

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

TB 43-PS-669, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user. Masculine pronouns may refer to both genders.

**ISSUE 669 AUGUST 2008****COMBAT VEHICLES**

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Stryker Wheel Stud Nuts  
Stryker Differential Fill Plug Gasket  
Stryker Refueling on the Move  
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M113-Series FOV Idler Wheel Lubing  
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**MSG Half-Mast**  
**PS, the Preventive Maintenance Monthly**  
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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

0815505

PS, The Preventive Maintenance Monthly (ISSN 0475-2953) is published monthly by the Department of the Army, Redstone Arsenal, AL 35898-5000. Periodical postage is paid at the Huntsville, AL post office and at additional mailing offices.

Postmaster: Send address changes to PS, The Preventive Maintenance Monthly, USAMC LOGSA (AMXLS-AM), 5307 Sparkman Circle, Redstone Arsenal, AL 35898-5000.

Issue 669

**PS**

August  
2008

**THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY**

TB 43-PS-669

Approved for  
Public Release;  
Distribution is  
Unlimited

**NESTING BIRDS!**

**THIS  
IS A  
JOB...**

**...FOR  
THE FOD-  
BUSTERS!**

(NOE  
KUBER)



**WHO YA GONNA CALL?  
SEE PAGE 27**

# Now That's a Plan

THE DICTIONARY DEFINES THE WORD PLAN AS A METHOD OF DOING OR MAKING SOMETHING OR OF ACHIEVING AN END.



Everybody makes plans; it's just human nature. For instance, before you go on a road trip, you first decide on a destination. Then you consult a roadmap, determine what highways to take, make a few motel reservations, maybe even choose some interesting sights to visit along the way.



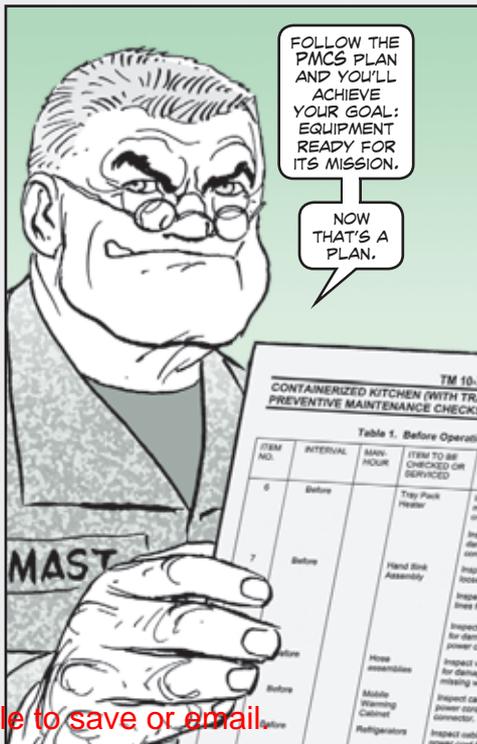
Or let's say you're building a playhouse for your children. You don't just start nailing boards together willy-nilly. No, first you plan the dimensions. After that come other decisions: figuring the board feet, selecting the type of wood and the correct hardware, choosing the primer and paint.

Plans are important because they provide a direction and a goal.

For a soldier maintaining equipment, few plans are as important as Preventive Maintenance Checks and Services (PMCS). PMCS is a clear, workable plan that guides you step-by-step to achieve one end: keeping your gear in good shape and ready for its mission.

The PMCS table identifies tools and materials. It tells you when to do the checks and services—Before, During or After Operations; or Weekly, Quarterly or Semi-annually. The table lists the items you must check or service. It describes the procedures you must do, such as inspecting, cleaning, tightening or lubing. It tells you what faults will keep your equipment from performing its mission.

In other words, it's all spelled out and planned for you. No guesswork required.



FOLLOW THE PMCS PLAN AND YOU'LL ACHIEVE YOUR GOAL: EQUIPMENT READY FOR ITS MISSION.

NOW THAT'S A PLAN.

## CONTAINERIZED KITCHEN (WITH TRAILER) PREVENTIVE MAINTENANCE CHECKS

Table 1. Before Operation

ITEM NO.	INTERNAL	MAX. HOUR	ITEM TO BE CHECKED OR SERVICED
6	Before		Tray Pouch Holder
7	Before		Hand Sink Assembly
	Before		Hose assemblies
	Before		Mobile Warning Cabinet
	Before		Refrigerators

## PS THE PREVENTIVE MAINTENANCE MONTHLY

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Stryker...

YOUR WHEEL HUBS ARE LOW ON OIL, SO I'M GONNA ADD SOME!

ARE YOU SURE THEY'RE LOW?

DID YOU WAIT LONG ENOUGH BEFORE CHECKING THEM?



## Hub Oil Simplified

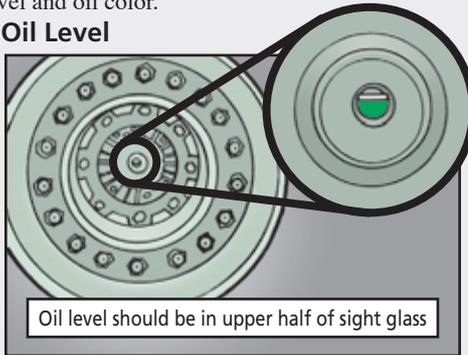
The wheel hubs on your Stryker have sight glasses for checking the oil, drivers. Easy stuff, huh?

It's a little more complicated than you might think. Checking the oil is actually a two-step process that involves oil level and oil color.

Wheel hub oil levels should be checked after every operation—but not immediately after. You need to allow about an hour for the oil to run back from the planetary gears into the hub to get an accurate reading. Do it too soon and you'll end up overfilling the hubs.

The correct oil level should be in the upper half of the sight glass, usually between  $\frac{3}{4}$  and  $\frac{7}{8}$  full.

### Oil Level



Oil level should be in upper half of sight glass

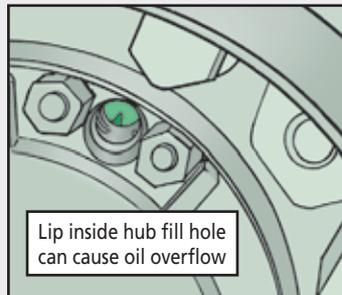
### Oil Color

Oil color in your Stryker's hubs will vary. Knowing how to read the color code can head off damage.

New oil will be yellowish to clear in color. It soon turns black—usually within the first 25 miles or so. Either of those two colors are OK as long as the level is good.

But if the oil turns milky or greenish in color, you've got a problem. Those colors mean the oil is contaminated with water and has lost its ability to lubricate. Your Stryker is NMC until your mechanic can flush the contaminated oil and refill the hub with SAE 75W90 oil.

Mechanics, go slow and easy when replacing the oil. There is a small lip inside the filler hole that makes filling the hub slow work. Go too quickly and the oil will overflow all over the hub.



Lip inside hub fill hole can cause oil overflow

Stryker...

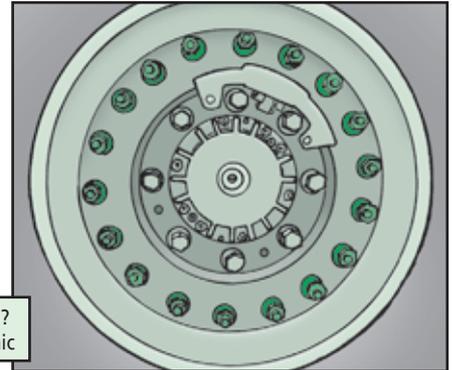
## Loose Nuts = Loose Wheels

A LITTLE THING LIKE A LOOSE NUT CAN HAVE SOME PRETTY BIG CONSEQUENCES FOR YOUR STRYKER, DRIVERS.



Just one loose wheel nut will put more strain on its neighbors. They loosen and, before you know it, you've got a runaway wheel.

Look closely at the wheel stud nuts when you perform before operation PMCS. If you spot any rust or shiny areas under the nuts, your vehicle is NMC. Report it. Your mechanic will inspect and then retighten the nuts to 226-236 lb-ft.



Wheel nuts loose? Call your mechanic

## Gasket Makes a Differential Difference

Mechanics, when you remove the fill plug to add oil to the differential, take a close look at the metal gasket on the plug.

If the gasket is missing or damaged, oil will leak from around the plug. Lose enough oil and the differential gears can lock up. A replacement gasket comes with NSN 5330-12-124-0982.

If the gasket is in good shape, clean it off and wipe around the opening in the differential before reinstalling the plug. Dirt or sand under the gasket will also allow a leak.



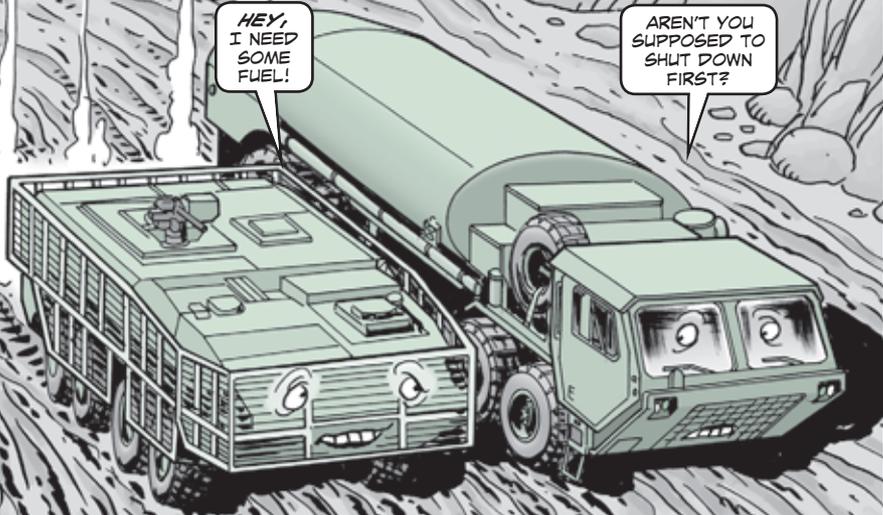
Differential fill plug's metal gasket missing or damaged? Replace it

Stryker...

# Hot Refueling Allowed?

HEY, I NEED SOME FUEL!

AREN'T YOU SUPPOSED TO SHUT DOWN FIRST?



Dear Half-Mast,

In Iraq, saving time on a mission can be vitally important. So we like to refuel our Strykers on the move.

"Hot refueling" allows us to complete a mission faster and get our Strykers back out for the next mission quicker than if we're required to do a complete shutdown.

So, is there any reason why we *can't* refuel our Strykers on the move?

CW4 R.W.F.

Dear CW4 R.W.F.,

According to PM Stryker, you *can* refuel your Strykers on the move. However, there are three restrictions.

1. You must be with a deployed unit.
2. All transmitters **must be turned off**. That includes the crew intercommunications system and the Enhanced Position Location and Reporting System (EPLRS). However, the FBCB2 systems can remain fully powered and operating.
3. Power to the antennas, particularly the high frequency antennas, **must be off**.

Since it applies to deployed units only, this information will not be added to the TMs.

*Half-Mast*

M1-Series Tanks...

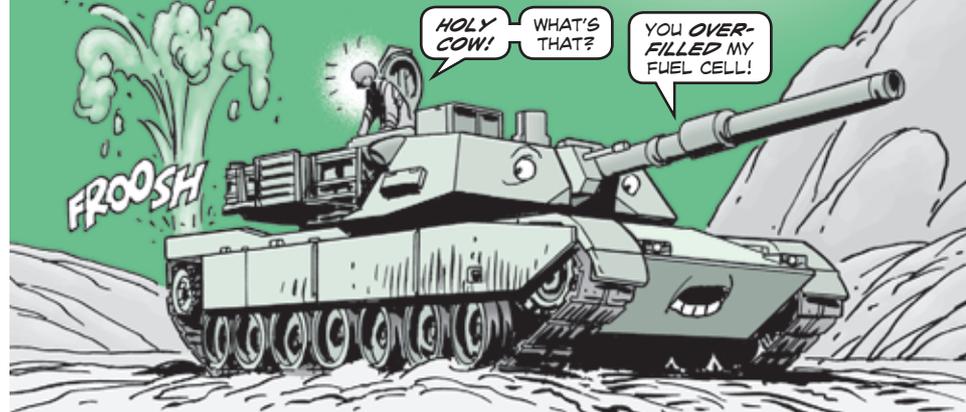
# HOW FULL IS TOO FULL?

HOLY COW!

WHAT'S THAT?

YOU OVER-FILLED MY FUEL CELL!

FROOSH



Crewmen, when it's time to fill the fuel cells on your M1-series tank, ask yourself, "How full is too full?"

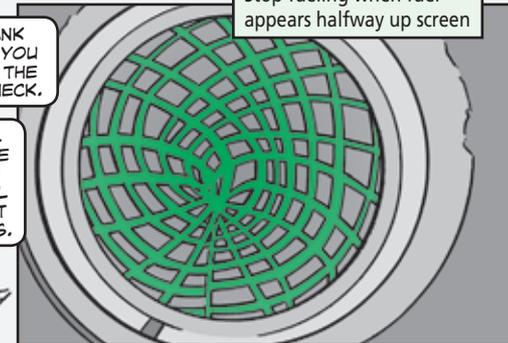
The answer too many tankers come up with is, "As full as I can get it!" Those are the same tankers who have to clean up a spill when their fuel cells overflow.

As fuel heats up, it expands. So unless you leave room for this expansion when filling the cells, you'll end up with a fuel geyser.

Stop fueling when fuel appears halfway up screen

WHEN IT'S TIME TO TANK UP, STOP AS SOON AS YOU SEE FUEL HALFWAY UP THE SCREEN IN THE FILLER NECK.

THAT'LL KEEP THE FUEL IN THE CELL WHERE IT BELONGS.



## M113A3 FOV Hose Clamp Change

The heater kit hose clamp shown as Item 21 in Fig 310 and Item 22 in Fig 348 of TM 9-2350-277-24P (EM 0040) is too large. Use NSN 4730-00-908-6293 to get the correct clamp.

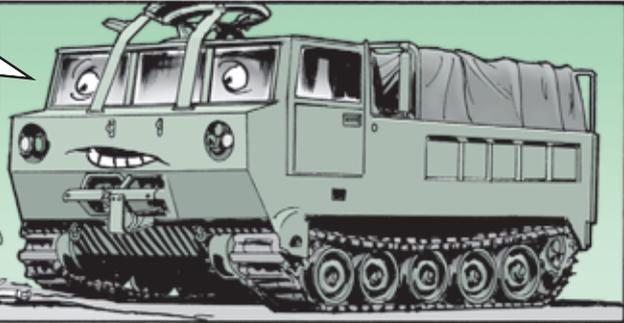
# IDLER WHEEL LUBING A MUST!

WHEW! THAT TAKES CARE OF ALL YOUR LUBING!



NOT 'TIL YOU LUBE MY IDLER WHEEL SUPPORT ARMS!

YOU OVER-LOOKED 'EM AGAIN!



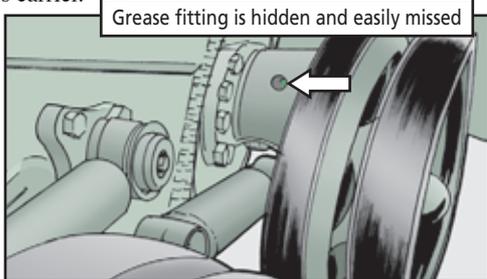
Crewmen, it's out-of-sight, out-of-mind when it comes to lubing the idler wheel support arms on your M113-series carrier.

