

PS**THE
PREVENTIVE
MAINTENANCE
MONTHLY****ISSUE 675 FEBRUARY 2009**

TB 43-PS-675, 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.

**COMBAT VEHICLES**

Stryker Ground Clearance Tips
M1-Series Tank Commander's Hatch Seal
M2/M3-Series Bradley MILES Maintenance
M2/M3-Series Bradley M242 Track
M88-Series Recovery Vehicle Track Tips
M109A6 Paladin Breech Roller Ram
M777A1/A2 Towed Howitzer Battery Charging

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HMMWV Underbody Armor Checks
HMMWV Wheel/Rim Assembly
FMTV Turn Signal Fix
FMTV Cab Air Springs
M1142 Tactical Fire Truck Circuit Breaker

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Small Arms Barrel Cleaning Tip
M249 Machine Gun Rear Sights
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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.html>

By order of the Secretary of the Army:

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

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JOYCE E. MORROW

Administrative Assistant to the Secretary of the Army

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TB 43-PS-675

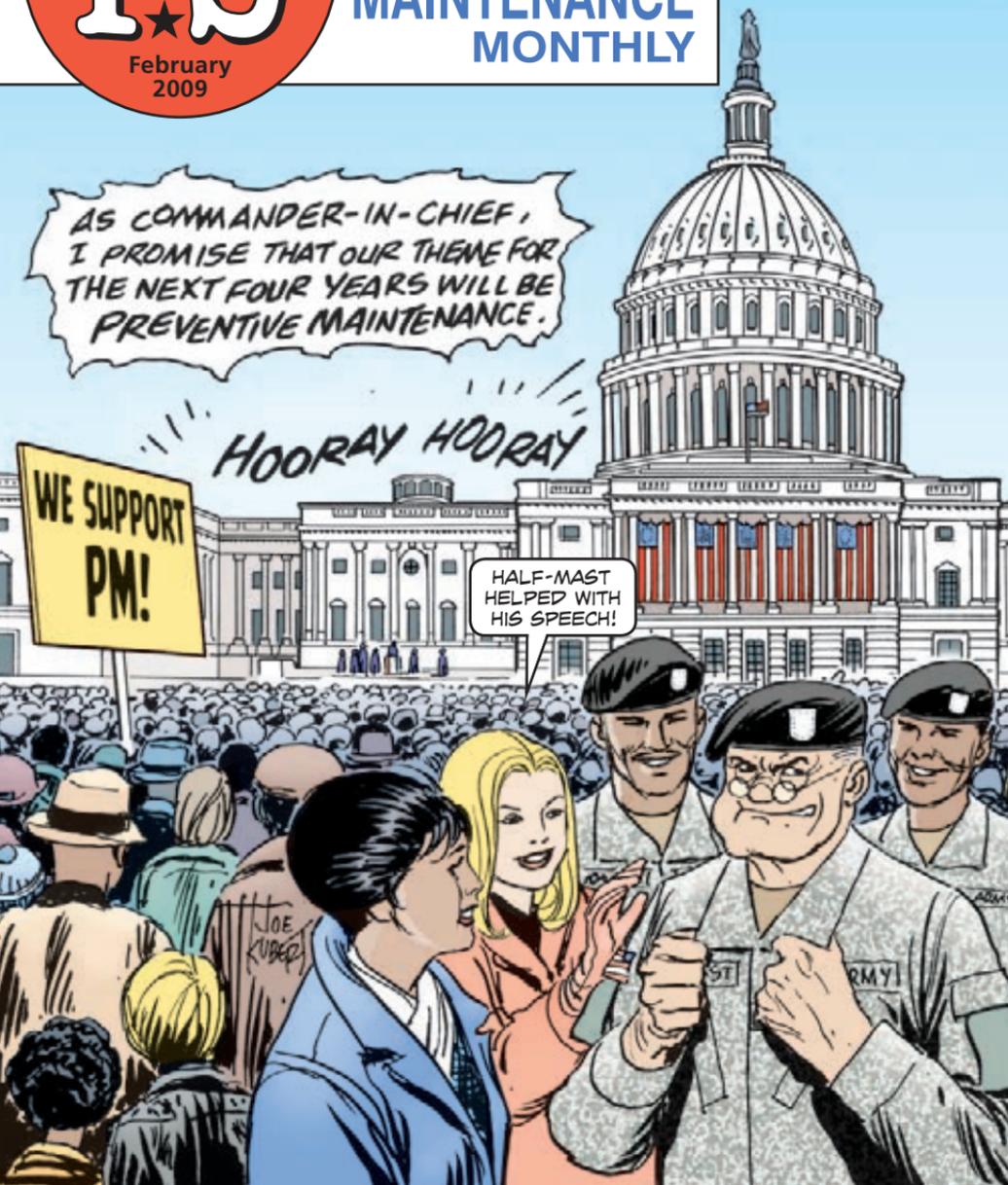
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AS COMMANDER-IN-CHIEF,
I PROMISE THAT OUR THEME FOR
THE NEXT FOUR YEARS WILL BE
PREVENTIVE MAINTENANCE.

HOORAY HOORAY

WE SUPPORT
PM!

HALF-MAST
HELPED WITH
HIS SPEECH!



Better *Safe* Than *Sorry!*



When dealing with ammunition or explosives, it's much better to be **very safe** or you could end up **very sorry**.

A case in point with the M260/M261 rocket launcher: A helicopter crew in Iraq had replaced the right launcher without first downloading all the rockets in the left-side launcher. They were conducting electrical checks on the newly-installed right-side launcher when a rocket fired from the left one. The rocket blasted into a concrete wall 10 feet away. Warhead fragments damaged a Kiowa on the other side of the wall.

It doesn't take much to imagine how easily this negligence could have turned into a fatal accident. If a few soldiers had been standing in the wrong place, several lives would have been lost in an instant.

All that was necessary to prevent this incident was to do it by the book—in this case, Para 4-6 on helicopter safety procedures in the Kiowa's TM 9-1090-214-23&P.

If the crew had done the testing by the book, they would have made sure both launchers were completely unloaded before they did any maintenance or testing.

Doing it by the book is important not only with rocket launchers, but also with all small arms and missile systems. Always make sure the weapon is not loaded before doing anything else.

BAD THINGS HAPPEN WHEN YOU *DON'T* OPERATE BY THE BOOK!

BETTER *SAFE* THAN *VERY SORRY!*



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Stryker...

YOU WANT ME TO DRIVE OVER THAT?!

PICK YOUR ROAD CAREFULLY

THE STRYKER HAS A HIGH GROUND CLEARANCE, DRIVERS.

BUT THAT DOESN'T MEAN YOU CAN DRIVE WILLY-NILLY OVER ANYTHING YOU WANT WITHOUT CONSEQUENCES.

IN FACT, IF YOU TRY TO DRIVE OVER ROCKS, BUSHES, STUMPS OR OTHER OBSTACLES THAT ARE TALLER THAN 16 INCHES, YOU RISK DAMAGING THE DRIVE TRAIN AND STEERING COMPONENTS.

Objects taller than 16 inches can damage drive train and steering components

SINCE YOU CAN'T ALWAYS CHOOSE WHERE YOU HAVE TO GO, KEEP THESE TIPS IN MIND...

- If you're faced with an obstacle taller than 16 inches, try to position the vehicle so that the tires drive over them.
- Avoid trees that are larger than 3 inches in diameter. If necessary, you can drive over trees that are 3 inches or less, but do so at low speed and with the center of the vehicle. That prevents damage to the tires from broken stumps.
- Approach obstacles such as banks, curbs, steps and logs at an angle between 70 and 90 degrees and at low speed.

M1-Series Tanks...

Housecleaning Keeps Seal in Shape

YO! HOW 'BOUT CHECKING MY COMMANDER'S HATCH SEAL WHILE YOU'RE UP THERE!

CHECKING THE COMMANDER'S HATCH SEAL AFTER EVERY OPERATION IS AN EASY JOB, TANKERS.

You know to look for tears, rips, cuts and separation. You even know to check for places where the seal doesn't spring back after compression. And of course you know to get a damaged seal replaced.

BUT DO YOU KNOW HOW TO KEEP ALL THOSE PROBLEMS FROM HAPPENING IN THE FIRST PLACE? HERE'S HOW...

Look for debris around lip of hatch opening

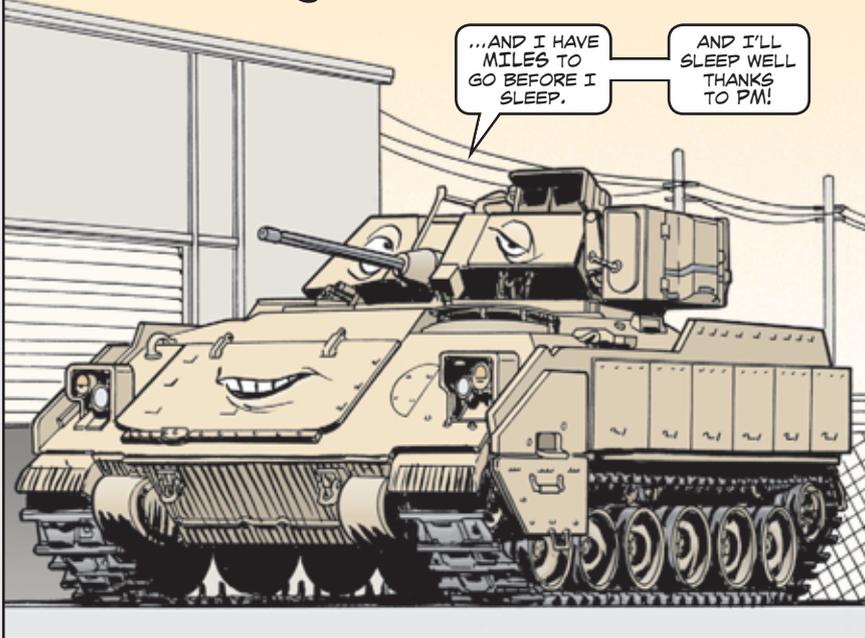
Most seal damage comes from dirt, sand, rocks and other debris that collect on the lip around the hatch opening. The seal wears out and tears when it's constantly pressed down against that stuff.

Check seal for damage

CHECK THE HATCH OPENING OFTEN AND SWEEP AWAY ANY DEBRIS THAT COLLECTS THERE.

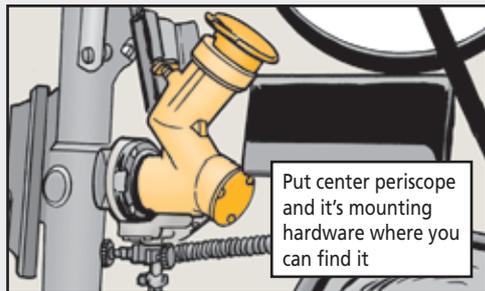
THEN WIPE THE LIP CLEAN WITH A DAMP CLOTH TO GET RID OF SMALLER PARTICLES.

Traveling MILES with PM



YOUR TRAINING JOURNEY WITH MILES (MULTIPLE INTEGRATED LASER EQUIPMENT ENGAGEMENT SYSTEM) IN YOUR BRADLEY WILL BE BUMPY IF YOU FORGET SOME BASIC PM.

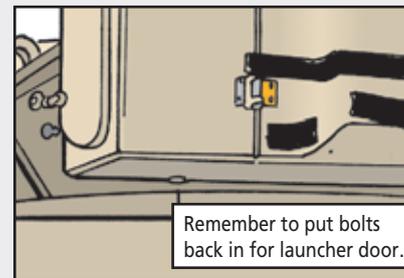
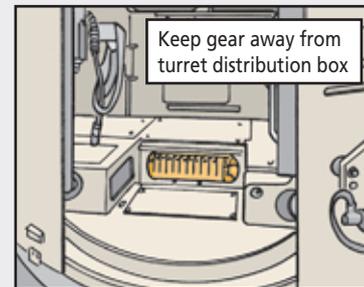
First of all, there's the center periscope. It must be removed to train with MILES. But when you're through training, you have to reinstall it and that's often the problem. Crews misplace the mounting hardware. Put the periscope and its attachments in a container so that you'll know right where they are when you need them.



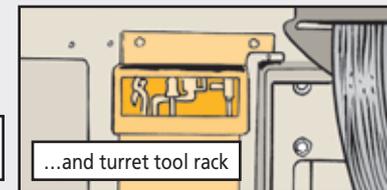
When you load the MILES missiles, make sure they're seated far enough back in the launcher. You'll know you have the missiles correctly in place if the launcher locking lever engages easily. If the missiles aren't seated right, the pillar blocks will be damaged when you try to engage the missiles.

MILES can cause the turret distribution box to overheat, so give the box plenty of breathing space. Don't pile your gear around the distribution box or the relay junction box.

When you remove MILES, don't forget to reinstall the bolts for the launcher. Otherwise the launcher door will be hanging on only by its top hinge. And because the door isn't secured, you won't be able to boresight the launcher.



Put the bolts back in for the turret tool rack, too. If you forget, the rack will bounce itself to death during travel.



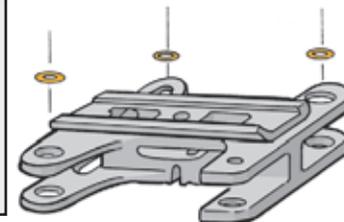
Look for M242 Track O-rings

Dear Editor,

The track on the Bradley's M242 automatic gun has rubber O-rings for the track sprockets. These O-rings act to hold the track sprocket shafts in place by fitting into a detent in the track sprocket shaft. Over time, the O-rings become worn, which can cause them to come out. If that happens, the sprocket shaft will not have a tight fit, which could let the sprockets come out. Your M242 is silenced when that happens.

M242 crews should check for all three O-rings when they clean the bolt and track. If the O-rings are missing or in bad shape, report 'em to your repairman so they can be replaced.

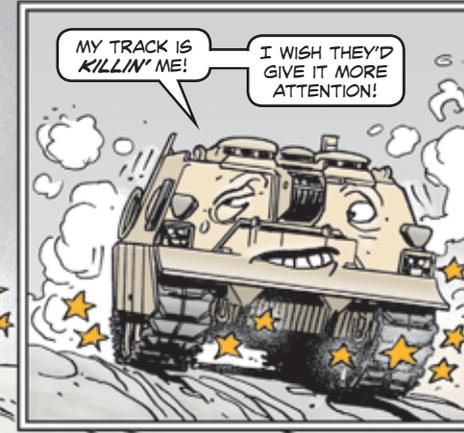
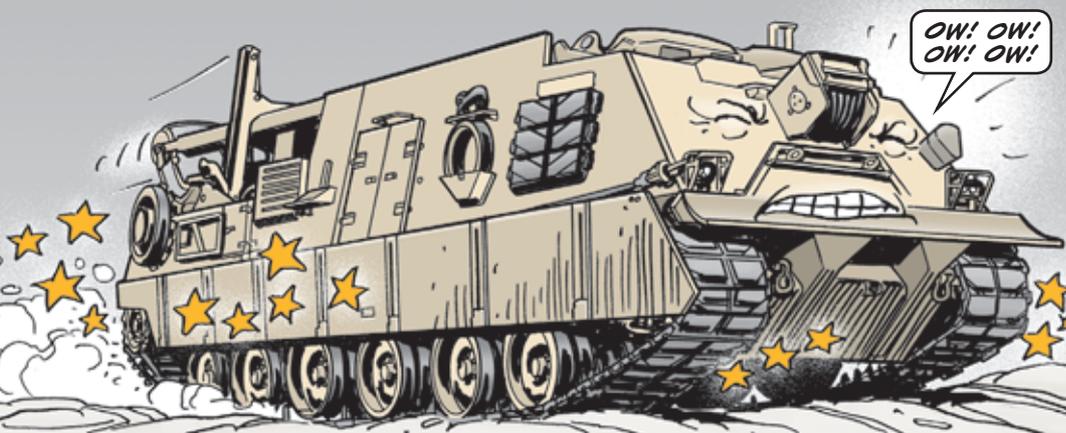
Check for all three O-rings when you clean bolt and track and make sure they're in good shape



SFC D.R.
SFC S.B.
B Co, 1-68
Ft Carson, CO

Editor's note: An excellent check that can keep your M242 firing. Thanks.

Timely Track Tips

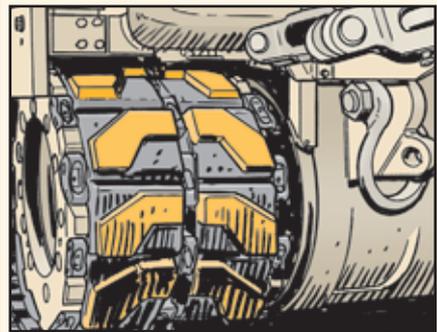


IN ORDER TO TAKE CARE OF THE T107 TRACK ON YOUR M88-SERIES RECOVERY VEHICLE, YOU'LL NEED TO KNOW WHEN IT'S WORN ENOUGH TO NEED REPLACEMENT.

FOLLOW THESE GUIDELINES...

Pad Height

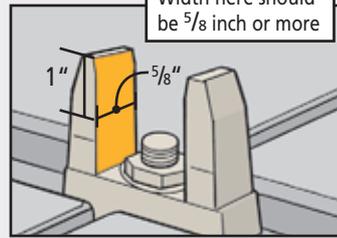
Replace the track shoe when its pad is less than $\frac{1}{2}$ inch in height.



