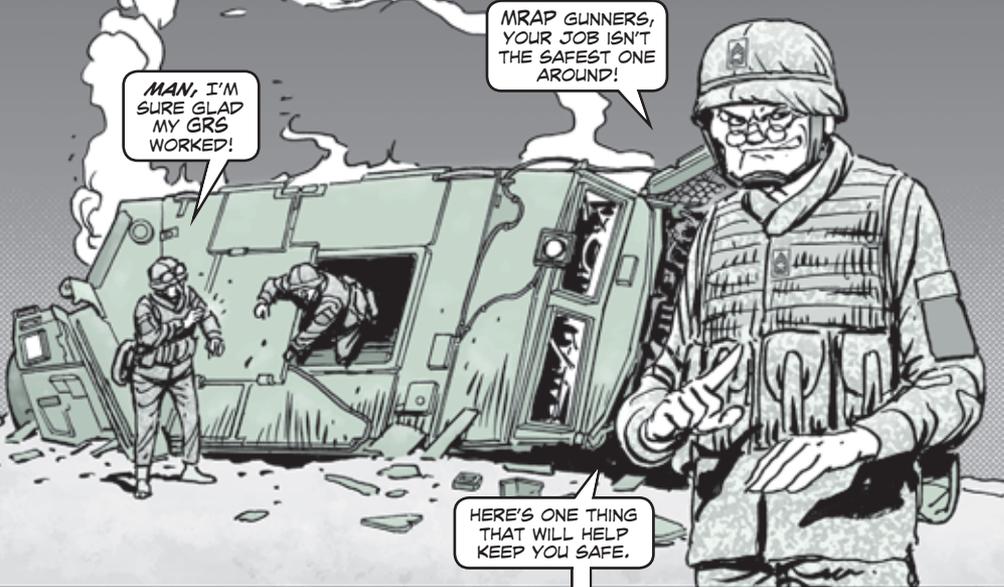
## LISTEN UP!

WHEN PLANNING MISSION ROUTES USING COMPOSITE RISK MANAGEMENT, REMEMBER THAT MRAP VEHICLES ARE **LARGER** AND **HEAVIER** THAN THE VEHICLES THEY REPLACED.



THAT MEANS YOU HAVE TO CONSIDER **NOT ONLY** THE MISSION'S CRITICALITY, **BUT ALSO** THE VEHICLE'S SIZE AND MISSION WEIGHT AND HOW THOSE FACTORS MAY BE AFFECTED BY WEATHER AND TERRAIN!

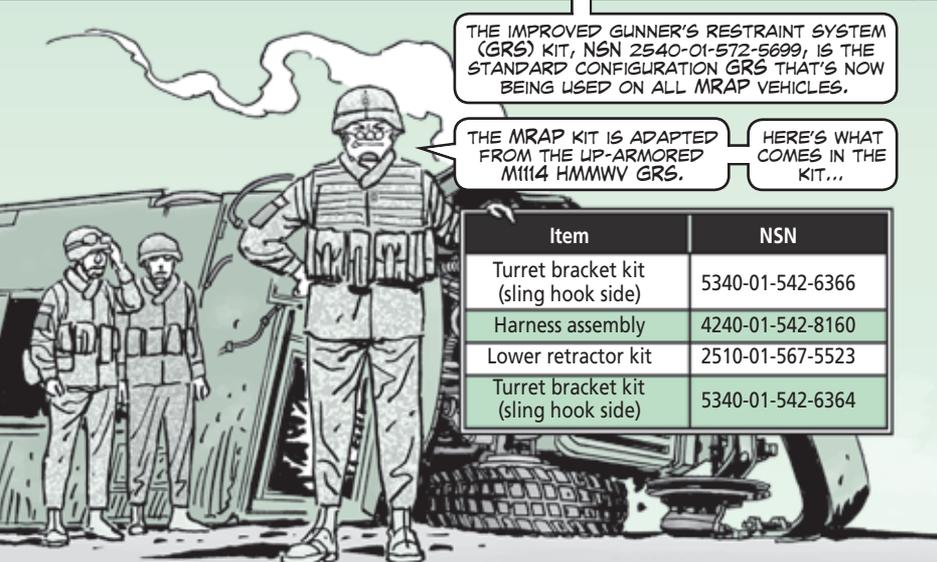
# MRAP... GUNNER RESTRAINT SYSTEM



MAN, I'M SURE GLAD MY GRS WORKED!

MRAP GUNNERS, YOUR JOB ISN'T THE SAFEST ONE AROUND!

HERE'S ONE THING THAT WILL HELP KEEP YOU SAFE.



THE IMPROVED GUNNER'S RESTRAINT SYSTEM (GRS) KIT, NSN 2540-01-572-5699, IS THE STANDARD CONFIGURATION GRS THAT'S NOW BEING USED ON ALL MRAP VEHICLES.

THE MRAP KIT IS ADAPTED FROM THE UP-ARMORED M1114 HMMWV GRS.

HERE'S WHAT COMES IN THE KIT...

Item	NSN
Turret bracket kit (sling hook side)	5340-01-542-6366
Harness assembly	4240-01-542-8160
Lower retractor kit	2510-01-567-5523
Turret bracket kit (sling hook side)	5340-01-542-6364

The HMMWV's GRS was first fielded without the swivel design, causing gunners to get tangled. Since it didn't have the quick-release button, gunners couldn't exit the vehicle quickly. But now that's changed.

If you see an adjustable tail strap with a push-button quick release and swivel, you've got the improved gunner's restraint system. The quick-release button lets you get out of your MRAP quickly without having to drop the harness first. The swivel keeps the tail strap from twisting. And the adjustable tail strap lets a tall gunner lengthen the straps for easier access. It also allows shorter gunners to keep the strap tight enough to protect them as it should.

Make sure hip buckles are secure

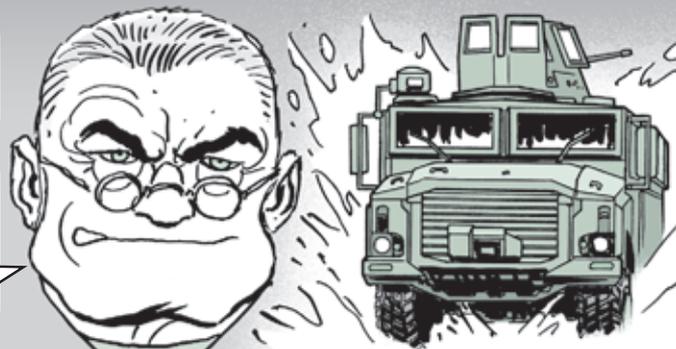


Pull on waist straps to fit



THE GRS WILL KEEP YOU FROM BEING EJECTED IN CASE OF ROLLOVER.

IT WILL ALSO KEEP YOU IN PLACE WHEN RIDING ON ROUGH TERRAIN AND DURING HIGH-SPEED MANEUVERS.



HMMWV...

OOCH! OW! MY POOR BATTERIES ARE GETTING BOUNCED ALL OVER THE PLACE!

# BEWARE OF BOUNCING BATTERIES

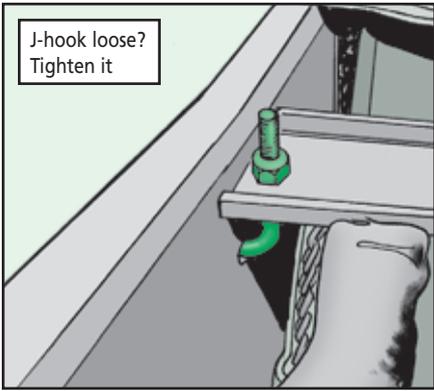
IF THE BATTERIES IN YOUR HMMWV ARE DOING THE OLD SHAKE, RATTLE AND ROLL, YOU COULD HAVE A PROBLEM, OPERATORS.



The batteries are held in place with four J-hooks. But if the nuts that lock down the J-hooks come loose, your batteries will be bouncing all over the place. That leads to spilled electrolyte, shorts and maybe even a cracked battery!

When checking the batteries during PMCS, take a close look at the J-hooks, too. If the nuts are loose, tighten them. If the J-hooks are missing, you'll probably find them in the bottom of the battery box. If not, order new ones.

NSN 5306-01-190-2193 brings the larger J-hook. The smaller one comes with NSN 5306-01-185-7071. NSN 5310-00-880-7744 brings 100 replacement nuts.



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HMMWVs...

# MOVING MIRRORS A MUST

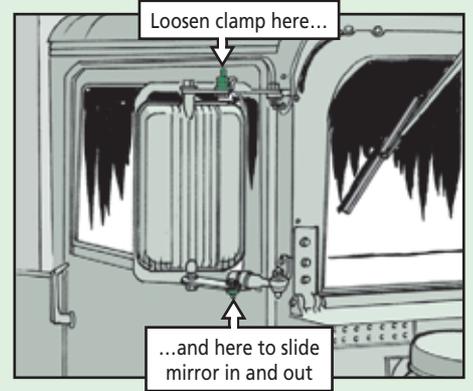


When you're driving along in your HMMWV, what you don't see can hurt you. That's why it's important to properly position the passenger and driver's side mirrors before you hit the road.

Most drivers pivot the mirror frames in and out and pivot the mirror itself within the frame trying to get the best view possible. But what they forget is that the mirror can also be moved a third way.

Depending on the type of HMMWV you're driving, you may also need to slide the mirrors farther out on the frame. Mirrors that sit too close to the doors can be blocked by what's on the back of your vehicle.

Adjusting a mirror is easy. Just loosen the top and bottom clamp, slide the mirror in or out, and then retighten the clamps. You'll be a lot safer when you can see what you would have missed.

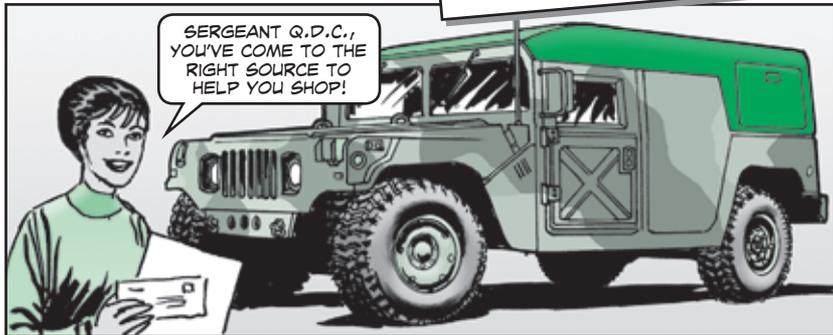


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# HELMET HARDTOP SUPPORT MADE EASY



Dear Bonnie,  
I'm having a hard time finding helmet hardtop covers for my unit's HMMWVs. Can PS give me some help to make my job easier?  
SSG Q.D.C.



Here's what you need to know.

HMMWV helmet hardtops are authorized for use, but the Army doesn't support them. That's why you won't find them in the TM. Amtech Corporation (CAGE 0C8U3), the manufacturer, supports the field through TACOM LCMC.

Contact Amtech at 509-877-2228 (main office), 509-877-6271 (customer support) or go to their website: [http://amtechcorp.com/military/mp\\_home.php](http://amtechcorp.com/military/mp_home.php)

When you reach them, use this list of authorized helmet hardtop options:

NSN 2510-01-	Part Number	Description
446-3535	1551	Unit for four-door HMMWV with side storage compartments, OD green
502-7721	1551-C	CARC-painted version of 1551
446-3542	1551-0	Unit for four-door HMMWV with no side storage compartments and no windows, OD green
502-8840	1551-0-C	CARC-painted version of 1551-0
439-9949	1551-1	Unit for four-door HMMWV with side storage compartments, left side antenna door and ground plane in roof, OD green
503-4573	1551-1-C	CARC-painted version of 1551-1
446-3550	1551-3	Unit for two-door HMMWV with side storage compartments, OD green
502-8304	1551-3-C	CARC-painted version of 1551-3
446-3553	1551-4	Unit for four-door HMMWV with left storage compartment only, OD green
502-8364	1551-4-C	CARC-painted version of 1551-4
502-8485	1551-5	Unit for two-door HMMWV with no side storage compartments and no windows, OD green
502-7668	1551-5-C	CARC-painted version of 1551-5
462-9095	1551-6	Unit for two-door HMMWV with side storage compartments and bulkhead kit with roof vents, OD green
502-7711	1551-6-C	CARC-painted version of 1551-6
446-3558	1552	Unit for four-door HMMWV with side storage compartments, Sand
502-6659	1552-C	CARC-painted version of 1552
446-3562	1552-0	Unit for four-door HMMWV with no side storage compartments and no windows, Sand
502-9088	1552-0-C	CARC-painted version of 1552-0
446-3568	1552-1	Unit for four-door HMMWV with side storage compartments, left side antenna door and ground plane in roof, Sand
502-8314	1552-1-C	CARC-painted version of 1552-1

# Parking Brake Lever NSNs

NSN 2510-01-	Part Number	Description
446-3575	1552-3	Unit for two-door HMMWV with side storage compartments, Sand
502-8296	1552-3-C	CARC-painted version of 1552-3
446-3576	1552-4	Unit for four-door HMMWV with left storage compartment only, Sand
502-8842	1552-4-C	CARC-painted version of 1552-4
503-4569	1552-5	Unit for two-door HMMWV with no side storage compartments and no windows, Sand
502-6664	1552-5-C	CARC-painted version of 1552-5
462-9169	1552-6	Unit for two-door HMMWV with side kit with roof vents, Sand
502-6668	1552-6-C	CARC-painted version of 1552-6



The following bulkhead kits are also authorized:

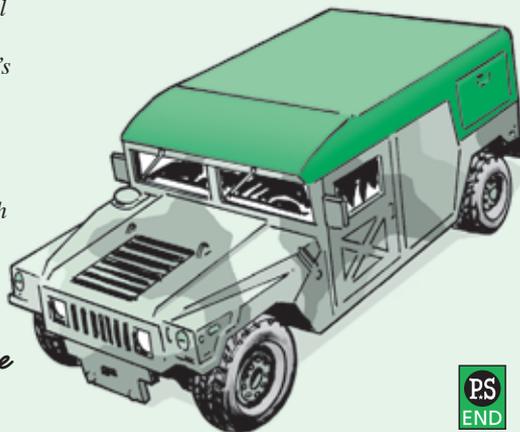
NSN 2590-01-	Part Number	Description
462-9087	D-HMV101	Bulkhead kit with roof vents, OD green (Helmet hardtop 2-door unit only)
463-0653	D-HMV112	Bulkhead kit with roof vents, Sand (Helmet hardtop 2-door unit only)

Amtech can help you choose which part best meets your needs. Make sure you select **only from these options** because the Army hasn't approved all variations.