Support arms sit behind the idler wheels and are often covered with mud, so the grease fittings are easy to miss.

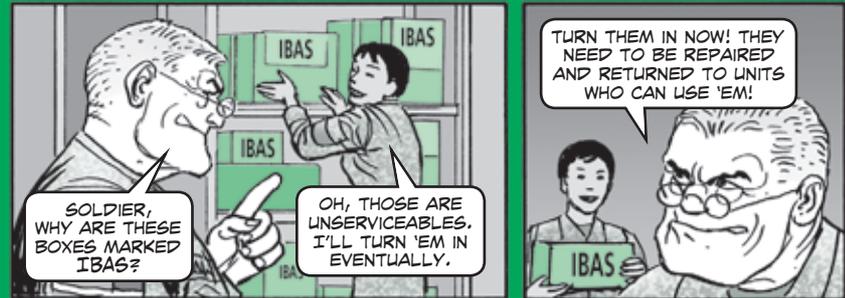
If you forget too often, though, the bearings dry out and the idler arm freezes. When the arm won't move, you can't adjust track tension. Your vehicle is NMC.

Lube both idler arms with GAA every 150 hours of operation, 1,500 miles or semiannually, whichever comes first. Clean the fittings with dry cleaning solvent first to keep dirt from mixing with the grease.

Put a dab of lube on the grease fittings immediately after washing or fording the vehicle, too. That'll keep the valves from rusting.



# Turn in IBAS Unserviceables



The Army is running out of Bradley A3-series improved Bradley acquisition system (IBAS) repair parts because units aren't turning in unserviceable IBAS components.

The depot doesn't have IBAS components to repair and the supply pipeline goes dry. The Army is forced to purchase new replacement parts, which costs a whole bunch of money.

So if you have any IBAS items (weapon system code EH) that are considered unserviceable/repairable (condition code F), turn them in NOW!

These items are in especially short supply:

Item	NSN	P/N
Periscope head assembly	1240-01-442-4825	13588710
Monocular assembly	1240-01-464-1068	13588680
Xenon tracker assembly	1240-01-466-4050	13588692
Missile control subsystem	1430-01-462-8506	13588703
Laser shutter assembly	5855-01-462-8522	13588672
Collimator, infrared	5855-01-462-9048	13588681
Circuit card assembly, IBAS frame buffer	5865-01-462-1739	13588707
Lower target acquisition subsystem	5865-01-462-8513	13588676
Target acquisition subsystem	5865-01-462-8514	13588671
Target acquisition system block 1	5865-01-537-0124	13620293
Lower target acquisition system block 1	5865-01-537-0134	13620294
Circuit card assembly, quad C40	5998-01-462-8510	13582747
Circuit card assembly, missile interface	5998-01-462-8512	13588709
Circuit card assembly, range logic card	5998-01-462-9833	13492680
Circuit card assembly, power supply assembly	6130-01-473-1472	13586629
Biocular display assembly	7025-01-463-4586	13588679

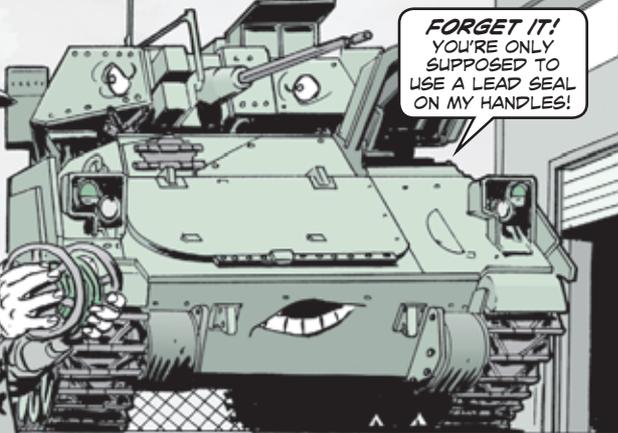
All of these items have a recoverability code of D.

# GET A HANDLE ON IT!

I'VE GOT THAT SAFETY WIRE FOR YOUR EXTERNAL FIRE SUPPRESSION SYSTEM HANDLE!



FORGET IT! YOU'RE ONLY SUPPOSED TO USE A LEAD SEAL ON MY HANDLES!



And don't make the mistake of using safety wire to hold the handle in place. Safety wire may last longer than the lead seal, but it won't snap when you try to pull the handle. And you sure won't have time to cut it off!

*Half-Mast*

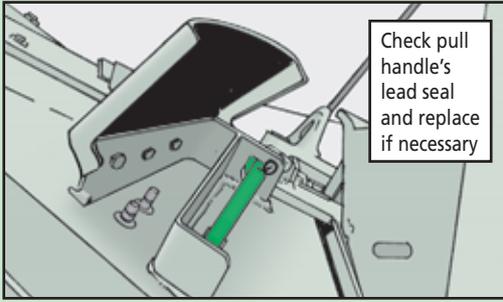
P.S. Page 14-8 of TM 9-2350-284-20-1-5 (Feb 97) on EM 0043 says you'll find the lead seal press for your Bradley listed as Item 146 in App G. You may have noticed that App G ends with Item 145. The lead seal press is actually Item 87.1, NSN 5120-00-224-7592.

Dear Half-Mast,  
I'm hoping you can help settle an argument. On some of our Bradleys, the lead seals on the fire suppression system's external pull handles have corroded. Some of them are so bad that they crumble away when touched. Some of the folks in our motor pool say that the pull handles don't need the extra protection since they're covered by a fold-down rubber guard. I'm not so sure. What do you think?

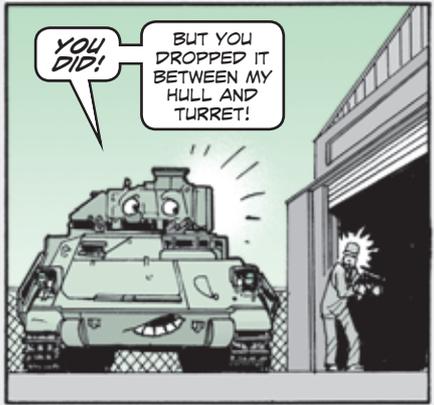
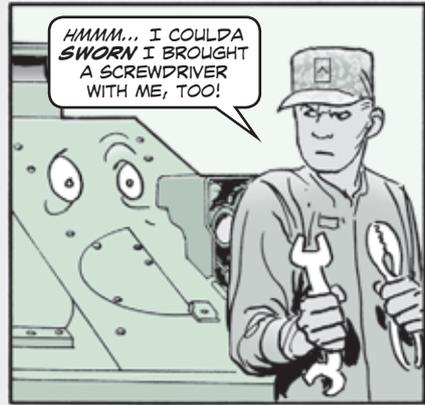
SFC W.P.K.

Dear Sergeant W.P.K.,  
I think you're right, Sergeant! The rubber guard will protect the pull handle from most problems, but not everything. It takes only a chance encounter with some stray branches in the field to accidentally pull the handle and trigger the fire suppression system.

Your best bet is to inspect the pull handle during PMCS and replace the lead seal if it doesn't appear strong enough to hold the handle in place. Get a replacement lead seal with NSN 5340-00-835-9815 and seal it with a hand press, NSN 5120-00-224-7592.



# TURRET CLEANUP A MUST

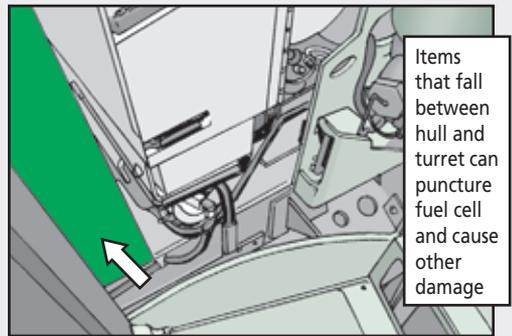


The old saying, "There's a place for everything and everything in its place," takes on new meaning when you're talking about your Bradley turret, crewmen.

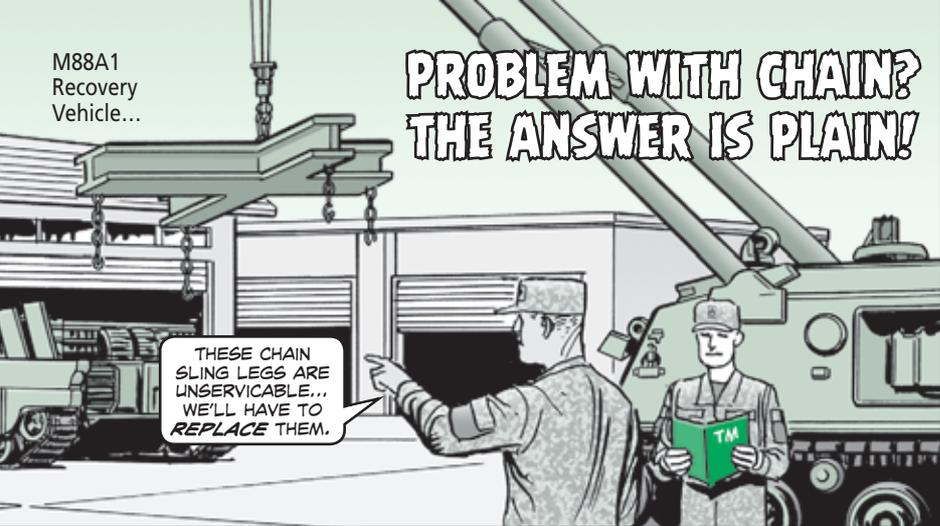
Loose items, such as tools, parts, trash, and TMs, can put you out of operation fast. If these or other items get under the floor or between the hull and turret, they can break parts, cut cables, damage ammo, and on and on.

One soldier accidentally dropped and forgot a 25mm cleaning rod. When the turret was traversed, the rod punctured the lower fuel cell and the Bradley was NMC for weeks.

A daily housecleaning inside the turret and under the floorboard will help get rid of loose items before they become a repair problem.



# PROBLEM WITH CHAIN? THE ANSWER IS PLAIN!



THESE CHAIN SLING LEGS ARE UNSERVICABLE... WE'LL HAVE TO REPLACE THEM.



WE GOTTA GET A WHOLE NEW SLING? THAT'S A LOTTA MONEY! I WONDER IF THERE'S ANOTHER WAY?



WHEN IT COMES TO YOUR M88A1'S ENGINE SLING, THINK SAFETY FIRST!

Dear Half-Mast,

I have an M88A1 engine sling, NSN 3940-00-622-7288, with two unserviceable chain sling legs.

Fig 318 of TM 9-2350-256-24P-1 lists only the sling. The characteristics data in FED LOG gives PN 11671982 for the legs, but the part number doesn't cross to an NSN.

We really don't want to pay \$1,900 for a new sling just because of some bad chain legs. Can you help?

SFC R.V.F.

Dear Sergeant R.V.F.,

Sorry, Sergeant, but there are no repair parts for the engine sling. The SMR code for the sling is PEFZZ, which means it must be replaced upon failure.

TACOM's thinking on the matter is safety. And it's hard to fault their reasoning. After all, if the legs are broken or missing, the overall condition of the sling itself is probably not that good either.

Trust me—you don't want a sling failure to happen in the middle of lifting that engine!

*Half-Mast*

# WHAT TO DO WITH THAT EXTRA WIRE



WHEW! I FEEL A LOT BETTER NOW THAT MY FIRE WIRE IS PROPERLY ROUTED!

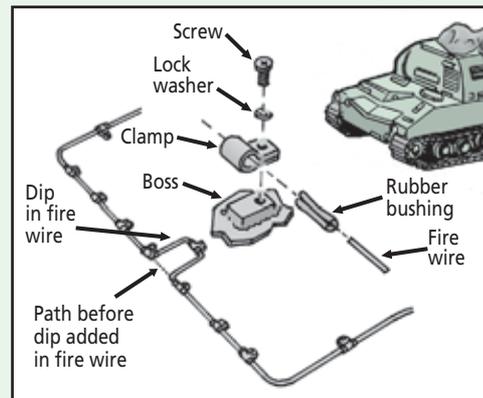
WE WOULD'VE DONE IT QUICKER...

...BUT YOUR POWER-PACK HAD TO BE REMOVED FIRST!

The fire wire in the lower front of the engine compartment of some M992A2 ammo carriers has some extra slack, mechanics. During production, that slack was coiled up in the corner of the engine compartment to keep it from getting cut or damaged.

Problem is, the extra wire was supposed to be formed into a dip at the front of the engine compartment to provide better fire coverage.

So if your carrier has a serial number of 821 or higher, you'll need to secure the extra wire the next time the powerpack is removed. Just gather all the slack in the middle of the engine compartment and clamp the fire wire in place to the existing boss on the carrier's hull. Make sure you don't crimp the wire.



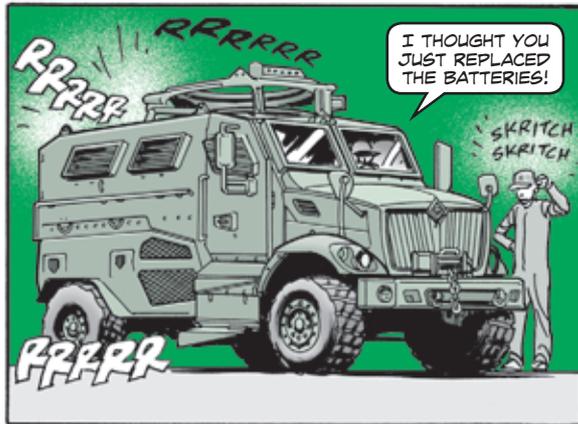
HERE ARE THE PARTS YOU'LL NEED...

Item	NSN
Rubber bushing	5365-99-881-6505
Loop clamp	5340-00-057-2890
Lock washer	5310-00-045-3296*
Machine screw	5305-00-984-6208*

\*These NSNs bring 100 of the items.

If MWO 9-2350-372-30-1 has been applied to your vehicle, don't worry about the fire wire. It's no longer used on modified vehicles. The fire wire should be removed the next time the powerpack is pulled.

# Battery Removal and Installation



You've just deployed to the sandbox again, but this time something's different. There's a new vehicle in your unit's motor pool. Now you have the IMG mine resistant ambush protected (MRAP) vehicle, NSN 2355-01-553-4634.

Whenever a new vehicle comes on the scene, the challenge of maintaining it comes right along with it. And knowing how to remove and install the battery is a basic maintenance task that you mechanics ought to know.

Not sure how to do this on the MRAP? You have to follow the right instructions, or you could blow the transmission control module 10-AMP fuse. Then you won't be able to start your engine. The battery cable disconnect procedures aren't correct in the TMs, so here's the solution for you.

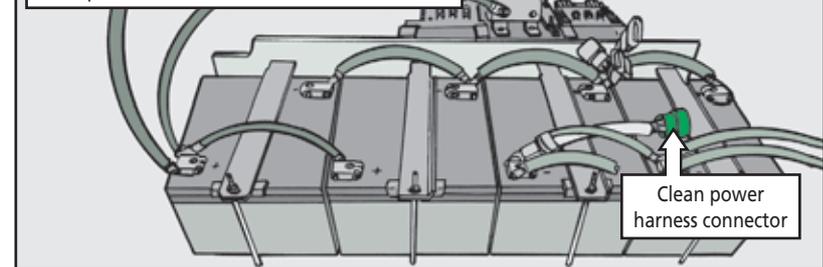
## Removing the Battery

1. Disconnect the clean power harness connectors.
2. Disconnect the ground terminal. The conduit is black.
3. Disconnect the positive 24-volt terminal. It has a blue conduit.
4. Disconnect the remaining battery terminals.
5. Remove the battery hold-down clamp.
6. Remove the batteries.