Center Guides

Measure the thickness of the center guides one inch down from the tip. Replace any center guide that is less than $\frac{5}{8}$ inch thick at that point.

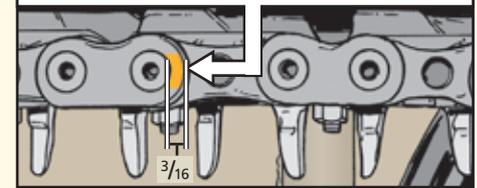
Width here should be $\frac{5}{8}$ inch or more



End Connectors

Always replace end connectors when they reach their wear limit of less than $\frac{3}{16}$ inch. Bad end connectors don't fit well on the sprocket teeth. That results in wear that can ruin even a new sprocket in short order.

Less than $\frac{3}{16}$ inch here? Replace end connector

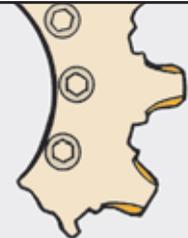


Sprocket Reversal

Speaking of sprockets, you should plan to reverse them annually. That evens out wear on the sprocket teeth.

However, if the sprocket is worn to the back edge of the wear mark before the year is up, go ahead and reverse the assembly. If the marks are reached on both sides, replace the sprocket.

Reverse sprocket when wear mark is no longer visible



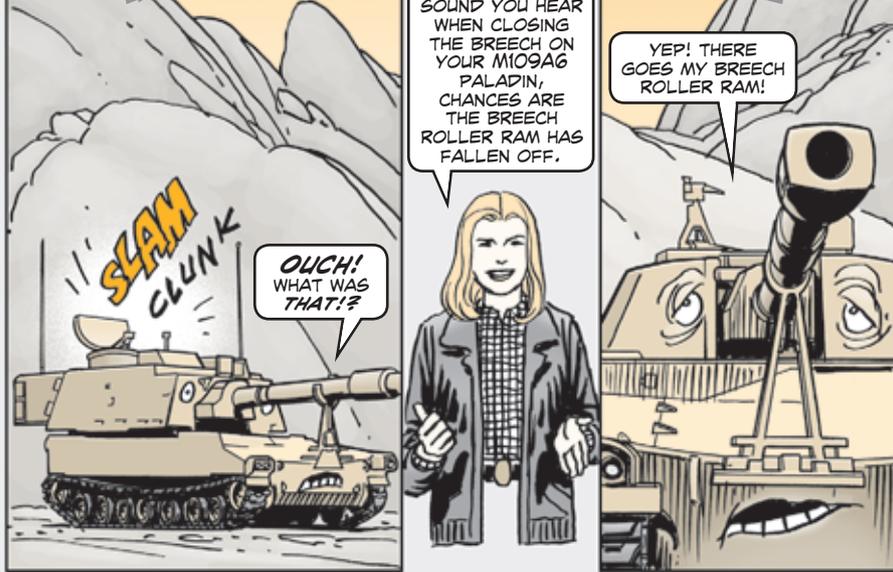
Track Tension

Track tension is important when it comes to track component wear. Track that is too tight wears out end connectors and cups sprockets. Track that is too loose may result in thrown track.

Follow the instructions in your -10 TM to the letter. You'll find them starting on Page 3-21 of TM 9-2350-256-10 (Mar 98) and in WP 108 and WP 109 of TM 9-2350-292-10 (Nov 05).

Most important of all, make sure you drive the vehicle back and forth a few vehicle lengths over hard, level ground. Then **coast** to a stop. Using the brake to stop will throw off the tension adjustment and lead to sprocket cupping.

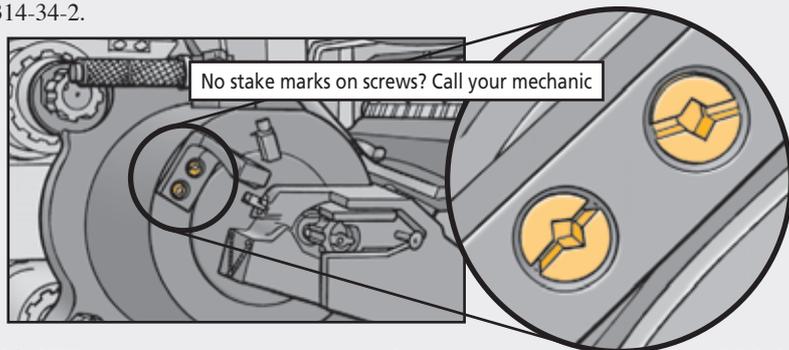
RAM SCREWS ARE AT STAKE



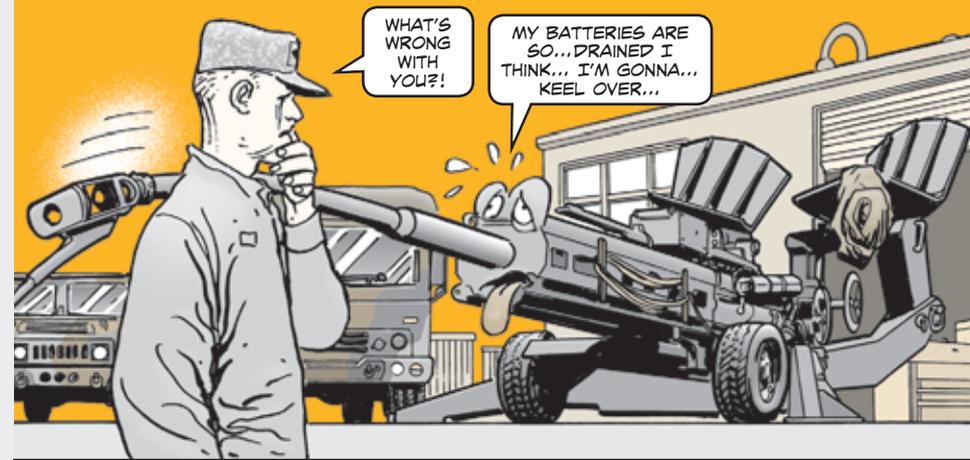
The ram is held in place with two screws. The constant stress of closing the breech, especially during live fire, can loosen the screws and allow the ram to break or fall off. That's why it's important to make sure the screws are installed properly.

Take a quick look at the screw heads. There should be two stake marks on each screw head.

If you don't see the stake marks, the screws **will** come loose. Ask your mechanic to stake them properly. He'll follow the procedures on Page 4-108 of TM 9-2350-314-34-2.



CHARGE AHEAD ON BATTERIES



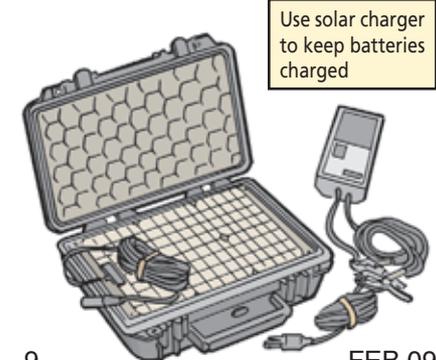
The M777 howitzer operates on a 24-volt system with two 12-volt batteries. Those batteries are crucial to the operation of the howitzer.

Unfortunately, howitzers can spend many days sitting in the motorpool between uses. The batteries slowly drain until they're useless when it's time for the next mission.

Of course you could drive the prime mover to each of the guns, hook it up and run the vehicle (700 rpm for the FMTV and approximately 850 rpm for the M939-series 5-ton) until the batteries are charged. But that can take a lot of time, especially if you have a whole battalion of howitzers. And with the cost of fuel nowadays, keeping the batteries charged that way is almost more expensive than buying new batteries.

That's why a solar battery charger is available in the howitzer's BIL. You'll find the charger listed as Item 76 on Page B-16 of TM 9-1025-215-10 (Jun 06 w/Ch 2, Oct 07).

There are three NSNs available. NSN 6130-01-540-3380 gets the charger, case and solar panel. NSN 6130-01-521-1387 gets the charger and solar panel, but no case. Get just the charger with no case or solar panel with NSN 6130-01-521-1329.



Underbody NMC Criteria Update

Dear Half-Mast,
I've heard that the underbody NMC criteria for M1151A1, M1152A1 and M1165A1 HMMWVs has changed. Can you tell me what those changes are?

SFC M.U.V.

Dear Sergeant M.U.V.,
Can do!
Item 44g in Table 2-2 of TM 9-2320-387-10 says that if your up-armored HMMWV is missing a retainer plate or more than one screw, your truck is NMC. That hasn't changed, but TACOM LCMC will add inspection criteria for your M1151A1, M1152A1 and M1165A1 HMMWV's underbody armor. This is because it has a unique attaching scheme.

The -10 TM will eventually be updated with the extra criteria. But while you wait for that to happen, note these additions, and keep a copy of this article with your TM.

Under these circumstances, your HMMWV is still mission capable:

1. One of two plates must remain on each of the group of two front underbody panels.
2. One of two plates must remain on each of the group of two rear underbody panels.
3. A total of up to four retainer plates may be missing provided that the conditions above are met.

Remember, this change applies only to M1151A1, M1152A1 and M1165A1 HMMWV models!

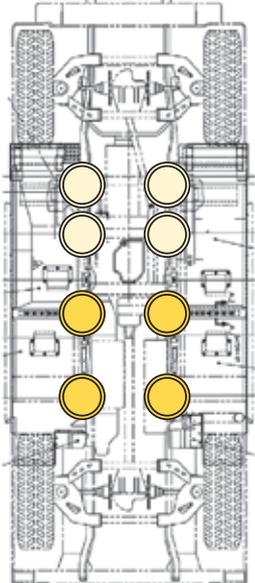
Make sure you follow the underbody NMC changes for M1114, M1116 and M1145 up-armored HMMWVs we put out on pages 18 and 19 of PS 667 (Jun 08). Here's the link to that article:

<https://www.logsa.army.mil/psmag/archives/PS2008/667/667-18-19.pdf>

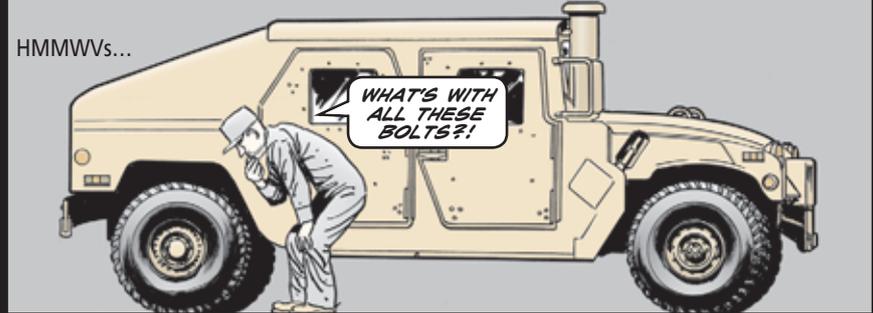
Half-Mast

DON'T FORGET THE FOLLOWING UNDERBODY ARMOR CHECKS WHEN DOING YOUR PMCS!

Front underbody panel plates and screws



Rear underbody panel plates and screws



New 24-Bolt Wheel / Rim Assembly

WANT A MORE RELIABLE WHEEL/RIM ASSEMBLY FOR YOUR HMMWVs?

THEN GET THE NEW 24-BOLT OPTION, NSN 2530-01-561-7699.

TACOM MAM 08-019 TELLS YOU ALL ABOUT IT.

IF YOU HAVEN'T SEEN THAT MAINTENANCE ADVISORY MESSAGE YET, HERE'S WHAT YOU SHOULD KNOW.



NSN 2530-01-561-7699 brings new 24-bolt rim

The 24-bolt rim is used in new production HMMWVs, and it doesn't change the gross vehicle weight (GVW) rating. When you order this rim, you get the inner rim, outer rim, and related hardware.

This new rim also has the same form, fit, and function as the 12-bolt rim. So the 24-bolt rim assembly attaches to the vehicle the same way the 12-bolt assembly does, except it has 12 additional bolts to fasten the inner rim half to the outer rim half.

During maintenance services, you'll see that the number of bolts is the only difference between the 12-bolt and 24-bolt assemblies. You've got 12 more bolts on the 24-bolt rim assembly to remove or install.

Finally, even though there are no compatibility issues when mixing 12-bolt rims and 24-bolt rims on the same HMMWV, tire mixing limitations still apply.

See TACOM SOUM 08-002 for tire compatibility guidance. It's available online using this link:

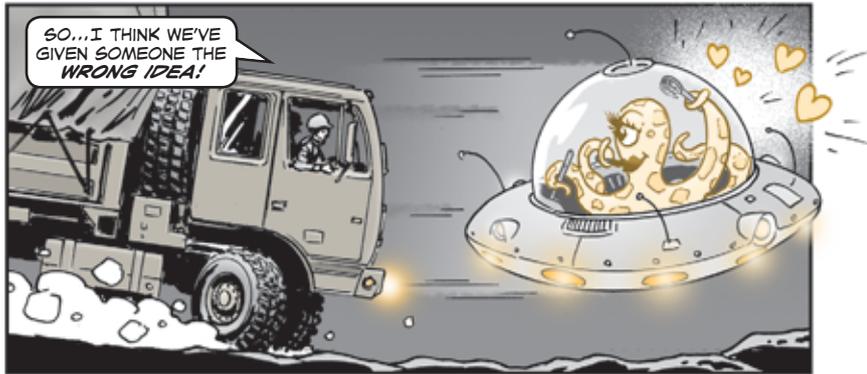
https://aeps2.ria.army.mil/commodity/soum/tacom_wn/08/soum08-002.html

And you can eyeball TACOM MAM 08-019 online here:

https://aeps2.ria.army.mil/commodity/mam/tacom_wn/08/mam08-019.html

By the way, now whenever you order the HMMWV wheel assembly, NSN 2530-01-558-2138, you'll get the 24-bolt rim assembly, plus the tire and runflat insert.

FIX FOR FAULTY FLASHING



FMTV trucks with serial numbers 100,001 to 115,482 need a new K-10 relay. That's because these newer production 2 1/2- and 5-ton FMTV trucks equipped with LED service light switches have a problem with unexpected flashing of the front turn signals.

Fortunately, older model FMTV trucks with mechanical-type light switches and incandescent turn signal light bulbs are not affected.

The faulty front turn signal flashing happens when the ignition switch is placed in the ON position, the engine is running, the air pressure is in the normal range and the service lights are in blackout mode. The front turn signal lights will flash once each time the operator releases brake pedal pressure.

New K-10 Relay

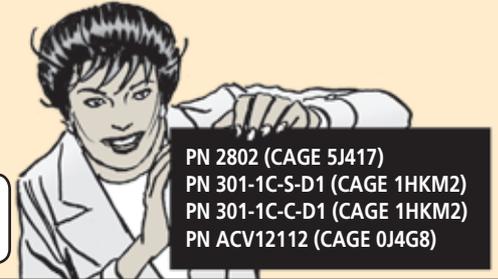
The culprit is the K-10 relay located in the passenger side power distribution panel (PDP). It doesn't operate correctly in that circuit, so the front turn signal lights flash.



A NEW REPLACEMENT RELAY IS AVAILABLE TO CORRECT THIS PROBLEM.

REPLACEMENT K-10 RELAYS ARE IDENTIFIED BY A BLUE MARKING ON TOP.

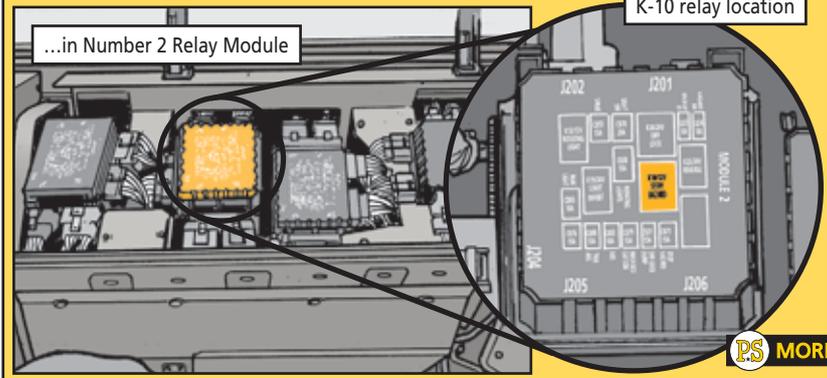
THESE RELAYS WILL ALSO HAVE ANY ONE OF THE FOLLOWING VENDOR PART NUMBERS STAMPED ON THEM...