By the way, the HMMWV's LIN won't change when you install the helmet hardtop.

And remember to get approval from your unit's commander and comply with local regulations regarding CARC painting before placing your order.

Four-door standard shelter fits all non-armor HMMWVs



Bonnie



Dear Half-Mast,

I'm looking for the stock numbers for the parking brake levers on my M105 trailer. They're shown as Item 28 in Fig 9 of TM 9-2330-213-14&P. I used the part numbers from the TM to search in FED LOG. But the PN for one side pulled up as a wired circuit panel, and the other PN had no matches! What are the correct NSNs for both the left and right side parking brake levers?

SGT S.T.P.

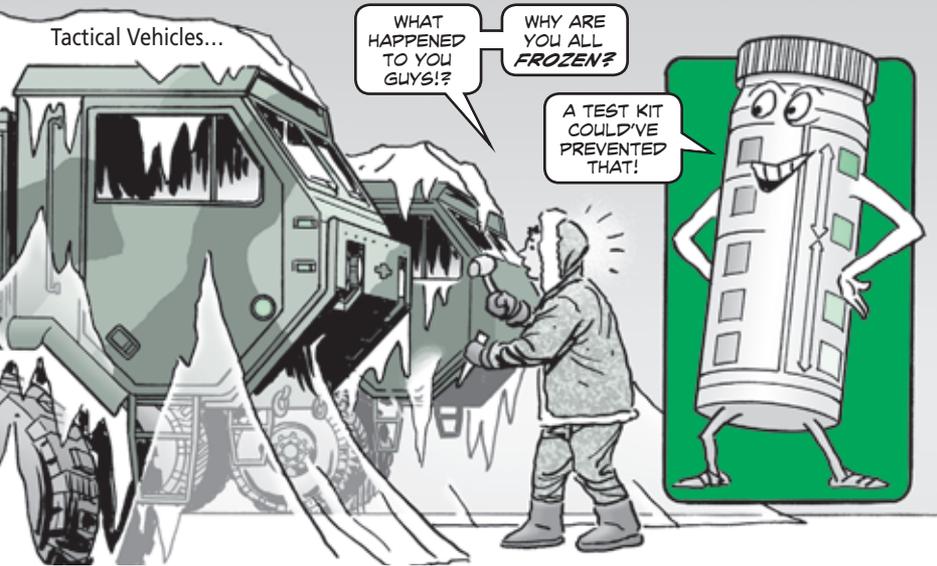
Dear Sergeant S.T.P.,

Today ends your endeavor to find the parking brake levers. TACOM LCMC tells us that both parking brake levers have been changed since the TM was first released. But the TM hasn't been updated yet.

All M105-series trailers now use NSN 2530-00-973-2355 for the left-hand lever, and NSN 2530-00-973-2356 for the right-hand lever. Make a note until TM 9-2330-213-14&P is updated.

Half-Mast

Tactical Vehicles...



WHAT HAPPENED TO YOU GLYS!?

WHY ARE YOU ALL FROZEN?

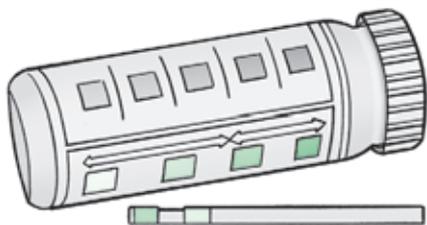
A TEST KIT COULD'VE PREVENTED THAT!

## ANTIFREEZE TESTS

Is your vehicle's cooling system ready to perform in all types of weather? If you're not sure, test it. This should happen at least during scheduled maintenance and climatic change services.

The combination antifreeze and battery tester, NSN 6630-00-105-1418, tests for freeze protection down to -50°F. Use this only for 50/50 blend antifreeze.

Antifreeze test kit, NSN 6630-01-011-5039, tests for freeze protection



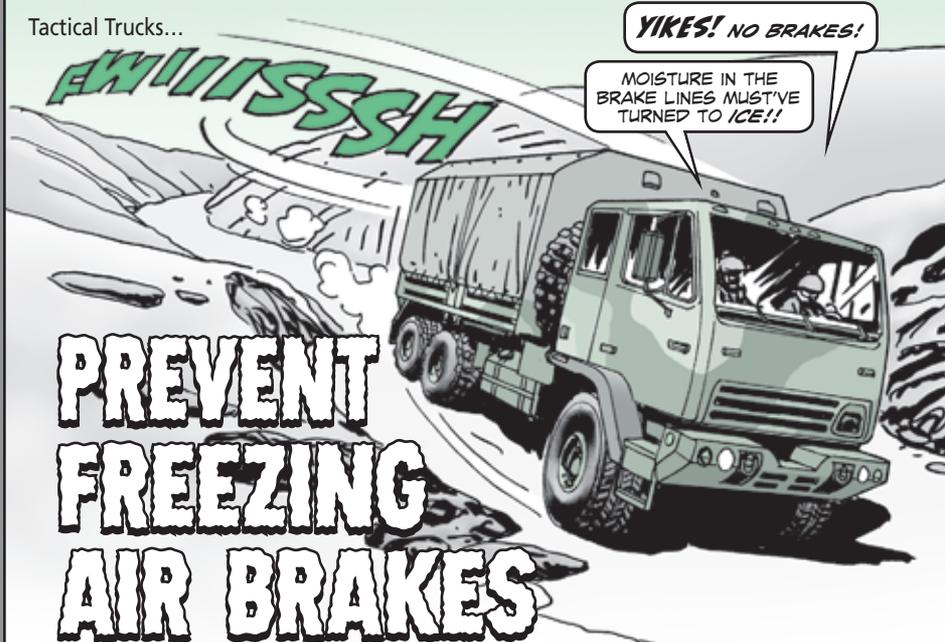
Antifreeze test kit, NSN 6630-01-011-5039, tests for freeze protection down to -60°F. The test strips in this kit can be used for both the 50/50 and 60/40 antifreeze blends.

Use test kit, NSN 6850-01-154-3653, to test the nitrite (corrosion protection) level of antifreeze. The ideal nitrite concentration for 50/50 antifreeze/water solution is between 1,200 and 1,400 ppm.

For more info on testing antifreeze, eyeball TB 750-651, *Use of Antifreeze Multi-Engine Type Cleaning Compounds and Test Kit in Engine Cooling Systems*. You can find it on LOGSA's ETM website:

<https://www.logsa.army.mil/etms/index.cfm>

Tactical Trucks...



## PREVENT FREEZING AIR BRAKES

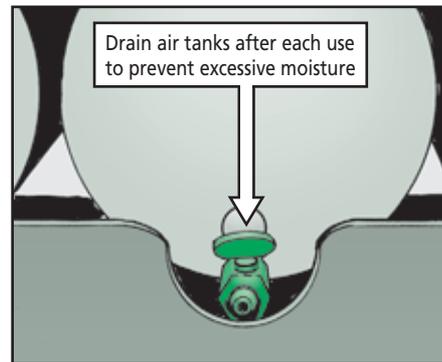
Drivers, moisture can build up in your truck's air brake system even in good weather. Over time, that moisture corrodes air lines, relief valves, check valves, and the air tanks, too.

During winter, the moisture turns to ice. Then you inherit a worse problem— ice plugs up the air system!

If air can't get through, the brakes won't work. Plus, water has a habit of expanding as it freezes. So it can burst lines and fittings and ruin your brakes.

Stop that problem by draining the air tanks after each day's run. And don't forget to close the air valves after draining. Otherwise, the valves may freeze in the open position.

By the way, if your vehicle has an alcohol evaporator to keep moisture from freezing in the air lines, make sure it has the alcohol it needs to do the job. NSN 6810-00-597-3608 gets one gallon of methyl alcohol. NSN 6810-00-275-6010 gets a 5-gal can.



# Steps to Safe Firing



ONE M224 MORTAR UNIT HAD A MORTAR FIRE WHEN IT WASN'T SUPPOSED TO.

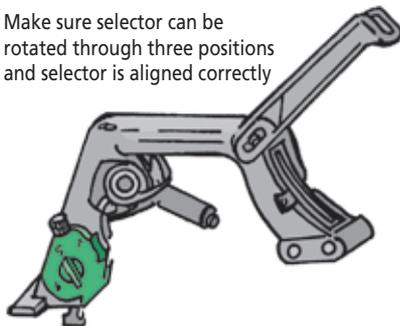
TO PREVENT THAT HAPPENING AGAIN, ALL M224 OPERATORS SHOULD ALWAYS DO THIS CHECK BEFORE THEY PREPARE TO FIRE...



Make sure the firing selector on the handle and firing mechanism can be rotated through the T (trigger fire), S (safe), and D (drop fire) positions. If it can't, the M224 needs to be sent to direct support for evaluation.

Also make sure the selector aligns correctly with the three positions. If it's in between positions, the mortar could accidentally fire on safe. If you have any doubts, the M224 needs to be sent to direct support.

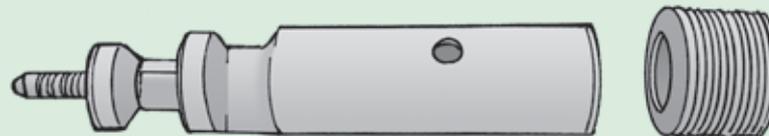
Make sure selector can be rotated through three positions and selector is aligned correctly



## New Firing Pin

M224 operators and armorers also need to be aware that the old three-piece firing pin configuration (firing pin, firing pin guide, and threaded plug) has been replaced by a two-piece configuration (firing pin and threaded plug).

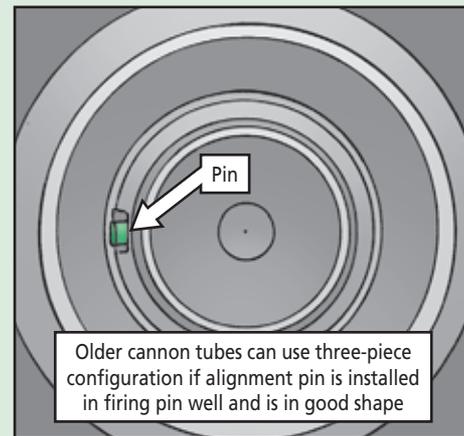
Two-piece configuration replaced old three-piece firing pin configuration



All M224s can use the new two-piece configuration, but only old mortar cannon tubes with an alignment pin in the firing pin well can use the old three-piece configuration. If you use the old configuration in a mortar missing the alignment pin, the mortar could accidentally fire.

Any cannon manufactured after 2005 and/or having a serial number higher than 3387 should use the two-piece configuration.

It's OK to continue to use the three-piece configuration in older cannons as long as they have a serviceable alignment pin in the firing well. If the alignment pin is missing or in poor condition, get the new firing pin configuration. Even if the cannon has a good alignment pin, you should replace the old configuration with the new one the next time the mortar is serviced.



Older cannon tubes can use three-piece configuration if alignment pin is installed in firing pin well and is in good shape

Purge bench stock of the old firing pin configuration and replace it with the new firing pin, NSN 1015-01-546-6617, and threaded plug, NSN 5935-01-546-6679. They must be ordered together the first time. The new firing pin can't be used with the old plug and the old firing pin won't work with the new plug.



FOR MORE INFORMATION, SEE TACOM SAFETY OF USE MESSAGE 09-026.