## Installing the Battery

1. Install the batteries.
2. Install the battery hold-down clamp.
3. Connect the positive 24-volt terminal, shown with the blue conduit.
4. Connect the remaining cables.
5. Connect the ground terminal, shown with the black conduit.
6. Connect the clean power harness connectors.

When replacing batteries or disconnecting battery cables on IMG MRAPs, always disconnect clean power harness connectors first



For more information on this, eyeball TACOM LCMC's MAM 08-017. You can view it on the AEPS website using your AKO user name and password:

[https://aeps2.ria.army.mil/commodity/mam/tacom\\_wn/08/mam08-017a.html](https://aeps2.ria.army.mil/commodity/mam/tacom_wn/08/mam08-017a.html)

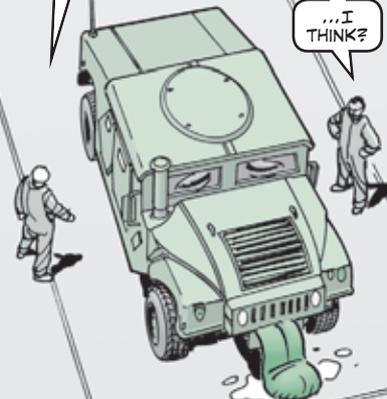
Lead-Acid Batteries...

# USE THE LABEL!

LOOKS LIKE THE BATTERIES DIED!

BUT I JUST INSTALLED THOSE BATTERIES—IT WASN'T THAT LONG AGO...

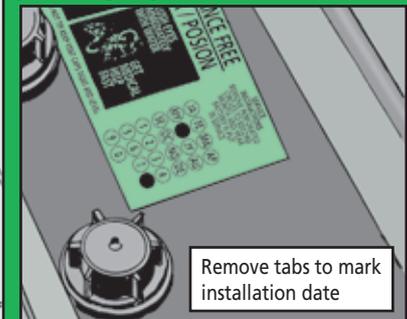
...I THINK?



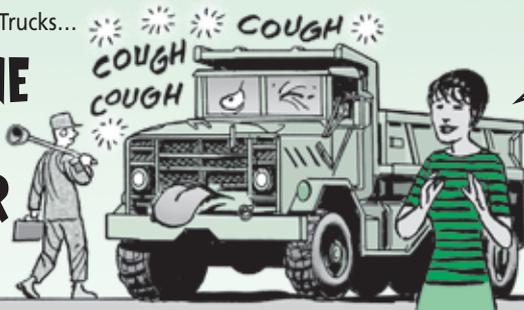
You've probably noticed the label on your vehicle's lead-acid battery. You know, the one with the removable tabs for month and year.

You're supposed to remove the appropriate tabs when you install the battery. That way, if and when the battery goes dead, you know if it died before its time.

But too many operators aren't taking advantage of the label. It only takes a few seconds. And when that battery fails, you'll be glad you remembered to do it.



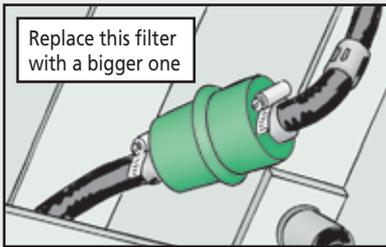
# IN-LINE FUEL FILTER FIX



DON'T CALL A **PLUMBER** IF YOUR M939A2'S SMALL IN-LINE FUEL FILTER GETS **CLOGGED!**  
ORDER A **BIGGER FILTER** INSTEAD.

Using the bigger filter should fix the problem of clogging, which stops you in your tracks. NSN 4930-01-387-1147 brings the bigger and better in-line fuel filter kit.

By the way, this is the same filter that is used on older M939s. The filter element alone comes with NSN 2910-00-152-2033.



Replace this filter with a bigger one

So get your unit mechanic to make the initial changeover on the vehicle. Instructions come with the kit.



Filter element alone comes with NSN 2910-00-152-2033

# Longer Lasting Geared Hub Seal

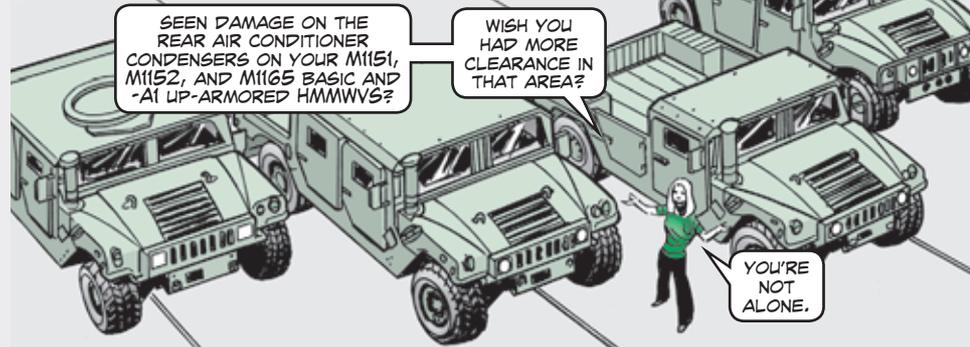
Dear Editor,

Our unit uses the old-style inner geared hub seal, NSN 5330-01-180-9099, on our HMMWVs. They work well enough, but we've found that another geared hub seal, NSN 5330-01-456-3884, lasts longer. It costs more, but it's worth it for us in the long run.

SFC  
Ft Sill, OK

**Editor's note:** Your HMMWV parts manuals don't list the longer-lasting geared hub seal. If your chain of command doesn't mind paying more, the new seal may pay off for your unit. Thanks for the tip, Sergeant.

# OUT WITH THE OLD REAR CONDENSERS



SEEN DAMAGE ON THE REAR AIR CONDITIONER CONDENSERS ON YOUR M1151, M1152, AND M1165 BASIC AND -A1 UP-ARMORED HMMWVS?

WISH YOU HAD MORE CLEARANCE IN THAT AREA?

YOU'RE NOT ALONE.

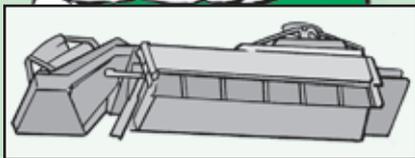
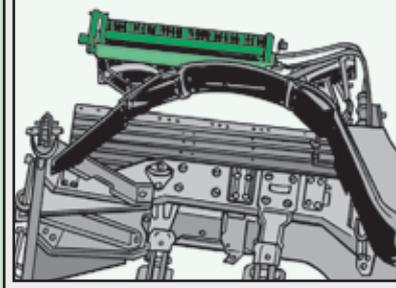
Problems in the field led TACOM LCMC to develop a new rear condenser. It allows for more clearance and has a beefed-up closeout panel. That should curb damage.

The original rear condensers, NSN 4130-01-537-4847 and NSN 4130-01-536-5561, are no longer available. But you can get the new condensers, closeout panel and related hardware in new upgrade kits that the truck headshed assembled.



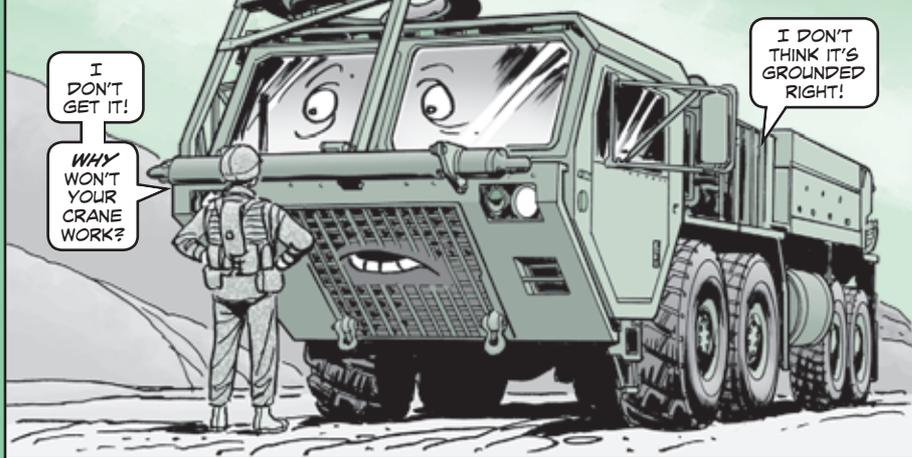
ORDER THE LEFT-HAND REAR CONDENSER KIT USING NSN 2540-01-558-3448, AND THE RIGHT-HAND REAR CONDENSER KIT USING NSN 2540-01-558-3450.

New rear condenser allows for more clearance and has beefed-up panel



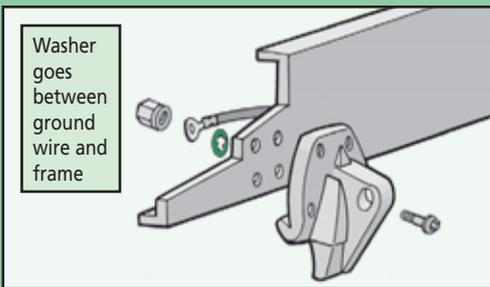
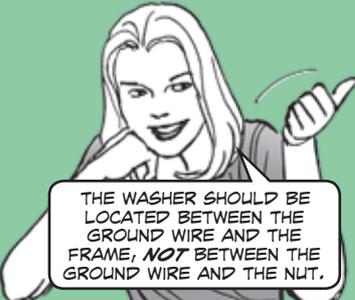
AND MAKE A NOTE OF THIS IN THE TM UNTIL IT GETS UPDATED.

# MISSING WASHER KILLS CRANE



If the crane on your HEMTT wrecker won't work, it could be due to a small star washer that's missing from the ground wire.

The washer, NSN 5310-00-935-8984, is shown on Page 14-13 of TM 9-2320-279-20-2 for axle No. 4, but it's shown in the wrong place.



1. Take off the nut and ground wire.
2. Scrape a spot of paint, about the size of a quarter, from around the bolt hole.
3. Put on the star washer, followed by the ground wire and then the nut.
4. Torque the nut to 110 lb-ft.
5. Spot paint any remaining bare metal with CARC.

CAN YOU SEE ME NOW?



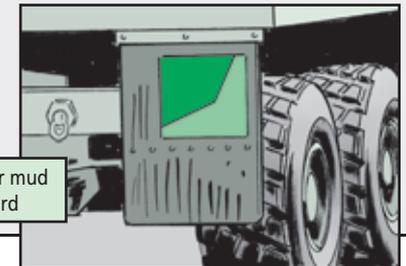
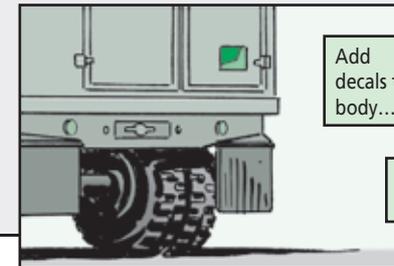
When vehicles get rear-ended, sometimes it's because the driver didn't see the vehicle in front until it was too late. Give those drivers behind you all the help you can by using reflective decals.

You'll need your commander's approval first. Then you can apply reflective decals—just like those you see on Army vehicles in Europe—to your over-the-road vehicles.

These decals can help cut down the likelihood of rear-end collisions, especially in dense fog or sandstorms. And they're available in two sizes: 7 7/8 x 7 7/8 inches and 15 3/4 X 15 3/4 inches.

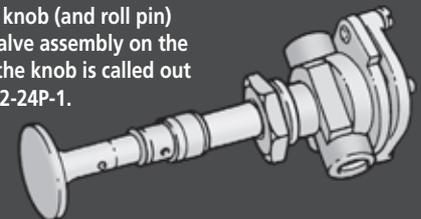
Order the smaller decal with NSN 9390-01-382-8308. Get the larger one with NSN 9390-01-382-8369.

Since these are peel-and-mount decals, make sure surfaces are clean before applying the decals to your truck's rear body or mud guard.

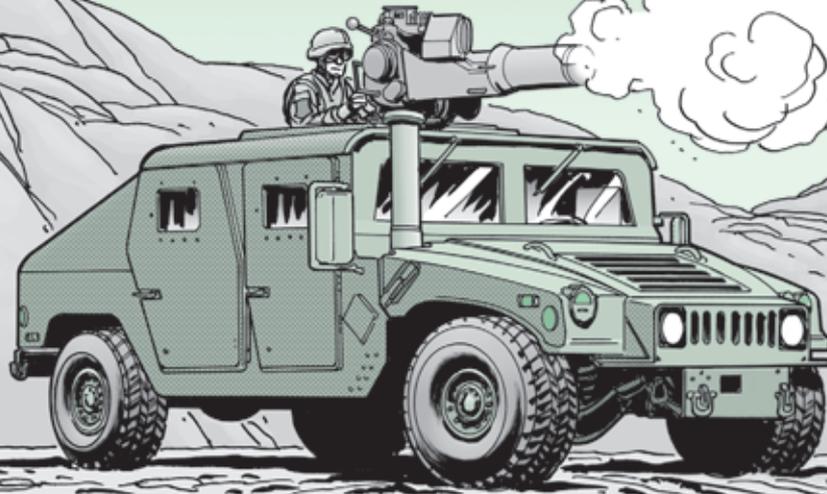


## M929A2 Brake Release Knob

Use NSN 5335-01-292-7833 to get the knob (and roll pin) for the spring brake release control valve assembly on the 5-ton dump truck. Make a note until the knob is called out separately in Fig 283 of TM 9-2320-272-24P-1.



# The ITAS Has It!



IF YOUR UNIT NEEDS THE ABILITY TO DETECT AND DESTROY ENEMY TARGETS DAY OR NIGHT FROM NEAR AND FAR, THE ITAS (IMPROVED TARGET ACQUISITION SYSTEM) CAN DO IT.

BUT TO PROTECT YOU, THE ITAS NEEDS PROTECTION BY ITS CREW.

FOR INSTANCE...



**Do the weekly PMCS and systems checks.** That makes sure that when lives are on the line the ITAS is ready to deliver. The lithium battery box (LBB) is the power source for the ITAS. The LBB needs to be recharged to at least nine battery capacity (BAT CAP) bars once a week. Charging the LBB can be done either on the vehicle using the vehicle-mounted charger (VMC) or off the vehicle using the lithium-ion AC charger (LIAC).

The VMC and LIAC provide a “fast charge” to the LBB up to 90% (nine BAT CAP bars) within four to five hours. The VMC and LIAC will continue to provide a “balance charge” to balance the LBB cells to 100% (10 BAT CAP bars). When balance charging, the LBB CHARGE indicator will cycle on and off. This is normal. Continue to charge the LBB until it’s at nine to ten bars.