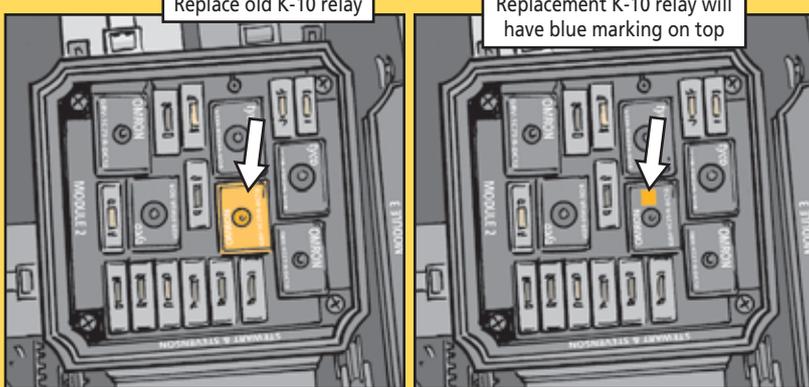
Removal and Replacement

Use your FMTV truck's IETM, EM 0195, to get to the maintenance procedures found in TM 9-2320-392-20. Then follow these steps to remove and replace the K-10 relay and fix the faulty flashing:

1. Set the external master manual battery disconnect switch to OFF.
2. Make sure the service light switch is set to OFF.
3. Remove the PDP using the Power Distribution Panel Replacement (PDPR) procedures in your IETM.
4. Open the module 2 relay panel cover using EM 0195's Circuit Breaker and Relay Replacement Work Package.



5. Remove the old K-10 relay, NSN 5945-01-527-6667 and PN G8V-1C7T-R-DC12, and replace it with the new relay, NSN 5945-01-557-4666 and PN 12424852. This relay location is referenced on the outside of the relay panel cover as K10/12V/ Stop/Hazard.



6. Close the number 2 PDP relay module cover and reinstall the PDP cover.
7. Place the external batteries switch to ON.

Operational Light Check

Next, conduct an operational light check following these steps:

1. Start your truck's engine with the transmission in NEUTRAL.
2. Allow the air tanks to build up normal operating pressure.
3. Get someone to stand outside the truck, in a safe position, to observe the front turn signals.
4. Put the service lights in blackout mode.
5. Press and hold the brake pedal.
6. Release the brake pedal pressure while the observer you tagged in step three watches the front turn signals. The turn signal lights **should not** illuminate or flash.

You've Got a Spare

The K-10 relay you removed is also used in other circuits throughout the power distribution modules. That means you can use them as spares.

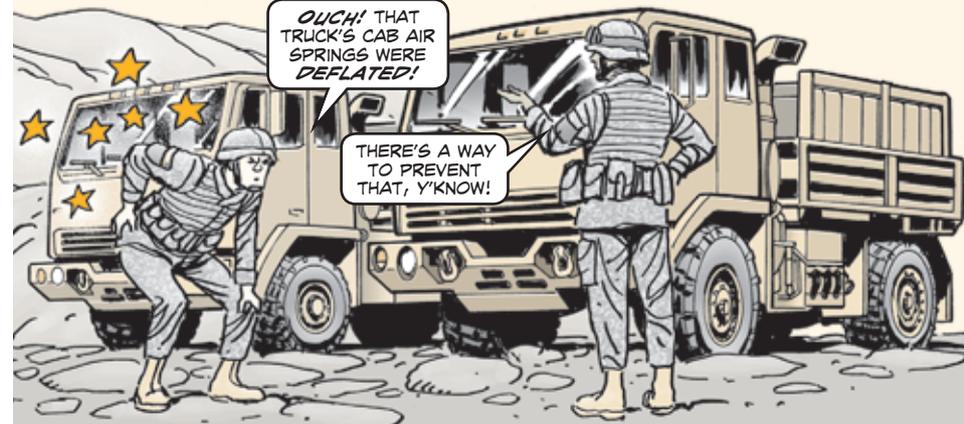
And look for a future update to EM O195 (TM 9-2320-392-20). It'll give you updated NSN and PN information.

This info is also found in TACOM MAM 08-032. You can download it on the AEPS website using this link:

https://aeps2.ria.army.mil/commodity/Mam/Tacom_WN/08/mam08-032.html

FMTV...

ACCESS COVER SAVES YOU IN THE END



Dear Editor,

Recently, a SMART suggestion was approved that can save Uncle Sam thousands of dollars. It prevents accidental and unnecessary air spring deflation on your FMTV truck.

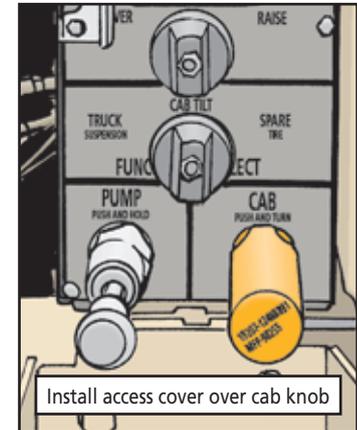
The cab knob on the FMTV's hydraulic manifold control panel inflates and deflates the air springs in the cab. The only time you need to deflate the air springs is when you're preparing for air transport. If you forget to re-inflate—and operate your FMTV with deflated air springs—you could damage the air springs and other air bag components.

Units can easily prevent down time and costly repair work by installing an access cover, NSN 5340-01-531-5710, over the cab knob. It only takes a minute of your time and a hex wrench to install it.

Before installing the access cover, make sure the cab knob is preset to the inflate position by pressing and turning it to the right.

And note that this tip applies only to older FMTV trucks that don't already have this cover installed.

C.M.
FMTV Equipment Specialist
TACOM-Warren



Editor's note: Using this suggestion can also save FMTV drivers and passengers from backside injuries. Good looking out, Mr. M.

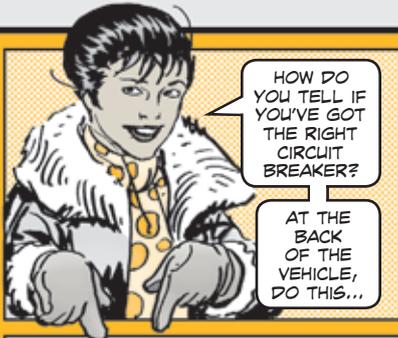
CIRCUIT BREAKER CHECK

OPERATORS, SOME OF US M1142 TACTICAL FIRE FIGHTING TRUCKS WERE ASSEMBLED WITH THE **WRONG BREAKER** FOR THE HEATER CIRCUIT IN THE VEHICLE'S REAR COMPARTMENT!

THE CORRECT RATING FOR THE CIRCUIT BREAKER IS 20 AMPS.

A 15-AMP BREAKER WILL TRIP PREMATURELY.

TRUCKS WITH A 30-AMP BREAKER WILL NOT PROTECT THE HEATER CIRCUIT.



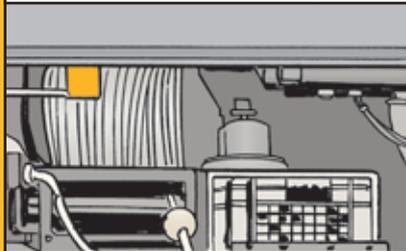
HOW DO YOU TELL IF YOU'VE GOT THE RIGHT CIRCUIT BREAKER?

AT THE BACK OF THE VEHICLE, DO THIS...

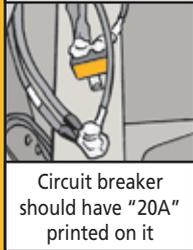
- Lower the rear platform assembly and open the rear compartment doors.



- Take a close look at the circuit breaker where it's mounted on the left door's stay rod bracket.



Lettering on circuit breaker should be visible on lower side of breaker



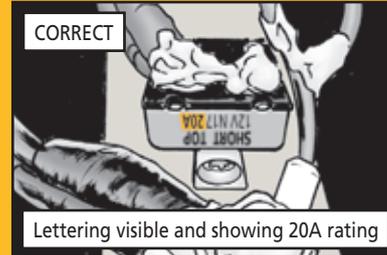
Circuit breaker should have "20A" printed on it



"20A" indicates 20 amp rating

If there's no lettering on the breaker, or it shows something different from 20 amps, have your mechanic replace the circuit breaker.

CORRECT



Lettering visible and showing 20A rating

INCORRECT



No lettering visible or showing anything other than "20A"

If in doubt, replace it

A REPLACEMENT CIRCUIT BREAKER KIT IS **FREE** JUST FOR THE ASKING.

WRITE TO THE PROJECT MANAGER'S OFFICE AT THIS E-MAIL ADDRESS:

conus.army.mil

OR CALL DSN 786-4194 OR (586) 574-4194.



INCLUDED WITH EACH KIT ARE REPLACEMENT PARTS, INSPECTION PROCEDURES, AND REMOVAL AND INSTALLATION INSTRUCTIONS.

COOL OFF COOK OFFS

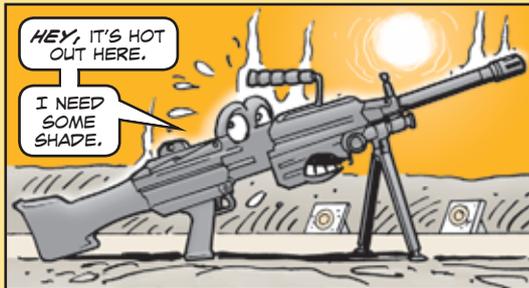
HERE ARE SOME WAYS TO COOL OFF M249 COOK OFFS!



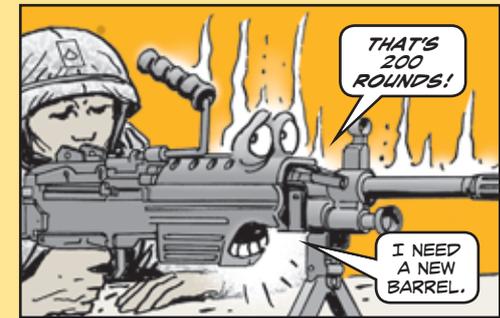
M249 machine gunners have reported a rash of cook offs recently. A cook off occurs when a round fires because of a hot barrel and not because the trigger was pulled. There are a few things you can do to cool off cook offs.

First, keep your M249 as cool as possible. Don't leave the M249, its spare barrel, or its ammo in direct sunlight or on hot surfaces or shut up in hot vehicles or buildings.

Of course, in the desert that's very difficult, but you can still keep your M249 covered as much as possible in the field.



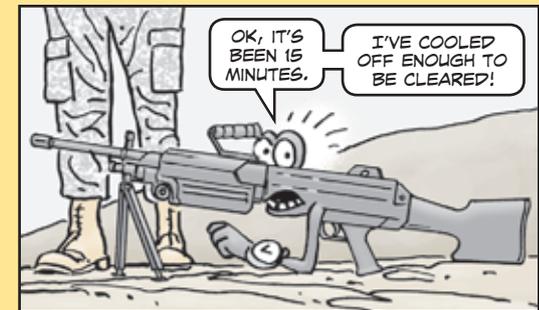
Change the barrel when you're supposed to during firing. If you continue firing through the same barrel, you not only risk a cook off but also a ruined barrel. During both sustained fire (3 to 5 round bursts, 4 to 5 seconds between bursts, 50 rounds per minute) and rapid fire (8 to 10 round bursts, 2 to 3 seconds between bursts, 100 rounds per minute), change the barrel every 200 rounds.



Clean and lube your weapon like it says in TM 9-1005-201-10. A dirty, rusty, poorly lubed weapon will have more trouble with malfunctions that lead to cook offs than a properly maintained weapon.

If you do have a stoppage, charge the weapon. If a round is ejected, fire again.

If no round is ejected, assume you have a live round in the chamber. If the weapon is hot (it's fired 200 successive rounds or more), don't open the cover or remove the barrel. Point the weapon down range, put it on SAFE, let it cool off for 15 minutes, and then clear it. If the M249 isn't hot, you can clear it immediately.



Small Arms...

The *Final* Cleaning Step

Dear Editor,

I thought your article in PS 668 (July 08) on cleaning the M16 rifle was very good, but I believe there is one final step that should be mentioned.

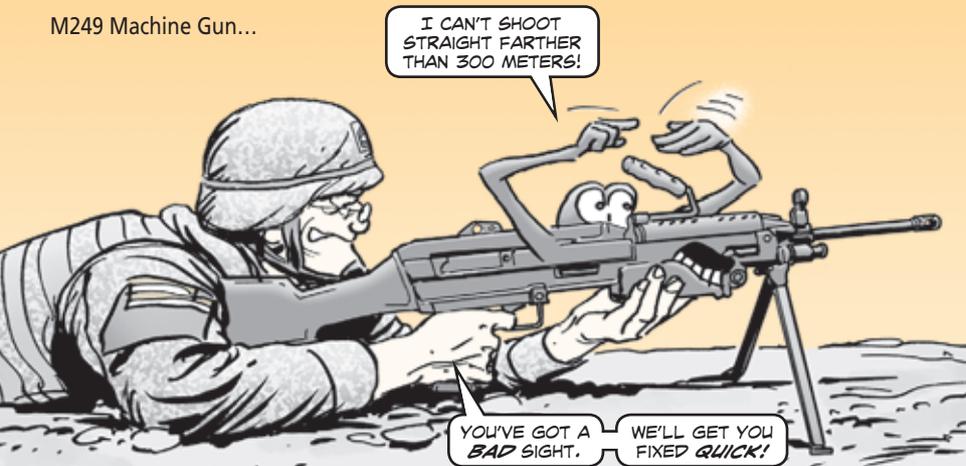
The last thing you should do when cleaning the bore of the M16 or any of the machine guns is to repeatedly run clean, dry patches through the barrel until the patches come out clean. That way you've made sure all oil and foreign material have been removed from the bore.

SSG K.G.
Illinois ARNG

Run dry, clean patches through barrel until all oil and obstructions are removed



Editor's note: Excellent point, Sergeant. We'll pass it on.



Sighting Bad Sights

Some defective M249 machine gun rear sights have gotten into the field. Because the sight elevation knobs were installed wrong, you can't zero the sights beyond 300 meters.

It's easy to tell if you have a bad sight. Check to see if the line on the elevation cam assembly matches up with the lines on the rear sight base at each of the detents. If they don't, you've got a bad sight.

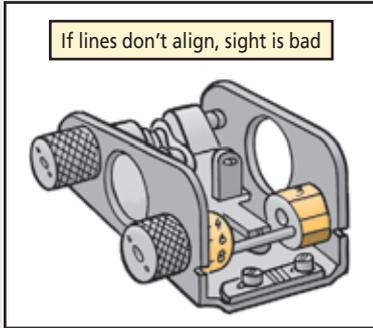
You can continue to use the M249 while you're waiting for a new sight. Just be aware it won't be accurate beyond 300 meters. The bad sight is no problem, though, if you're using ACOG, M68, or M145 sights.

If you're not deployed, contact your local logistics assistance representative (LAR) to get a new sight. If you're deployed in Baghdad, contact the Small Arms Support Center at DSN 312-987-5130 (ext. 6805 or 6806), (732) 427-5130 (ext. 6805 or 6806), or email: smallarmsbaghdad@mmcs.army.mil

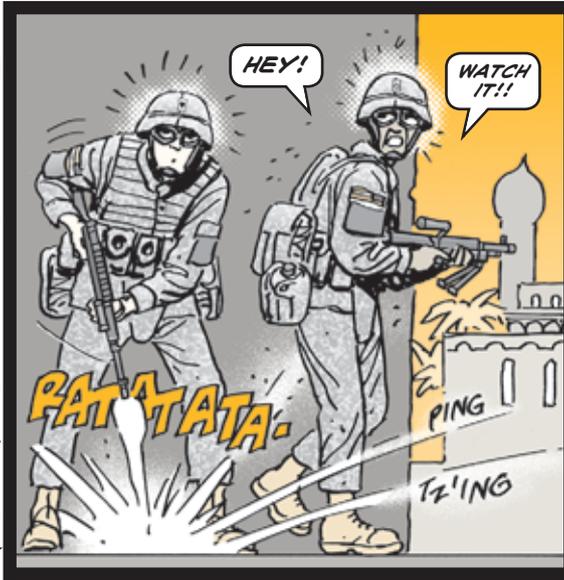
For Balad's Small Arms Support Center, call 312-987-5130 (ext. 6050) or email: steelez@mmcs.army.mil

For Afghanistan, call the Small Arms Support Center at DSN 312-987-5130 (ext. 6050) or email: alexanderw@mmcs.army.mil

For more info, see TACOM maintenance advisor message 08-041: https://aeps2.ria.army.mil/commodity/mam/tacom_wn/08/mam08-041a.html



SURRENDER SAFETY



IF THE SEAR BECOMES TOO WORN ON YOUR M240-SERIES MACHINE GUN, THE M240 COULD FIRE WHEN YOU DON'T WANT IT TO.

THAT COULD HURT YOUR POPULARITY IN YOUR UNIT.



It's easy enough to tell if the sear is still up to the job. After clearing your M240, move the safety to F (fire) and pull the cocking handle completely to the rear to lock back the bolt. Then return the cocking handle to the forward locked position. Place the safety in the S (safe) position and depress the trigger. Nothing should happen.

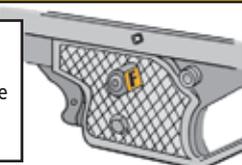
Next move the safety to F and hold the cocking handle to the rear while you fully depress the trigger. Then ease the bolt forward until it locks. You should not be able to move the safety to S.

If your M240 flunks this test, it shouldn't be fired. Tell your armorer. He needs to check it out.

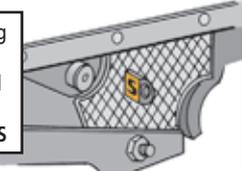
The reason sears wear out fast is because gunners don't pull the trigger fully to the rear when firing and don't release the trigger fully when they've finished firing. So remember to pull the trigger completely back to keep the sear healthy.

