

Issue 743

PS

October  
2014

# THE PREVENTIVE MAINTENANCE MONTHLY

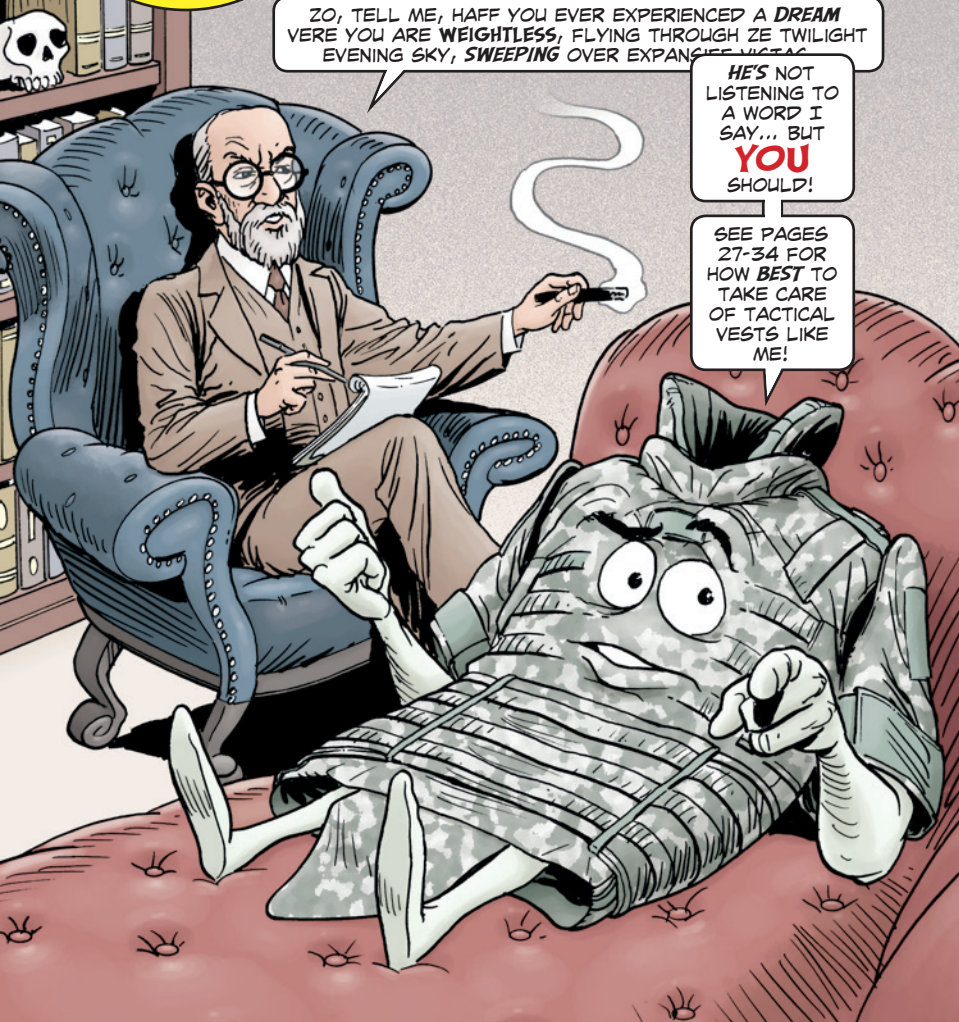
TB 43-PS-743

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ZO, TELL ME, HAFF YOU EVER EXPERIENCED A *DREAM* VERE YOU ARE **WEIGHTLESS**, FLYING THROUGH ZE TWILIGHT EVENING SKY, *SWEEPING* OVER EXPANSIVE VEGAS

HE'S NOT LISTENING TO A WORD I SAY... BUT **YOU** SHOULD!

SEE PAGES 27-34 FOR HOW **BEST** TO TAKE CARE OF TACTICAL VESTS LIKE ME!



HEY, JONES!  
**HURRY UP!** IT'S  
TIME TO CLOSE  
UP SHOP.

OK, OK! I WAS ALMOST  
FINISHED, BUT I GUESS IT'S  
GOOD ENOUGH FOR NOW.

OK, OK! I WAS ALMOST FINISHED, BUT I GUESS IT'S GOOD ENOUGH FOR NOW.

PLAN AHEAD AND  
LEAVE PLENTY OF TIME  
TO DO THE JOB **RIGHT.**

NEXT TIME, I'M  
GOING TO MAKE  
SURE I START  
EARLIER!

So don't be in a hurry to get the job done. Maintenance is a long distance race, not a sprint, so give it the time it deserves. Your life depends on the condition of your equipment. Rushing maintenance is like playing Russian roulette; you never know when your luck will run out.

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Aircraft Circuit Breaker Lockouts  
HGU-56/P Helmet PMCS  
Microclimate Cooling Unit Turn-ins

26	Connie's Post Scripts	60-61
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Just write to:  
**MSG Half-Mast**  
**PS, the Preventive Maintenance Monthly**  
**USAMC LOGSA (AMXLS-GP)**  
**Bldg. 3303**  
**Redstone Arsenal, AL 35898**  
Or email to:  
**half.mast@us.army.mil** or  
**usarmy.redstone.logsa.mbx.psmag@mail**  
Internet address:  
**<https://www.logsa.army.mil/psmag/pshome>**