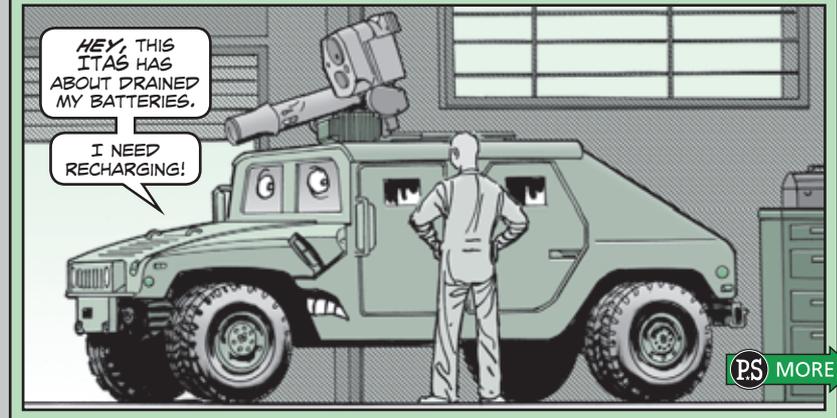
If the LBB is not allowed to balance charge, the cells will be out of balance and won’t fully charge. But an extended charge will take care of that problem. An unbalanced LBB will seem to stop charging at six to eight bars, but it’s really balancing the internal cells. Balance charging is very slow. For every unlit BAT CAP bar, the LBB may need to be left on charge for up to three days. **So keep it charged and balanced!**

The LBB should be fully charged prior to placing it in storage. Check the LBB every **three** months while it’s in storage and recharge it to a BAT CAP of nine to ten bars.

If the LBB displays a constant BAT or ELEC fault indicator or it will not charge above five BAT CAP bars, turn it in to maintenance.

This information will be included in the updated ITAS TM 9-1425-923-10.

**Don’t forget truck batteries.** When the ITAS is mounted on a truck, remember that when you get a BPS INTERNAL message that means the ITAS has switched over to LBB power to prevent the truck batteries from being drained. The HMMWV’s radio and other electronic gear, however, continue to draw truck battery power. So as soon as you safely can, start your HMMWV and recharge its batteries. This is also a good time to charge the LBB.



PS MORE

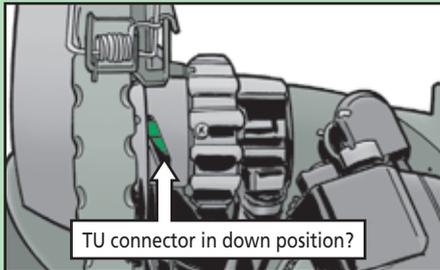
**Keep track of how long the ITAS needs to cool down to operating temperature.**

No matter how hot it is, the ITAS should cool to operating temperature within 15 minutes. If your ITAS is taking longer, it needs to be checked out by maintenance. Something is wrong.

**Take it slow and easy hooking up the TAS (target acquisition system) to the TU (traversing unit).** If you follow the procedures in WP 0006 in the TM, paying close attention to the cautions and notes, you can't go wrong. Never use force to mate the connectors. If you've done your PMCS and it's still difficult to hook up the TAS, something is wrong. Your maintenance folks need to check it out.

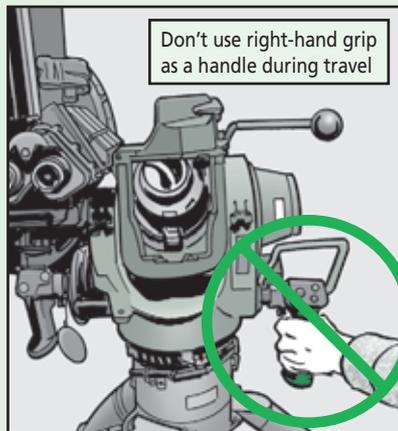
Here are the most common TAS mounting problems:

- The TU connector is not in the down position before putting the TAS on the TU.
- The connectors have broken pins or are plugged with debris or dirt.
- The locking knob is missing any of its three connector guide pins, which ensure the cable connector goes on straight.
- The TAS coupling clamp tab is binding on the locking knob. The tab is often bent, which prevents a good connection.

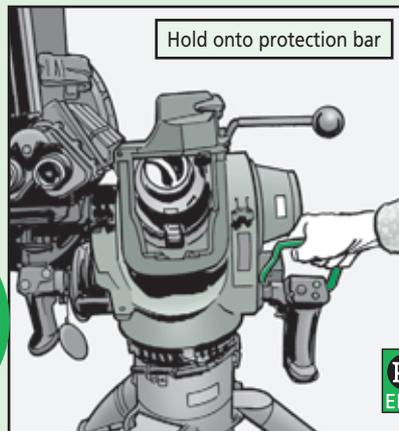


You can usually blow out any debris or dirt yourself. All other problems must be fixed by your maintenance.

**Don't use the right-hand grip as a handle during travel.** One good bump on the road and you break the handle. If you need to hold onto something, hold onto the grip's protection bar.



Don't use right-hand grip as a handle during travel



Hold onto protection bar

PS  
END



Dear Half-Mast,

If we have to shut down the gunner's display unit (GDU) because the MLRS launcher is not running, it takes us at least 10 minutes to power the GDU back up. Is it a good idea to use a small generator to keep the GDU powered up?

SSG A.H.

Dear Staff Sergeant A.H.,

You shouldn't need a generator for the GDU. If your launcher batteries are in good shape, it shouldn't take 10 minutes to power up the GDU. If it's taking that long, get your repairman to check out the batteries. You probably need some replaced.

Normally, you shouldn't run the GDU longer than 30 minutes with the launcher off. The GDU should give you an alarm when the 30 minutes is up. If the alarm is going off sooner, that's also a sign the batteries should be checked.

Half-Mast

## TOW TEST EQUIPMENT OBSOLETE

The basic TOW missile equipment that was fielded in the 1980s with the Bradley has been replaced by the TOW 2 system.

As a result, all basic TOW test equipment is obsolete and should be turned in. See Figs 1, 47, and 63 in TM 9-4935-474-24P-1 for pictures of the equipment.

These are the items TOW repairmen should look for:

Item	LIN	NSN 4935-01-	PN
Alignment breakout box	B12701	107-7619	13143607
Support equipment basic sight assembly	S61627	108-2968	13143606
AN/TSM-154 guided missile system test set	T29881	108-0442	13143602
AN/TSM-154 guided missile system test set	T29881	355-1331	13314320

Do not demil this equipment or send it to DRMO. Contact AMCOM's Jenice Rozier at DSN 746-0606, (256) 876-0606, or email [jenice.rozier@us.army.mil](mailto:jenice.rozier@us.army.mil) for disposition instructions.

# QUARTERLY INSPECTION FINE TUNED

I CAN'T TELL FROM THIS IF IT'S OK IF YOUR TOP PLATE MOVES.

WE BETTER FIND OUT.

IT MIGHT BE DANGEROUS TO FIRE ME!



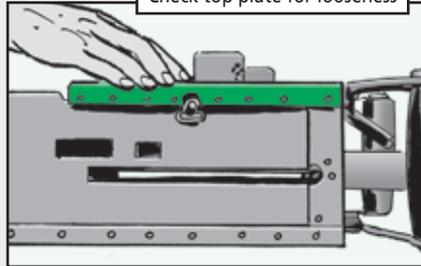
The M2 machine gun's quarterly inspection criteria in TM 9-1005-213-23&P are a little cloudy about what's OK and not OK.

To clear up confusion, TACOM-RI is adding these steps to the quarterly inspection of the receiver that begins in WP 0010 on Page 00-23.

Disassemble the M2 and remove the back plate, barrel, barrel extension, buffer recoil mechanism, bolt and drive rod spring.

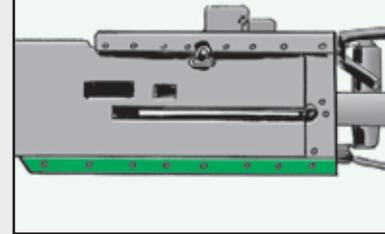
**1. Check the top plate.** Open the feed tray cover. Using your hand only, try to move the top plate. If the plate has obvious movement, send the M2 to support for further inspection. It's OK if the top plate rivets turn.

Check top plate for looseness



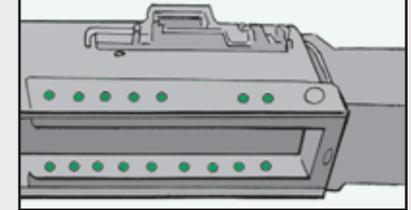
**2. Check the bottom plate.** Turn the receiver onto the top plate. Grasp the bottom plate with your hand and try to move it. If the plate has obvious movement, send the M2 to support for inspection. It's OK for the rivets to turn.

Do the same with bottom plate



**3. Check the trunnion.** With the receiver still sitting on its top plate, hold the receiver assembly with one hand and use the other hand to grasp the barrel support. Try to move the barrel support. If the trunnion has obvious movement, send the M2 to support for inspection. It's OK for the rivets to turn.

Support checks trunnion rivets



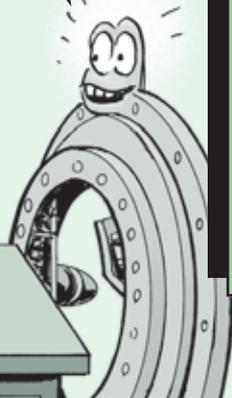
Your support unit needs to add this Step 5 to Page 00-3 in WP 0034:

**5.** Measure between the riveted components by using a 0.010-in feeler gauge, NSN 5210-00-221-1999.

Check the rivets on the left and right sides of the top plate, the left side of the bottom plate, and the left and right side of the trunnion. The right side of the bottom plate doesn't need to be inspected if the charging handle is attached. If the feeler gauge can fit between the riveted components and contact the rivet for the entire length of the inspection area (at each rivet, in other words), the receiver is condemned.

THANK GOODNESS THEY'VE PUT THIS INFORMATION ONLINE SO WE DON'T HAVE TO WAIT FOR YOUR NEW TM TO BE PUBLISHED!

YEAH, NOW YOU CAN ORDER THOSE PARTS TO GET ME FIXED!



## M66

## Mount Draft TM Online

Dear Half-Mast,  
We need repair parts for our M66 ring mount. But the M66's new TM 9-1005-335-13&P hasn't come out yet. Where can we go for part NSNs and maintenance info on the M66?  
SSG R. R.

Dear Sergeant R. R.,

The holdup on the new TM is that it hasn't been formatted to the new two-level maintenance plan. When that is completed, the TM will be published.

In the meantime, you can see parts of the **draft** version of the TM:

<https://aeps2.ria.army.mil/commodity/mount/index.cfm>

After you log in with your AKO password, click on VIEW DOCUMENTS on the left side of the screen. This will take you to a list of documents that includes parts of the TM, such as unit maintenance and repair parts and their NSNs.

Watch PS for word on when TM 9-1005-335-13&P is to hit the field.

Half-Mast

# Ordering Timing Poster Smart Card

THIS IS  
A GREAT  
IDEA!

NOW MY  
GUNNERS WILL  
KNOW FOR  
SURE WHAT  
TO DO.



Every M2 machine gunner needs to know exactly how to time and headspace his weapon. Mistakes can be deadly.

To help educate gunners, units can order both a headspace and timing poster and a smart card that fits in a pocket. Here's how:

### Poster

- Have your unit pubs clerk order the poster from:  
<https://dol.hqda.pentagon.mil/ptclick/index.aspx>
- Click on Search
- Under Quick Search, use the drop down menu to search by "Short Title"
- Under "search for", type in "M2 Headspace"
- Click on Search
- "DA Poster 750-98" will appear
- Click on Available
- Log in
- Verify your address
- Click on Subscribe
- Enter quantity needed
- Click on Add to Selection
- Verify order and log out

### Smart Card

- Go to  
<http://www.train.army.mil>
- Click on the Reimer Digital Library
- Under Type, select "Graphic Training Aids"
- Under School, select "Any"
- Under Keyword, type in "09-06-045" and click on Submit
- Click on GTA 09-06-045, 31 Aug 2007
- Scroll down to the bottom of the web page and click on Training Audiovisual Support (TASC)
- Select your training support center and request the GTA through the center's POC

# HEAT SHIELD GOOD FOR BOTH BARRELS

ARE YOU SURE  
I NEED A NEW  
HEAT SHIELD  
WITH MY SHORT  
BARREL?

NO, I'M NOT.  
THAT'S WHY  
I'M WRITING  
HALF-MAST.



Dear Half-Mast,

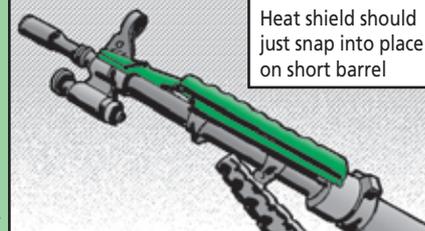
We got the new short barrels for our M249 machine guns, but we didn't get a new heat shield for the short barrels and the old heat shields don't fit. You can't attach the heat shield to the front sight pin on the short barrel. Is there a special heat shield for the short barrel?

SGT T.H.

Dear Sergeant T.H.,

No, there isn't a special heat shield because the old shield should work for both barrels. Although you can't use the front sight pin on the short barrel for the heat shield, the shield should snap into place on both barrels.

*Half-Mast*



Heat shield should just snap into place on short barrel

# NSN for Sight Bracket?

Dear Half-Mast,

We tried to order quadrant sight mounting brackets for our MK 19 machine guns, but the NSN listed in the TM is no longer good. Is there a good NSN?

SSG G.T.

Dear Sergeant G.T.,

Yes, use NSN 1240-01-515-3767 to order the adjustable sight bracket.

*Half-Mast*



# TRAINING FOR THE DANGERS OF IED

HOMEMADE BOMBS, COMMONLY KNOWN AS IEDS (IMPROVISED EXPLOSIVE DEVICES), HAVE TAKEN A HEAVY TOLL ON SOLDIERS AND VEHICLES IN IRAQ.

TO HELP SOLDIERS LEARN TO RECOGNIZE AND QUICKLY REACT TO IEDS, THE ARMY'S PROGRAM EXECUTIVE OFFICE OF SIMULATION, TRAINING AND INSTRUMENTATION (PEO STRI) HAS DEVELOPED SEVERAL TRAINING DEVICES THAT SIMULATE IEDS.

THESE DEVICES CAN HELP YOUR UNIT PREPARE FOR THE DANGERS OF IRAQ...

**Increment 2 Training IED (TIED 2)**—The TIED 2 kit is a non-pyrotechnic IED simulator that uses CO<sub>2</sub> and talcum powder to create the smoke effect of an explosion. TIED 2 can also be used with pyrotechnic devices to create a real explosion. The devices can be detonated by remote control or by direct wire. The TIED 2 can be defeated by simulated electronic countermeasures, which are described below.

**CREW 2 training device (DUKE trainer)**—CREW 2 simulates the actual device fielded to units to electronically disable IEDs. During training, the CREW 2 captures events, configurations, and settings that can be used in an after action review. CREW 2 can also be ordered with a laptop and PDA that can be used for building training configuration files. The files can then be uploaded to CREW 2 for training.

A counter-indicator unit (CIU) is also available that acts as a test set for the CREW 2.

**Interrupt Device, Increment 2 (ID2)**—The ID2 installs in-line between any triggering device and the IED and transmits a disable command from the CREW 2, simulating jamming.

**Chameleon trainer**—The trainer simulates the Chameleon disarming device by using software to disarm the TIED 2 or Interrupt Device 2.

**Suicide bomber vest simulator**—The vest uses CO<sub>2</sub> cartridges to simulate the behavior and effects of a suicide bomber.