Another good health tip for the sear is to store your M240 with the safety on F and the bolt locked forward.

Place safety on F and pull cocking handle to rear to lock back bolt



Return cocking handle to forward locked position and put safety on S



When you depress trigger, nothing should happen

Javelin Missile System...

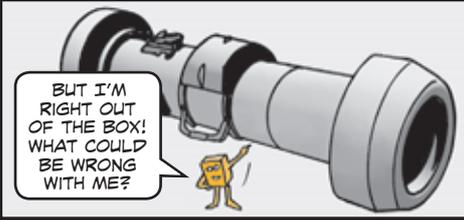


TICK-TICK-TICK
TICK-TICK-TICK

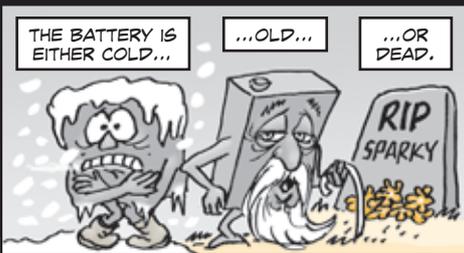
WHAT'S WRONG?
I PUT IN A BRAND NEW BATTERY!

Tick, Tick, Tick - You've Got a Battery Problem!

IF YOU INSTALL A NEW BATTERY IN YOUR JAVELIN'S CLU (COMMAND LAUNCH UNIT) AND YOU HEAR A TICKING SOUND WHEN YOU TURN ON THE CLU, YOU'VE GOT A **BATTERY PROBLEM**.



BUT I'M RIGHT OUT OF THE BOX! WHAT COULD BE WRONG WITH ME?



THE BATTERY IS EITHER COLD...
...OLD...
...OR DEAD.

SO WHAT CAN YOU DO TO STOP THIS TICKING AND GET ON WITH YOUR MISSION? READ ON!

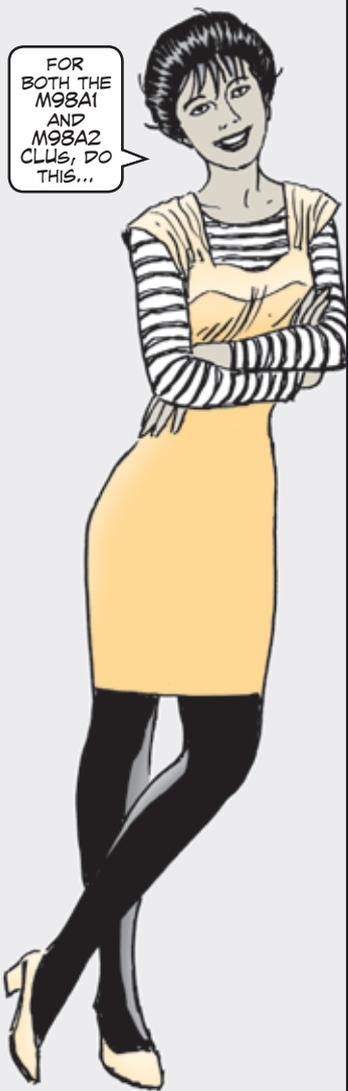
This ticking can occur with both the BA-5590 (primary live-fire battery for the M98A1 and M98A2) and BA-5390 (alternate live-fire battery for the M98A2) and the rechargeable BB-390A and BB-390B training-only batteries. And it can occur even if the battery is fresh out of the box.

The ticking is caused because the CLU voltage or potential collapses, causing the circuitry to shut down. The ticking is caused by the CLU turning off and on.

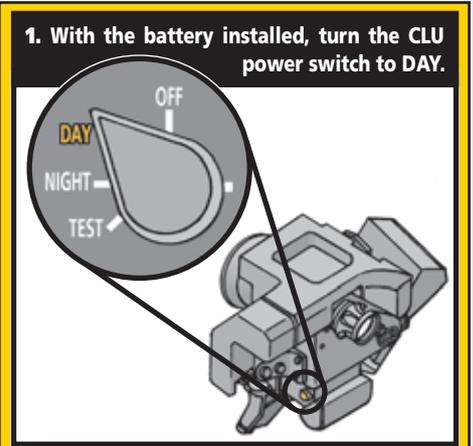


Cold Batteries

First, check to see if the battery is cold to the touch. If it is, you may just have a cold battery. Try shaking the battery. Sometimes that solves the problem. If shaking doesn't work, follow these steps:



FOR BOTH THE M98A1 AND M98A2 CLUs, DO THIS...



2. After 30 seconds, cycle the power switch from DAY to OFF and then back to DAY.
3. If the CLU keeps ticking, repeat the procedure.

4. Still no luck? Try warming the battery under your arm or in a warm environment. Once the battery no longer feels cold, try the procedure again. If that doesn't work, the battery may be old.



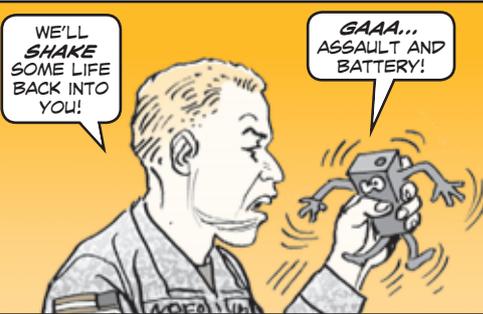
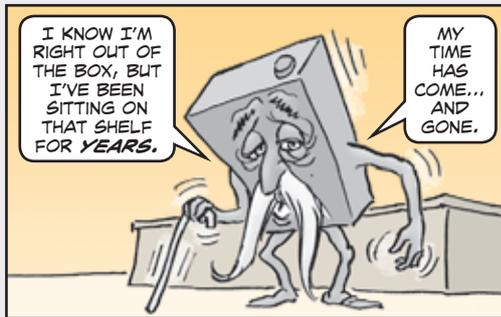
PS MORE

Batteries can be old even if they're fresh out of the box. Batteries that sit on the shelf for a long time can develop a "passivation" crust on their metal plates, which prevents electrons from passing through the plates.

Sometimes you can shake off the crust. Remove the CLU battery and shake it vigorously for one minute. Reinstall the battery and turn the switch to NIGHT for both the M98A1 and M98A2 CLU. If the CLU keeps ticking, give the battery another one-minute shaking and try again. If three rounds of shaking don't stop the clicking, the battery is probably dead.

If the CLU stops ticking, but the CLU battery indicator lights up, there is hope. Leave the CLU on for 15 minutes to see if the battery current burns through the passivation layer. If the indicator goes off, you're in business.

Old Batteries

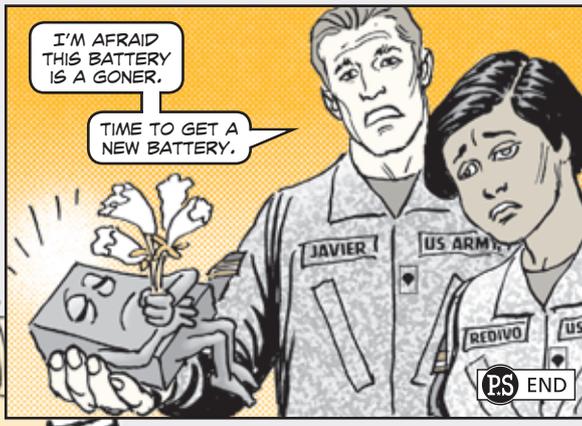


IF NONE OF THIS WORKS, YOU HAVE A DEAD BATTERY.

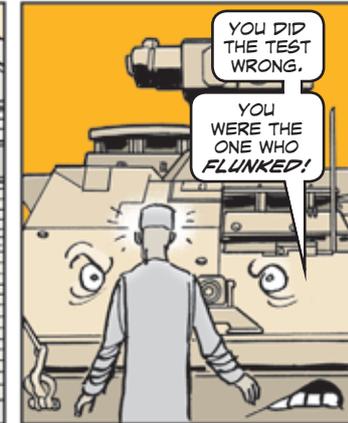
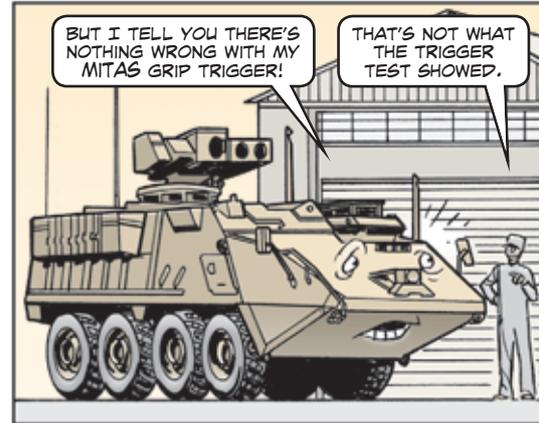
TURN IT IN AND GET A NEW ONE.

I'M AFRAID THIS BATTERY IS A GONER.

TIME TO GET A NEW BATTERY.



MITAS...



Passing the Trigger Test

Dear Editor,

The grip trigger test is a part of the PMCS for the MITAS (modified improved target acquisition system) on the Stryker. But MITAS often flunks the test because operators forget the correct setting for the gunner's control panel.

The platform mode selector switch on the gunner's control panel must be set to MISSILE 1 or MISSILE 2 before doing the test. If the panel is left on LOAD or RAISE/STOW, MITAS will show a bad grip trigger, even though there's nothing wrong with the trigger. And the next time the IBIT (integrated built-in test) is run, a FCS and TU icon will show during the IBIT, usually LRU codes ZW2 and 1A8.

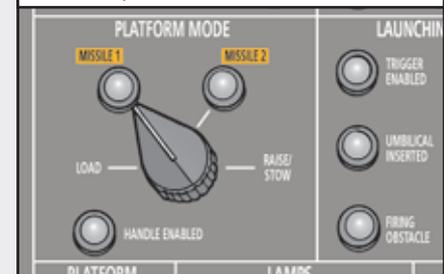
If this occurs, set the platform mode selector to MISSILE 1 or MISSILE 2 and power down the MITAS system. Then power up and perform the grips test and IBIT again. The fault should go away. If it doesn't, tell support.

Forgetting the correct gunner's control panel setting for the trigger test can cause the operator and MITAS needless problems. Just remember MISSILE 1 or 2 for all MITAS systems operations.

SGT G.M.
296th MSB
Ft Lewis, WA

Editor's note: It's so easy to overlook a detail like the panel setting. Thanks for helping MITAS operators get a grip on the problem.

Make sure panel is set to MISSILE 1 or MISSILE 2



MITAS...

Words for the Wise

THESE WORDS CAN HELP MAKE YOU WISER...

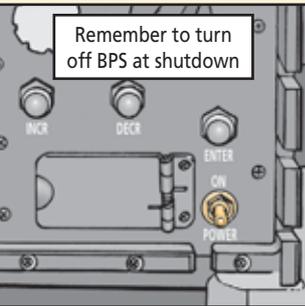
...ABOUT GETTING THE MOST OUT OF YOUR MITAS (MODIFIED IMPROVED TARGET ACQUISITION SYSTEM).

REMEMBER TO **TURN OFF THE BPS (BATTERY POWER SOURCE) WHEN YOU SHUT DOWN!**

The BPS is often forgotten during shutdown because it sits out-of-sight on the floor. Then when you get ready to operate next time, the BPS is still on and it doesn't get a chance to cycle and pass its BIT (built-in test). That puts error codes in the system that only a repairman can clear.

So remember to shut off the BPS when you shut down MITAS. And when you are ready to power up MITAS, make sure the BPS is off before you turn on the gunner's main power. Then turn on the BPS and let it run its BIT. Just a bit of attention can save troubleshooting trouble.

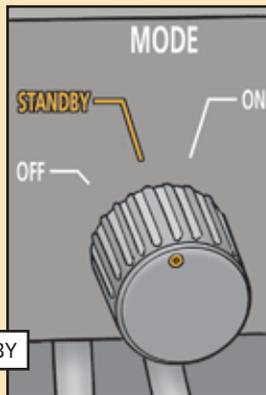
Remember to turn off BPS at shutdown



WHEN MOVING, KEEP MITAS IN **STANDBY!**

That keeps the MITAS' internal systems locked in place so they aren't bouncing around and suffering major damage. But in STANDBY, the FLIR system is still being cooled, which means as soon as MITAS is turned on it's ready to fire. So you're not sacrificing readiness, but you are protecting your MITAS by keeping it in STANDBY.

During travel, put MITAS in STANDBY



A Day of Leave with PM Steve!

WHERE'RE YOU HEADED, PM STEVE?

I'M GOING HOME ON LEAVE.

MAKE SURE NO ONE SLACKS UP ON PM WHILE I'M GONE.

I DON'T WANT ALL MY HARD WORK TO GO DOWN THE TUBES!



NO PROBLEM, PM STEVE. WE'VE GOT YOUR BACK!





HOURS LATER, PM STEVE ARRIVES HOME...

HI, SIS!



STEVE! I'M GLAD YOU'RE HOME.

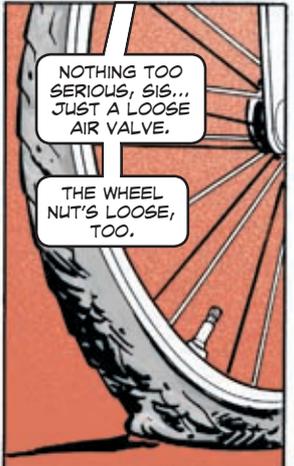
LOOKS LIKE YOUR TIRE'S GOING FLAT.



I KNOW, BUT I DON'T KNOW HOW TO PREVENT IT.



LET'S SEE WHAT WE CAN DO ABOUT IT.



NOTHING TOO SERIOUS, SIS... JUST A LOOSE AIR VALVE.

THE WHEEL NUT'S LOOSE, TOO.



A PAIR OF PLIERS, A SMALL WRENCH AND A LITTLE AIR WILL HAVE THIS AS GOOD AS NEW IN NO TIME!



THEY DON'T CALL ME PM STEVE FOR NOTHIN'!



THE WHEEL NUT'S NICE AND TIGHT, AND THE AIR VALVE IS SECURE.

ALL SET, SIS.



THANK YOU, STEVE. I'M SURE GLAD YOU'RE MY BROTHER!



WELL... GUESS I'LL GO INSIDE AND UNPACK.

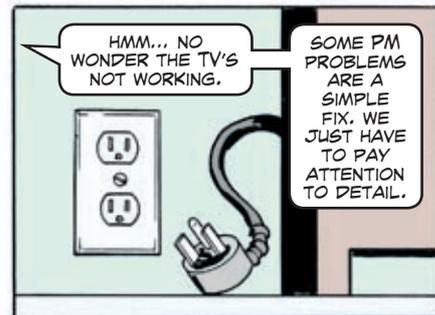


WONDER WHAT'S ON TV?



KLICK KLICK KLICK

UH, OH. SOMETHING'S WRONG!



HMM... NO WONDER THE TV'S NOT WORKING.

SOME PM PROBLEMS ARE A SIMPLE FIX. WE JUST HAVE TO PAY ATTENTION TO DETAIL.



THERE! NOW IT WORKS.



IT'S GREAT TO BE HOME, MOM AND DAD, AND LUNCH WAS *DEE-LISHUS*, NOT AS GOOD AS MRS., OF *COURSE*.

HA-HA! IT'S GOOD TO HAVE YOU HOME, SON.



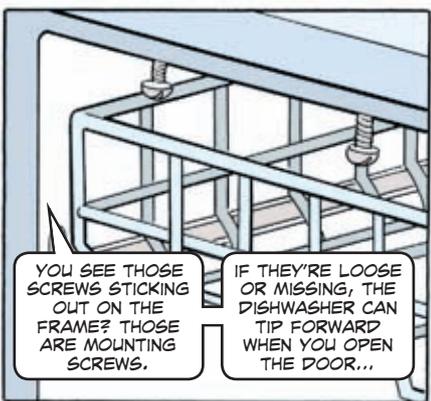
UH, OH. LOOKS LIKE YOU'VE GOT A PROBLEM HERE, MOM.



...OR WHEN YOU PULL THE RACK OUT, I'LL JUST TIGHTEN 'EM UP NOW.



LET ME HELP YOU WITH THE DISHES MOM!
THE ARMY'S TRAINED YOU WELL!



YOU SEE THOSE SCREWS STICKING OUT ON THE FRAME? THOSE ARE MOUNTING SCREWS.
IF THEY'RE LOOSE OR MISSING, THE DISHWASHER CAN TIP FORWARD WHEN YOU OPEN THE DOOR...



YOU'VE GOTTA REMEMBER TO DO PREVENTIVE MAINTENANCE, MOM. IT CAN SAVE YOU FROM A LOT OF TROUBLE.



THANK YOU, STEVE. YOU SOLVED A PROBLEM *BEFORE* IT HAPPENED.

THAT'S THE BEST WAY TO DO IT, MOM!

HERE... I'LL SWEEP UP THE KITCHEN. YOU SIT AND REST.



THIS BROOM DOESN'T DO A VERY GOOD JOB.