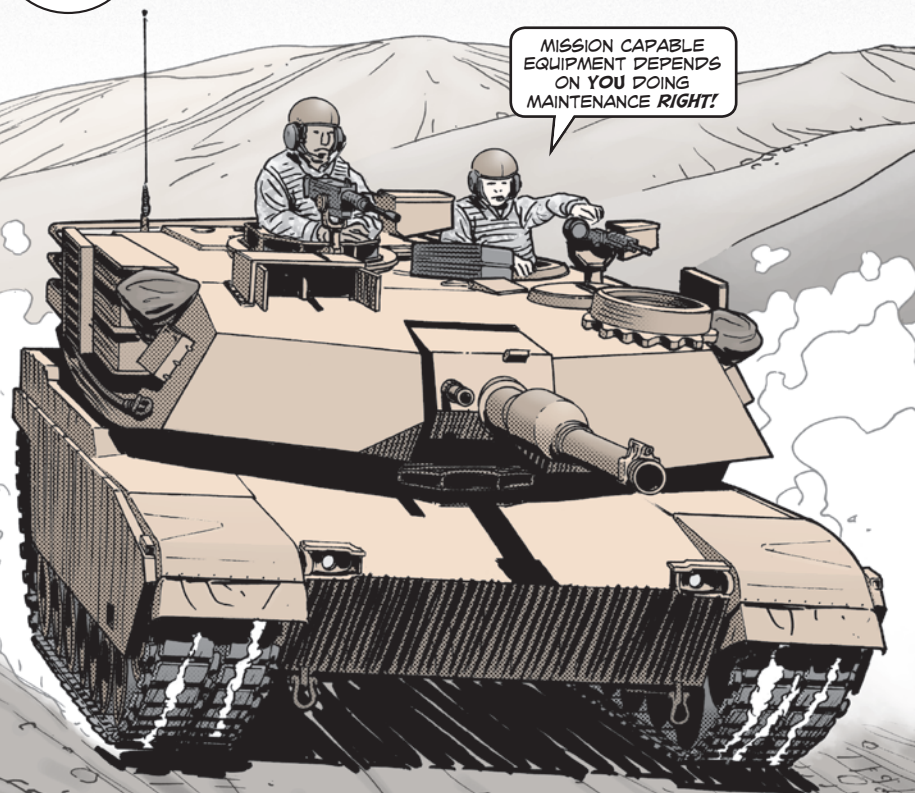
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# PS COMBAT VEHICLES

MISSION CAPABLE EQUIPMENT DEPENDS ON YOU DOING MAINTENANCE RIGHT!

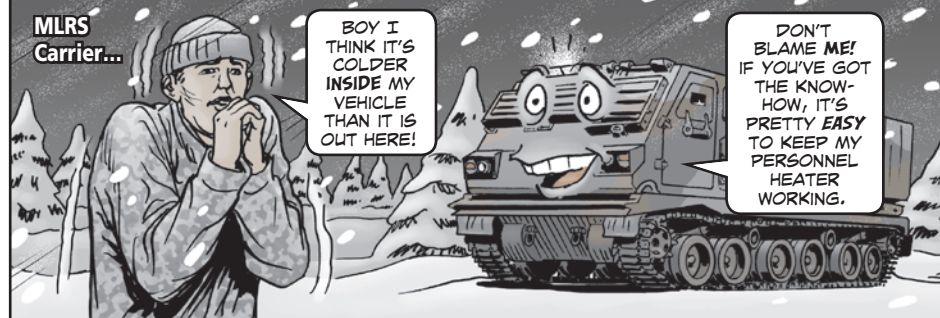


**T**his section covers MLRS heaters, Stryker mortar cracks, lubing M113s and using funnels to add oil.

MLRS Carrier...

BOY I THINK IT'S COLDER INSIDE MY VEHICLE THAN IT IS OUT HERE!

DON'T BLAME ME! IF YOU'VE GOT THE KNOW-HOW, IT'S PRETTY EASY TO KEEP MY PERSONNEL HEATER WORKING.



## KEEP WINTER'S BITE AT BAY!

**A** working personnel heater on a cold winter's morning is a thing of beauty. But when the heater's on the fritz, the temps inside your vehicle can get real ugly in a hurry.

You can keep the big freeze at bay by knowing what to do if your heater stops working.

The main culprits behind a non-heating heater are a jammed exhaust fan or a burned-out fuse.

Over time, dust and dirt build up inside the heater. When enough debris builds up, it locks up the exhaust fan. If the fan stops turning, the 6.3-amp fuse burns out and the heater shuts down.

Before removing the heater and sending it in for repair, try the following:

1. Remove the air duct hose, NSN 4720-00-535-7615, from the heater.
2. Vacuum out the accumulated dirt and dust around the fan.

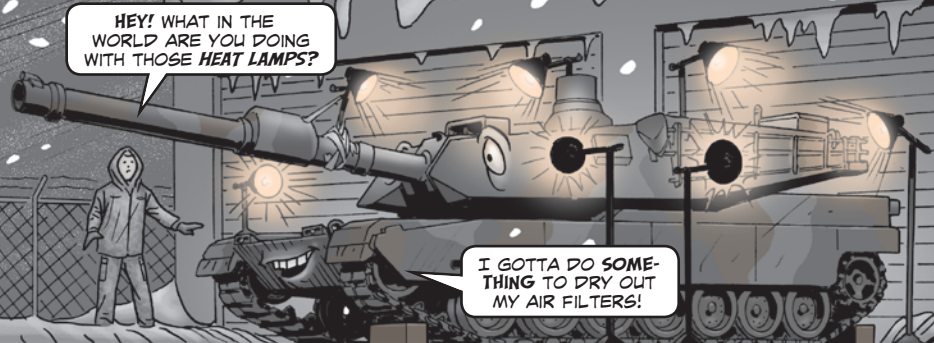


3. Turn the fan back and forth to loosen dirt at the base of the fan and vacuum again.
4. Replace the 6.3-amp fuse, NSN 5920-12-301-5271, if necessary.