All of the IED training devices can be ordered through PEO STRI's MAJ at (407) 421-7839 or email: [@us.army.mil](mailto:@us.army.mil)

# FOD BUSTERS

OVER THE PAST FEW WEEKS, WE'VE HAD REPORTS OF STRANGE HAPPENINGS AT AVIATION COMPANIES ALPHA AND BRAVO.

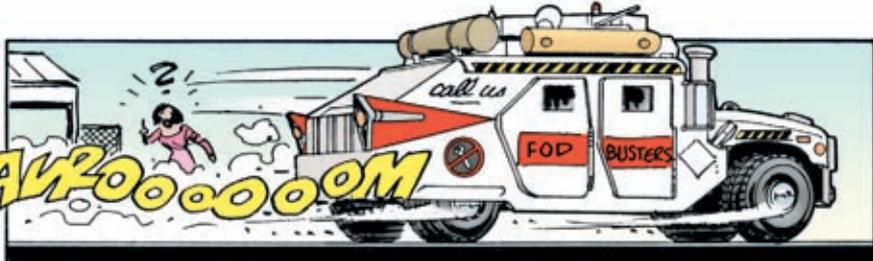
THIS IS JANET SMART REPORTING FOR WERD TV.

FT GROTON

HELICOPTERS SEEM TO BE OUT OF CONTROL.

WAIT A MINUTE! WHAT'S THIS?

**FOREIGN OBJECT DAMAGE**



IT APPEARS THAT SOMEONE HAS CALLED THE FOD BUSTERS!



DON'T TOUCH THAT DIAL! WE'LL BRING YOU THE SCOOP ON THIS STRANGE STORY.



THIS IS WERD TV... AND WE'LL BE RIGHT BACK...AFTER THIS COMMERCIAL BREAK.



EARLIER...

HELLO, THIS IS FOD BUSTERS! HOW MAY WE HELP YOU?



FOD BUSTERS! COME QUICK!

WE NEED YOUR HELP AT ALPHA COMPANY. WE'VE GOT A BLACK HAWK DOING STRANGE THINGS.



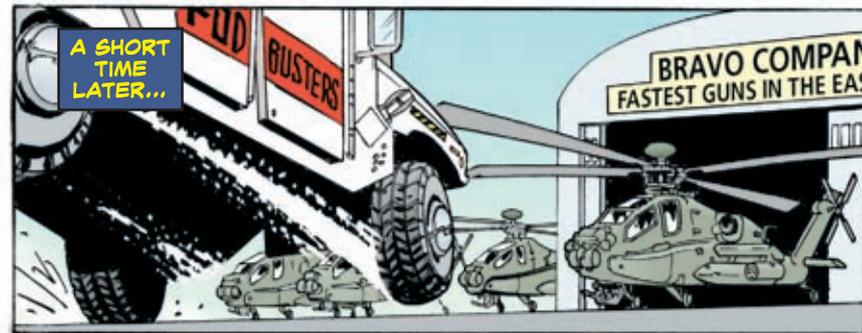
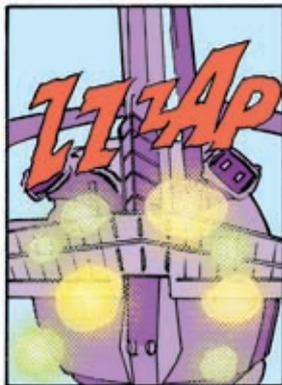
OK, PEOPLE, LET'S SUIT UP AND MOVE OUT!

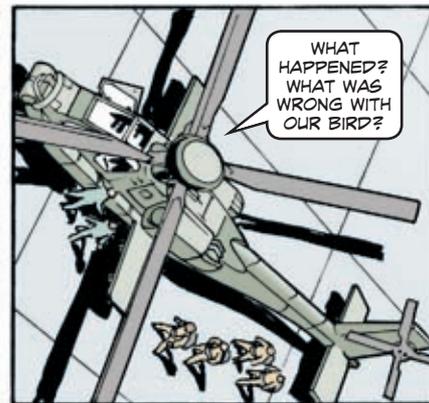
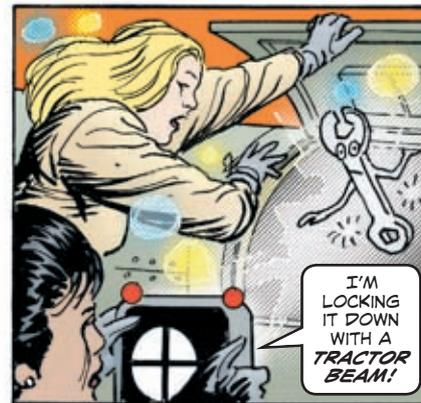
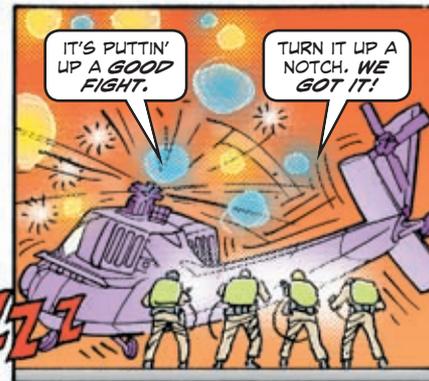
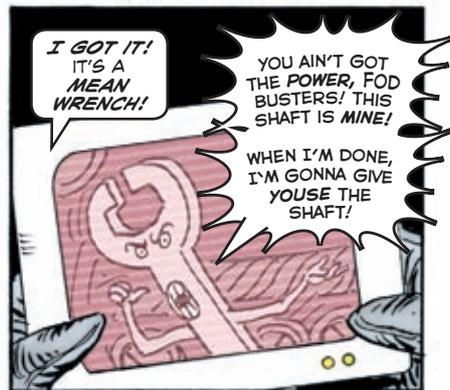


WHEN YOUR BIRD IS ACTING UP AND YOU DON'T KNOW WHY -- WHO SHOULD YOU CALL? **FOD BUSTERS!**



BACK TO THE PRESENT...







SOMEBODY DIDN'T PRE-FLIGHT THE BIRD. THIS WRENCH COULD'VE CAUSED A CATASTROPHIC FAILURE IN THE AIR! **DON'T TAKE FOD FOR GRANTED!**

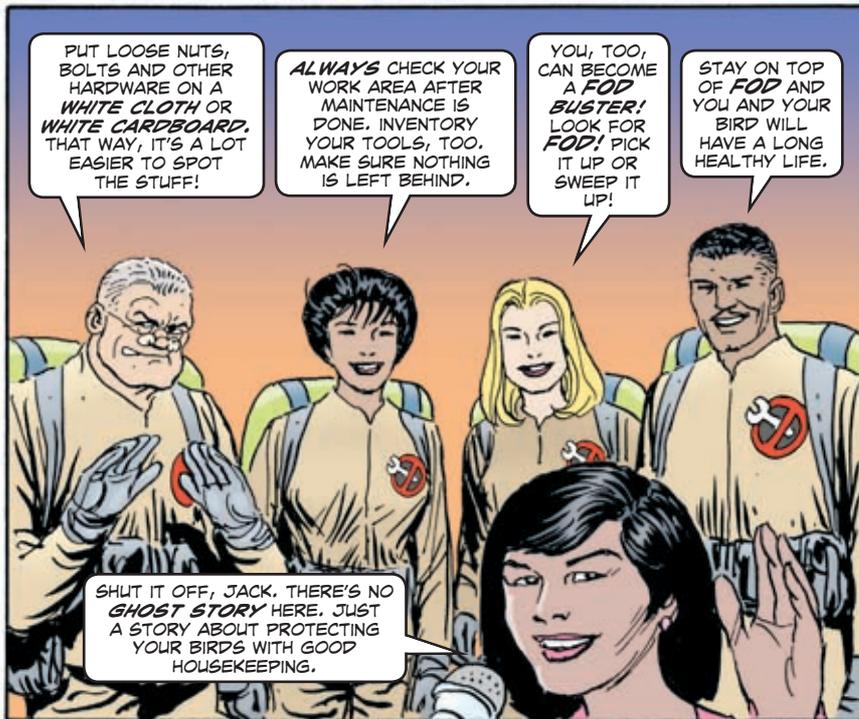


**LATER, AS THE FOD BUSTERS LEAVE FORT GROTON...**

WHAT'S THE LATEST ON THE STRANGE HAPPENINGS AT ALPHA AND BRAVO COMPANIES?



**FOD IS NOT STRANGE, BUT IT IS DEADLY. THE BEST DEFENSE AGAINST FOD IS TO PICK IT UP WHEREVER YOU SEE IT.**



PUT LOOSE NUTS, BOLTS AND OTHER HARDWARE ON A **WHITE CLOTH OR WHITE CARDBOARD**. THAT WAY, IT'S A LOT EASIER TO SPOT THE STUFF!

**ALWAYS CHECK YOUR WORK AREA AFTER MAINTENANCE IS DONE. INVENTORY YOUR TOOLS, TOO. MAKE SURE NOTHING IS LEFT BEHIND.**

YOU, TOO, CAN BECOME A **FOD BUSTER!** LOOK FOR **FOD!** PICK IT UP OR SWEEP IT UP!

STAY ON TOP OF **FOD** AND YOU AND YOUR BIRD WILL HAVE A LONG HEALTHY LIFE.

SHUT IT OFF, JACK. THERE'S NO **GHOST STORY** HERE. JUST A STORY ABOUT PROTECTING YOUR BIRDS WITH **GOD HOUSEKEEPING**.

All Aircraft...

# CAPS AND PLUGS OK, BAGS ARE NOT!



AWRIGHT— WE CAN'T DAMAGE ENGINES THE WAY WE WANT TO DO BECAUSE OF CAPS AND PLUGS...

ANYBODY GOT A NEW IDEA?

IF THEY USE **BAGS**, THEN WE GOT A CHANCE!!

**BAGS! YEAH!!**



DON'T LISTEN TO THESE GUYS! WE'VE GOT WHAT YOU WANNA KNOW RIGHT HERE!

**N**ot covering aircraft lines, tubes and fittings with caps or plugs while performing checks or maintenance is a bad check against **you**. Here are some results you might see:

- Dirt in open lines contaminates fluids and residue on the fittings won't let connectors seal.
- Moisture in lube becomes paste and the lube can't do its job.
- Threads get smashed, and delicate connector pins get broken or bent.

So use and reuse clean and dry caps and plugs that come with components, hoses, lines, fittings and electrical connectors. Check and cap or plug all exposed openings and lines to prevent fluid spills, moisture in oil and dirt buildup.

AND **DON'T** USE BAGS ON DISCONNECTED ELECTRICAL CONNECTORS FOR THE T700-SERIES ENGINES THAT ARE INSTALLED ON BLACK HAWKS AND AH-64s.

THAT'S BECAUSE A CONNECTOR COVERED TIGHTLY WITH A BAG AND A RUBBER BAND CAN TRAP MOISTURE, WHICH LEADS TO **CORROSION**.



USE THESE LISTS OF PLUGS AND CAPS TO SEAL FLUID SYSTEMS AND PROTECT THREADS ON YOUR BIRD IF THE TM DOESN'T LIST CAPS OR PLUGS.



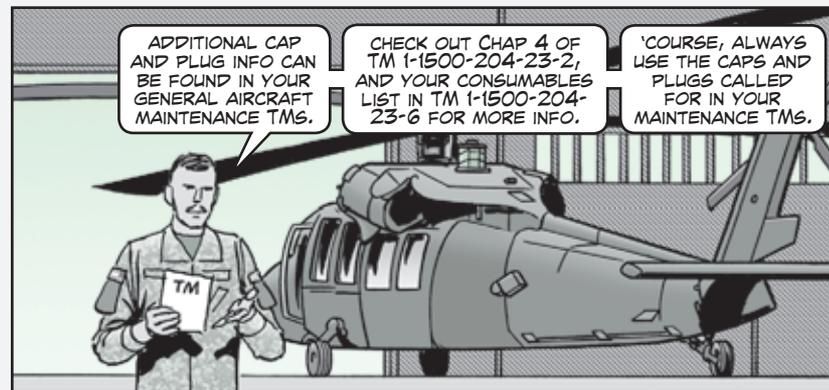
Cap Tube (Flared) NSN 4730-	Size (Outside diameter) inches	Tube Plug (Flared) NSN 4730-00-	Size (Outside diameter) inches
00-633-4398	1/8	287-0109	1/8
00-221-2126	3/16	287-0100 (plain)	3/16
00-278-5006	1/4	287-0110	1/4
01-061-4150	5/16	287-0111	5/16
00-585-8769	3/8	715-0082	3/8
00-221-2127	5/8	287-0112	3/8
00-221-2128	3/4	287-0113	1/2
00-221-2129	1	287-0116	5/8
		080-3091	3/4
		287-0118	1

Tube Plug (HYD) (Flareless) NSN 4730-	Size (Outside diameter) inches	Tube Cap (HYD) (Flareless) NSN 4730-	Size (Outside diameter) inches
00-540-2231	1/8	00-837-9842	1/8
00-595-3917	3/16	00-115-0210	3/16
00-541-7198	1/4	00-958-3704	1/4
00-541-1465	5/16	00-640-0632	1/4
00-202-9169	5/16	00-985-5165	5/16
00-203-3709	3/8	00-618-3572	3/8
00-555-7804	3/8	00-990-2585	3/8
00-202-8341	1/2	00-451-2762	1/2
00-202-8860	1/2	00-618-4227	5/8
00-966-5695	5/8	00-454-9631	5/8
00-203-0247	5/8	00-202-8792	3/4
00-289-8627	3/4	00-221-2128	3/4
00-203-0246	3/4	00-400-2223	3/4
00-203-6938	1	00-085-1936	1
00-289-8626	1	00-274-7120	1

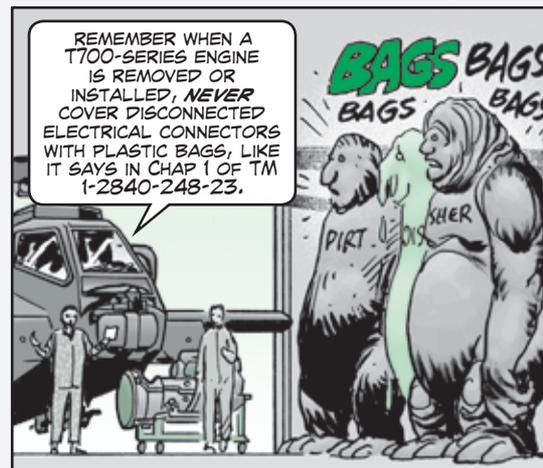
ADDITIONAL CAP AND PLUG INFO CAN BE FOUND IN YOUR GENERAL AIRCRAFT MAINTENANCE TMS.

CHECK OUT CHAP 4 OF TM 1-1500-204-23-2, AND YOUR CONSUMABLES LIST IN TM 1-1500-204-23-6 FOR MORE INFO.

'COURSE, ALWAYS USE THE CAPS AND PLUGS CALLED FOR IN YOUR MAINTENANCE TMS.



REMEMBER WHEN A T700-SERIES ENGINE IS REMOVED OR INSTALLED, **NEVER** COVER DISCONNECTED ELECTRICAL CONNECTORS WITH PLASTIC BAGS, LIKE IT SAYS IN CHAP 1 OF TM 1-2840-248-23.