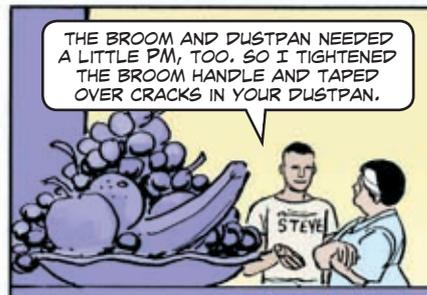
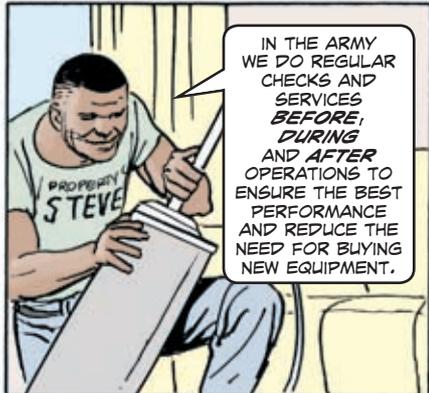
AND THIS DUST PAN'S CRACKED!

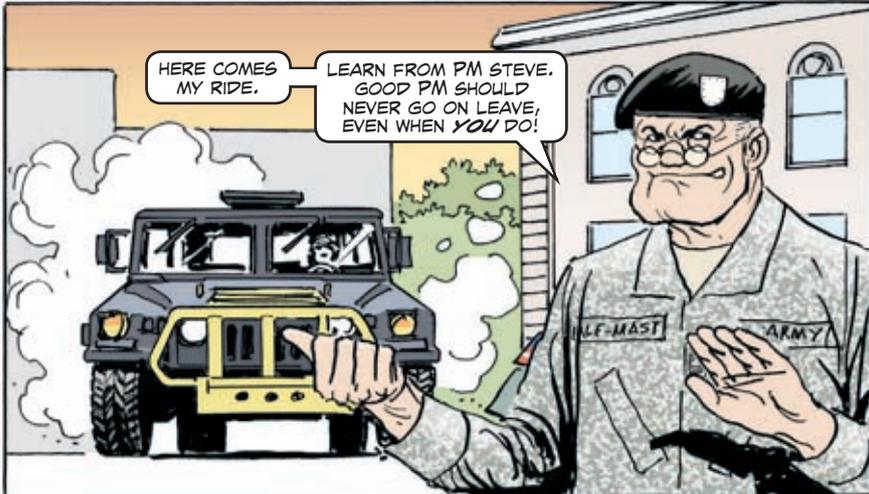
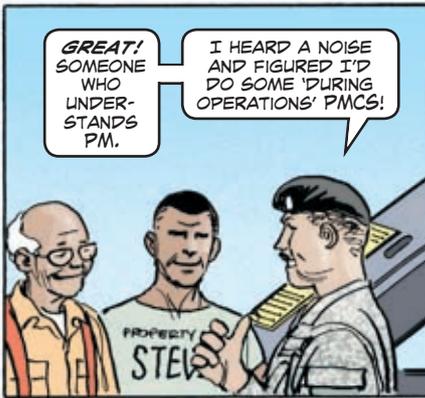


HMM... NO WONDER. THE HANDLE'S LOOSE!



LOOKS LIKE *BEFORE* OPERATION CHECKS SHOULD BE DONE AT HOME AND ON POST!





THE FEET CAUSE DEFEAT

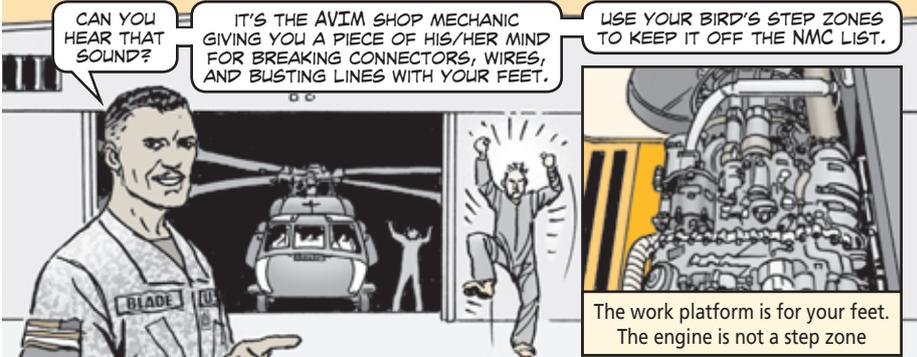
Mechanics, one sure way to put the engine on your Black Hawk or AH-64 on the NMC list is putting your feet where they don't belong!

Your aircraft have work platforms for standing and step areas for your feet, so keep your feet where they belong.

Engines have many items attached that if stepped on, will snap, crack or pop.

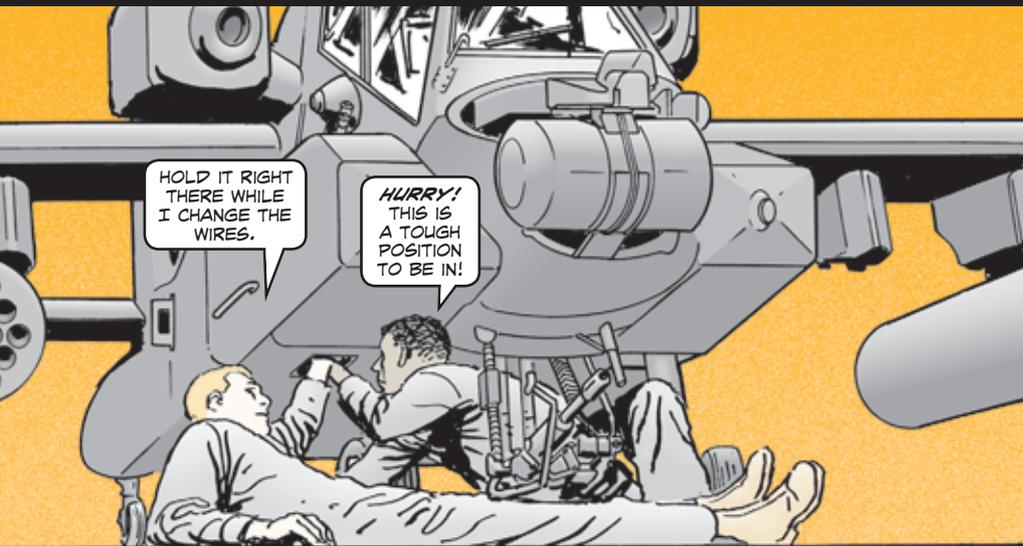
If you don't want to suffer the agony of defeat then keep your feet off of the engine temperature bulb, the engine alternator connector, the engine starter speed sensor wiring, the engine bleed air tube and the hydromechanical unit (HMU). Stepping on the HMU causes internal damage to the spline.

Sometimes the damage is not obvious. For example, stepping on the starter speed sensor can damage the internal connections. Then the starter will not sense the engine speed and won't shut off after the engine reaches optimum speed. So, the pilot has to shut off the starter manually.



The work platform is for your feet. The engine is not a step zone

HOLD UP THE LIGHT



Dear Sergeant Blade,

The searchlight underneath the nose of the AH-64D is a delicate piece of equipment. When it's time to replace the light, we have three options:

1. After disconnecting the light, let it hang by the wiring. Doing it this way puts stress on the wires which can cause breaks.

2. Use tie-wraps to hold up the light to keep stress off the wires. But this method creates another problem. Using tie-wraps makes it difficult to change or switch wires because the light is swinging and unstable.

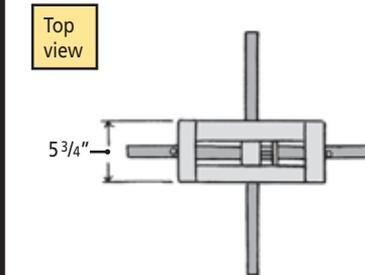
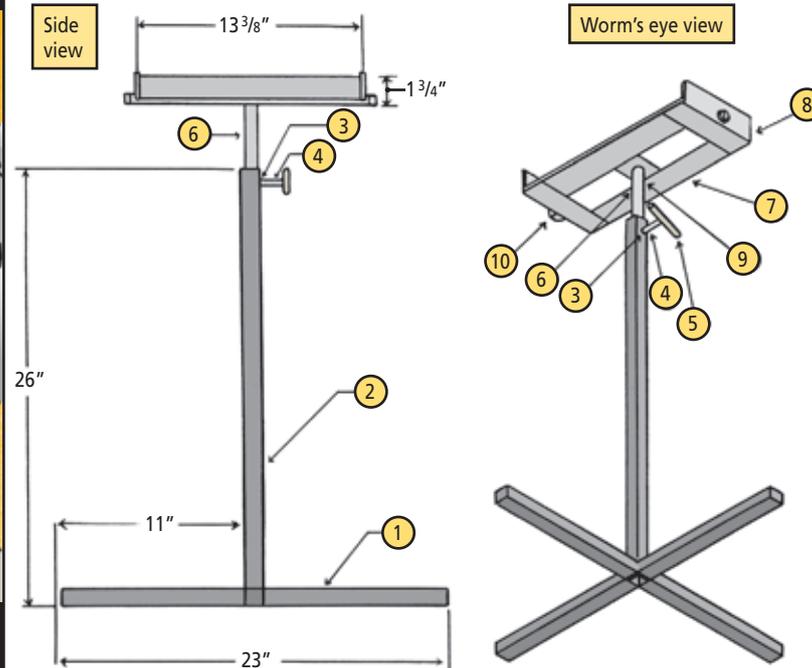
3. Make it a two-person job. One mechanic sits on the ground and awkwardly balances two lights over his head while the second mechanic switches over eight individual wires to the new light.

None of these options worked for us.

We've come up with a fourth option that does! We made a height adjustable searchlight stand that we place under the searchlight. It makes changing and switching wires to a new searchlight simpler and one mechanic can do it by himself.

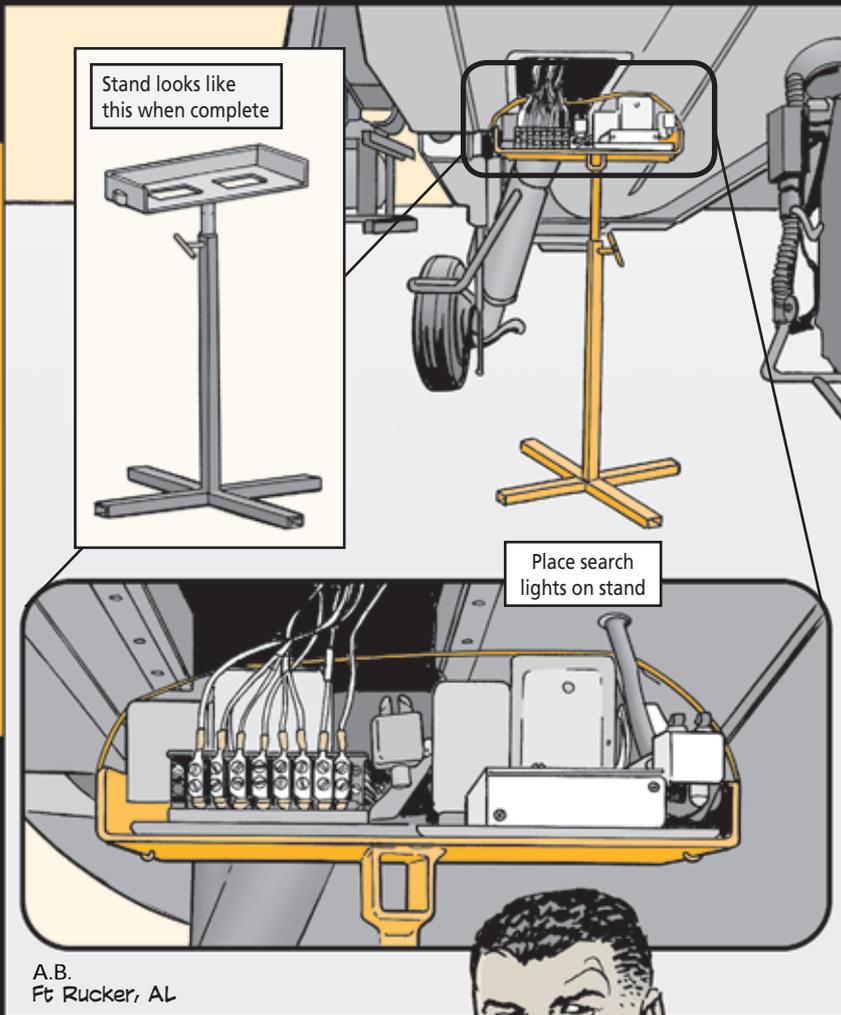
To make the stand, we welded together various tubing. It has a stable base, it's adjustable and has a platform large enough to fit two searchlight assemblies side by side. The sides and back are 1-in high to keep the unattached searchlights from falling off. We also use a bungee cord to secure the two searchlights. We can adjust the stand to the height we need to change searchlights.

Just check the drawings and you can see it doesn't require much effort for a shop to make the stand. Our mechanics have used this stand for a long time and they love it! Here are the plans for the stand and what the finished stand looks like and how it's used.



Parts List		
Item	Qty	Description
1	4	1" x 1" x 11" steel tubing
2	1	1" x 1" x 26" steel tubing
3	1	5/16" nut
4	1	5/16" NC x 1 1/2" long bolt
5	1	5/16" x 3" rod
6	1	3/4" dia. x 22" long CRS
7	2	1/8" x 1 3/4" flat bar
8	2	1 3/4" x 1/8" angle bar
9	1	Flat bar
10	2	1/2" NC nuts





Stand looks like this when complete

Place search lights on stand

A.B.
Ft Rucker, AL

MR. B., THAT'S A GREAT IDEA! LOOKS LIKE YOU MADE A STAND ON MAINTENANCE.

PS
END

Ground Support...

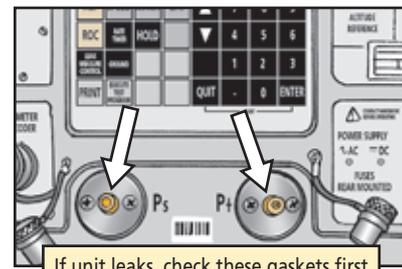
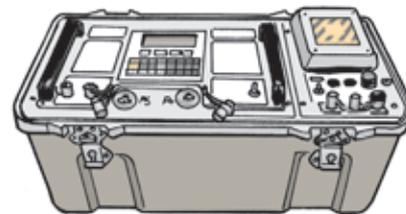
PITOT STATIC TEST SET PROBLEMS



Mechanics, the pitot static test set, NSN 4920-01-388-6790, shouldn't be turned in for repair for any old reason.

Too many test sets are being unnecessarily turned in for leakage problems. But the real problem is not replacing damaged or missing gaskets on the Ps and Pt connectors.

Inspect test set before using



Before operating the test set, first inspect the gaskets to see if they have abrasions, tears, other damage or are missing. If they are damaged or missing, replace 'em.

Always replace bad gaskets with the new gaskets issued with the set. If you don't have a service kit on hand, order the fuse kit, NSN 5920-01-437-2460, which includes gaskets.

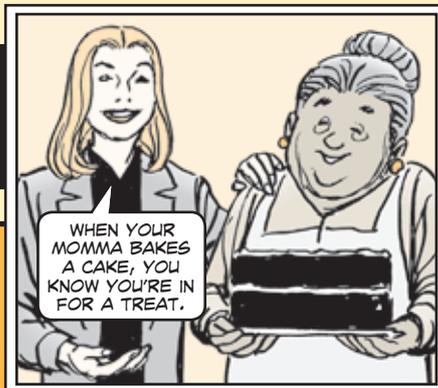
To extend gasket life and decrease chafing when attaching test hoses to the set, apply a light coat of silicone grease, NSN 6850-01-465-2261, to the gaskets.

After replacing the gaskets, run your leak test like it says in Chapter 2 of TM 43-4920-910-12. If the test set fails, then turn in the set.

Never use teflon tape on the connectors if the set fails. That's because bits of tape can be drawn into the test set. Tape clogs the wire mesh filters. And if the particles are small enough, you're looking at even more extensive test set damage.

Your unit's wallet will take the hit on repair cost. So always inspect and check the set before operating it.

WHEN TOO HOT IS NOT COOL!



How do new commo batteries get baked?

Well, sometimes it happens in transit. The supply train between you and the manufacturer might be a long one. And that train may make a stop or two in some very hot areas. Sitting in the Kuwaiti sun for a day before they arrive at your Iraqi commo shop is a low spot in a battery's short shelf-life.

Sometimes it happens in your storage CONEX. The air temperature in a closed CONEX under the hot sun could easily suck the life out of your batteries.

With this in mind, it's important to check new batteries for a charge, even AAs. Even alkaline (AAA, AA, C, D and 9-volt) commercial batteries should be checked prior to use to ensure heat has not fried them. Check them in your equipment or use ZTS tester, NSN 6625-01-494-9163.