And remember, you can usually prevent the problem altogether by cleaning the fan when temperatures start to fall and again at the end of winter. Making sure the air inlet screen, NSN 2510-01-264-0153, is properly installed in the cab will help keep out debris, too.

# FREEZE OUT AIR FILTER DAMAGE



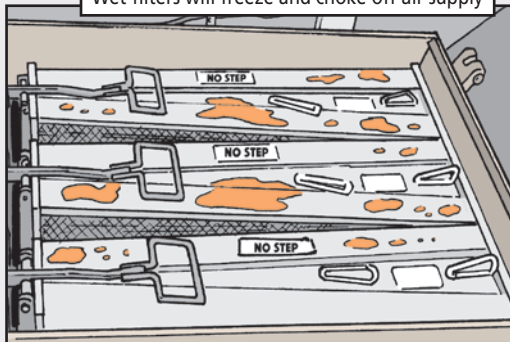
Dust, sand and dirt are obvious dangers to your combat vehicle's air filters. But water can be just as big of a hazard.

If it's cold out, wet filters can freeze and plug up, keeping the engine from getting the air it needs to work. That can lead to a burned-out engine.

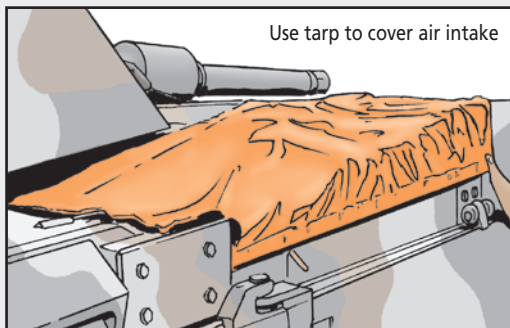
So take steps to keep those air filters as dry as possible. When the vehicle is sitting, cover the air cleaner intake with canvas or plastic to keep out rain, sleet and snow. Just be sure to remove the cover before starting the vehicle.

Keep a close eye on the air cleaner indicator or air filter clogged light while operating your vehicle. If the element gets plugged, it needs to be cleaned, dried out or replaced—whichever is needed—as soon as possible.

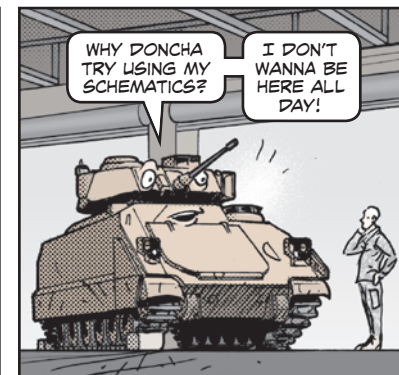
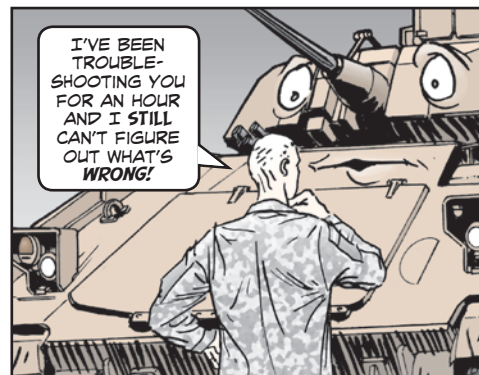
Wet filters will freeze and choke off air supply



Use tarp to cover air intake



# Dig Deeper with Schematics



Mechanics, troubleshooting a Bradley is usually fairly straightforward. You just complete the onboard diagnostics and follow the maintenance procedures in the TM until you figure out what's causing the problem.

But sometimes it takes a little more digging to figure out what's wrong. That's when the schematics come in handy. They'll help you troubleshoot all of the Bradley's subsystems so whatever the problem is, you can fix it.

You can find a complete set of schematics for all Bradley vehicles in TB 9-2350-408-23, *Field Maintenance Schematics* (Jul 13).

Download it at the Logistics Support Activity's (LOGSA) ETM website:

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

## FM Helps Prepare for Action

Dear Editor,

We have discovered that FM 3-20.21, *Heavy Brigade Combat Team Gunnery*, can make getting your Bradley ready for action much simpler.

Appendix B gives all sorts of information on boresighting, troubleshooting and zeroing the Bradley's guns. But what is particularly helpful is Para B-72, which has a pre-fire checklist for the gunner and vehicle commander. The checklist will ensure the Bradley is ready to shoot.

1SG Brent Garrett  
SSG Joseph Mellon  
SPC Clayton Wells  
1/3 BSTB  
Ft Stewart, GA

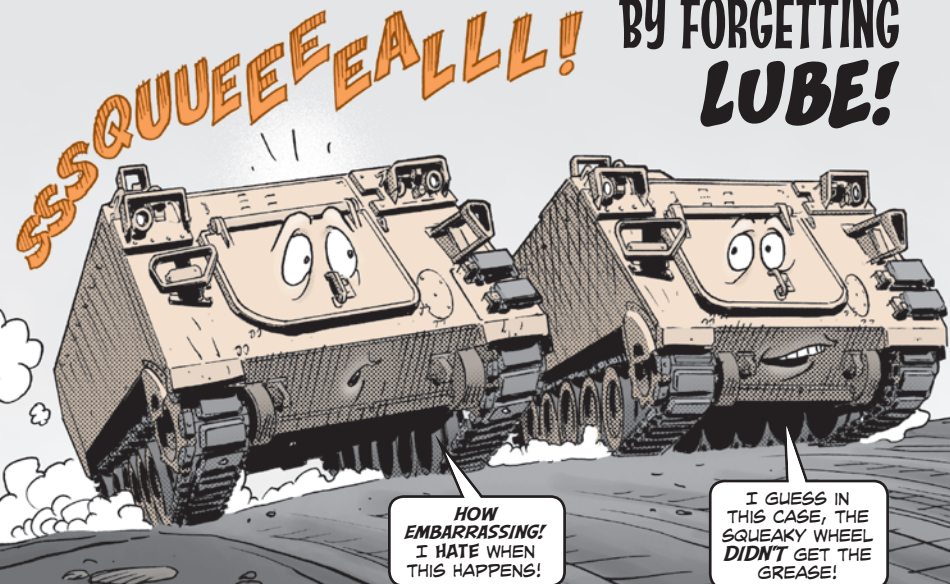
**Editor's note:** Good idea! The FM is online:

<https://rdl.train.army.mil/catalog/go/100.ATSC/FD2AF9CA-151D-4565-9540-82B357944BE3-1300778516510>

You can just print out Appendix B and keep it inside your Bradley.



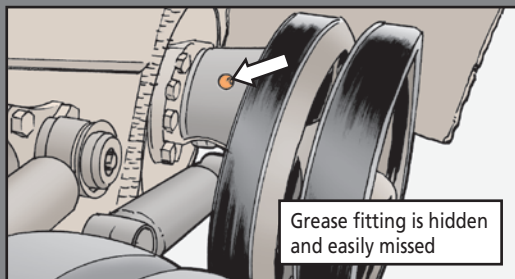
# DON'T IDLE CARRIER BY FORGETTING LUBE!



Crewmen, you know that old saying about the squeaky wheel getting the grease? That also goes for the idler wheel support arms on your M113-series carrier.

But you don't wanna wait until the support arms start squeaking before you grease them. That's a sure way to make those idler wheels idle.

It's easy to miss the grease fittings because they sit on the support arms back behind the idler wheels. And lots of times, they're covered with mud.

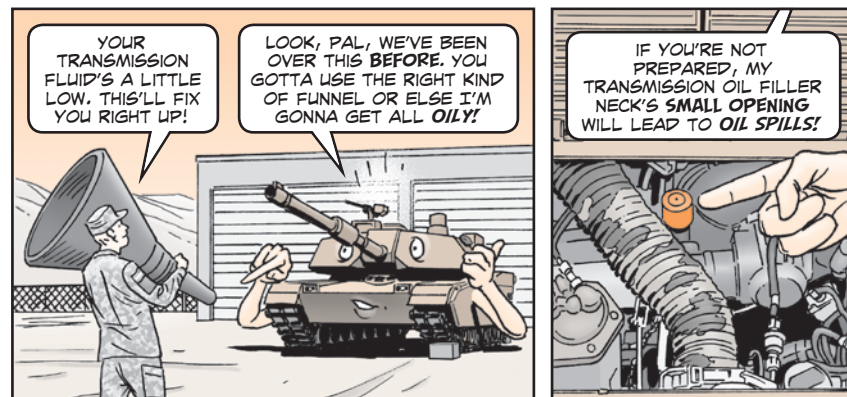


If you don't lube the support arms, the bearings dry out and the idler arm freezes. When the arm won't move, you can't adjust track tension. That makes your vehicle NMC.

Lube both idler arms with GAA every 150 hours, 1,500 miles or semiannually, whichever comes first. Just remember, clean the fittings with dry cleaning solvent before you pump in any lube. That'll keep dirt from mixing with the grease.

Finally, put a dab of GAA on the grease fittings immediately after relubing, washing or fording the vehicle. That'll keep the fittings from rusting.

# FUNNEL AWAY OIL SPILLS



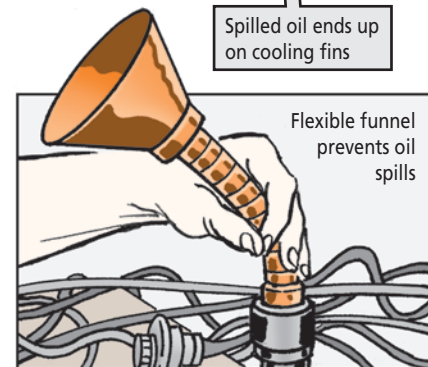
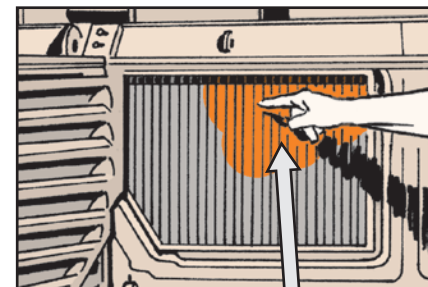
**M**echanics, you've probably noticed that the M1-series tank's transmission filler neck doesn't have a very big opening. It's just too small to pour transmission fluid directly from the can.

Some of the fluid is gonna spill, no matter how careful you are. And things don't get any better after that. The oil cooler fans are gonna blow that oil all over the oil cooler fins.