FOR THE KIOWA WARRIOR T-55 ENGINE, USE CAPS AND PLUGS. FOR T-63 ENGINES, USE PLUGS, CAPS, BARRIER MATERIAL, NSN 8134-00-383-0565, AND TAPE, NSN 7510-00-074-5124.



Air Warrior...

THE MAX GRIP AND FRICTION FIGHTER FLYER GLOVES HAVE BEEN RECOMMENDED AS AN OPTION BY THE US ARMY WAR FIGHTING CENTER FOR AIRCREW MEMBERS TO PERFORM FLIGHT DUTIES.

# GET A GRIP ON FLYER GLOVES

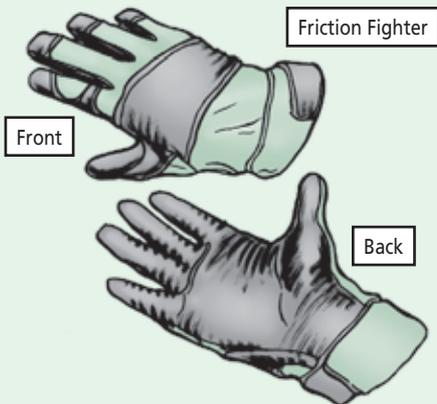


Aviation folks can wear these gloves as an alternative to flyer's gloves MIL-DTL-81188C, summer, type GS/FRP-2. The Project Manager, Clothing and Individual Equipment, has given approval for optional use of the gloves.

You can order the gloves by NSN or local purchase them. They come in five sizes and two colors.



Max Grip



Friction Fighter

Max Grip, MX-Series			
NSN 8415-01-536-	Color	Size	
2065	Tan	SM	
2068	Tan	MED	
2070	Tan	LG	
2071	Tan	XLG	
2072	Tan	XXLG	
2034	Green	SM	
2035	Green	MED	
2037	Green	LG	
2051	Green	XLG	
2061	Green	XXLG	
Friction Fighter, FF-Series			
2411	Tan	SM	
2412	Tan	MED	
2413	Tan	LG	
2414	Tan	XLG	
2416	Tan	XXLG	
2419	Green	SM	
2421	Green	MED	
2422	Green	LG	
2425	Green	XLG	
2423	Green	XXLG	

HGU-56P AIHS...

# Helmet Communication



CAN YOU HEAR ME NOW?

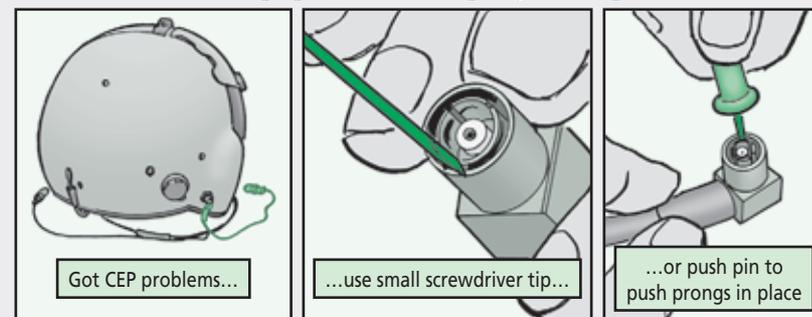
HUH? WHAT'D YOU SAY?

The HGU-56/P aircrew integrated helmet system (AIHS) can work for you or against you. It depends on how well you take care of the helmet.

If you frequently push in and pull out the communication earplug (CEP) connector, NSN 5965-01-504-0077, the connector prongs can bend out of place. That can cause intermittent communication failures.

The problem is caused by poor contact in the right angle connector. The tabs in the connector are bending away from the center and losing contact with the center jack on the helmet.

However, **you** can fix the problem. Just use a push pin or a jeweler's screwdriver set, NSN 5120-00-288-8739, to bend the four prongs slightly toward the center of the connector to establish good contact. Make sure you reattach the connector to the helmet to see that it seats properly and that the prongs are not pushed in too far.



Got CEP problems...

...use small screwdriver tip...

...or push pin to push prongs in place

Let your ALSE tech know if you fix this problem. But don't tear your helmet apart if this doesn't solve the problem. That's the job of the ALSE tech.

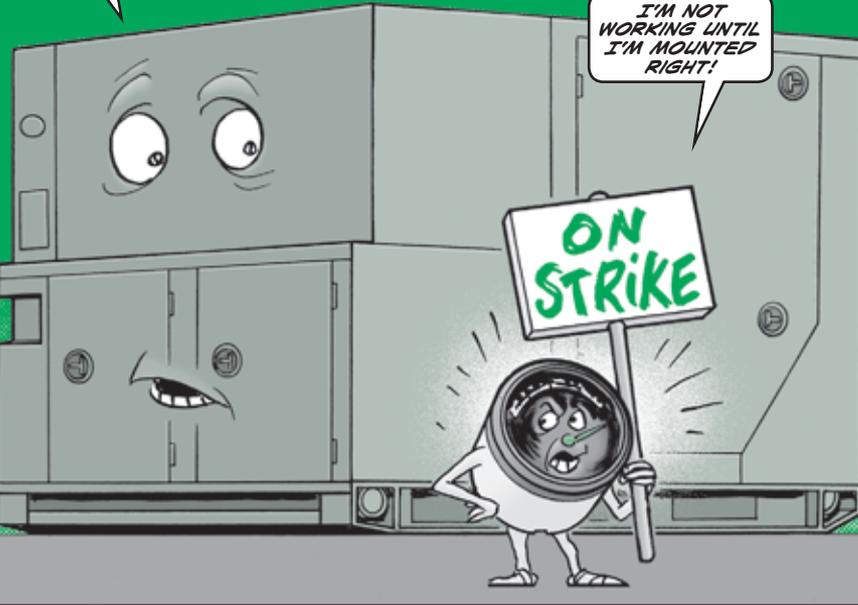
Keep helmet communication alive and helmet care going well with the good words in Air Warrior TM 1-1680-377-13&P (EM 0250).

# Let's Talk GAUGES

WHY ARE  
YOU ON  
STRIKE?

I'M NOT  
WORKING UNTIL  
I'M MOUNTED  
RIGHT!

ON  
STRIKE



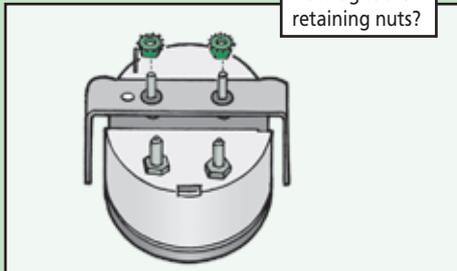
Is the 24-volt fuel gauge, water temperature gauge, or oil pressure gauge on your tactical quiet generator maxing out or burning out?

Are gauges hitting max?



If one or all of them are, the problem may be with the torque put on the retaining nuts on the mounting bracket.

How tight are  
retaining nuts?



The gauges are made by Beede Electrical and are installed into the control panel of your generator by DRS Fremont. The fuel gauge is part number 945331 and NSN 6625-01-366-0193. The water temperature gauge is part number 945329 and NSN 6685-01-364-6549. The oil pressure gauge is part number 945330 and NSN 6620-01-368-1531.

The retaining nuts are to be torqued to a setting of 6 in-lbs. This is not much more than finger-tight! When the nuts are over-torqued, the bushings are crushed and the gauge grounds against the mounting bracket. This ground will either max out the gauge or destroy it!

Bushings should look like this...



...and *not* like this

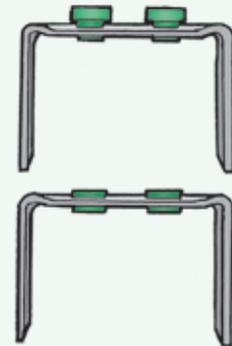


So, if you're having this problem, loosen the nuts on the mounting bracket. Sometimes, if the gauge is still functional, it will work right. If you install a new gauge and mounting bracket, make sure to torque it to 6 in-lbs.

Beede is helping you out, too. The new mounting bracket for these gauges has a denser, thicker insulator that will help prevent the bushings from being crushed. The old insulator is black and the new one is white.

So, generator mechanics, why not check these gauges right now? If the insulator is white, you're in good shape. If the insulator is black, check the condition of the bushings. If they're being crushed, back off the nuts on the mounting bracket, then torque them to 6 in-lbs.

New bracket has thicker insulator

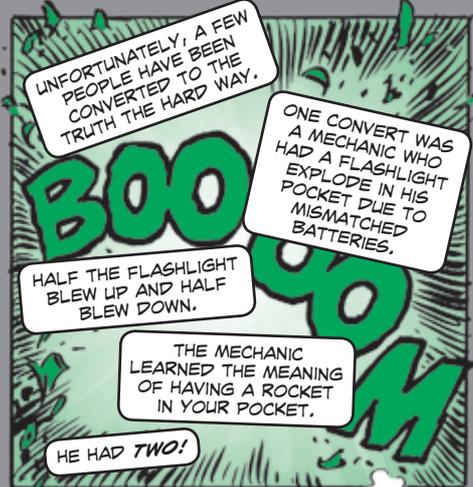
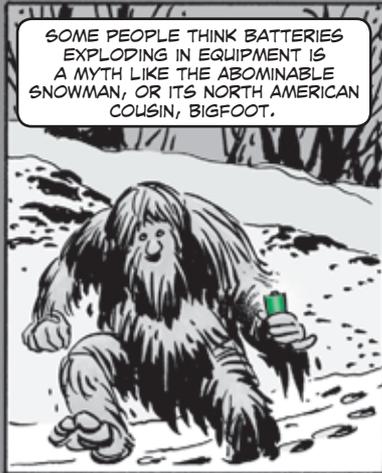


New

Old

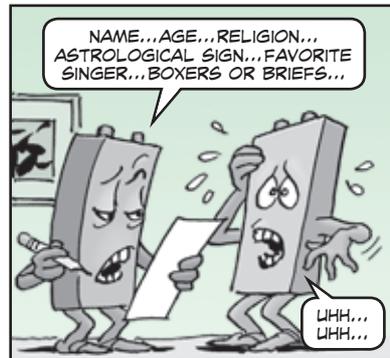
Chances are good that by now, the gauges with the black insulation are out of the supply system and when you order a new gauge, you'll get the white insulator. But if your new gauge still has the black insulator, the correct torque is the key to a good gauge.

# WE'RE NOT KIDDING, THEY WILL EXPLODE!

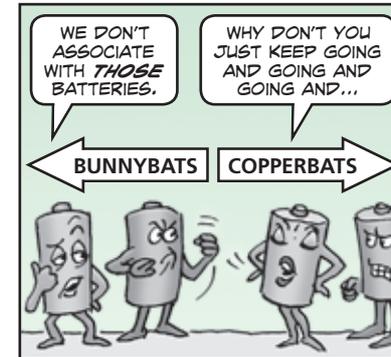


**1. If it takes two, replace two!** Always replace all the batteries in a piece of equipment at the same time (except for memory-hold batteries). They should both be fresh and fully charged.

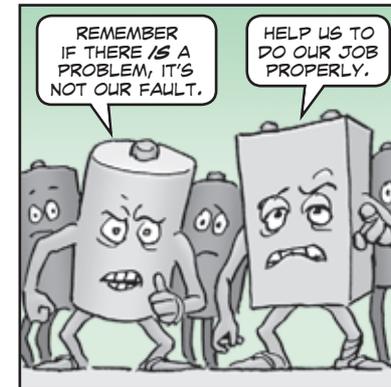
**2. Do it by the numbers!** Replacement batteries should have the same contract number. Check the box for the number. They should also have the same, or very close to the same, date codes.



**3. Mind the maker!** Batteries installed in a piece of equipment must have the same manufacturer. Not all batteries, even those that look it, are created equal.



**4. Order by NSN, but don't install by it!** The batteries that exploded in the flashlight in the mechanic's pocket were both 3-volt lithium, NSN 6135-01-351-1131. But they had different manufacturers! Multiple manufacturers of items like batteries are common. Check the NSN on FED LOG and you'll see a slew of part numbers which means a slew of manufacturers. For further details, see point three above.



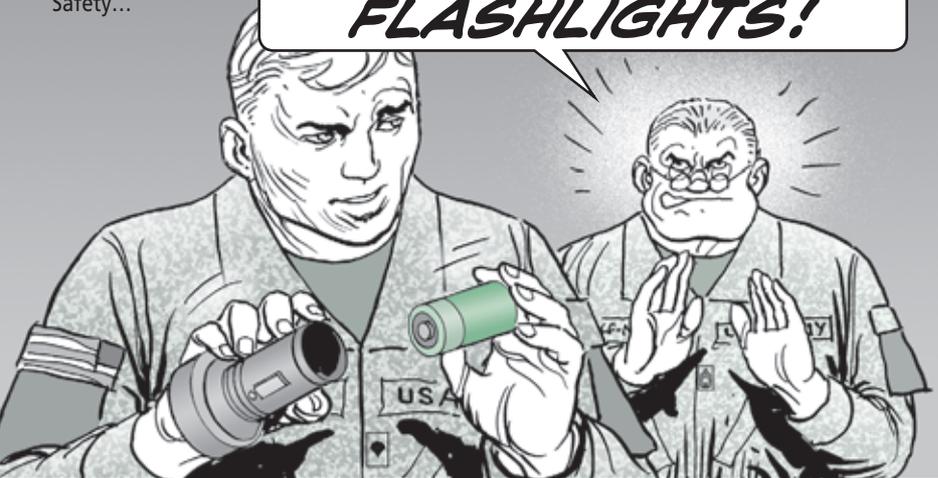
**5. Rechargeable and non-rechargeable batteries don't get along!** Like Democrats and Republicans on the Senate floor, sparks will fly if you put a rechargeable battery with a non-rechargeable in the same piece of equipment. One will overpower the other and then, KABLOOEY!



**6. You've been warned!** Batteries have warning labels. Battery manufacturers issue warnings. Technical manuals have warning information. And now we've warned you! Ignorance is not bliss. Heed the warnings about batteries. If you don't heed those good words, you may hear these bad words: "Your pants are on fire!"



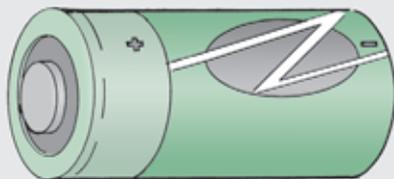
**THESE AREN'T FOR  
FLASHLIGHTS!**



**I**f you're using BA-5123/U, 3-volt lithium batteries in your flashlight, make sure they're not Interstate 123A batteries. These batteries come with a warning from the manufacturer that states: "Not recommended for use in flashlights."

The confusion is not entirely your fault. You may have ordered the batteries using NSN 6135-01-351-1131. That stock number will bring 3-volt lithium batteries made by other manufacturers that can be used in flashlights. It's just the Interstate batteries that you don't want to use.

It's a great battery for some equipment, but not flashlights!



WHY?

WELL,  
THEY COULD  
EXPLODE!



That's the bad news. The good news is, they do fine in other equipment like the AN/PEQ-6A, -14, -15; the AN/PSC-12, AN/PSX-1; and test sets, TS-4495/U and TS-4501/U.

So right now, check your 3-volt lithium batteries and make sure the warning on the Interstate batteries about not using them in flashlights is well-known and well-learned in your commo shop.

**This Is a Test**

EVERY COMMO SHOP WORTH ITS SALT SHOULD HAVE BATTERY TESTER, NSN 6625-01-494-9163.