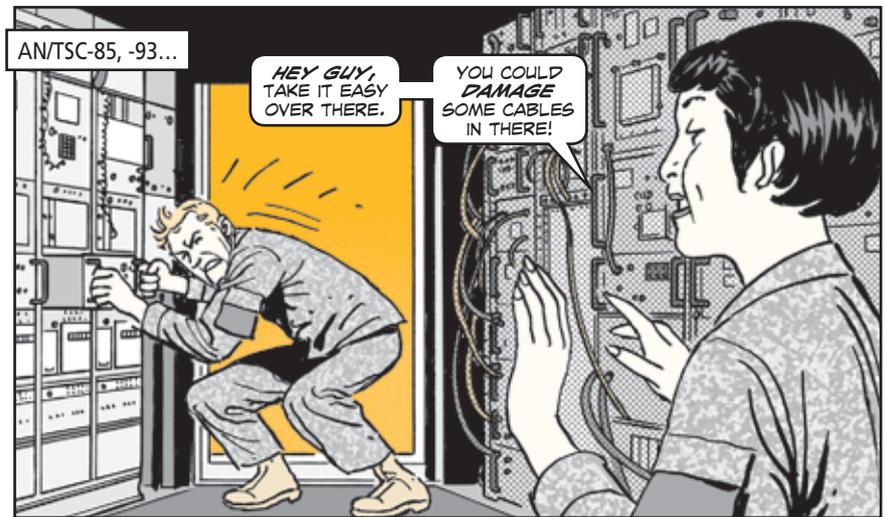
If you're using batteries in an ASIP manpack, the first choice is the lithium rechargeable, BB-2590/U, NSN 6140-01-490-4316. It does a good job in the heat, but you need a place below 122°F to charge it.

If you can't consistently find a cool place for charging, use the BA-5390, NSN 6135-01-501-0833, without a state-of-charge indicator (SOC), or NSN 6135-01-517-6060 with an SOC.

If you have neither of the above to choose from, use the BA-5590, NSN 6135-01-438-9450, without the SOC, and NSN 6135-01-523-3037 with the SOC.

Don't use the BB-390B/U, NSN 6140-01-490-4317. It does not do the job it should in the heat and it cannot be charged in high temperatures.

AN/TSC-85, -93...



Fight the Kink! Resist the Shove

Dear Editor,

The AN/TSC-85 and -93 satellite communications terminals have at least one rack that has the AM-6701/TSC high power amplifier (HPA) and the PP-8530/TSC high voltage power supply (HVPS). After doing repair or PM to either of these chassis, there is plenty of thick cabling that also goes along for the ride when sliding a chassis back into the rack.

Too often that ride is not a good one. Cables kink, pinch and bind. This leads to fraying and severing. Damaging one of the cables could trip a breaker, possibly a main breaker, deadlining a rack, if not the entire terminal.

Nobody wants to have to explain a system outage. If cable resistance is felt, or there's a "spongy" feeling while sliding an HPA or HVPS back into the rack, make sure a cable is not getting in the way. Don't just shove until the resistance is gone. Move a wiring harness out from between a slide and the chassis or otherwise out of harm's way.

T.B.

CECOM LCMC
Ft Monmouth, NJ

Editor's note: Mr. B. points out a problem with which we're all familiar. Whether it's at home with our personal electronic equipment or in the shop, when cabling gets in the way of installation, we like to give it that extra push. Usually, we get away with it. But every once in a while, it bites us in the butt! Apparently, in the case of the AM-6701/TSC and PP-8530/TSC, it's biting way too often. So, fight the kink and resist the shove!

AMMUNITION FOR THE COMMO FIGHT

KEEPING YOUR COMMO EQUIPMENT DOING ITS COMMUNICATION JOB CAN BE A BATTLE.

THE ENEMIES IN THE FIGHT ARE THE **ELEMENTS IN THE AIR** AND THE **ENVIRONMENT ON THE GROUND**.

HERE ARE A FEW WEAPONS THAT SHOULD BE IN YOUR ARSENAL...

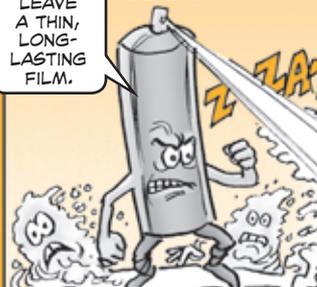


Water-Displacing Compound

WATER-DISPLACING COMPOUND IS A MULTI-PURPOSE LUBRICANT, PENETRANT AND CORROSION INHIBITOR.

I DRIVE OUT MOISTURE AND I LEAVE A THIN, LONG-LASTING FILM.

CONSIDER IT A **MUST** BETWEEN ANTENNA SECTIONS.

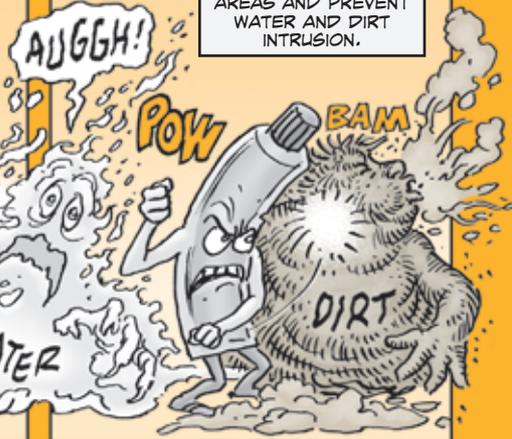


NSN 6850-00-142-9389 BRINGS A BOX OF TWELVE 16-OZ CANS.

Silicone Compound

NSN 6850-00-880-7616 BRINGS AN 8-OZ TUBE OF SILICONE COMPOUND WITH CORROSION INHIBITOR.

SILICONE SEALS OPEN AREAS AND PREVENT WATER AND DIRT INTRUSION.

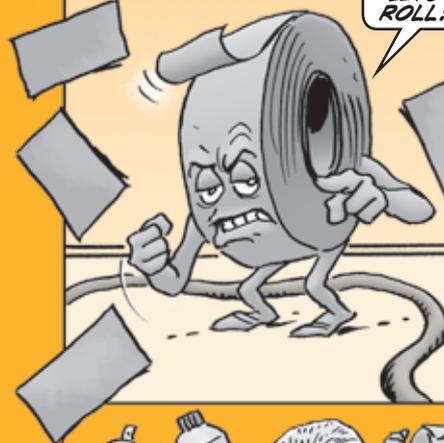


Electrical Tape

ELECTRICAL TAPE HAS A **HUNDRED USES** IN YOUR COMMO SHOP.

ORDER IT WITH NSN 5970-00-419-4291.

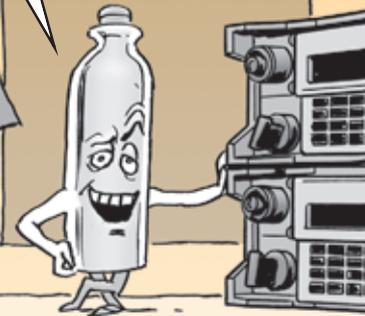
LET'S **ROLL!**



Isopropyl Alcohol

KEEPING EQUIPMENT CLEAN IS A MAJOR JOB AND SOME CLEANERS CAN DO MORE **HARM** THAN GOOD.

ISOPROPYL ALCOHOL, NSN 6810-00-753-4993, DOES A GOOD CLEANING JOB AND **DOES NOT HARM** YOUR EQUIPMENT.



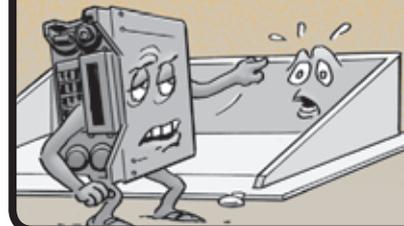
IF YOU GENTLY CLEAN YOUR EQUIPMENT, KEEP MOISTURE AND DIRT OUT OF CONNECTIONS AND CONNECTORS, AND USE PROHIBITORS TO FIGHT CORROSION, YOU'LL **WIN** THE COMMO WAR.



SINGGARS Installation Kits Stay Put!

I'VE GOT TO GO, BUT YOU STAY HERE!

AWW, MAN! I NEVER GET TO DO ANYTHING!



Once a SINGGARS installation kit is installed in a vehicle, it stays with the vehicle. Too many are being removed prior to deployment or before a vehicle is sent to RESET and this has created a critical shortage. Paragraph 2-1 b(1)(b) and 2-1 b(2)(b) of SB 11-131-2, *Vehicular Radio Sets and Authorized Installations, Volume II*, gives you the official support for this policy. You'll also find this policy explained in a Department of the Army message from DAMO-AOC, 301958Z Sep 05.

Generators...

ARE THEY GROUNDED GOOD?



INSPECTION OF GROUNDS IS EVERY SOLDIER'S RESPONSIBILITY.

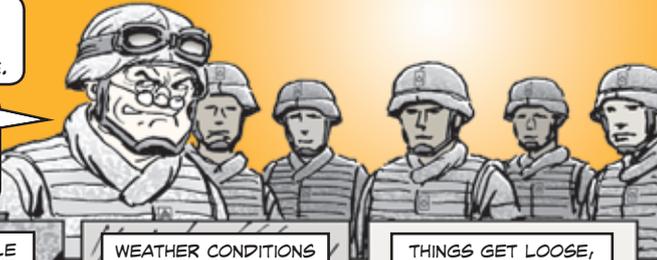
IF YOU SPOT A PROBLEM AND ARE NOT THE PERSON DESIGNATED TO SOLVE IT...



...REPORT IT!

IF IT'S YOUR JOB TO DO THE PM, REMEMBER THAT SITUATIONS CHANGE.

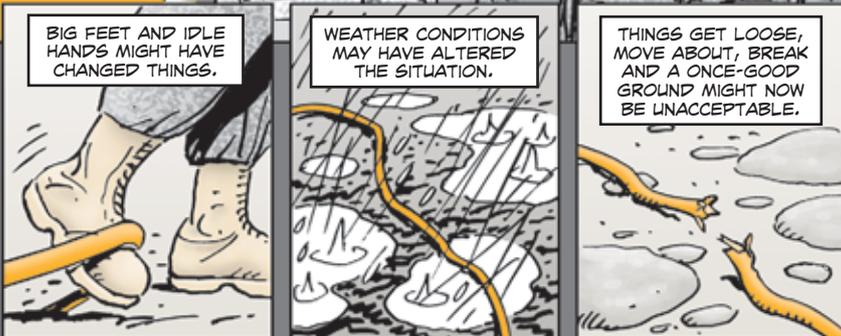
JUST BECAUSE YOU ESTABLISHED A GOOD GROUND DOESN'T MEAN IT'S STILL THERE.



BIG FEET AND IDLE HANDS MIGHT HAVE CHANGED THINGS.

WEATHER CONDITIONS MAY HAVE ALTERED THE SITUATION.

THINGS GET LOOSE, MOVE ABOUT, BREAK AND A ONCE-GOOD GROUND MIGHT NOW BE UNACCEPTABLE.



HERE ARE THINGS TO LOOK FOR WHEN DETERMINING WHETHER A GROUND IS GOOD OR NOT...



Start with the Strap

The ideal ground strap is flat, braided copper, ³/₄ of an inch to an inch wide, of 6 AWG or better. It is coated and will have a nickel or tin coloring. NSN 6145-00-395-8799 brings this strap by the foot.

The distance the strap must cover from the earth electrode—rod or other buried metal—to the generator should be short and straight. Fifteen feet is the maximum. Make sure there are no loops, kinks, knots or bends. Make sure the strap maintains the path of least resistance by running it around or under obstacles and not over them.



The strap needs to be securely connected both to the rod and the generator. It should not be wrapped around the rod as a means of connection. If this has been done, it should have been a temporary solution until a clamp could be found and used. If the wrap looks permanent, report it or fix it!

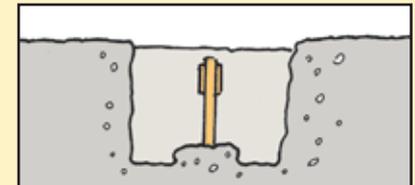
Continue with the Connections

Your generator frame or the trailer it sits on, has a built-in ground terminal. Make sure the threads on the terminal are clean and good and that the terminal is not loose. Also, make sure the wing nut is tight and the ground-wire lug is mated metal-to-metal with both the generator frame or trailer and any washers in use.

On the opposite end, you must use a clamp or a thumbscrew. If a clamp is used, make sure the area of the rod or underground pipe that the clamp is mated to is clean and has good, bare metal. You might use a knife to scrape the spot to ensure this. Make sure the clamp is tight and that the strap is tight within the clamp. You might find a strap that is attached to the clamp with copper wire. This should be temporary. If it looks permanent, report it or fix it!

Finish Well

As you wrap up your inspection of the grounding site, make sure the top of the ground rod is below the land surface. See if the soil around the ground rod has been conditioned with chemicals and water. Make sure that every generator has its own ground rod.



A Bid for BIDS PM

ONE DOLLAR BID, NOW 2,
NOW 2, WILL YA GIVE ME 2?
TWO DOLLAR BID, NOW 3,
NOW 3, WHO'LL GIVE ME 3?
THREE DOLLAR BID, NOW 4,
NOW 4, WHO'LL GO TA 4?

WHAT
BID DO I
GET FOR
**BIDS
PM?**

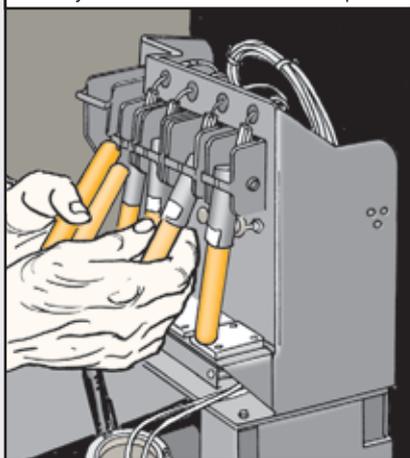


IT BETTER
BE A **HIGH
PM BID**
IF THEY
EXPECT
ME TO DO
MY BEST
DETECTIVE
WORK!

JBPDS

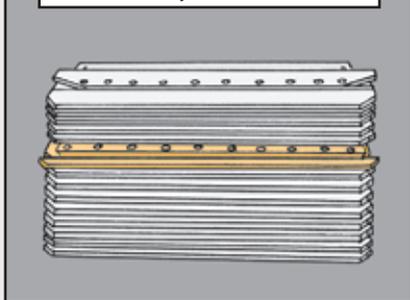
Vial stuff—To install the sample vials for the fluid transfer system, you must gently rotate them into place. If you jam them straight up into position, the needles for the vials are bent. Then you can't take a sample for that vial.

Gently rotate fluid transfer vials into place



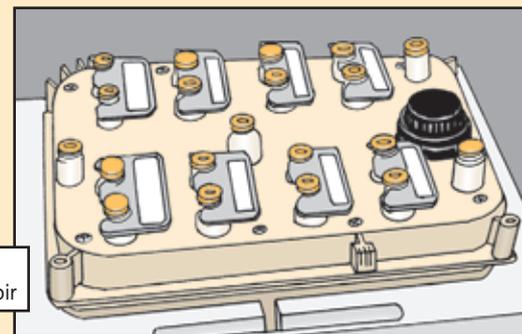
Carrier box—Before installing the box, make sure every card is seated. If they're not, you can bend or even break the cards when you push the box in place.

Make sure every carrier card is seated



Vials—For the vials for the assay reservoir, you need to remember to remove their caps before raising the reservoir into position. Otherwise, the caps bend the probes that fit in the vials.

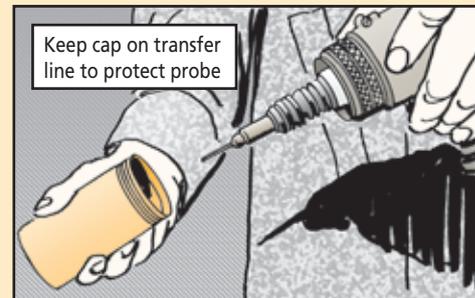
Take off caps before installing assay reservoir



Chemical biological mass spectrometer (CBMS)—It is heavy and difficult to maneuver, so be very careful when you install the CBMS. It's best if two people do the job. If you try to install it at the wrong angle, you can break the computer connector.

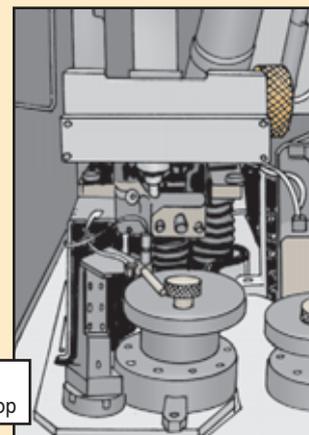
When you change the CBMS transfer line, put the cap on the line's connector to protect the probe from damage. It breaks easily. Don't coil the transfer line into loops any smaller than two feet across. If you force the line into smaller loops, you can break its glass capillary tube.

Keep cap on transfer line to protect probe



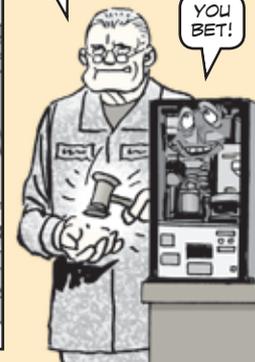
Liquid sampler—When you're cranking the sampler into place, turn the knob until it's hand tight **and then stop**. Some BIDS crews think you should turn the knob until you get two clicks. Not true. Turning the knob that much misaligns the sampler.