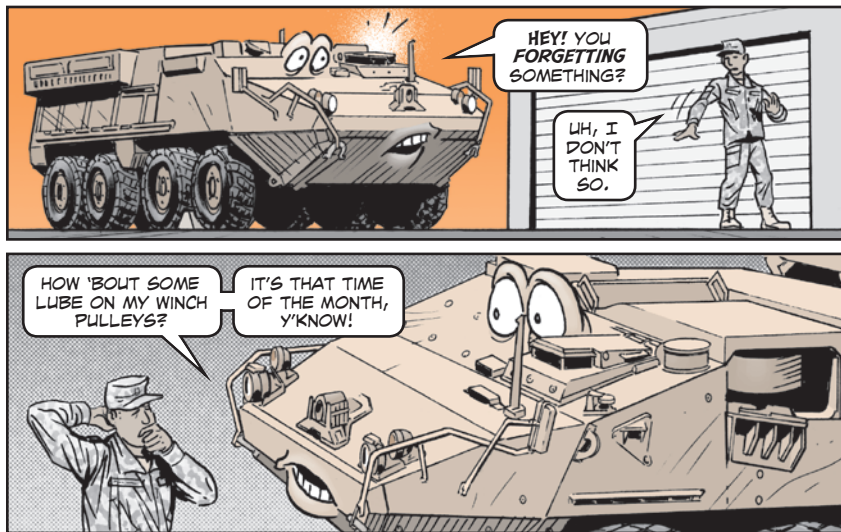
Dust is attracted to the oil residue. The gooey mess that forms on the cooling fins keeps the heat from radiating away from the oil inside the coolers. That leads to transmission damage.

But something as simple as a funnel can prevent all that. A box of 12 flexible funnels comes with NSN 7240-00-559-7364. Never add oil without using one. So get one of these if your current oil funnel is broken or too large for the transmission filler opening.

Each funnel holds a quart of oil. So don't pour more than a quart into the funnel at a time. And make sure you wipe up any spilled oil right away.



# Stryker... Pulleys Need TLC, Too

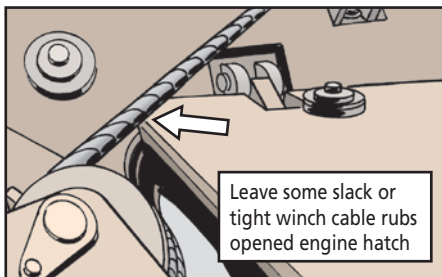
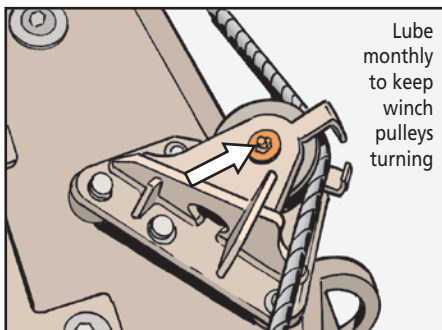


Crewmen, your Stryker's winch can help you and your buddies out of some tricky situations. But only if the winch pulleys get lubed. Otherwise, the winch won't winch.

The pulleys lock up if they aren't lubed. Then the winch cable is damaged by friction as it passes over the pulleys.

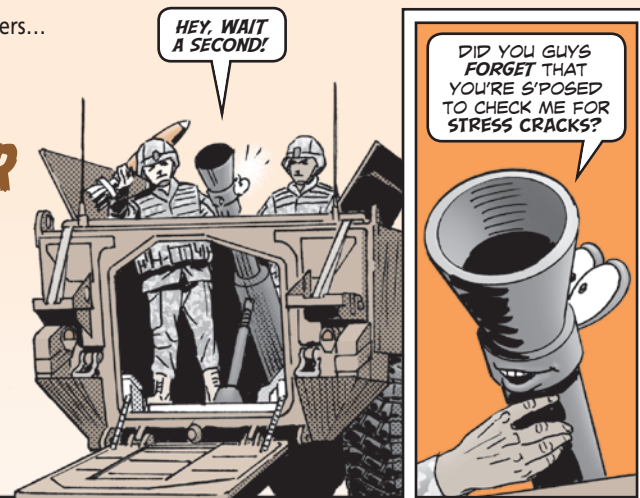
A few pumps of GAA once a month will keep those pulleys moving nice and smooth. Lubrication of the pulleys is covered under Item 5 of the monthly PMCS tables for all fittings and cables.

When you're finished with recovery operations, be sure to leave a little slack in the winch cable. That keeps the cable from rubbing against the corner of the front hatch when it's opened.



M1129A1 MCV,  
XM1252 MCVV Strykers...

## CHECK MORTAR TUBES FOR STRESS CRACKS



Crewmen, testing has shown that some 120mm mortar tubes on mortar carrier (MCV) Strykers are developing stress corrosion cracks. The cracks are appearing on the portion of the barrel under greatest pressure: between 46 and 51 inches from the muzzle end of the mortar. Those cracks could cause the mortar tube to rupture, resulting in severe injury or even death!

No mortar tube failures or injuries have been reported to date. But all 120mm mortar tubes in MCV Stryker and double "V" hull MCVVs need to be visually inspected immediately. Magnetic particle inspection of mortars has already started.

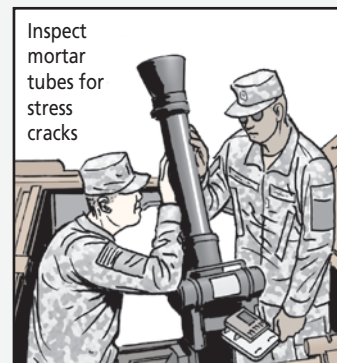
Do not fire any mortar tubes that have stress cracks. Report them to your repair team right away. Make sure mortar tubes are clean at all times because environmental factors, such as the presence of corrosive chemicals during firing, will cause stress corrosion cracks.