# DO'S AND DON'TS FROM DOL!



Dear Editor,

We do the small arms repairs for DOL at Ft Bliss and we see a few problems that we hope *PS* can help solve by educating Soldiers.

**Spare barrel**-*PS* has written again and again about the importance of changing machine gun barrels during firing. But that's still a problem. We frequently see barrels ruined because a Soldier fired and fired through the same barrel. Even if the barrel doesn't get so hot that it's warped, the heat can take the finish right off the barrel. Then corrosion has an open door.

But something else we're running into is units not IDing the spare barrel with the receiver's serial number. Then they take the spares to the field and randomly put one on their machine gun. Both barrels are headspaced to one receiver. Another barrel won't have the correct headspace, which means the machine gun could malfunction. If the barrels are not tagged, the weapon is NMC.

The serial number of the receiver should be stamped on dog tags and the dog tags should be safety wired to the barrels. Writing the serial number on the barrel bag will help, too. Soldiers need to be educated to make sure the ID number on the spare barrel is the same as the receiver's.

Units also need to remember that the spare barrel stays with the machine gun if it's transferred to another unit. If the spare barrel disappears, your unit can be giggered for a replacement.

**Cleaning rods**-We've seen Soldiers use another weapon's cleaning rod for PM. Using an M16 rifle cleaning rod to try to clean an M2 machine gun's barrel is pointless. The cleaning rod isn't big enough. But it's even worse if you do the opposite: try to clean an M16 with an M2 cleaning rod. We actually had to junk an M16 barrel because an M2 cleaning rod was stuck in it. Use only the cleaning rod specifically designed for your weapon.

**Barrel caps**-Units are leaving the caps on all the time. We've seen weapons shipped back from SW Asia where the cap had glued itself to the barrel. Plus the cap traps moisture in the barrel, which leads to corrosion. The only time the caps should be used is in the field to prevent dirt and sand from clogging the barrel.

Mr. D.W.  
DOL  
Ft Bliss, TX

I KNOW I NEED TO CHANGE YOUR BARREL, BUT I CAN'T FIGURE OUT WHICH IS YOUR SPARE?



YOU SHOULD'VE IDENTIFIED MY BARREL!

HEY, WAIT! I MAY JUST BE A SPARE, BUT IF THE GUN'S GOING TO A NEW UNIT...



...I NEED TO GO, TOO!

HA, YOU THINK YOU CAN CLEAN ME WITH THAT PITIFUL M16 CLEANING ROD.



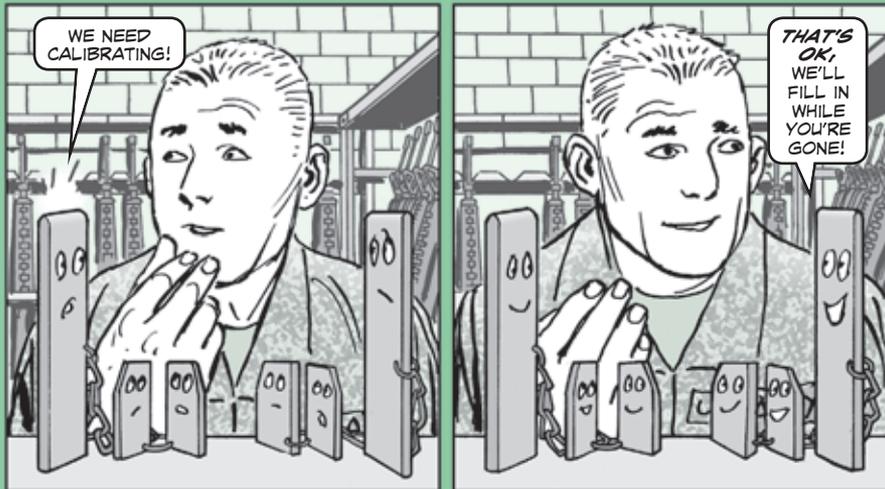
BE SERIOUS.

HEY, WE DON'T NEED THESE BARREL CAPS FOR STORAGE.

TAKE 'EM OFF.



**Editor's note:** Excellent points, Sir. Soldiers, do your weapon a favor and remember these points. If you have questions, call DSN 793-7458, (309) 782-7458. Or, email: [@us.army.mil](mailto:@us.army.mil)



## DON'T STAGGER CALIBRATION, ORDER EXTRA GAGES

Dear Editor,

I saw in PS 678 (May 09) your suggestion that units whose M2, M29G, or M3P machine gun gages hadn't received the required yearly calibration should stagger sending their gages to TMDE. That way all the gages aren't out at the same time.

The problem with that idea is that these machine guns are considered **NOT READY/AVAILABLE** if they don't have their gages or their gages haven't been calibrated in a year.

As a TACOM logistics assistance representative (LAR), I recommend to the units I assist that they have two sets of timing and headspace gages for each weapon.

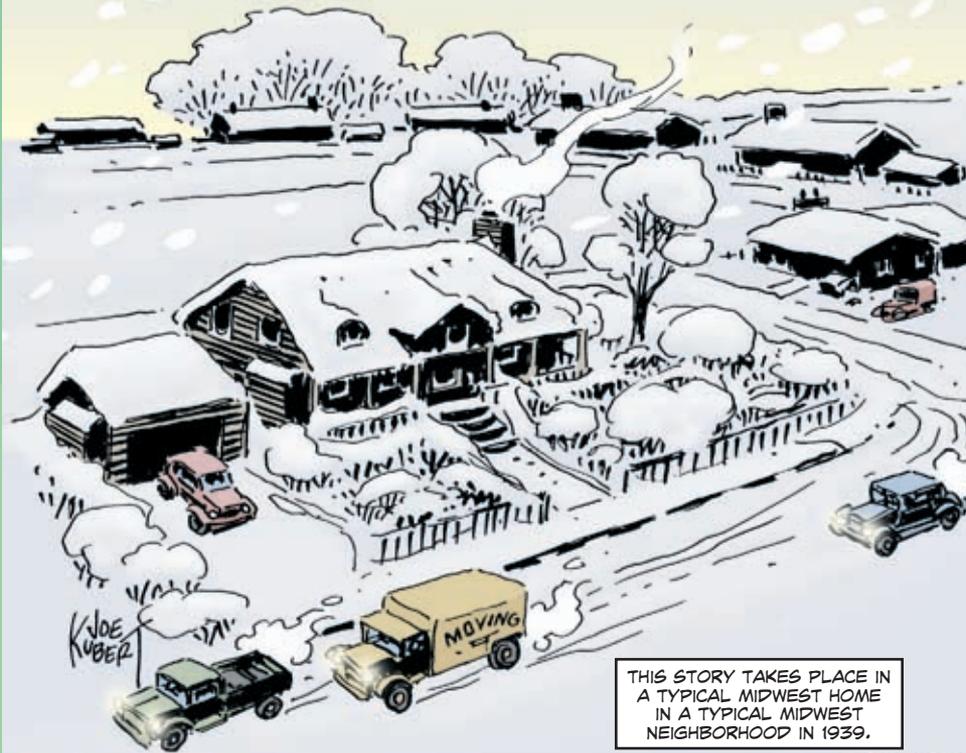
That way when one set of gages has to go to TMDE for calibration, you still have the other set available and your machine guns are still mission capable. Plus, gages are going to disappear in the field and this way you have an immediate replacement.

The gages cost almost \$200, but extra gages are worth it if they keep \$13K machine guns in action and make them safe for Soldiers to fire.

Mr. J. R. G.  
TACOM LAR  
Ft Benning, GA

*Editor's note: Good idea, Sir. The M2 and M29G headspace and timing gages come with NSN 5220-00-535-1217 and the M3P gage comes with NSN 5280-13-116-6359.*

# A CHRISTMAS STORY REVISITED



THIS STORY TAKES PLACE IN A TYPICAL MIDWEST HOME IN A TYPICAL MIDWEST NEIGHBORHOOD IN 1939.

IN 1966, JEAN SHEPHERD PUBLISHED A BOOK OF SHORT STORIES ENTITLED, IN *GOD WE TRUST, ALL OTHERS PAY CASH*. IN 1983 A COMPILATION FROM THAT BOOK BECAME THE HIT HOLIDAY MOVIE, *A CHRISTMAS STORY*. WHERE DID MR. SHEPHERD GET THE IDEA FOR THIS DELIGHTFUL TALE? UNTIL NOW, IT WAS BELIEVED THAT THE MAIN CHARACTER, RALPHIE, WAS BASED ON HIMSELF AS A CHILD.

BUT A RECENTLY DISCOVERED FIRST DRAFT OF THE STORY FOUND IN A HERMETICALLY SEALED OFFICIAL NFL FOOTBALL BOX UNDER A PORCH IN HAMMOND, INDIANA, REVEALS **ANOTHER** ORIGIN. IT SEEMS THAT MR. SHEPHERD WAS WRITING ABOUT HIS BEST FRIEND AND NEIGHBOR, HALFIE MAST. IT ALSO WAS REVEALED THAT THE ORIGINAL STORY WAS A BIT DIFFERENT THAN THE ONE PUBLISHED. SO HERE, FOR THE FIRST TIME ANYWHERE, IS THE ORIGINAL, UNEDITED VERSION OF *A CHRISTMAS STORY*.



BREAKFAST IN A MIDWEST HOME...

EAT YOUR CHIPPED BEEF, RANDY.

OKAY, MOM!



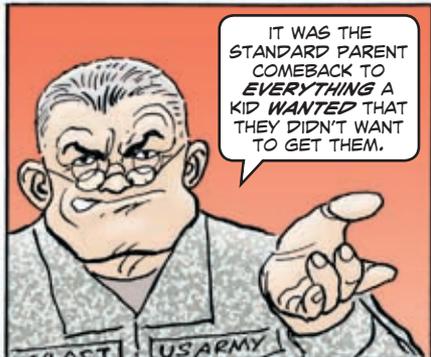
HALFIE, WHAT DO YOU WANT FOR CHRISTMAS THIS YEAR?



I WANT AN OFFICIAL RED RYDER CARBINE ACTION, TWO-HUNDRED SHOT, RANGE MODEL AIR RIFLE!



YOU WON'T TAKE CARE OF IT!



IT WAS THE STANDARD PARENT COMEBACK TO EVERYTHING A KID WANTED THAT THEY DIDN'T WANT TO GET THEM.



AND IT WAS THE PERFECT COMEBACK! BECAUSE NO KID ALIVE TOOK CARE OF ANYTHING. IT WASN'T IN OUR NATURE. IT WASN'T WHO WE WERE. LUCKILY, I HAD AN ALTERNATIVE PLAN—THE SCHOOL ESSAY.



MOST OF YOUR ESSAYS ON "WHAT I WANT FOR CHRISTMAS" WERE VERY GOOD.

SOME OF YOU, THOUGH, ASKED FOR THINGS THAT YOU KNOW YOU WON'T BE GETTING.



D-?

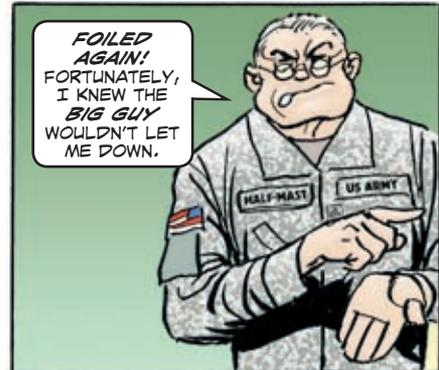


YOUR ESSAY WAS NOT REALISTIC.

BUT I GOTTA HAVE AN OFFICIAL RED RYDER CARBINE ACTION, TWO-HUNDRED SHOT, RANGE MODEL AIR RIFLE!



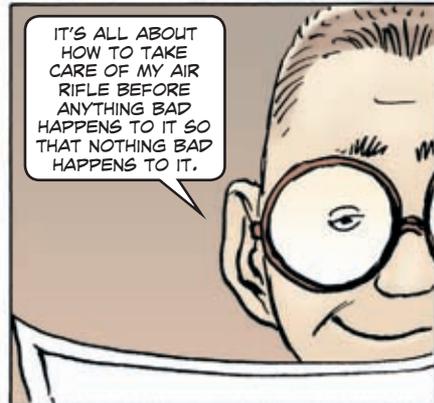
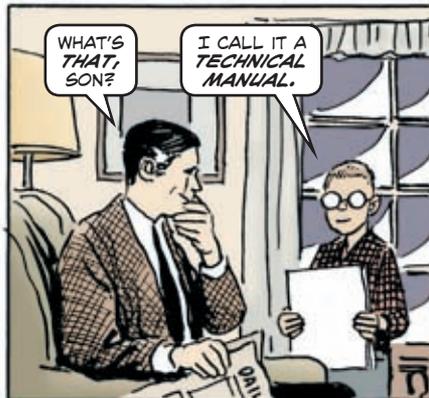
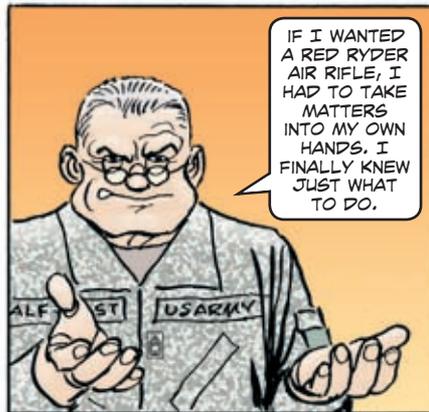
YOU WON'T TAKE CARE OF IT.