Turn knob until it's hand tight-then stop



WHEN IT COMES TO SAFETY, THIS BID IS WORTH EVERY PENNY!

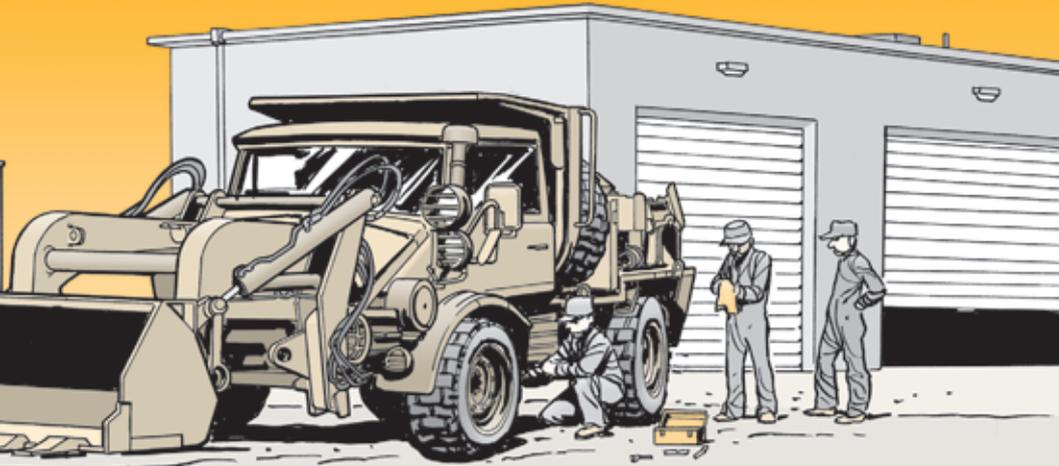
YOU BET!



SEE...



KEEP THESE PM TIPS IN MIND WHEN IT COMES TO THE EVAPORATOR RESERVOIR TANK (BOTTLE) FOR THE EXCAVATOR'S COMPRESSED AIR SYSTEM ANTIFREEZE UNIT.



Alcohol Only

Some of these vehicles have ANTIFREEZE stenciled on the side of the reservoir tank. That's a big NO-NO! Ethylene glycol monomethyl ether-known as antifreeze-should never be used in the reservoir tank. It plugs up hoses and corrodes lines.

So, make sure you paint over any antifreeze stencil near the excavator's reservoir tank. If the tank is already filled with antifreeze, drain it and refill it with alcohol, NSN 6810-00-543-7415. No flushing is necessary.

To prevent future problems, stencil USE ALCOHOL ONLY near the tank's filler cap. Remember that the pump has two settings-one for winter and one for the summer.



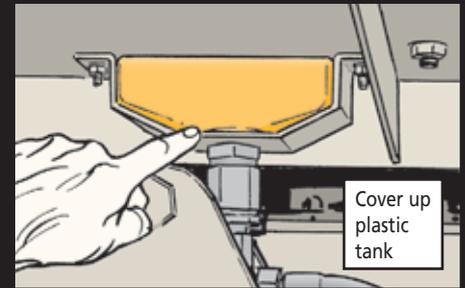
Stencil warning near cap

A Closer Look

Take a close look at the tank before the vehicle gets prepped for the paint shop.

The tank deteriorates and cracks from the elements and vehicle operation (vibration). Replace the tank using NSN 2930-01-457-5596 if it's in bad shape. If the tank looks OK, make sure it gets covered or taped before going off to the paint booth.

By the way, the tank's cap and gasket must be ordered separately with NSN 2930-01-457-5602.



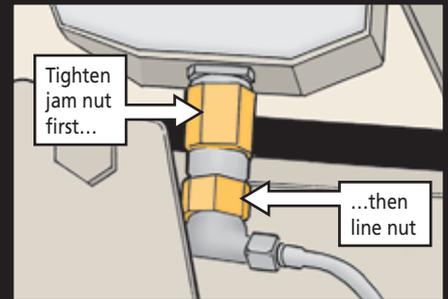
Cover up plastic tank

Some Fitting TLC

Handle the reservoir tank with TLC when tightening the fittings that attach the outlet line.

The plastic tank breaks easily if too much twisting is done. Also, its threads strip if nuts are over-tightened.

Tighten the jam nut before you tighten the line nut. If you run the line nut down too tight, you can strip tank threads or break the tank.

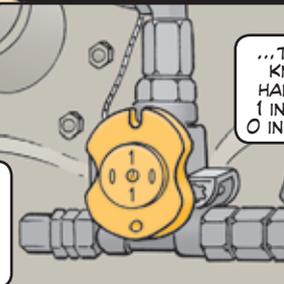


Tighten jam nut first...

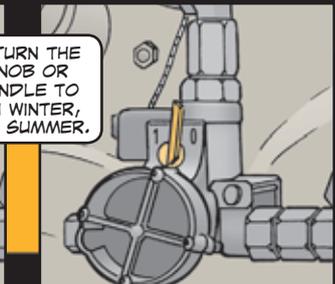
...then line nut



THE SETTING CAN BE A LITTLE CONFUSING, SO HERE'S THE STRAIGHT SCOOP...



...TURN THE KNOB OR HANDLE TO 1 IN WINTER, 0 IN SUMMER.



Keep the tank filled in the summer. That helps keep dirt and dust out.

IHMEE...

AIR FILTER PM REMINDERS

ENGINEER BATTALIONS IN SOUTHWEST ASIA (SWA) ARE GIVING THE INTERIM HIGH MOBILITY ENGINEER EXCAVATORS (IHMEE) A REAL RUN FOR THEIR MONEY.

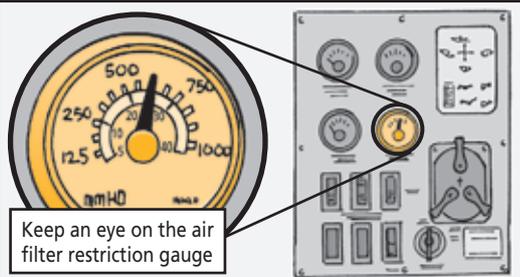
THEY'RE MOVING, DUMPING AND EXCAVATING DIRT AND SAND IN THE WORST POSSIBLE CONDITIONS.

KEEP YOUR IHMEE ON THE JOB BY FOLLOWING THE PMCS IN TM 5-2420-230-10 AND USE THESE PM TIPS FOR SMOOTH AIRFLOW THROUGH THE EXCAVATOR'S AIR FILTERS.

Filter Element Is Crucial

A clean air filter element is crucial in dusty and sandy areas. So keep an eye on the air cleaner restriction gauge located on the cab's dashboard.

If the gauge reads more than 25 in H₂O (625mm H₂O), it means the air filter element is dirty and needs to be cleaned.

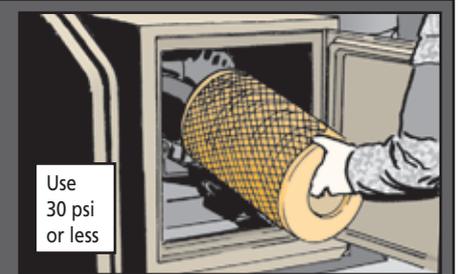


Keep an eye on the air filter restriction gauge

Use low-pressure air—30 psi or less—from inside-to-out, to loosen dirt and sand from the filter element. Never bang the element on a hard surface. That damages it. Replace the element once a year, or after six cleanings.

By the way, squeeze the dust and sand out of the dust cap on the bottom of the air filter element canister. Do this before the day's run.

Also, make sure the cap is in place on the canister. It has a bad record of getting knocked off when the air hose or tools are removed from the canister's storage compartment.

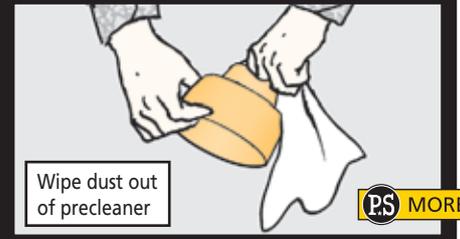


Use 30 psi or less

Dust Bowl Precleaner

The dust bowl precleaner is located on the back of the excavator's rear curbside fender. It collects fine dust before it gets into the cab air system's air filter element.

Remove the precleaner lid by unscrewing the knurled nut. Use a clean rag to wipe out the dust and sand that collects inside the precleaner.



Wipe dust out of precleaner



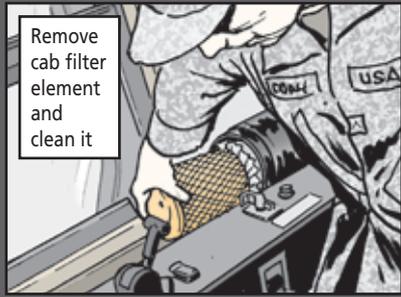
Cab Air System

The filter element for the cab's air system is located next to your right elbow when you're sitting in the driver's seat.

Most of the time, the air system keeps clean air circulating inside the cab, no matter how dusty the worksite is.

But a loss of fresh air inside the cab signals you to remove the filter element to see if it's clogged with dust and sand. If it is, clean it with low-pressure air.

Remove cab filter element and clean it



REMEMBER... FOR A SMOOTH AIRFLOW, DO YOUR PROPER PM ON THESE FILTERS!



PS END

DEUCE...

OPERATORS, GET DOWN ON YOUR HANDS AND KNEES.

NOW TAKE A CLOSE LOOK AT THE RUBBER ON THE DEUCE'S MID-ROLLERS AND FRONT AND REAR IDLER WHEELS.

HOW MUCH CHUNKING IS THERE?

How Much Rubber is Enough?

With vehicles racking up more and more hours of use, the question comes down to this: How much rubber is enough?

According to the PMCS check on Page A-4 of TM 5-2430-200-10, the mid-rollers need 50 percent of their rubber to work smoothly. The front and rear idler wheels are NMC if they're missing more than 25 percent of their rubber.

That's it—plain and simple.



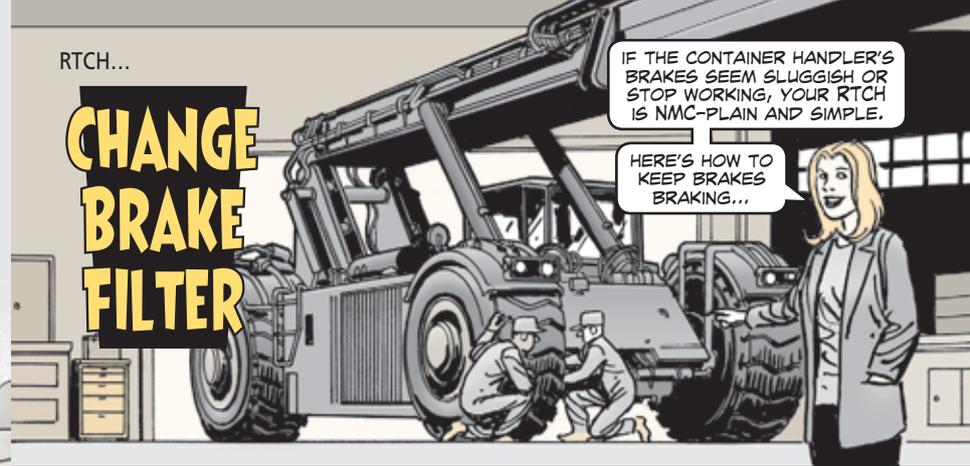
Mid-rollers need at least 50 percent of their rubber to work smoothly

RTCH...

CHANGE BRAKE FILTER

IF THE CONTAINER HANDLER'S BRAKES SEEM SLUGGISH OR STOP WORKING, YOUR RTCH IS NMC—PLAIN AND SIMPLE.

HERE'S HOW TO KEEP BRAKES BRAKING...



The brakes are hydraulically powered, so the brake system acts up when the hydraulic fluid is low.

A clogged front or rear brake cooling filter will also cause problems.

A clogged filter starves the vehicle's brake system for hydraulic oil. Low or no oil means the brake calipers won't open or close smoothly against the brake disc.

DEUCE...

OPERATORS, GET DOWN ON YOUR HANDS AND KNEES.

NOW TAKE A CLOSE LOOK AT THE RUBBER ON THE DEUCE'S MID-ROLLERS AND FRONT AND REAR IDLER WHEELS.

HOW MUCH CHUNKING IS THERE?

How Much Rubber is Enough?

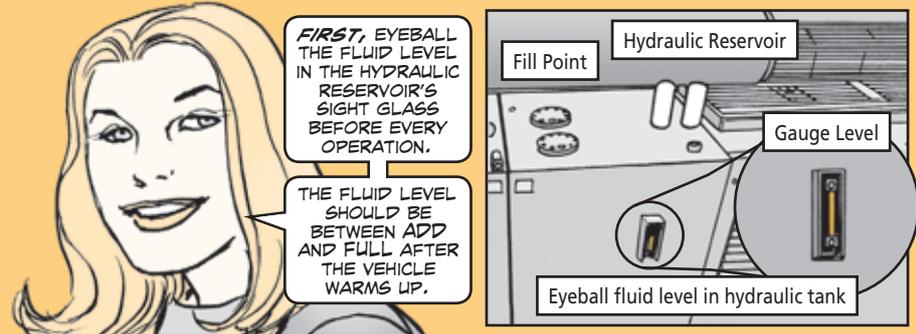
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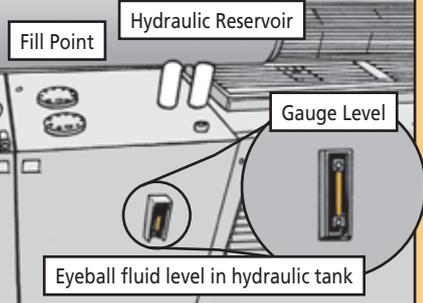


Mid-rollers need at least 50 percent of their rubber to work smoothly



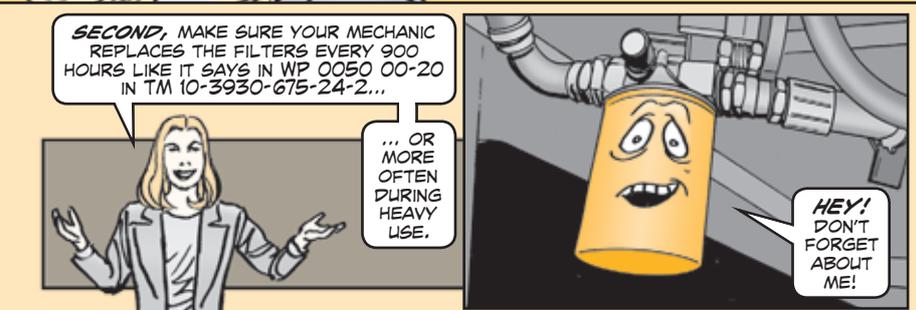
FIRST, EYEBALL THE FLUID LEVEL IN THE HYDRAULIC RESERVOIR'S SIGHT GLASS BEFORE EVERY OPERATION.

THE FLUID LEVEL SHOULD BE BETWEEN ADD AND FULL AFTER THE VEHICLE WARMS UP.



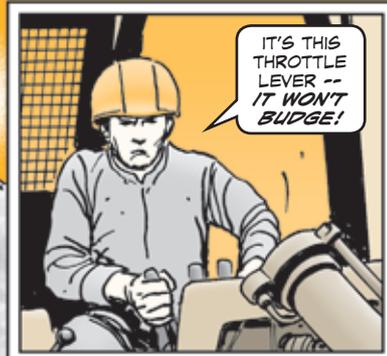
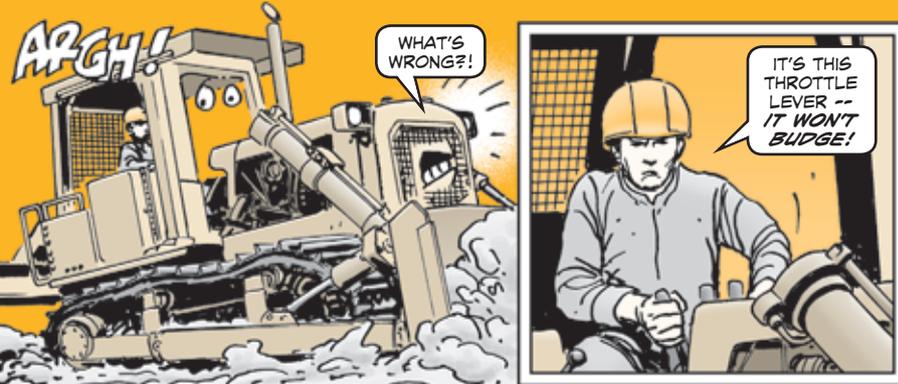
SECOND, MAKE SURE YOUR MECHANIC REPLACES THE FILTERS EVERY 900 HOURS LIKE IT SAYS IN WP 0050 00-20 IN TM 10-3930-675-24-2...

... OR MORE OFTEN DURING HEAVY USE.

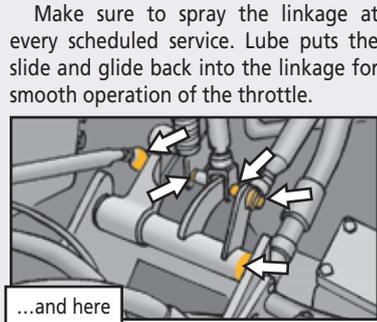
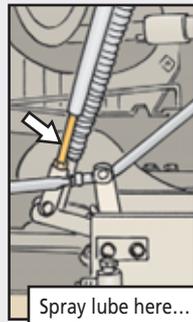


HEY! DON'T FORGET ABOUT ME!