TACOM LCMC safety message 14-009 has detailed instructions on how to inspect your Stryker's mortar tube. You'll find the message on the TACOM-Unique Logistics Support Applications (TULSA) website at:

<https://tulsa.tacom.army.mil/SAFETY/message.cfm?id=SOUM14-009.html>

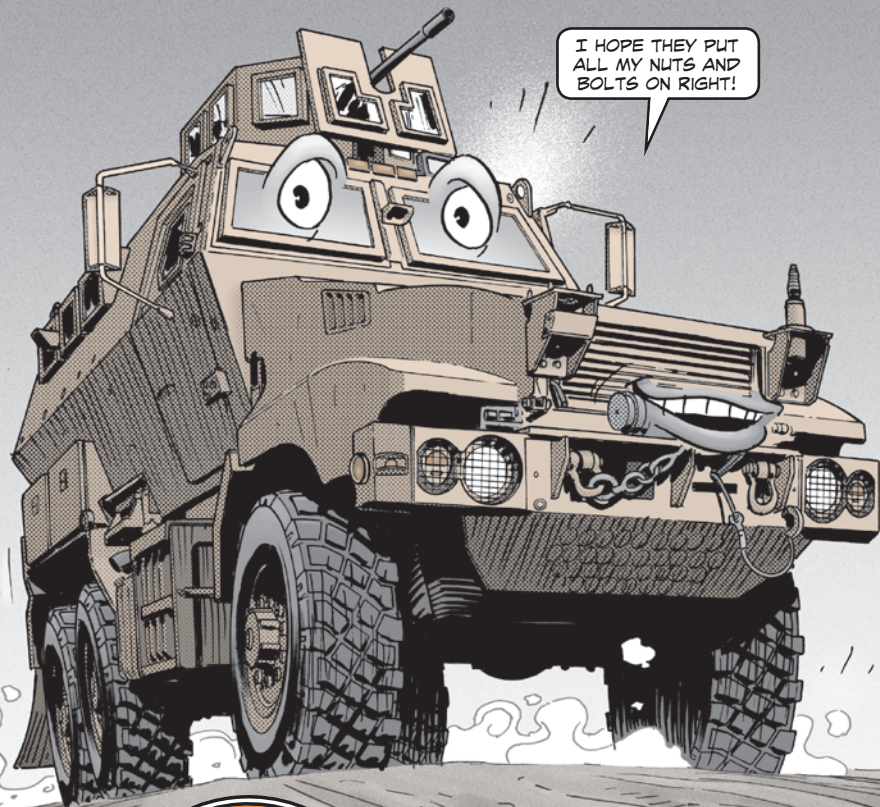
You'll need your CAC and first-time users must first request access.

Questions? Contact Marilou Happle at DSN 786-2016, (586) 282-2016, or email: [marilou.t.happle.civ@mail.mil](mailto:marilou.t.happle.civ@mail.mil)



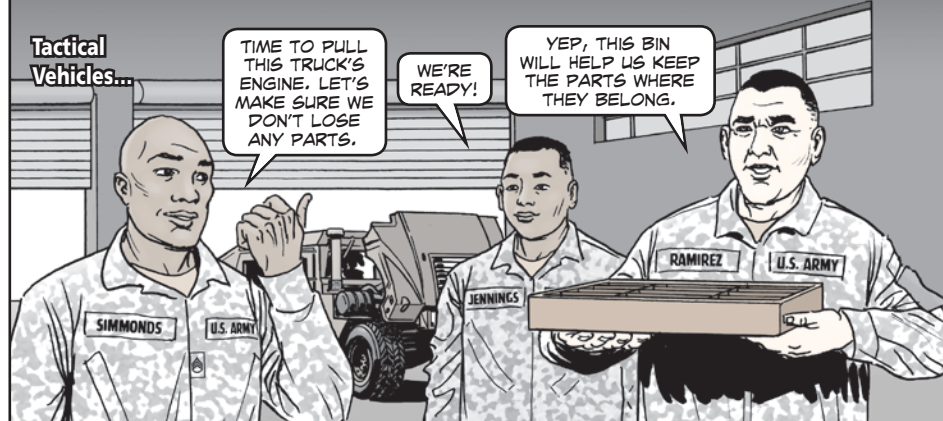


# PS TACTICAL VEHICLES



**T**his section covers parts and maintenance, how to improve MRAPs, M1074 trans fluid, and matching M939A2 batteries and alternators.

## Tactical Vehicles...



## ORGANIZATION SAVES TIME AND TROUBLE

Dear Editor,

We have a suggestion that will help mechanics keep up with parts while performing maintenance.

When we're removing a HMMWV engine, we use a bin with 12 compartments. Then we organize the bin by labeling where the parts go during the maintenance procedure. In other words, each individual piece that comes off the engine—bolts, nuts, etc.—is placed in its own compartment in the bin. That section of the bin is then labeled.

We just jot down where the parts came from and put it on a slip of paper with the associated parts. You can also choose to tape the paper to the bin. And depending on the maintenance job you're doing, some sections might be empty. Our bin for HMMWV parts looks something like this:

Grille mount bolts	Power steering pump bolts	Throttle clip
EMPTY	Intake turbo bolts	Starter
Wiring harness brackets/clip	EMPTY	Generator
Engine mount bolts	Exhaust pipe bolts	Flywheel bolts

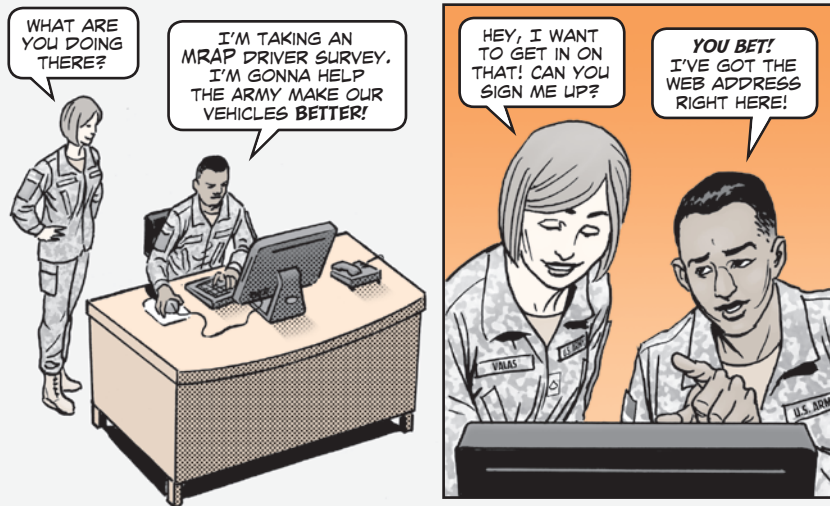
This system makes it easier for another mechanic to install the replacement engine if you aren't around to do it yourself. Plus, it's a great reminder of where the parts go and eliminates tracking down missing parts and finding new parts to replace lost ones.