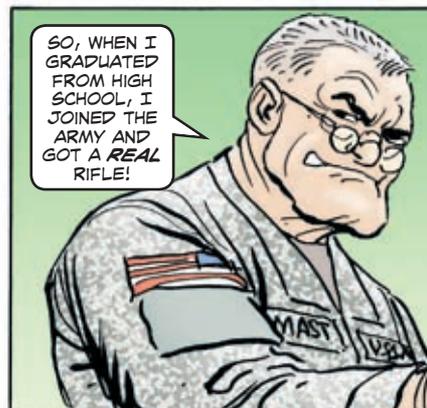
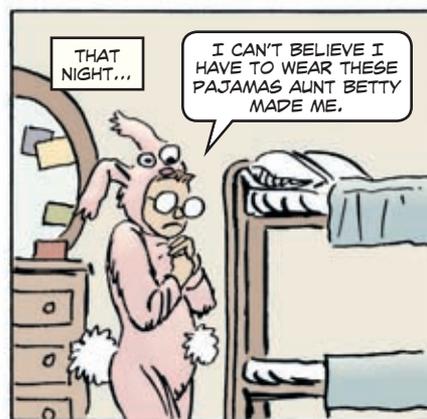
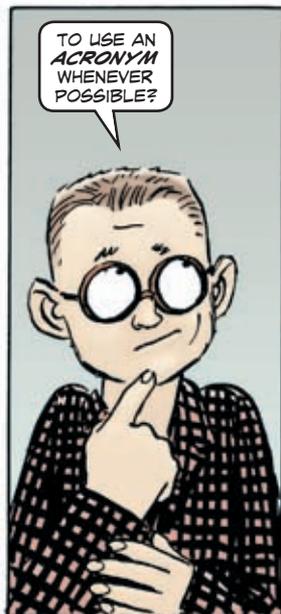


FOILED AGAIN! FORTUNATELY, I KNEW THE BIG GUY WOULDN'T LET ME DOWN.



AND WHAT DO YOU WANT FOR CHRISTMAS, LITTLE BOY?





# CHRISTMAS DAY

HEY, HALFIE...  
THROW THE  
FOOTBALL  
TO ME.

I-I CAN'T!  
THE AIR  
LEAKED OUT.



**N**O MATTER WHAT PRESENT IS UNDER THE TREE  
WHETHER FOOTBALL OR RIFLE THAT FIRES A B-B  
THIS ONE THING WE KNOW  
IN RAIN, SLEET OR SNOW  
EQUIPMENT WON'T LAST IF IT'S PM FREE!

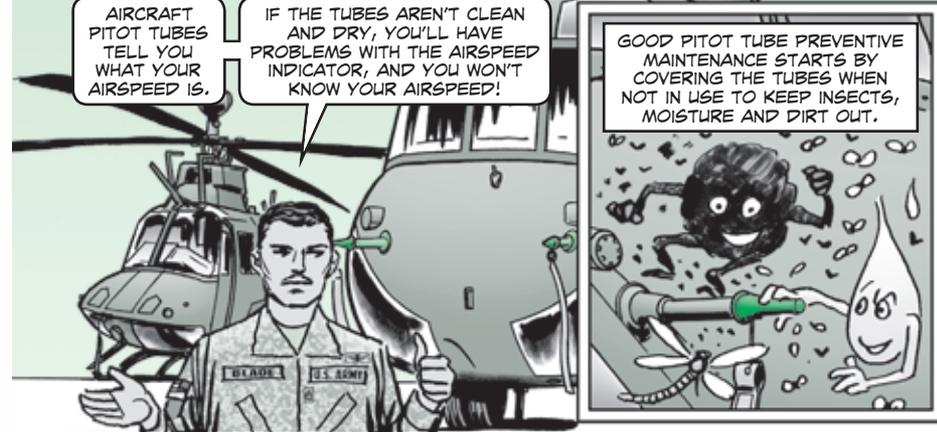
All  
Aircraft...

# Pitot Tube PM

AIRCRAFT  
PITOT TUBES  
TELL YOU  
WHAT YOUR  
AIRSPEED IS.

IF THE TUBES AREN'T CLEAN  
AND DRY, YOU'LL HAVE  
PROBLEMS WITH THE AIRSPEED  
INDICATOR, AND YOU WON'T  
KNOW YOUR AIRSPEED!

GOOD PITOT TUBE PREVENTIVE  
MAINTENANCE STARTS BY  
COVERING THE TUBES WHEN  
NOT IN USE TO KEEP INSECTS,  
MOISTURE AND DIRT OUT.



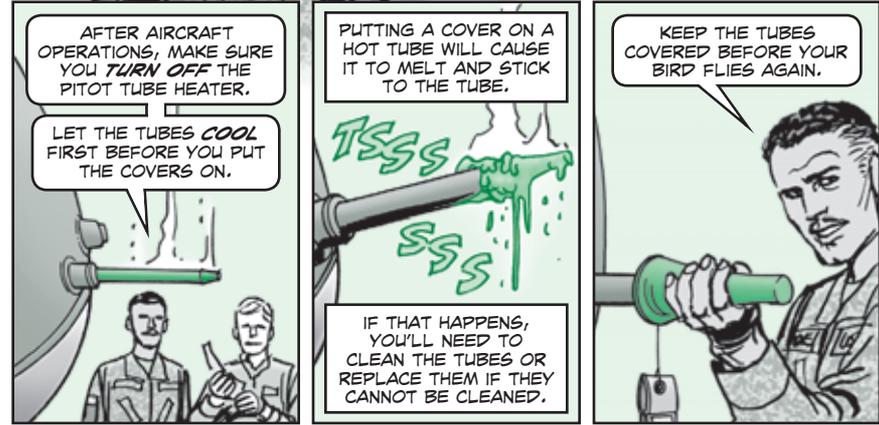
AFTER AIRCRAFT  
OPERATIONS, MAKE SURE  
YOU **TURN OFF** THE  
PITOT TUBE HEATER.

PUTTING A COVER ON A  
HOT TUBE WILL CAUSE  
IT TO MELT AND STICK  
TO THE TUBE.

KEEP THE TUBES  
COVERED BEFORE YOUR  
BIRD FLIES AGAIN.

LET THE TUBES **COOL**  
FIRST BEFORE YOU PUT  
THE COVERS ON.

IF THAT HAPPENS,  
YOU'LL NEED TO  
CLEAN THE TUBES OR  
REPLACE THEM IF THEY  
CANNOT BE CLEANED.



ALWAYS TEST  
YOUR PITOT STATIC  
SYSTEM LIKE YOUR  
APPLICABLE TM  
SAYS.

IF YOUR PITOT  
SYSTEM DOES  
NOT CHECK OUT  
PROPERLY, YOU  
MIGHT NEED TO  
CHECK AND CLEAN  
YOUR SYSTEM.

CHECK CHAP 4 OF  
TM 1-1500-204-  
23-4 FOR THE  
GOOD WORD ON  
PITOT TUBES.

AND ALSO  
FOLLOW THE  
MAINTENANCE  
STEPS IN EACH  
AIRCRAFT'S TM TO  
CHECK AND CLEAN  
YOUR PITOT  
STATIC SYSTEM.



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

AS SOON AS I'M DONE BACK HERE, YOUR ENGINE IS NEXT.

FINE WITH ME, BUT STEER YOUR FEET AND BODY AWAY FROM MY HEAT SHIELD!

# PROTECT THE HEAT SHIELD

Your bird has many places where you shouldn't put your feet. We told you where not to put "de-feet" on [Page 39 in PS 617 \(Apr 04\)](#) when working around or on a Black Hawk engine.

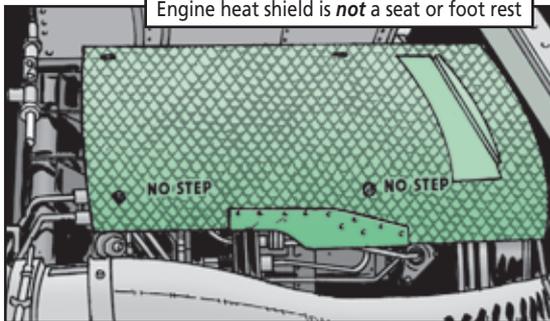
Black Hawks and AH-64s have the same engine and share some of the same components that you should never put your feet on.

For AH-64 mechanics, there's something else you need to avoid when working around the engine. When doing engine maintenance or going top side, steer your feet clear of the engine shroud assembly, NSN 1650-01-172-5052. Also make sure you don't lean on the shroud assembly, which some mechanics call a heat shield.

The heat shield is thin and cannot take your weight and will crack if you lean or step on it. If cracks occur, the heat shield will need replacing. It costs more than 2,000 bucks to replace a heat shield. Ouch!!

THE BEST WAY TO PREVENT DAMAGE TO THE HEAT SHIELD IS TO KEEP YOUR FEET OFF IT. DON'T LEAN OR SIT ON IT, EITHER!

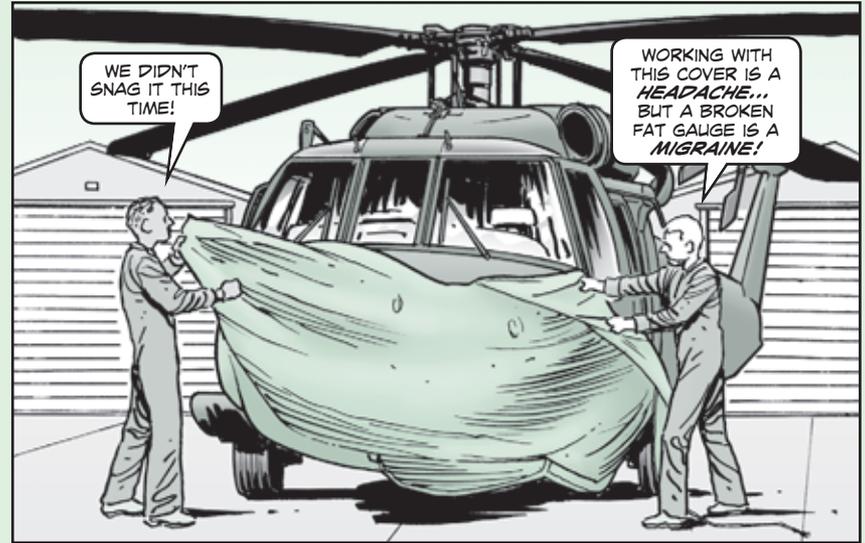
Engine heat shield is *not* a seat or foot rest



# AIRCRAFT NOSE COVER

WE DIDN'T SNAG IT THIS TIME!

WORKING WITH THIS COVER IS A HEADACHE... BUT A BROKEN FAT GAUGE IS A MIGRAINE!



Mechanics, putting on and taking off the Black Hawk nose cover is not that simple. Pay attention to the free air temperature (FAT) gauges when removing or installing the cover. Make sure the slots in the cover fit over the gauges.

You'll need to lift the cover high enough to clear the gauges as you remove the cover. And you'll have to clear the gauges again when you put the cover on. Either way, eyeball the FAT gauges so the cover won't snag.

Lift cover off gauges

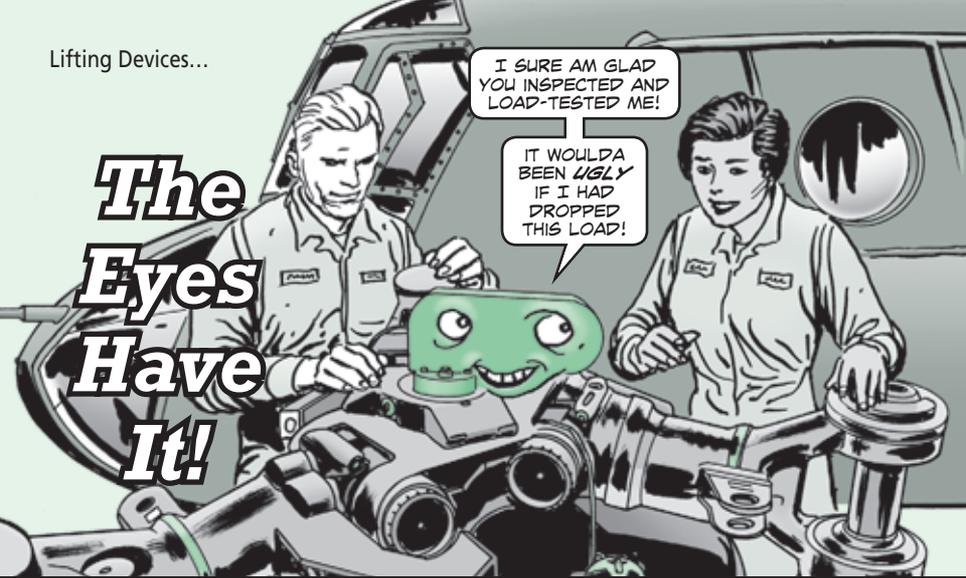


If the cover does snag, don't yank the cover loose from the FAT gauges. If you rip the cover loose, you can also rip off the FAT gauges and crack or break the pilot and copilot overhead windshields.