STUCK LEVER LINKAGE REMINDER



To prevent these problems, wipe off the throttle linkage with a brush or clean rag. Then spray pivot points and connections with a shot of lubricating spray, NSN 9150-00-458-0075. Move the throttle lever back and forth a few times to work it in.

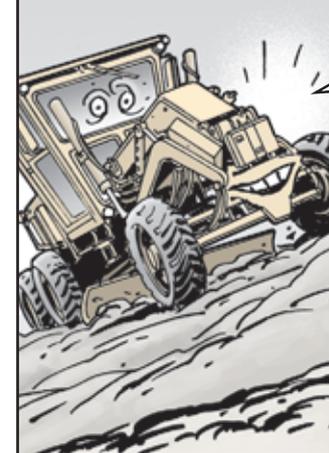


Make sure to spray the linkage at every scheduled service. Lube puts the slide and glide back into the linkage for smooth operation of the throttle.

Paint Shop Reminder
 Before your dozer heads off to the paint shop, tape over the throttle linkage where it connects into the mounting bracket. That way the linkage won't get stuck "in place." Just make sure the tape is removed when the dozer comes back from the paint shop.

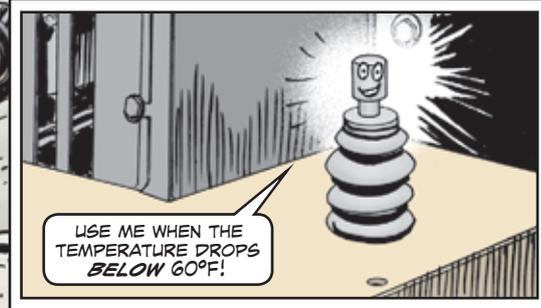
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USE HYDRAULIC UNLOADING VALVE IN THE COLD



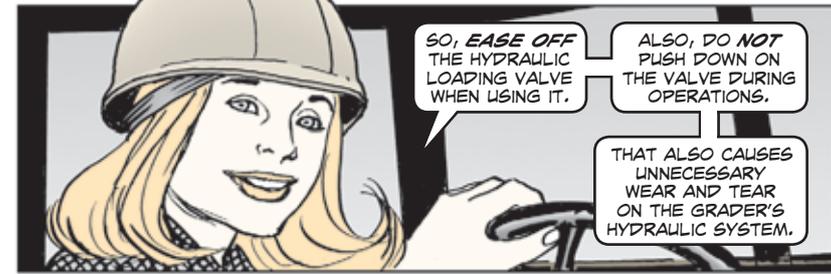
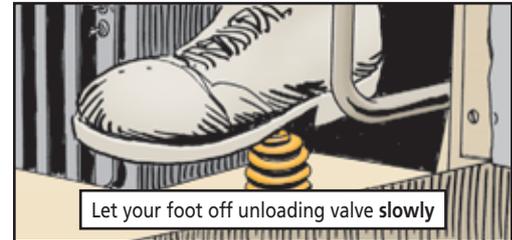
OPERATORS, WHEN TEMPS DROP BELOW 60°F, USE THE HYDRAULIC UNLOADING VALVE WHEN STARTING THE 130G ROAD GRADER'S ENGINE.

IT'S LOCATED BY YOUR LEFT FOOT WHEN YOU'RE SITTING IN THE DRIVER'S SEAT.



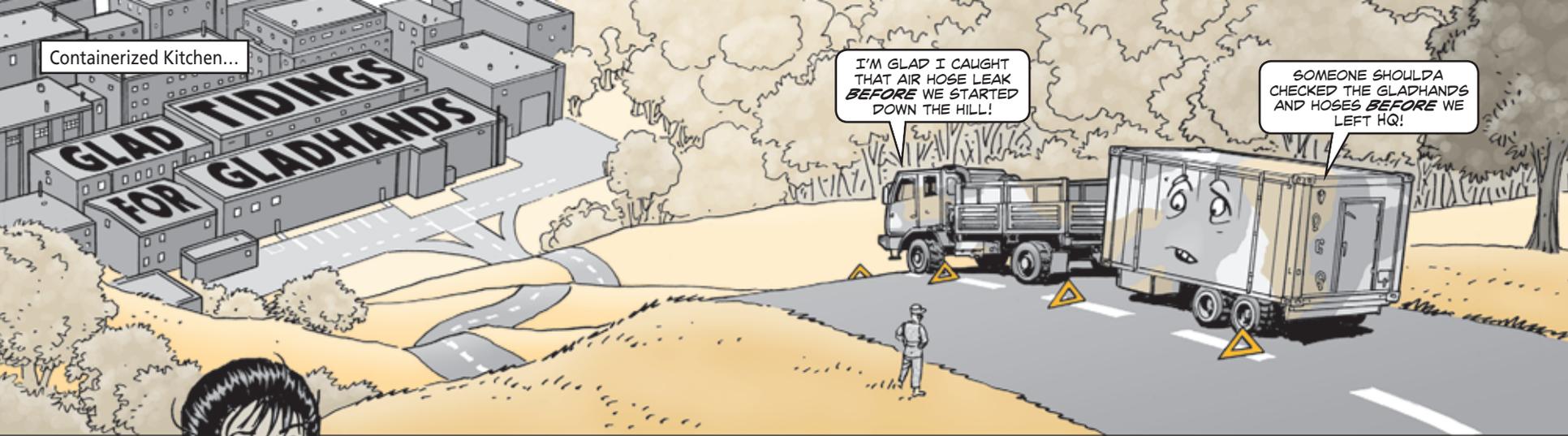
When you depress the valve, you're letting the vehicle's hydraulic pump spin free with no pressure, which reduces the load on the engine starter. This procedure saves a lot of wear and tear on the starter and pump when the hydraulic fluid gets thick and sluggish during cold weather.

As the engine warms up, do not take your foot off the valve too fast. That forces too much pressure from the pump into the system's main hydraulic lines. The end result is blown seals with lots of leaks.



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Containerized Kitchen...



OPERATORS, WHEN YOU'RE DOING PMCS ON YOUR CONTAINERIZED KITCHEN TRAILER, DON'T OVERLOOK THE GLADHANDS AND THEIR HOSES.

THEY'RE THE CONNECTION FOR THE AIR SUPPLY BETWEEN THE TOWING VEHICLE AND THE TRAILER.

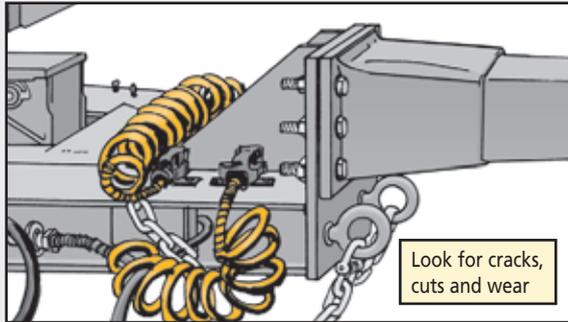
ANY BREAK IN THAT AIR SUPPLY CAN WEAKEN THE AIR BRAKES IN THE TRAILER.

THAT'S WHY YOU MUST INSPECT THE GLADHANDS AND HOSES BEFORE EACH OPERATION.

BE ON THE LOOKOUT FOR ANYTHING THAT MIGHT LEAD TO AN AIR LEAK.

Hoses

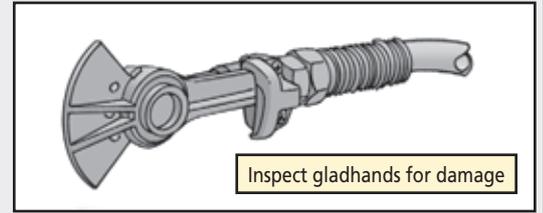
Sun, rain, heat and cold all take a toll on the hoses. Insulation dries out and cracks. Another culprit is rough handling; it causes major wear and tear. Either way, air leaks and brakes fail. Inspect the hoses for dry rot, cracks, wear, cuts and gouges.



Look for cracks, cuts and wear

Gladhands

It's a fact: gladhands take a beating over time. Look for loose or broken clamps, fittings and connectors. Also inspect the seals for wear, tears and flattening. These are air leaks waiting to happen.

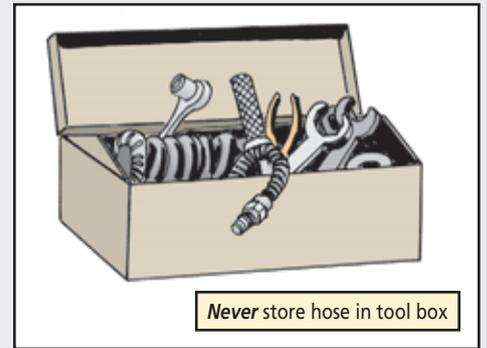


Inspect gladhands for damage

If you find any damage to the gladhands or hoses, report it to unit maintenance.

The Best Protection

So, what's the best way to protect the gladhands and hoses from damage when you set up the kitchen? Well, storing them in a crowded, jumbled tool box is not the answer. That's just inviting breaks, cuts and punctures. The best protection is to remove them from the trailer so they won't get stepped on. Then store them inside the kitchen out of harm's way, either in a storage cabinet or on a rack.

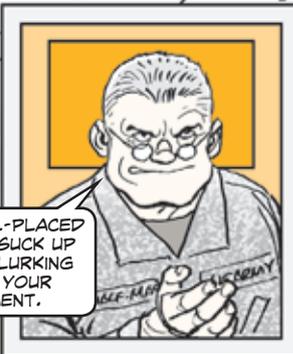


Never store hose in tool box

Desiccants: THE DRY FACTS

A DESICCANT IS A **DRYING AGENT**.

A FEW WELL-PLACED BAGS CAN SUCK UP MOISTURE LURKING AROUND YOUR EQUIPMENT.

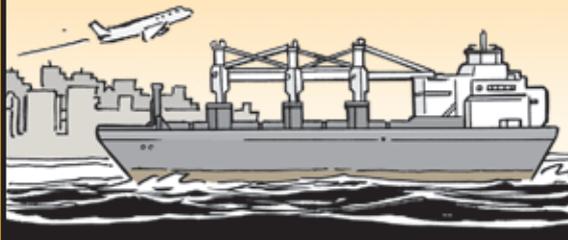


FELLOW DESICCANTS! PROTECT THE EQUIPMENT AT **ALL COSTS!!**

HERE ARE JUST A FEW USES FOR DESICCANTS...

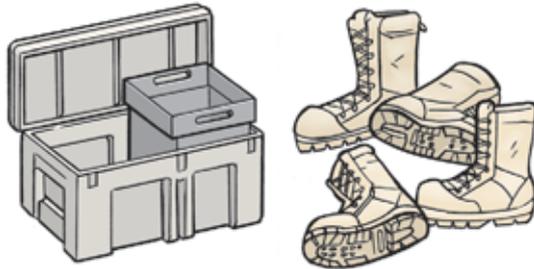


- in cargo shipments by land, sea or air



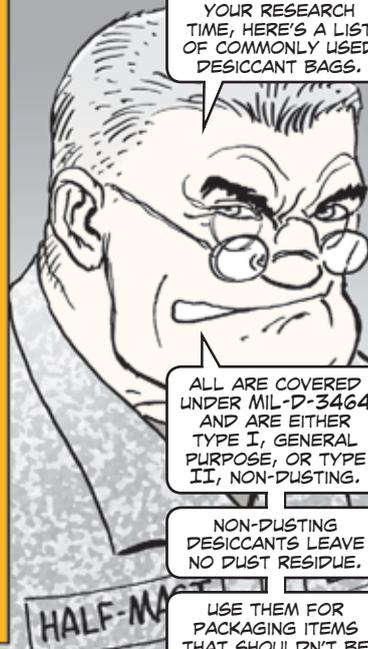
- to protect electronic gear
- to prevent metal spare parts from corroding
- in camera and laptop computer bags

- in footlockers and inside boots that you're not wearing



THE FED LOG CONTAINS SCORES OF NSNs AND A SLEW OF TECHNICAL DATA.

SO TO CUT DOWN YOUR RESEARCH TIME, HERE'S A LIST OF COMMONLY USED DESICCANT BAGS.



ALL ARE COVERED UNDER MIL-D-3464 AND ARE EITHER TYPE I, GENERAL PURPOSE, OR TYPE II, NON-DUSTING.

NON-DUSTING DESICCANTS LEAVE NO DUST RESIDUE.

USE THEM FOR PACKAGING ITEMS THAT SHOULDN'T BE EXPOSED TO DUST.

NSN 6850-00-	Unit of Issue	Numbers of Bags	Bag Size (in inches)	Type
965-2280	Bag	4	5.5 x 4.75 x .75	I
999-1094	Can	5	3.75 x 2.25 x .25	I
856-7955	Can	18	8.5 x 4 x 1.75	I
263-8640	Can	40	7 x 4 x 1.12	I
935-9793*	Drum	120	8.5 x 4 x 1.75	II
264-6573	Can	130	5 x 4.75 x .5	I
264-6572	Drum	150	8.5 x 4 x 1.75	I
935-9794	Drum	240	7 x 4 x 1.12	II
264-6562	Can	250	3.75 x 2.25 x .25	I
809-7321*	Can	300	3.75 x 2.25 x .25	I
264-6571	Drum	300	7 x 4 x 1.12	I
935-9795	Drum	400	5.5 x 4.75 x .75	II
264-6561*	Can	450	2.5 x 2.25 x .20	I
264-6568	Can	450	2.75 x 2.25 x .25	I
264-6574	Drum	500	5.5 x 4.75 x .75	I
935-9799*	Can	650	2.5 x 2.25 x .20	II
619-7805	Drum	800	5 x 4.75 x .5	I
935-9796*	Drum	1,000	3.75 x 2.25 x .25	II
264-6564	Can	1,200	2.5 x 2.25 x .20	I
619-7804	Drum	1,300	3.75 x 2.25 x .25	I

*These NSNs are not listed on the AMDF. Order them on DD-Form 1348-6 from RIC SMS and put "NSN not on AMDF" in the REMARKS block.



STORING FUEL CANS!

Dear Half-Mast,
 What's the correct way to store empty JP-8 fuel cans when they're not mounted on vehicles?
 MSG D.S.

Dear Master Sergeant D.S.,

If the fuel cans are **empty** and have **never** had any fuel in them, store the cans the same way you would store any other plastic container: in a shed, MILVAN or similar place.

But if the cans have held fuel in the past, they may still contain some fuel and fumes—even though they look empty. In that case, take the caps off the cans. Drain out any leftover fuel into approved containers. Store the open cans in a well-ventilated area away from heat or flames. Give them a few days to air out and let the fumes scatter. Then cap the cans to keep out dirt, bugs and water. Now you can store the fuel cans as if they had never had any fuel in them.

Half-Mast



Connie's POST SCRIPTS

TRACKING CORROSION-RELATED MAINTENANCE

In an effort to reduce the annual cost of corrosion in Army vehicles, make sure you write "170 Corroded" in the failure block of DA Form 2407 or DA Form 5990-E. This specific code helps the Army track costs when corrosion is identified as the root-cause of the part's failure for required maintenance. And that can lead to product improvements.

HMMWV Traversing Gear Assembly Upgrade

Your M1113 and M1114 HMMWV's original gunner's protection kit traversing gear assembly, NSN 5340-01-536-2054, is no longer available. So get the upgraded version using NSN 1005-01-563-4655. These assemblies are interchangeable.

However, the crank handles you need are **not** interchangeable. Note that the original crank handle, NSN 5340-01-536-0999, fits over the gear shaft and is held in place with set screws. The upgraded crank handle, NSN 5340-01-563-6839, fits *into* the gear shaft and is held in place with a quick-release pin.

M978 HEMTT Filter Element NSN

Use NSN 4330-01-477-7985 to get the fluid filter element for your M978 HEMTT fuel tanker's filter-separator assembly. It replaces NSN 4330-00-983-0998. This applies only to filters used in the type-A filter canister (15-filter type) shown as Item 11 in Fig 438 of TM 9-2320-279-24-2. Make a note until the TM and IETM are updated.

ASV Relay Part Correction

TACOM SOUM 08-022 told you how to fix your armored security vehicle's turret relay problem. But it gave the wrong part number and NSN for the required relay! If you've already ordered PN 6288971 and NSN 5945-01-262-2018 to comply with this SOUM, cancel those orders! Then use PN SBC-4401D and NSN 2920-01-395-3879 to get two of the correct relays.

ARMORED SECURITY VEHICLE HOIST

Need the hoist listed in TM 9-2320-307-24P as part of the ASV power pack lifting fixture special tool, NSN 4910-01-496-4173? Get it using NSN 3950-01-564-7789. And note that the other power pack lifting fixture components without NSNs will be assigned NSNs soon. If you need the parts before that happens, order them by part number and CAGE code.

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

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

**ONLY
YOU CAN
DELAY
THE GRIM
REAPER!
PREVENT
FOD.**



**YOUR LIFE
DEPENDS
ON IT!**

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