SSG Erik Simmonds  
SGT Alfredo Ramirez  
SPC Carlos Jennings  
86th ESB  
Ft Bliss, TX

*Editor's note: Great idea, Soldiers. Thanks for sharing that helpful maintenance tip.*



# MRAP Driver Survey



**MRAP** operators and crewmembers, DOD is looking for your comments and feedback!

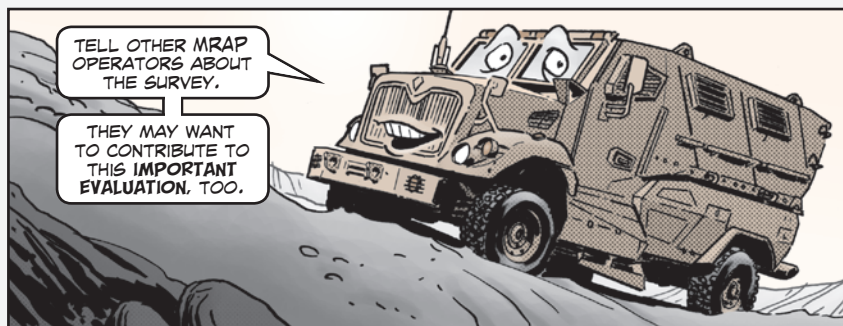
As a tactical vehicle operator, you have an opportunity to improve MRAP vehicle and training programs. Your opinion counts. Help DOD build a more survivable tactical vehicle and save the lives of fellow operators.

Access the online survey at:

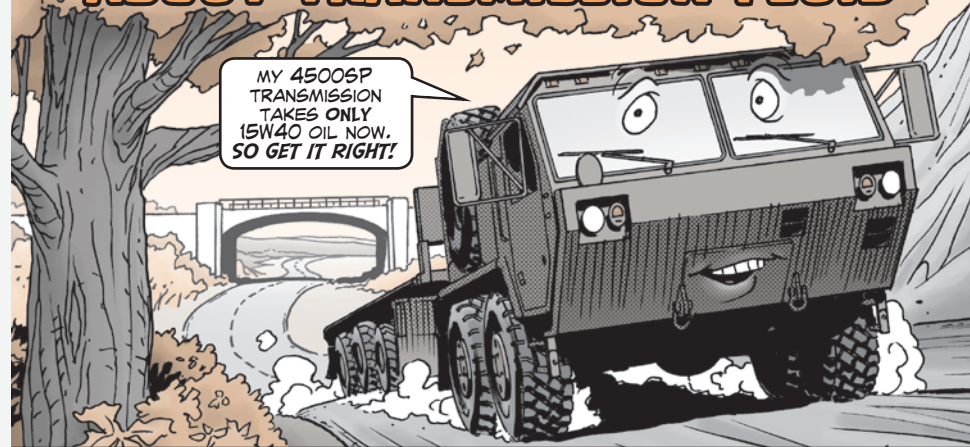
[https://www.surveymonkey.com/s/MRAP\\_Training](https://www.surveymonkey.com/s/MRAP_Training)

If you have problems accessing the survey, it could be due to firewall issues. Try completing the survey from a different computer.

At the end of the survey, you'll find a link to the Tactical Driver Training Course on the Unit Assistance Training Program (UTAP) website. The site requires CAC card access but is not associated with the survey.

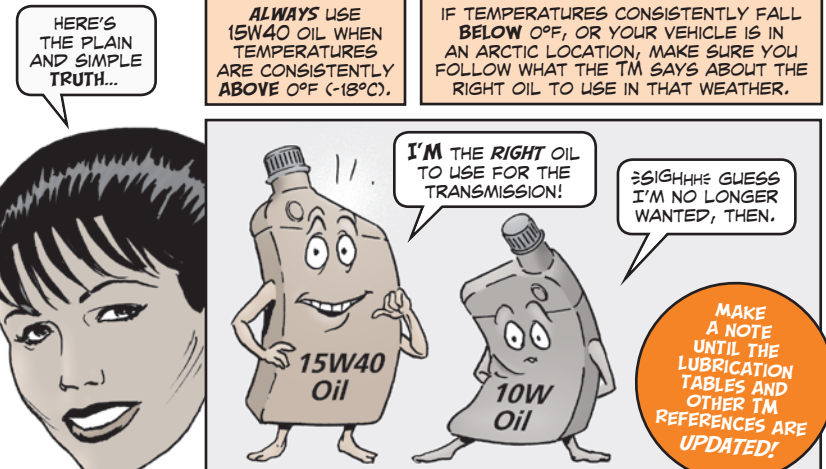


## M1074, M1075 PLS... GETTING SPECIFIC ABOUT TRANSMISSION FLUID



**W**hen the M1074 and M1075 base model PLS trucks got the 4500SP Allison transmission, the transmission fluid was changed from 10W to 15W40 oil.