That's not good because your bird will be out of commission until new windshields come in and avionic repairs are made to the FAT gauges.

So go easy when removing and installing the cover around the FAT gauges. You can avoid unnecessary downtime and repairs.

# The Eyes Have It!

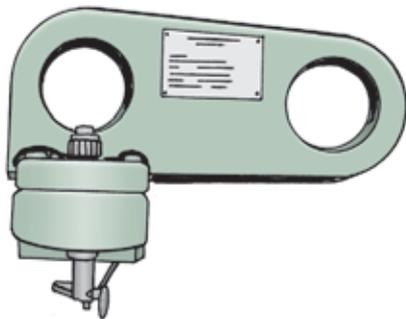


**M**echanics, are you inspecting and load testing your transmission hoisting eye, NSN 1730-01-130-1478, before using it? Do you have any documented test and inspection results on file.

If you answered no to either of these questions, or a lifting device hasn't been in use for a year, guess what!?! Don't use the lifting devices!

Before hoisting operations begin, the lifting devices must be inspected, load tested and up-to-date results documented on a DD Form 314, *Preventive Maintenance Schedule and Record* like it says in TB 43-0142. All lifting device maintenance records should be initiated and maintained like DA PAM 750-8 (Aug 05) tells you.

**Load-test and inspect before using**



Never use a lifting device without seeing the maintenance paperwork to prove its been inspected and has a current load test.

Not knowing the maintenance history of any lifting device, could mean the device doesn't have any umph left for hoisting.

If the device really doesn't pass the test for what it will be hoisting, the load could fall. Always inspect and test lifting devices following the good words in TB 43-0142. Make a note that DA PAM 738-750 should read DA PAM 750-8.

# Plugging Up Your Ears

FOAM EARPLUGS PROVIDE GREAT PROTECTION AND COMFORT FROM LOUD NOISE WHEN THEY'RE WORN CORRECTLY.



IF YOU WANT GOOD HEARING FOR THE LONG HAUL, PLACE THE EARPLUGS IN YOUR EARS THE RIGHT WAY FOR MAXIMUM PROTECTION.

FOLLOW THESE TIPS AND YOU WON'T HEAR SOMEONE SAY, "CAN YOU HEAR ME NOW!?"

● Make sure your hands and plugs are clean before using them.

**1** Roll each plug into a cylinder or golf tee shape as small as possible. Don't just squeeze them.



**2** Insert them quickly into your ear canal before they puff out.



**3** Hold them in place with your fingertip for one minute until they expand completely.



- After using earplugs, wash them with mild soap and water, then rinse thoroughly. Pitch earplugs that remain discolored or disfigured.
- Never wear earplugs in an environment where they can absorb chemicals.
- Never cut earplugs in half because that reduces the foam mass. Then you won't have full, effective noise reduction, which will put your hearing in harm's way.

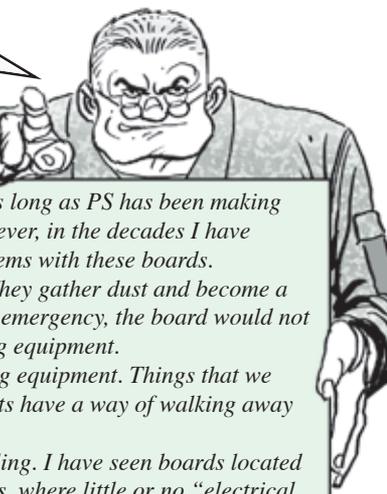
**Keep a set of earplugs with you at all times. You'll never know when they'll come in handy!**

# DO WE NEED A BOARD?



SO, IN SHORT, IT IS **NOT** REQUIRED TO HAVE AN ELECTRICAL SAFETY BOARD TO DISPLAY THE SAFETY EQUIPMENT...

...BUT IT **IS** REQUIRED TO HAVE THE EQUIPMENT, THAT WOULD BE ON THE BOARD, ON HAND AND READY TO USE IF YOUR FACILITY IS EXPOSING PERSONNEL TO **50 VOLTS** OR HIGHER.



PS has recommended electrical safety boards as long as PS has been making recommendations. We still recommend them. However, in the decades I have traveled from post to post, I have seen some problems with these boards.

First, they are often treated as static displays. They gather dust and become a part of the landscape. In the event of an electrical emergency, the board would not immediately come to mind as a source of lifesaving equipment.

Next, many of the boards I have seen are missing equipment. Things that we recommend for the board like gloves and flashlights have a way of walking away from the board and not walking back.

Also, the location of many of the boards is puzzling. I have seen boards located in hallways and at the far end of maintenance bays, where little or no "electrical emergency action" will happen.

So, let's go back to square one.

First, whether you use a display board or have another system to contain your electrical emergency equipment, you must have the gear and it must be easily accessible.

Dear Half-Mast,  
I arrived at my new unit last week and soon noticed we did not have an electrical safety board. My CO says it is not required. I thought it was. What do you say?  
  
SGT W. H.

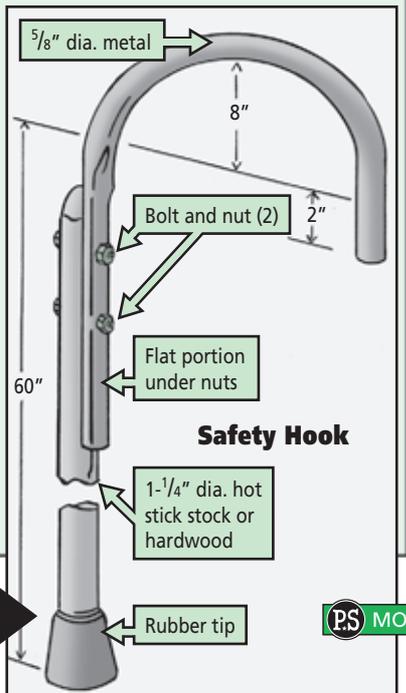
SERGEANT W. H.,  
THE INFORMATION ABOUT ELECTRICAL SAFETY BOARDS IS IN PARA 3.8.9 OF TB 385-4, SAFETY REQUIREMENTS FOR MAINTENANCE OF ELECTRICAL AND ELECTRONIC EQUIPMENT (01 JULY 08). HERE'S WHAT IT SAYS...

"Safety boards are permitted for use to store/prominently display emergency equipment. If used, safety boards should be made to be easily recognized and familiar to personnel. Safety boards that are used for storing and displaying emergency kits should be painted white with a 2-inch green border. Likewise, it is recommended that the board title contain white lettering on a green rectangular background and the positions of the items be designated in black letters on a white background."



That means you might need more than one board or more than one electrical emergency equipment station. You, the NCO in charge, with the help of your maintenance chief and CO, need to look at your entire area of electrical safety responsibility. Assess how many boards or stations you need. Get your post safety office to help you.

At each critical location, you should have a hook to grab, pull away and save a person who is being electrocuted. Too many units have one hook on the safety board. Often, it's so far away that by the time you retrieve it, well, it's too late to use it. Lack of available hooks have led to some Soldiers risking their lives to "bulldoze" a friend being electrocuted. Too often they get a jolt, too!



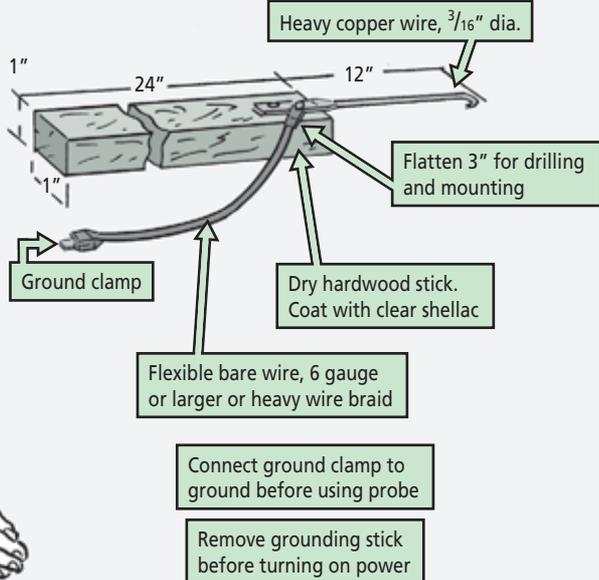
Here's how to make a lifesaving hook, shown on page 3-10 of TB 385-4:

ANOTHER ITEM YOU CAN MAKE FOLLOWING THE INSTRUCTIONS IN TM 385-4 IS A GROUNDING STICK.

HERE'S THE INFO FROM PAGE 3-9...



### GROUNDING STICK



Flexible bare wire, 6 gauge or larger or heavy wire braid

Connect ground clamp to ground before using probe

Remove grounding stick before turning on power

Next, consider having a prominent electrical safety board for display and training purposes, but have satellite areas that contain the equipment to be used in an actual emergency. Use paint to highlight those areas and to draw the eye to them.

What should be on your board and at your satellite locations?

Here's what TB 385-4 **requires** you to have in addition to your grounding stick and safety hook:

- General purpose first aid kit, NSN 6545-00-922-1200, or equivalent. (Make sure this kit is regularly inventoried and that people who might be required to use it are trained in accordance with DA Pam 40-11.)

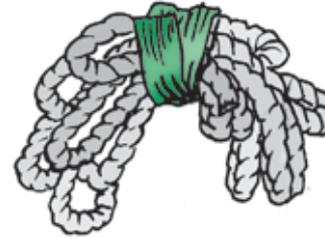


- Flashlight, NSN 6230-00-264-8261, or a suitable substitute.

- Emergency procedures and telephone numbers—ambulance, hospital, doctor, etc.

Here's what TB 385-4 **recommends** you have in addition to the above requirements:

- 3/8-in rope, 25-ft, NSN 4020-00-174-3031. (Or, we like rope, NSN 4020-00-599-7529. It's thinner, cheaper and orange.)



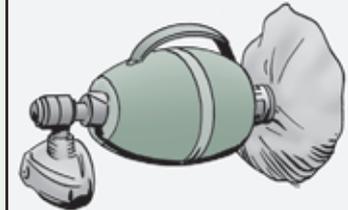
- Grounding cable from previous page



- Rubber gloves, 3000 volts, sizes 9-12, NSN 8415-01-158-9449/50/51/52



- Resuscitator



I recommend you have, in addition to the above requirements and recommendations, copies of FM 21-11, First Aid for Soldiers, and a portable defibrillator (to be used only by trained personnel).

You can add other things to your electrical safety board or electrical safety stations. Just remember that these are intended for electrical safety and not general safety. Resist the urge to clutter the board or the stations with general safety items. There is a place for these, but the place is not "in the way" when you have an electrical emergency.

Of course, all the safety equipment in the world is useless if your Soldiers are not trained on how and when to use it and how to de-energize the source of power. With the help of your local safety office, schedule onsite classes for your Soldiers that make doing the right thing and using the right equipment their first reaction to an electrical emergency.

*Half-Mast*





Dear Half-Mast,  
 My AN/PRC-148(V)3(C) joint tactical radio system (JTRS) enhanced multiband inter/intra team radio (MBITR)-JEM, has the phrase "NO PJC" on the display screen.  
 What's a PJC?  
 Why don't I have it?  
 And should I care that I don't have it?

Private B.B.K.

Dear Private B.B.K.,

The PJC is the private josecki component. It is the communication security master key that enables your JEM to be a Type 1 controlled cryptographic item. That means you can have secure communications.

You don't have it, because you allowed the hold-up battery (HUB) in your JEM to discharge. That happens to the HUB when it does not get juice from the main JEM battery for 60 days.

And, you should care because without the PJC, your JEM can operate only in the plain-text, line-of-sight mode.

So, take steps to make sure the HUB does not discharge. That means connecting a fully charged properly operating radio battery, the rechargeable lithium-ion, NSN 6140-01-487-1153, to the radio no less than once every 60 days. So, your best bet is to ensure that both AN/PRC-148 batteries are included in your unit's battery maintenance plan.

A dead, or almost dead HUB, will take at least 48 hours to recharge from a fully charged main battery.

Remember, it is not recommended to store the radios with the lithium-ion batteries connected for extended periods of non-use. The batteries may discharge completely over time.

If you are getting the "NO PJC" on your display screen, your COMSEC custodian will need to get on the job in order to get it back. The PJC should be loaded on every AN/CYZ-10 and AN/PYQ-10 in your unit and available to reload your radios when required.