SURE IT WILL COST YOU \$150, BUT IT WILL TEST THE STATE OF CHARGE FOR **MORE THAN 30** TYPES OF BATTERIES.

HERE ARE SOME OF THE BATTERIES IT WILL TEST...

ME FIRST!



- 3.6V Li-Ion rechargeable (RCR123A, 18500, 17650, 18650)
- 1.5V button cell (S76, A76, A625, A640)
- 1.2V NiMH/NiCad Rechargeable (AA, AAA, C, D)
- 1.5V alkaline (AA, AAA, C, D, N)
- 9V alkaline
- 12V alkaline (A23)
- 1.5V lithium (AA L91, AAA L92)
- 3V lithium coin (1616, 1620, 2016, 2025, 2320, 2032, 2430, 2450, 58L 1/3N)
- 6V lithium (BA-5372/U)

THIS TESTER IS **EASY TO USE AND EASY TO READ** AND WILL QUICKLY SHOW YOU WHETHER A BATTERY IS **GOOD-TO-GO** OR **DEAD-AS-A-DOORNAIL**.

OH, MAN... I AM JUST RARIN' TO GO!

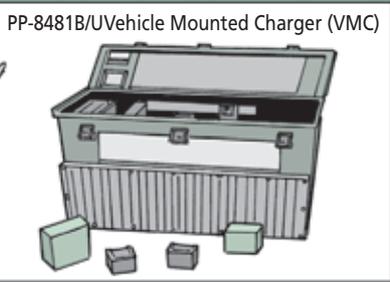
YEE-HA!

THUMP THUMP

AND I'M ALREADY GONE!

# VEHICLE-MOUNTED CHARGER GETS UPGRADED

VEHICLE-MOUNTED CHARGER, PP-8481B/U, NSN 6130-01-527-2726, HAS GOTTEN A SOFTWARE UPGRADE TO REVISION A OR GREATER.

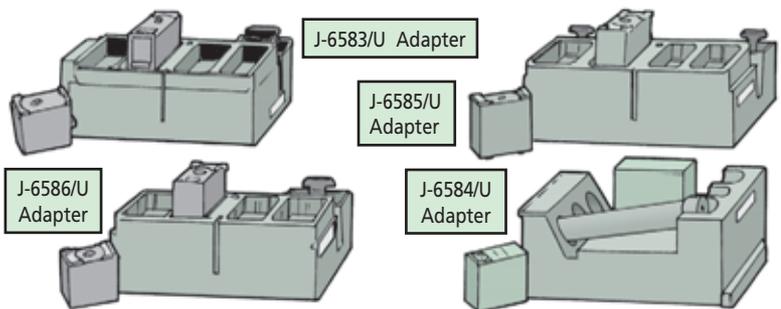


PP-8481B/U Vehicle Mounted Charger (VMC)

DOWNLOAD THE SOFTWARE FROM C-E LCMC'S WEBSITE: <http://www.monmouth.army.mil/cecom/lrc/lrcaq/power/rechargebat.html>

HERE ARE THE ADAPTERS YOU'LL NEED TO FIT THE BATTERIES INTO THE CHARGER...

Adapter	NSN 5940-01	Batteries
J-6581/U	494-7116	BB-390, BB-2590
J-6583/U	494-7118	BB-390, BB-2590, BB-2800, BB-2847, BB-2001A/U, CSEL
J-6584/U	494-7120	BB-557, BB-2557, BB-2600
J-6585/U	494-3002	BB-390, BB-2590, BB-2800, BB-2847, Falcon AN/PRC-152
J-6586/U	494-4134	BB-390, BB-2590, BB-2800, BB-2847, MBITR AN/PRC-148
J-6520A/U	493-8744	BB-326, BB-388, BB-390, BB-516A, BB-2588, BB-2590, BB-2800, BB-2847, MBITR, AN/PRC-148



WITH THIS NEW SOFTWARE AND THE RIGHT ADAPTERS, MULTI-CHARGING DOES NOT NEED ANY SPECIAL SETUP.

THE CHARGER WILL AUTOMATICALLY IDENTIFY BATTERIES THAT CAN BE MULTI-CHARGED.



WITH THE ADAPTERS, YOU CAN NOW CHARGE UP TO EIGHT BATTERIES AT ONCE WITH TWO OF THE ADAPTERS INSTALLED!

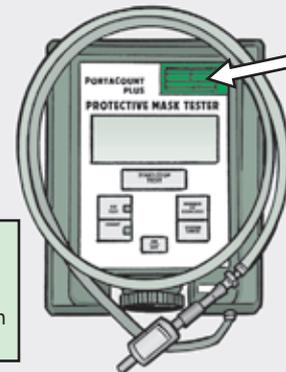
# NO CALIBRATION MEANS NO ACCURACY

If CBRN specialists let their M41 PATS (protection assessment test system) go year after year without calibration, your PATS will start flunking perfectly good masks.

That's not PATS' fault, it's **your** fault.

PATS needs to be sent off to TMDE for calibration every 18 months. TMDE completely disassembles PATS, cleans it, checks out all components and accessories and repairs them if necessary, and re-calibrates it. When they're finished, PATS is as good as new.

It's easy to tell if your PATS is ready for a trip to TMDE. Look at its calibration sticker. It gives the due date for the next calibration. If it's missing a sticker, your TMDE should have a record of when the PATS was last calibrated.



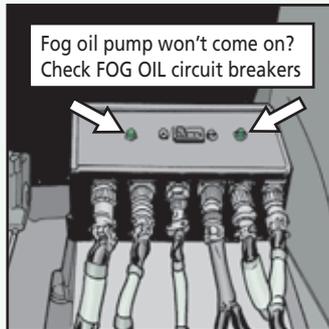
Check sticker for next calibration due date

# TROUBLE-FREE TROUBLESHOOTING

Dear Editor,

Through years of keeping the M157 smoke generators running for the Chemical School at Ft Leonard Wood, I've come up with a couple of troubleshooting tips:

- If the fog oil pump won't come on during the start procedure, make your first check the two FOG OIL circuit breakers in the control panel. If either one has tripped, the pump won't come on.
- If the circuit breaker kicks off when you turn on the main power and go to pre-heat, you've got either the glow plug or the band heater shorted to ground. Get out your multimeter and check.



Fleet Management Maintenance Support  
Ft Leonard Wood, MO

*Editor's note: Good troubleshooting tips that will help other smokers out there. Thanks!*

# Think Safety, Not Comfort

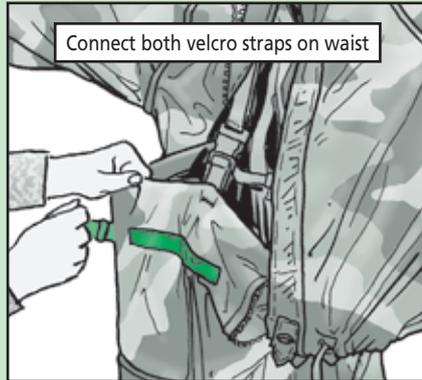
SAFETY IS WHAT YOU NEED TO BE THINKING ABOUT WHEN YOU WEAR YOUR JSLIST, NOT COMFORT.

IF YOUR JSLIST IS TO PROTECT YOU, YOU NEED TO WEAR IT CORRECTLY.

FOR INSTANCE...



- It may make the pants more comfortable if you don't hook up the two velcro waist straps, but that leaves the straps dangling. They can catch on something and break the JSLIST's seal. **Always** connect the waist straps.



Connect both velcro straps on waist

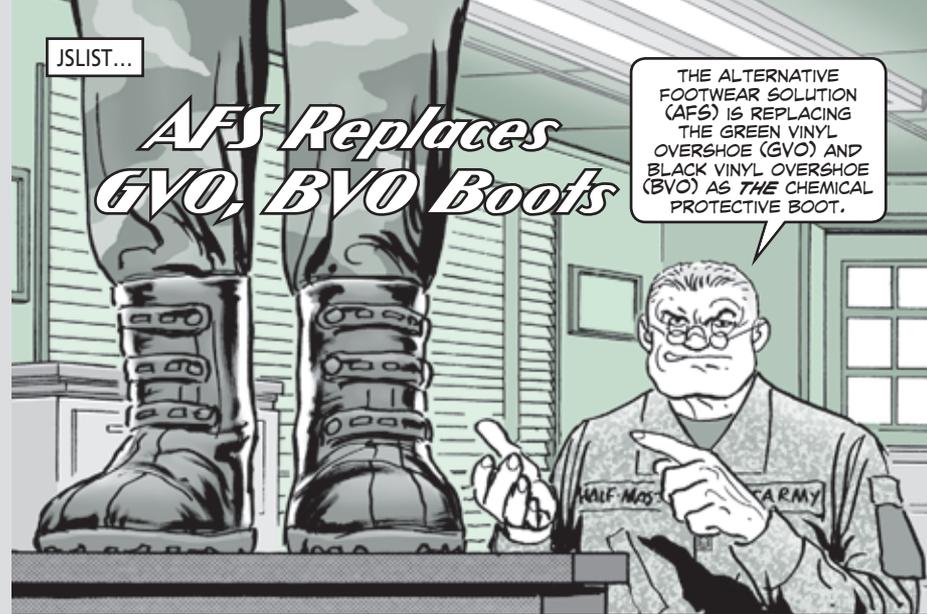
- Make sure the JSLIST hood seats around the top of the mask second skin just above the eye lens and on the mask's bottom over the ridge of the second skin. Be careful when you place the hood over the mask not to hit the straps' buckles. That could loosen the mask and hurt its seal.



Make sure hood covers top and bottom of mask

# AFS Replaces GVO, BVO Boots

THE ALTERNATIVE FOOTWEAR SOLUTION (AFS) IS REPLACING THE GREEN VINYL OVERSHOE (GVO) AND BLACK VINYL OVERSHOE (BVO) AS THE CHEMICAL PROTECTIVE BOOT.



The AFS is a lightweight chemical and biological agent protective overboot made of compounded butyl rubber. It should provide 24 hours of protection when exposed to chemical agents in liquid, vapor or aerosol form. AFS can be worn for 45 days with all current and future chemical/biological clothing.

AFS has an anti-slip, ridged tread pattern for better traction and a slip coat treatment on the inside of the boot for easier donning and doffing. The boots have three sets of buttons with butyl rubber straps to secure the boots.

THE AFS COMES AS A PAIR OF RIGHT AND LEFT BOOTS IN THESE SIZES...



Size	NSN 8340-01-	Combat Boot Size Correlation
X-small	553-6290	3.5-5.5
Small	536-5413	6-7.5
Medium	536-5415	8-9.5 regular
Large	536-5416	9.5 wide-11.5
X-large	536-5419	12-14
XX-large	553-6283	14.5-17

AFS is vacuum packed to take up less space.

Don't throw away your GVO or BVO. They can be used as cold/wet weather boots.

AFS training and general information can be found at:

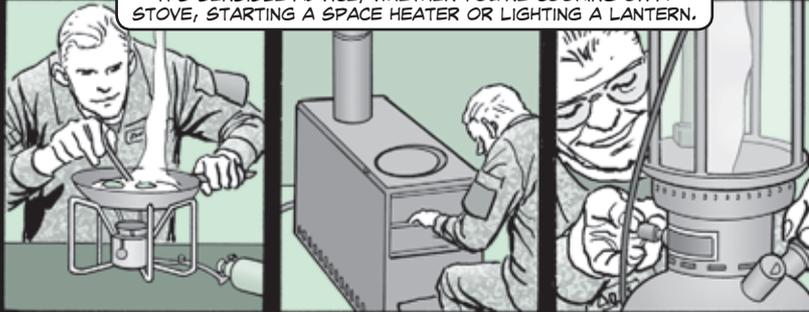
[https://aeaps2.ria.army.mil/sbcom/gtw/ICEMP/AFS\\_Training.ppt](https://aeaps2.ria.army.mil/sbcom/gtw/ICEMP/AFS_Training.ppt)

# A BEACON TO SAFELY GUIDE YOUR WAY

**DON'T PLAY WITH FIRE.**

HOW MANY TIMES HAVE YOU HEARD THAT WARNING?

IT'S SENSIBLE ADVICE, WHETHER YOU'RE COOKING ON A STOVE, STARTING A SPACE HEATER OR LIGHTING A LANTERN.



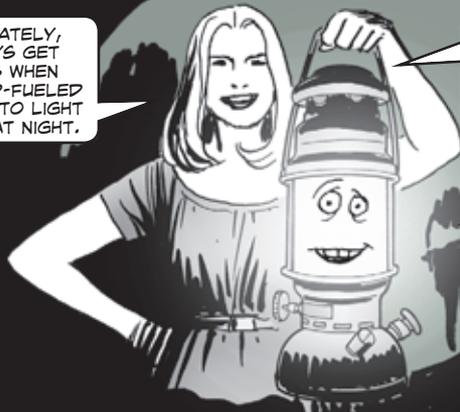
UNFORTUNATELY, SOME GUYS GET CARELESS WHEN USING LIQUID-FUELED LANTERNS TO LIGHT THEIR WAY AT NIGHT.

THAT'S A MISTAKE YOU CAN'T AFFORD.

LIGHTED LANTERNS POSE TWO MAIN HAZARDS: CARBON MONOXIDE (CO) AND FIRE.

ONE POISONS, THE OTHER BURNS.

**BOTH CAN KILL.**



SO DON'T PLAY FAST AND LOOSE WHEN HANDLING LANTERNS.

FOLLOW THESE PROVEN SAFETY RULES...



- Read all safety, operating and maintenance instructions that come with your lantern.

Read safety instructions



- Use only approved fuels recommended by the manufacturer. Unapproved fuels may cause a fire or explosion.
- Store flammable liquids and fuel tanks at a safe distance—10 feet or more—from tents, shelters and sources of heat or flames.

Store fuel at a safe distance

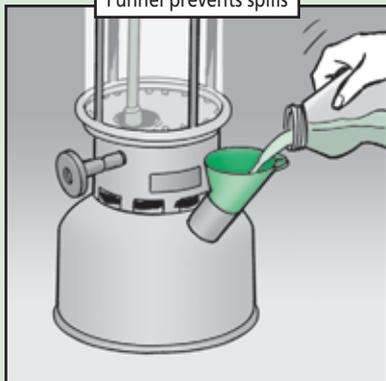


PS MORE

USE A FUNNEL TO POUR FUEL INTO A LANTERN'S TANK.

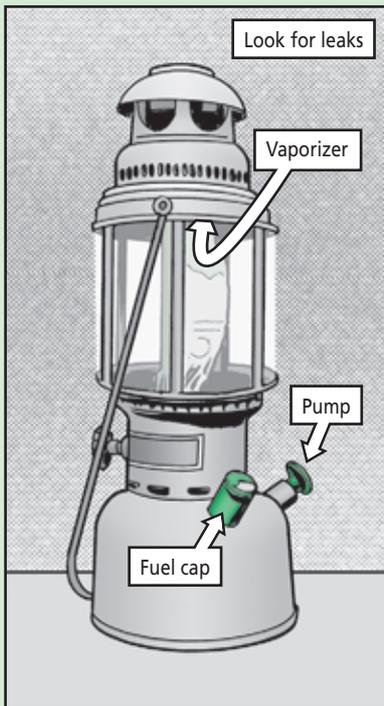
AVOID SPILLING FUEL.

CLEAN UP SPILLS RIGHT AWAY.