There are three new chargers available for the JEM: the single-slot charger, NSN 6130-01-512-0183; the six-slot AC/DC charger, NSN 6130-01-504-3675; and the six-slot AC-only charger, NSN 6130-01-510-9922.

The JEM is manufactured by Thales Communications, Inc. They will answer non-sensitive questions about the JEM if you email them:

[technical.support@thalescomminc.com](mailto:technical.support@thalescomminc.com)

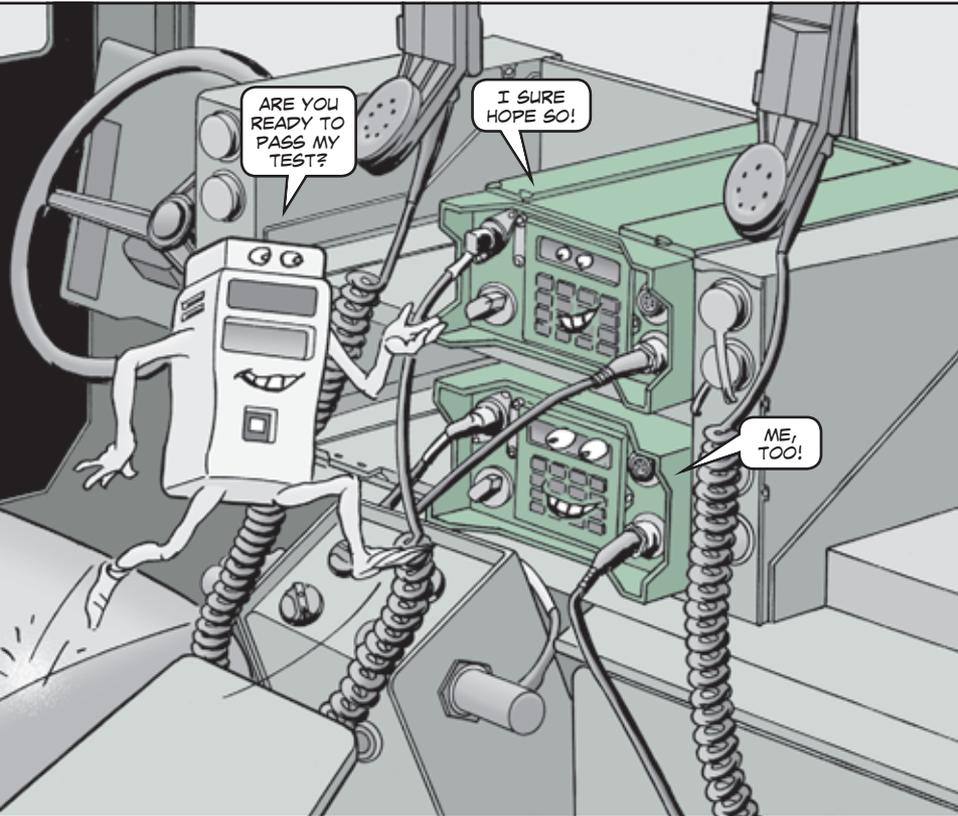
Or call them: 1-800-914-0303.

NO PJC?  
 No secure coms!



*Half-Mast*

# A New Test Set for SINGGARS!



Dear Half-Mast,

Part of a good PM program for the SINGGARS radio system is testing for power out and reflected power between the radio and the antenna matching unit using the AN/PRM-34 test set, NSN 6625-01-094-5646.

Unfortunately, this test set is no longer being made. Someone told me an AN/PRM-35 would soon be available. Is that true? If not, what can we use to make this critical power test?

SGT P.T.M.

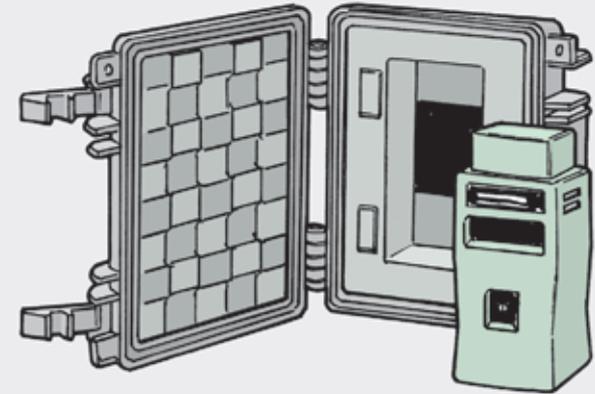
Dear Sergeant P.T.M.,

You're right about the AN/PRM-34 no longer being produced. However, production of the AN/PRM-35 was cancelled due to changes in requirements.

All is not lost, though. Agilent Technologies, Inc., has made a substitute called the PRM-34B. This new tester provides the same functions as the PRM-34, but is fully automatic. Just hook it up and turn it on and it makes all the measurements simultaneously. You can check out a radio and antenna in less than 30 seconds.

The PRM-34B can help in field troubleshooting other tactical radios if you tune the radio to operate in the PRM-34/SINGGARS radio spectrum (30 MHz to 88 MHz). The PRM-34B is much smaller than the PRM-34 (it fits in your cargo pocket) and uses the BA-5372 6V lithium battery, NSN 6135-01-214-6441.

Here's the new test set!



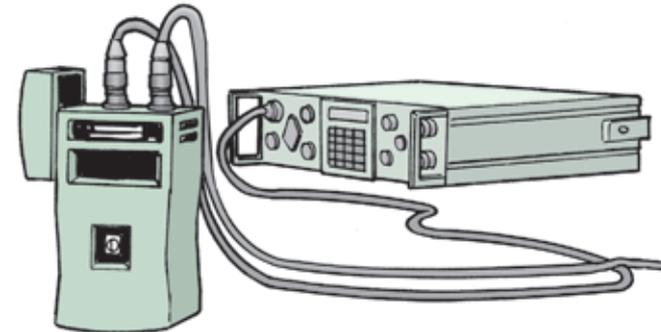
You can order the PRM-34B as an off-the-shelf item from GSA for around \$3,500. Go to the GSA website:

[https://www.gsadvantage.gov/advgsa/advantage/main/start\\_page.do](https://www.gsadvantage.gov/advgsa/advantage/main/start_page.do)

Once there, enter PRM-34B in the search field and the ordering info will come up.

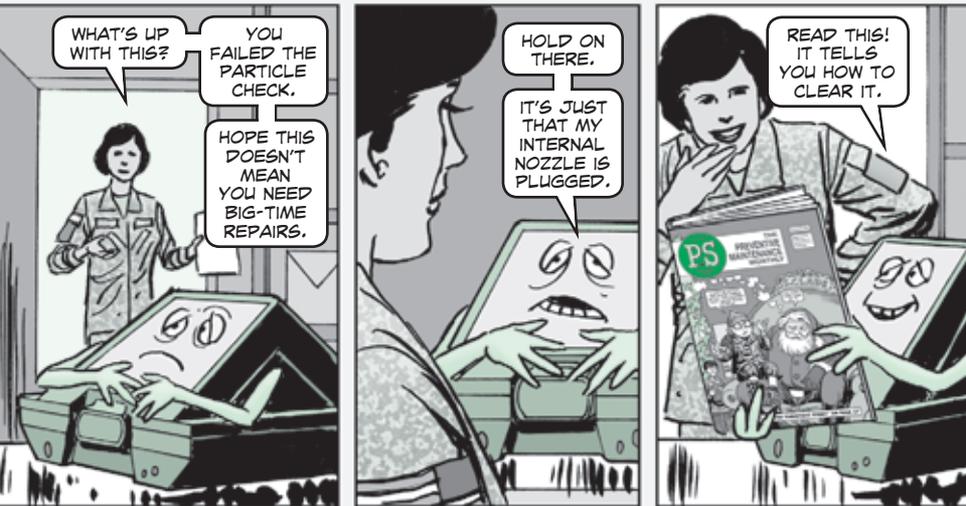
Half-Mast

Put your SINGGARS to the test!



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

# Unclogging Clogged Nozzle



**A** clogged internal nozzle on the M41 protection assessment test system (PATS) causes a low (maybe zero) ambient particle count, which causes the particle check/particle count to fail. That stops mask testing.

But there are a couple of easy fixes you can use to unplug that clogged nozzle:

First, try compressed air. Get a can of compressed air with a long straw that attaches to its nozzle. Most stores have the air cans in their computer section. NSN 7930-01-398-2473 gets six 10-oz cans of compressed air.

Turn off the PATS and remove the alcohol cartridge. Gently insert the long straw into the PATS as far as it will go with the straw centered in the cavity. The internal nozzle is at the far end of the cavity. Give the nozzle two or three bursts of air.

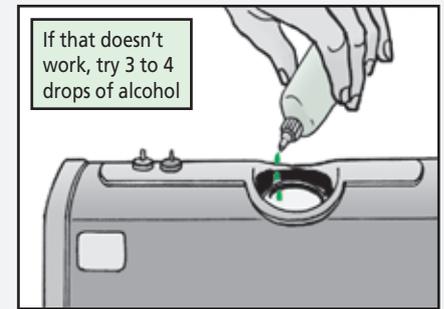
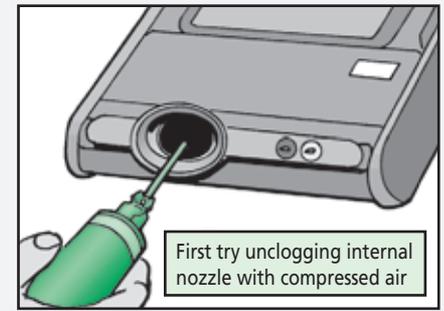
Reinsert the alcohol cartridge and turn on the PATS. Do the daily checks. If you still get a particle check/particle count failure, time for Plan B.

Turn off the PATS and remove the alcohol cartridge. Turn and hold the PATS on end so that you can look down into the cartridge cavity. Take a bottle of the reagent alcohol used with PATS and drip three to four drops down into the cavity. Try to keep the drops centered so they don't hit the sides of the cavity. Don't let more than a few drops go down the cavity. One well-placed drip is enough.

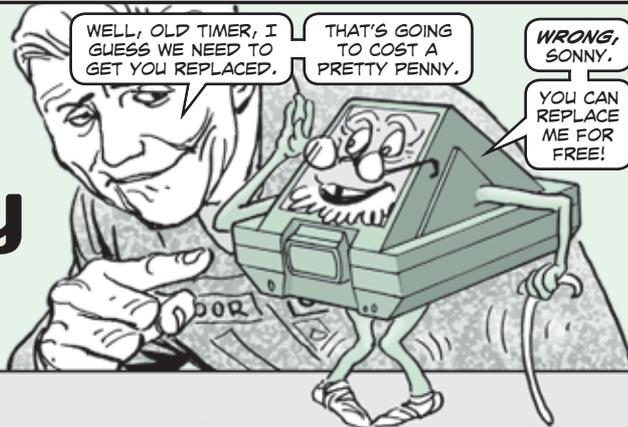
Keep the PATS in the vertical position for five minutes so the alcohol can soften or dissolve the blockage.

Put the PATS in its normal operating position and perform the procedure with compressed air again. No luck? Try the nozzle procedure in WP 0014 00 in TM 3-4240-349-12&P.

If PATS still fails the particle check/particle count, it's time to call the experts. Contact the JPEO CB Hotline at (866) 476-8404 or TMDE at DSN 788-8546, (256) 842-8546.



# No Need to Buy PATS



**W**hen they need a replacement M41 protection assessment test system (PATS), some units are buying a new one directly from the manufacturer. That's a waste of unit money.

The Army has plenty of M41s stored at depots. If your unit is authorized PATS, you can get one of these stored units for free!

If you need help requisitioning a PATS, NSN 4240-01-365-8241, contact your MACOM's UIC information officer. To find who that is, go to: <https://liw.logsa.army.mil/> and log in with your CAC card. Then under FORCE, click on **MACOM UIC Info Officer**.

Your command's UIC will be listed there along with the contact's phone number.

You can also contact the PATS inventory management specialist at DSN 793-3033, (309) 782-3033, or email: [@us.army.mil](mailto:@us.army.mil)

# Good Reception Thanks to PM

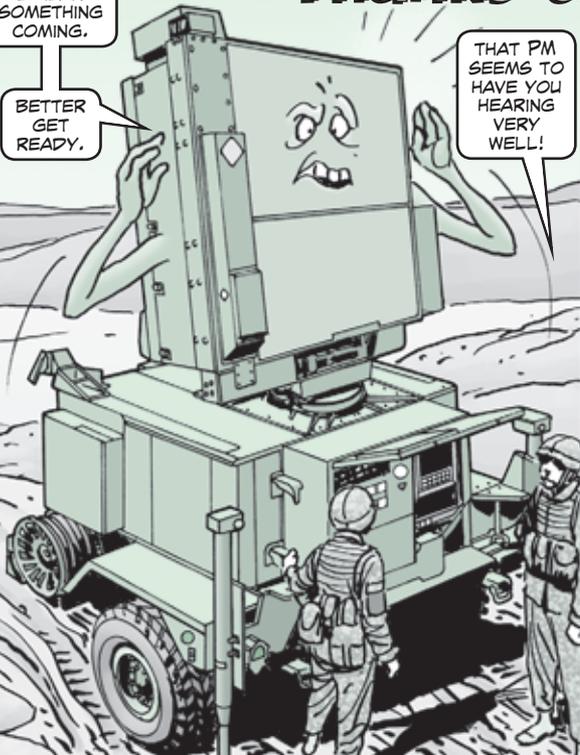
HEY,  
I HEAR  
SOMETHING  
COMING.

BETTER  
GET  
READY.

THAT PM  
SEEMS TO  
HAVE YOU  
HEARING  
VERY  
WELL!

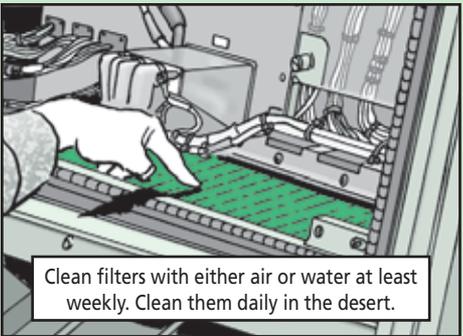
IF YOUR SENTINEL IS  
GOING TO WARN YOU  
ABOUT THE ENEMY, IT  
NEEDS TO BE VERY  
RECEPTIVE.

IF YOU'RE RECEPTIVE  
TO THIS PM, COUNT  
ON GOOD SENTINEL  
RADAR RECEPTION.



## Filters

Clean filters give the Sentinel plenty of clean air to stay cool. Clogged filters lead to breakdowns like blown fuses in the high voltage bay. The Sentinel has eight filters (make that 10 for the newest version) and all the filters need to be cleaned at least weekly. In the desert, make that daily when you're operating. Remember, too, that filters will log quicker after rain.

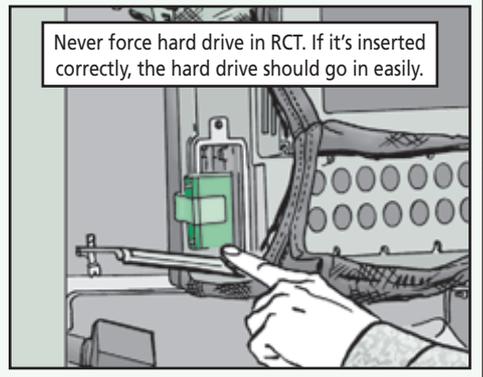


Clean filters with either air or water at least weekly. Clean them daily in the desert.

Most of the time, blowing out the filters will be good enough. But if the filters are really packed with sand or dirt, wash them out. That's the best way to get rid of all that gunk. Let them thoroughly dry before using them again.

## RCT

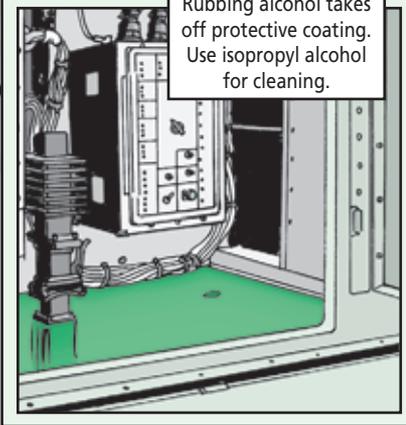
If the hard drive won't go in the radar control terminal (RCT) easily, something is wrong. If you force the hard drive in, you can damage the RCT and cost your unit more than \$50K. That won't look good on your next evaluation. The problem usually is that the hard drive is backwards. Try reversing it. If the hard drive still won't slip in easily, don't force it! Tell your repairman.



Never force hard drive in RCT. If it's inserted correctly, the hard drive should go in easily.

## No Rubbing Alcohol

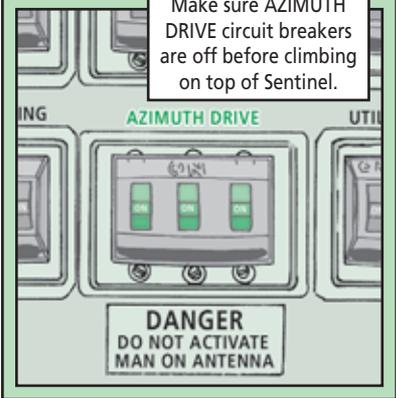
Do not use rubbing alcohol to clean inside the Sentinel's compartments. Rubbing alcohol removes the protective coating on the compartments' walls, which can lead to corrosion and arcing. If you need to use alcohol for cleaning, use isopropyl.



Rubbing alcohol takes off protective coating. Use isopropyl alcohol for cleaning.

## Safety

Never let anybody on top of the Sentinel unless the AZIMUTH DRIVE circuit breakers are off. Otherwise, that person can be sent flying if the antenna is accidentally rotated during maintenance. Always check the circuit breakers before climbing up the Sentinel.



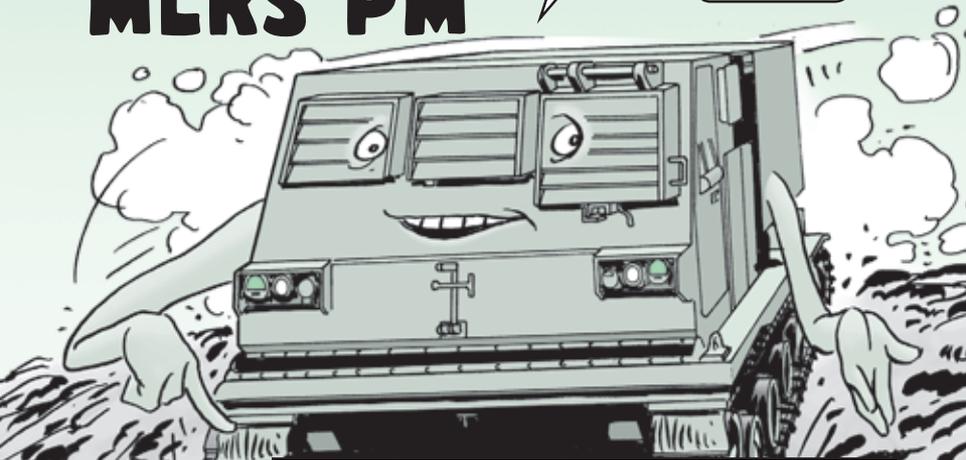
Make sure AZIMUTH DRIVE circuit breakers are off before climbing on top of Sentinel.

**DANGER**  
DO NOT ACTIVATE  
MAN ON ANTENNA

# MULTIPLE MLRS PM

ALL THIS ADDS UP TO GOOD STUFF FOR ME!

PLEASE PAY ATTENTION TO THESE TIPS FOR BOTH OUR SAKES!



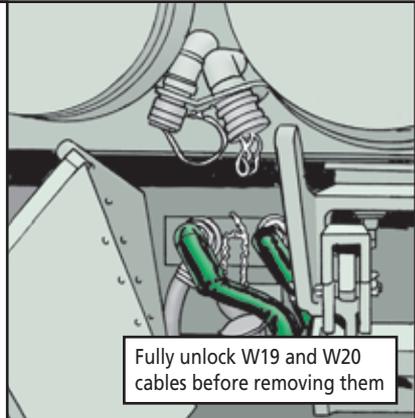
MULTIPLE LAUNCHINGS FOR YOUR MLRS REQUIRES PM MULTIPLIED.

MULTIPLY YOUR MLRS' CHANCES FOR SUCCESS BY ADDING UP THESE TIPS...

**Exercise**—The worst thing you can inflict on your MLRS is to just let it sit. If it sits without exercise, the batteries run down, the rollers on the booms freeze, and the hydraulic fluid turns to gunk, among other things. Exercising the launcher during weekly PMCS can help avoid many problems.



**W19 and W20 cables**—These cables often are broken during reloads because Soldiers get in a hurry and yank on them. That extinguishes firing. The way to disconnect them is to completely unlock the cables' connectors and then pull straight back on the connector. Do not pull on the cable—that breaks wiring.



Fully unlock W19 and W20 cables before removing them

After travel, clean the W19 and W20 connectors with compressed air and a soft brush. If the connectors are plugged, you get non-existent faults for major problems, which can waste troubleshooting time.

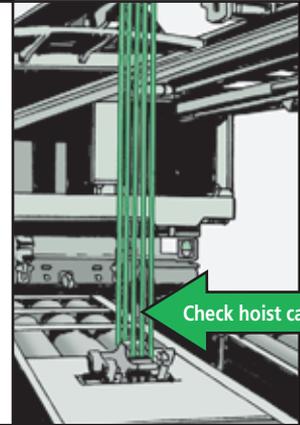
**Hydraulic fluid**—Too many MLRS units check the hydraulic fluid rarely... or never. If the fluid gets too low, the launcher will move erratically or not at all. During your weekly PMCS, just give the sight glass a glance. It should read GOOD. If it's not, tell your repairman so he can add fluid.



Check that sight glass says GOOD

Any time the launcher is moving strangely, check the hydraulic fluid before anything else. That could save troubleshooting time.

**Hoist cables**—Keep an eye on the metal cables for the hoist. Look for fraying, tears, bends or any signs the cable is failing. If it breaks during operation, you could have to replace the hoist drum. Plus when the cable snaps it could whip out and injure someone.



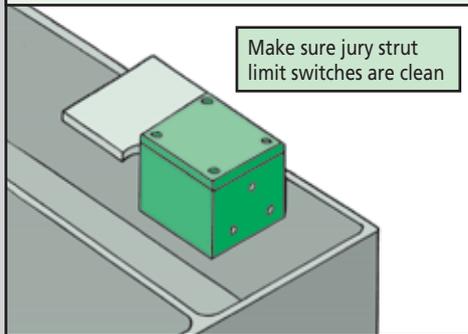
Check hoist cables for fraying, tears or bends

**Travel lock**—Remember that to unlock the travel lock you must first turn off all the power or the MLRS will try to lock itself back in place. If that happens, the ratchet extension will be jerked from your hand, which could injure you.



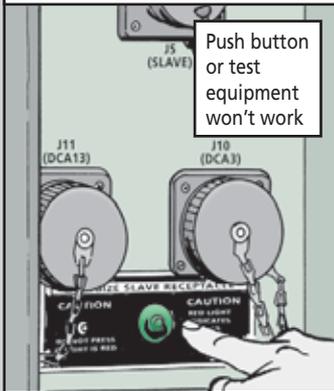
**Jury struts**—First of all, use them anytime you're working under the launcher. They will prevent the launcher from falling on you.

Pay attention to the jury strut limit switches. If they get too dirty, they will indicate the jury struts are installed when they're not. If the limit switches are gunked up, wipe them off with a clean rag.



Make sure jury strut limit switches are clean

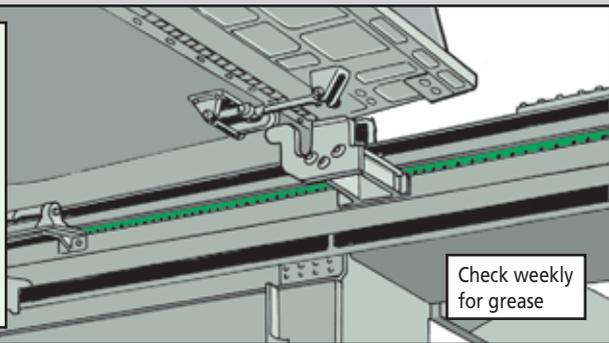
**Test equipment**—When you hook up test equipment to the slave receptacle, don't forget to push the button at the bottom of the receptacle. Otherwise, the equipment won't work.



Push button or test equipment won't work

**Boom racks and gear teeth**

Check weekly for grease. If they're not lubed regularly, they jerk going in and out, which damages the W75 and W76 cables. Use GAA to lube the booms.



Check weekly for grease

**Inspection**

When your MLRS is ready for its semi-annual inspection, clean it first. If it's caked with mud, things like cracked welds or frayed cables will be impossible to spot.



PS END

POL...

# OPLOG Planner Replaces SB 710-2



Logistics personnel, if you haven't already heard, SB 710-2, *Combat Consumption Rates for Armored and Aviation-Type Petroleum Products*, is rescinded. The consumption rates were based on engineering projections which weren't very reliable, and it hadn't been updated in more than 10 years!

So start using the Equipment User Profile (EUP), a component of OPLOG Planner, for unit-level consumption requirements. EUP's consumption rates are based on actual consumption data and will be updated annually.