- Never fuel a lantern when it's lit or hot. Allow it time to cool down.

- Always fuel a lantern outdoors. And fuel it at safe distances from space heaters, campfires, grills, torches and other sources of heat or flames.
- Pressurize the tank and check for fuel leaks, especially around the pump, vaporizer and fuel cap. Tighten connections to prevent leaks.



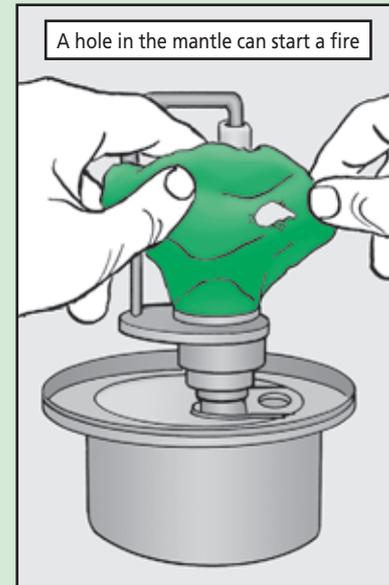
- Never check for a gas leak with a lighted match. Instead, put some soapy water on the connections. If the water bubbles, gas is leaking out.
- Always light a lantern outdoors.
- Set it on a **stable** surface.
- If a lantern goes out, wait until it cools before re-lighting. If you don't, hot fuel vapor could explode.

- A lantern gets hot enough to burn you. Do not bend over it or touch the globe or hood. Let it cool down and put on anti-contact gloves before handling it.



- Keep a hot lantern away from flammable liquids or pressurized fuels, such as propane or butane.
- Keep it away from flammable materials, such as paper, books or fabric.
- Never set it directly on the forest floor or close to brush and debris.
- Burning fuel creates carbon monoxide (CO). CO is a gas you can't see or smell—but it can make you sick or kill you. So avoid using a lantern indoors or in enclosed areas (such as a tent). If you have to use it inside, provide **good ventilation**. And consider installing carbon monoxide and smoke detectors.
- If you use a lantern inside a tent, allow a few feet between the lantern and the tent wall, roof or fabric floor.
- Never leave a lit lantern unattended.
- If you plan to store a lantern for five months or more, empty the fuel tank first.

- Do not remove the heat shield when a lantern is lit. The heat shield lets a lantern operate for a short time with a broken mantle while protecting the fuel tank from becoming unsoldered.
- Inspect the mantle for holes. A hole can make a lantern overheat and start a fire. Replace the mantle if necessary.



- Make sure the glass globe is not cracked or broken. If it is, replace it.



Tents...

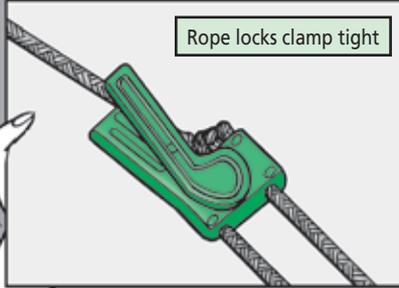
# It's a Cinch

SOME THINGS NEED TO BE TIED DOWN TIGHT, SUCH AS TENTS, LOOSE GEAR, CARGO NETS, TARPS, AND VEHICLE AND TRAILER COVERS.

TO CINCH 'EM SNUG, YOU DON'T NEED A TALENT FOR TYING KNOTS.



Rope locks clamp tight



ALL YOU NEED ARE SOME ROPE LOCKS, NSN 4030-01-477-0524.

THE NSN BRINGS A PACKAGE OF 12 MOLDED LOCKS.

EACH ROPE LOCK CAN HOLD A 5/16-IN POLYPROPYLENE OR NYLON CINCH ROPE IN PLACE.

IT CLAMPS TIGHT AND DOESN'T NEED CONSTANT ADJUSTMENTS AFTER IT'S SECURED OR FASTENED.

THE ROPE LOCK COMES WITH A THREE-POSITION LOCKING LEVER THAT ADAPTS TO SLIGHT CHANGES IN THE SIZE OF THE ROPE.

THOSE SIZE CHANGES COULD BE CAUSED BY...

- temperature changes
- rope swelling when it's wet
- variations in ropes from different suppliers

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# Low Heat to Dry ECWCS Parka

IT'S GOOD TO CLEAN YOUR PARKA TO GET READY FOR WINTER. BUT YOU HAVE TO SET THE DRYER TO **LOW!**



**S**et your machine dryer to LOW heat when drying your generation II extended cold weather clothing system (ECWCS) parka in universal camouflage.

Hotter settings partly melt the 2-in adhesive buffer tape along the bottom of the parka. The sticky tape causes the parka's material to stick together. If you try to pull it apart, the tape tears.

So set the dryer to LOW, or hang the parka to air dry.

# Safety - What Weighs Heavy on Your Mind?

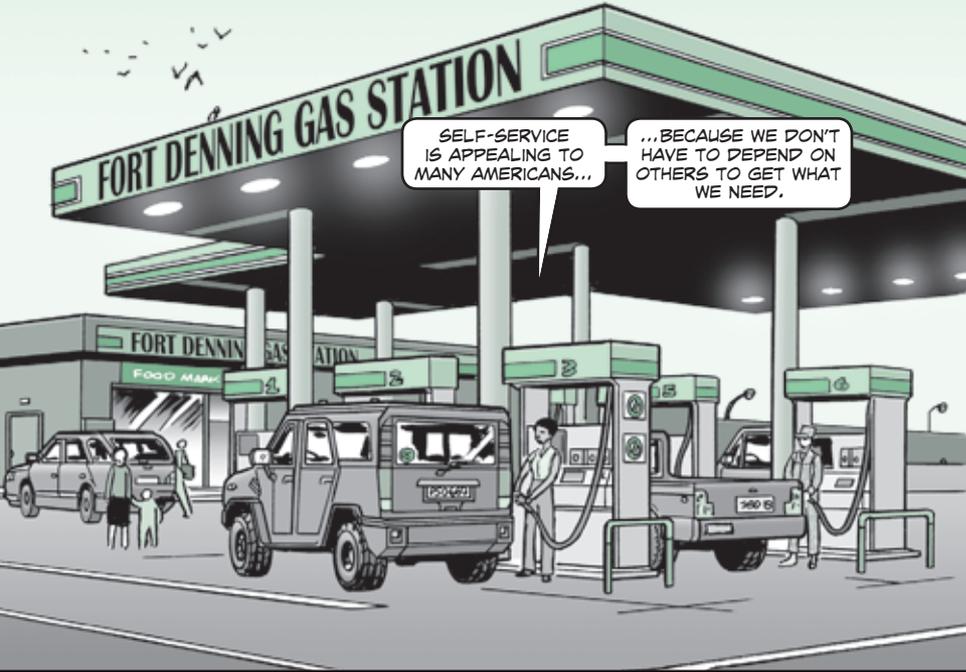


**A** private first class in Iraq suffered a concussion in 2007 when he tried to mount an M2 on an M114 by himself. He did not properly support the weapon and it fell on his head. Yeah, Ouch!

Use the buddy system when moving heavy, bulky or awkwardly shaped items. And, make sure equipment is secure so it won't give you a massive migraine.

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# Tailor Pubs to Unit Needs



SELF-SERVICE IS APPEALING TO MANY AMERICANS...

...BECAUSE WE DON'T HAVE TO DEPEND ON OTHERS TO GET WHAT WE NEED.

THERE ARE TWO WAYS YOU CAN FIGURE OUT WHAT PUBLICATIONS YOUR UNIT NEEDS.



YOU CAN EMAIL THE LOGISTICS SUPPORT ACTIVITY (LOGSA) EQUIPMENT ORIENTED PUBLICATIONS DATA BASE (EOPDB) TEAM AND...



...WE'LL RUN THE REPORT FOR YOU.

OR YOU CAN USE THE LOGSA LOGISTICS INFORMATION WAREHOUSE (LIW) TO RUN THE REPORT ONLINE YOURSELF.



REGARDLESS OF WHICH METHOD YOU USE, YOU MUST ENTER THE RIGHT INFORMATION TO GET THE RIGHT RESULTS.

IF YOUR UNIT IS TRANSITIONING TO NEW EQUIPMENT OR MISSIONS, BE SURE YOU ARE USING THE NEW LIC/MTOE/LIN INFO TO GET NEW EQUIPMENT PUBLICATION LISTS.



## EOPDB Team

Using the team means that you get their expertise in dealing with the database. You also get three reports (the Pubs, LIN and Reject Reports) in place of the single LIW report.

REJECT LINS	REPORT BY PUB NUMBER	REPORT BY LIN
90937N	LIN P91756	P91756
95157N	NIIN 013388010	013388010
97274N	LO 10-4320-316-12	-4320-316-12
99161N	PUMP UNIT, DIESEL, 65 GPM	UNIT, 65
99172N		
A0316		
A0317		
A0318		

BUT, UNLIKE SELF-SERVICE GAS STATIONS, GETTING A PUBLICATIONS LIST ORIENTED TO YOUR EQUIPMENT ONLINE MAY NOT GET YOU EVERYTHING THAT THE EOPDB OFFICE WILL.



YOU CAN SAY THAT AGAIN!!





# ☆☆☆ Connie's ☆☆☆ ☆☆☆ Post Scripts ☆☆☆

## M1070 Tow Shackle NSN

Use NSN 4030-01-539-5345 to get a 17-ton tow shackle for the HET and PLS. This NSN replaces the 13-ton tow shackle shown in the BII as Item 33 on Page B-11 of TM 9-2320-360-10.

## BRIDGE WEIGHT CLASS SIGN

Use NSN 9905-00-565-6267 to get a weight classification sign kit for your truck. The sign helps you decide whether it's safe to cross a marked bridge when you come to it.

## M997 HMMWV A/C Conversion MWO

MWO 9-2320-289-35-5 converted the M997 and M997A1 ambulance air conditioner to an R-134 system using conversion kit, NSN 4130-01-503-9310. The MWO lists the conversion kit components, but TM 9-2320-280-24P-2 still lists parts for the R-12 system. Mr. Millard Evans of FMS 28, AL ARNG, in Mobile, AL, told us he recommends units with M997 ambulances place a copy of MWO 9-2320-289-35-5 near the TM for reference until the TM is updated. That makes sense to us, so do this. Or you can pencil in the changes or make a reference to the MWO in your TM until this change happens.

## M978 Tanker Pump Gasket

NSN 5330-00-391-8491 gets a gasket for the tanker's pump module piping. This NSN replaces the parts info shown as Item 36 of Fig 449 and Item 8 of Fig 450 in TM 9-2320-279-24P-2.

## CRANE WIRE ROPE

You'll look at least once, probably twice, trying to find the wire rope (cable) for the 22-ton crane. The cable is shown as Item 89 on Page 340 of TM 5-3810-307-24P. The NSN is missing from the technical manual, so order NSN 4010-01-477-3812 to get the cable.

## M1078 LMTV SNOW PLOW KIT

In heavy snow, you'll need the snow plow kit for your M1078A0 LMTV, NSN 3825-01-509-5922. It costs about \$10,000 and takes about 90 days for delivery once you've placed your order. Contact Arrowhead Equipment at 888-883-5572 to get one.

## HAWKER BATTERY WEBSITE AND HOTLINE

Need help with your Hawker battery, NSN 6140-01-485-1472? Go to this website for assistance: <http://www.hawkeraplus.com/> You can also get your questions answered using the toll-free 24/7 customer support hotline: 877-485-1472

## PLS Connector Plug NSN

NSN 5935-01-491-0504 gets a new electrical connector plug for the M1074/M1075 PLS. This NSN replaces the one shown as Item 22 in Fig 102 of TM 9-2320-364-24P-1.

## PLS Pressure Test Kit

You'll need four additional fittings when using the PLS's pressure test kit, NSN 4730-01-378-8863, to adjust the vehicle's steering pump hydraulic-pump control. Order two fittings with NSN 4730-01-356-0682. Then order two fittings with PN FF20000T-1212S with CAGE 01276 directly from the vendor, Aeroquip, by calling (952) 937-7190.

## HEMTT and HEMAT Helical Spring

Use NSN 5360-01-299-9316 to get the helical spring used in the HEMTT and M989A1 HEMAT ammo trailer's front and rear brake assemblies. This NSN replaces the old spring shown as Item 20 of Fig 188 and Item 21 of Fig 189 in TM 9-2320-279-24P-1 for the HEMTT. And it's Item 19 in Fig 8 of TM 9-2330-383-14&P for the HEMAT.

## HEMTT Engine Bolt

Tell your buddies in support that NSN 5306-01-270-8239 gets the right cap screw (bolt) that mounts the blower to the basic HEMTT and A1's engine block. The bolt shown as Item 5 in Fig 35 of TM 9-2320-279-24P-1 is no longer recommended for mounting the blower.

## HEMTT Cab Wiring Harness

Use NSN 6150-01-518-7874 to get a cab wiring harness for the HEMTT. This NSN replaces the one shown as Item 1 in Fig 122 of TM 9-2320-279-24P-1.

## M1117 ASV Exhaust Clamp

Use NSN 4730-01-478-0490 to get an exhaust clamp for the armored security vehicle. This new clamp (and locknut) replaces the old clamp shown as Item 21 in Fig 4-1 of TM 9-2320-307-24P.

## MW24C Dust Cap

Use NSN 5340-01-182-5274 to get the dust cap for the steering wheel on the MW24C scoop loader. This NSN replaces the parts info shown as Item 3 in Fig 93 of TM 5-3805-262-24P.

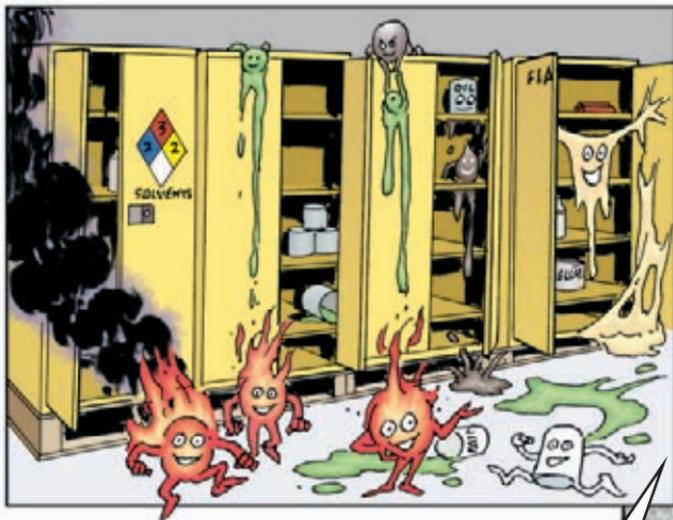
## 175B LOADER TIRE NSN

You won't find the right tire info for your 175B loader in TM 5-3805-257-24P. So get replacement tires using NSN 2610-01-076-9414, part number ZZ-T-1083 or GP4A/26.50-25/L/LDKD, and CAGE 81348. And make a note until the TM is updated.

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

Would You Stake Your Life <sup>right now</sup> on  
the Condition of Your Equipment?

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KEEP MSDS REPORTS UP-TO-DATE AND MAKE SURE SOLVENTS, PAINTS, OIL, GREASE AND ADHESIVES ARE STORED PROPERLY.

SEE THE DIFFERENCE PROPER STORAGE MAKES!



**DO YOU KNOW HOW YOUR HAZMAT IS STORED?**