You'll need an AKO account to access OPLOG Planner. It's on the following website:

<http://www.cascom.army.mil/cdi/FDD/Multi/PDB/ArmyLogisticsPlanningData.HTM>

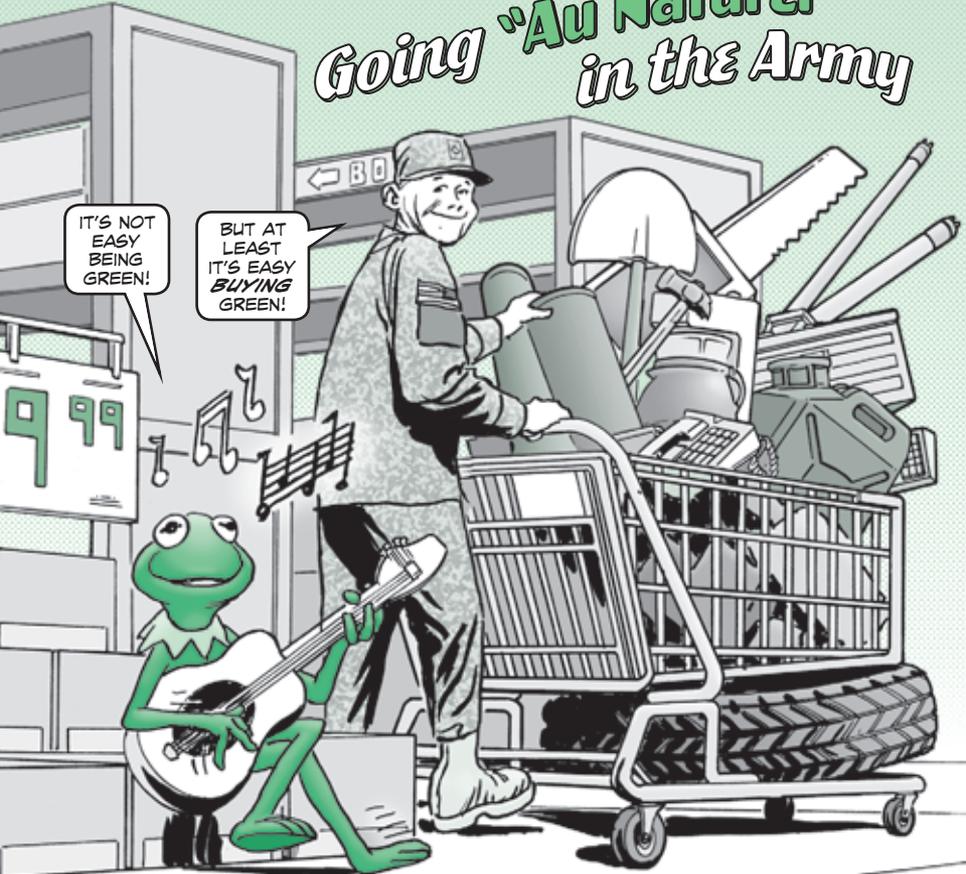


Need more information? Call 703-767-7649, DSN 427-7649, or email: [@dla.mil](mailto:dla.mil)

# Going "Au Naturel" in the Army

IT'S NOT EASY BEING GREEN!

BUT AT LEAST IT'S EASY BUYING GREEN!



"THINK GREEN" IS NOT ONLY A POPULAR TURN OF PHRASE-IT'S THE RULE OF LAW WHEN IT COMES TO ARMY PROCUREMENT.

DOD'S GREEN PROCUREMENT PROGRAM (GPP) DIRECTS THAT GREEN PRODUCTS OR SERVICES MUST BE CONSIDERED FOR ALL ITEMS AND SERVICES PROCURED BY MILITARY SERVICES.



"GREEN PROCUREMENT" MEANS BUYING PRODUCTS THAT HAVE A REDUCED NEGATIVE EFFECT ON HUMAN HEALTH AND THE ENVIRONMENT WHEN COMPARED TO SIMILAR PRODUCTS.

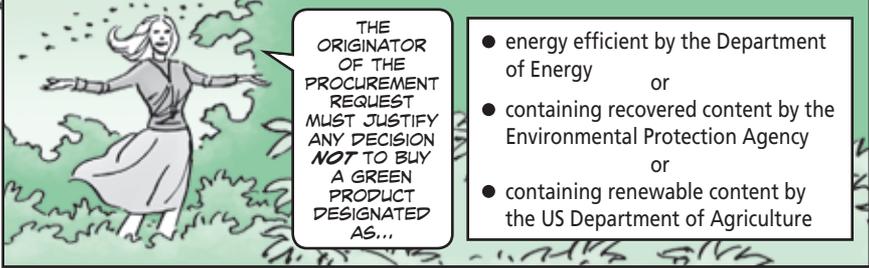
SOME GREEN EXAMPLES INCLUDE CLEANERS THAT ARE CITRUS-BASED INSTEAD OF SOLVENT-BASED, ALTERNATIVES TO PRODUCTS MADE WITH ASBESTOS, OR PLASTIC PRODUCTS MADE WITH RENEWABLE MATERIALS INSTEAD OF FOSSIL OR PETROLEUM SOURCES.

ENERGY AND WATER-EFFICIENT PRODUCTS ARE GREEN, TOO.



GOING GREEN IS MANDATORY IN THE ARMY WHEN PROCURING CERTAIN ITEMS AND SERVICES, INCLUDING BUT NOT LIMITED TO...

- paper and paper products
- office products and equipment
- vehicle maintenance
- printing supplies or services
- appliances
- computers and other electronic equipment
- industrial supplies
- parks and recreation products
- building construction, renovation or maintenance supplies



THE ORIGINATOR OF THE PROCUREMENT REQUEST MUST JUSTIFY ANY DECISION NOT TO BUY A GREEN PRODUCT DESIGNATED AS...

- energy efficient by the Department of Energy or
- containing recovered content by the Environmental Protection Agency or
- containing renewable content by the US Department of Agriculture



WRITTEN JUSTIFICATION IS REQUIRED FOR PURCHASES OVER THE MICROPURCHASE THRESHOLD AND MUST STATE THAT THE REQUIRED GREEN VERSION OF A PRODUCT COULD NOT BE ACQUIRED...

- at a reasonable price
- to meet reasonable performance standards
- within a reasonable timeframe or at a sufficient level of competition



REMEMBER, WHEN YOU BUY GREEN PRODUCTS, YOU ARE HELPING THE ARMY PERFORM ITS MISSION BY...

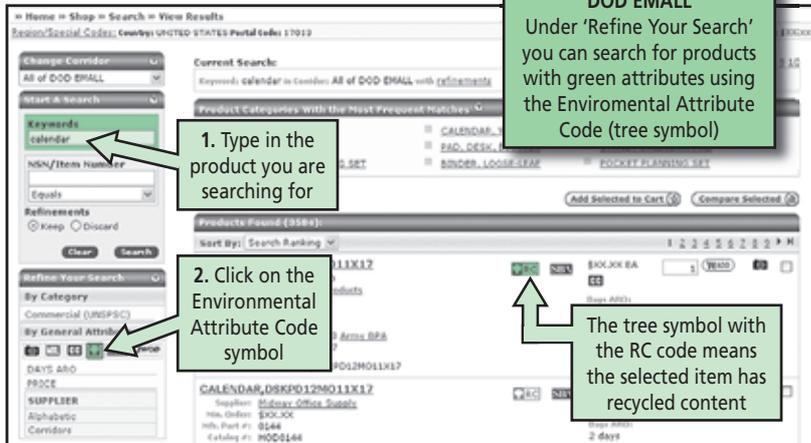


- increasing energy efficiency
- improving workers' health
- promoting environmental stewardship
- creating markets for green products

It's easy to participate in the GPP. Green products are identified in the DLA Federal Catalog System, the Federal Logistics Information System Web Inquiry (WebFLIS), and DOD's Electronic Mall (EMALL). Simply enter the keyword or part number you're looking for and watch the green tree icons sprout up in your search results. In DOD's EMALL, you can also set your search to identify **only** green products by clicking on the tree logo in the lower left-hand corner of your search screen.

#### DOD EMALL

Under 'Refine Your Search' you can search for products with green attributes using the Environmental Attribute Code (tree symbol)



Customers who purchase green products through authorized channels will also benefit by having their purchases recorded to help them meet green product procurement and reporting mandates.

The Environmental Reporting Logistics System's Green Procurement Report (ERLS GPR) tracks green items purchased via the DLA or GSA stock system. Any military service can track their environmentally-friendly purchases in the ERLS GPR:

<http://www.dlis.dla.mil/erlsgr/default.asp>

TO LEARN MORE ABOUT THE WHYS AND HOWS OF THE GPP, CHECK OUT THE FOLLOWING...

- The Federal Green Purchasing Program: <http://www.fedcenter.gov/programs/buygreen/>
- DLA's Green Toolbox: <http://www.dla.mil/j-4/cric/GreenProcurement.asp>
- Call a Greenline representative: DSN 695-4060, (804) 279-4060, or email: [greenproducts@dlamail.mil](mailto:greenproducts@dlamail.mil)



SAMS-E...

## Protect the Commander's Password!



The commander's password for the Standard Army Maintenance System—Enhanced (SAMS-E) prevents ordinary users from making decisions requiring commander-level authority.

The authority for the commander's password lies in DA PAM 750-8, *The Army Maintenance Management System Users Manual*, paragraphs 1-1 and 1-5.

In addition, paragraphs 2.17-1 and 3-9.b (1) in AR 750-1, the *Army Materiel Maintenance Policy*, specify that commanders are responsible for oversight of their maintenance operations. The commander's password ensures that maintenance activities are approved by senior leadership.

Some commanders may be annoyed by having to create and use yet another password, especially when their schedule is full. But, the password helps protect commanders and SAMS-E from these and other problems:

- Crucial unit parameters and data could be reset, wreaking havoc with associated processes like the Army Materiel Status System (AMSS). AMSS is critical in tracking equipment readiness.
- Unauthorized switching from unit-to-unit within multiple-unit systems could cause a ripple effect, with data errors flowing across many units.
- Deadlined equipment or unsafe vehicles could be dispatched, placing lives and equipment at risk.

REMEMBER, COMMANDERS, YOUR SAMS-E PASSWORD PROTECTS YOU AND YOUR UNIT.

BE SURE TO CREATE ONE AND USE IT CORRECTLY.

AND DON'T SHARE IT WITH ANYONE ELSE!



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## Connie's POST SCRIPTS

### FUEL TANKER FILTER ELEMENT

Use NSN 4330-00-872-1779 or NSN 5920-01-424-6740 to get a filter element for the fuel/water separator on the M969/A1/A2 5,000-gal fuel tanker. These NSNs replace the parts info shown as Item 14 in Fig 109 of TM 9-2330-356-24P.

### M809 Wheel Bearings

New synthetic GAA lasts longer than the old stuff. That means you don't have to repack wheel bearings annually on M809-series 5-ton trucks. The service interval is now changed to every 12,000 miles or 36 months. Make a note until the vehicle's lube order is updated.

### M915A3/A4 Vent Window Knobs

Vent window knobs on M915A3- and A4-series tractor trucks are known to strip out. Forget about ordering the vent window assembly in TM 9-2320-302-24P and TM 9-2320-303-24P just to replace a busted knob. Instead, order the left knob with PN 197LEXC/M166-75L and the right one with PN 196REXC/M166-75R. Use CAGE code 64678 with these part numbers on a DD Form 1348-6 when ordering the knobs.

### MRAP Axle Info

Use only these NSNs when you order axles for the BAE RG33/RG33L MRAP vehicles.

Item	NSN 2530-01-
Front Axle	555-5437
Intermediate Axle	571-7242
Rear Axle	571-7243

The intermediate and rear axles are manufactured by Axle Tech or Arvin Meritor. You can use axles made by either manufacturer to replace an entire axle on the vehicle. However, do not cannibalize/exchange repair parts between the axle manufacturers. The parts are not interchangeable. Axle Tech parts will not work on Arvin Meritor axles, nor will Arvin Meritor parts work on Axle Tech axles.

### M1097A2 Rear Door NSN

Use NSN 5340-01-442-7491 to get the rear door for the M1097A2 HMMWV contact truck. This NSN replaces the one listed for Item 14 in Fig 4 of TM 9-4940-563-13&P.

### MRAP and HMMWV Trainer Info

Soldiers can get injured by falling into or against the hand rails on the MRAP and HMMWV egress trainers. Instructions that identify material, parts and procedures for applying padding to the hand rails are available at these websites:

<https://www.us.army.mil/suite/doc/18684857> or <https://www.us.army.mil/suite/doc/18686099>

By the way, you'll need an AKO account to access these websites. Materials required are not in the supply system and must be locally purchased. The vendor's address and telephone number are provided as part of the instructions. Quantities required are identified in tables specific to each trainer. The vendor has sufficient stock of the materials to support this requirement.

### STABILATOR COVER FOR UH-60 AND AH-64

On pages 38-39 of PS 659 (July 07), we told you to contact the CA AVCRAD to make covers to protect your helicopter stabilators from damage. However, the AVCRAD is not the supplier of the cover to the Army community. Units need to contract locally to have the cover made or make the cover themselves with the instructions on [pages 38 and 39 of PS 659](#).

### GIVE PS THE WORD

Does your outfit put out a logistics bulletin, supply or maintenance letter, or something similar? Put PS on distribution. We're always looking for PM problems and solutions. Our mail and email addresses are on our Table of Contents page.

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

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