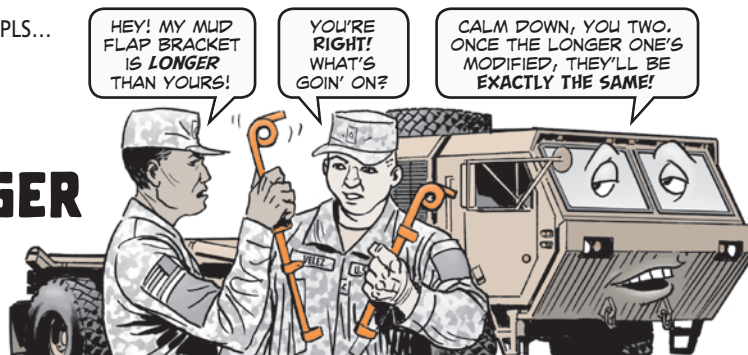
Problem is, the maintenance procedures and lubrication tables in TM 9-2320-364-14&P (IETM EM 0206, Apr 09) are inconsistent. Sometimes they say to use 10W oil and other times 15W40 oil.





M1074, M1075 PLS...

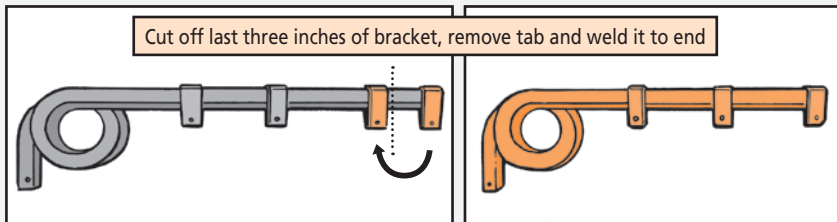
# MUD FLAP HANGER KIT FLAP



**M**echanics, when you order a new mud flap hanger bracket kit, NSN 5340-01-383-2457, for your palletized loading system (PLS) truck, don't be surprised if the left- and right-hand brackets you get are a little longer than the originals.

These brackets are now made by two different vendors. The brackets made by the second vendor are about three inches longer than the originals.

If you receive the longer brackets, you'll need to modify them. Just cut off the last three inches of both brackets. Then remove one clip from each bracket so that only three clips remain. Weld the end clip flush to the end of the hanger.



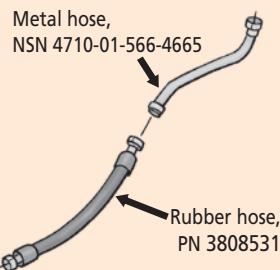
M1074A1 and M1075A1 PLS...

# HOW TO GET TWO-PIECE HYDRAULIC HOSE

**T**he old, one-piece hydraulic hose, NSN 4720-01-567-7068, shown as Item 56 in Fig 802 of TM 9-2320-319-13&P in IETM EM 0298 (Mar 10), is no longer available for your PLS. You must now order the hose as two separate pieces, one metal and one rubber.

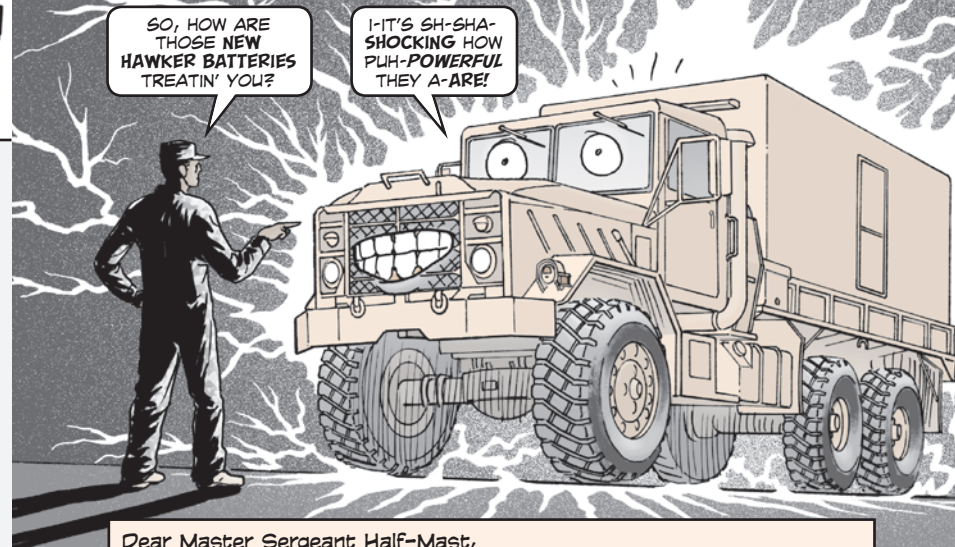
NSN 4710-01-566-4665 gets the metal hose. However, there is no NSN available for the rubber hose (PN 3808531). You'll need to order it directly from Oshkosh. Call 1-800-392-9921 or email:

[partssales@defense.oshkoshcorp.com](mailto:partssales@defense.oshkoshcorp.com)



M939A2-Series 5-Ton Trucks...

# NEW ALTERNATOR NEEDED WITH HAWKERS



Dear Master Sergeant Half-Mast,

We're having some serious problems installing Hawker batteries in our M939A2-series 5-ton trucks.

When our mechanics put Hawker batteries in those trucks, the voltage gauge maxes out. A mechanic from a nearby shop said they had the same problem, but their vehicle's alternator was fried, too!

Do you have any idea what's causing these problems?

MSG P.L.

Dear Master Sergeant,

Sure do. The problem is with the old 60-amp alternator used on those trucks. They can't handle the power from the Hawker batteries.

The fix is to have your mechanic replace the old alternator with the new 140-amp alternator, NSN 2920-01-371-6064. That'll stop the issues with the Hawker batteries.

If you ever have problems with the 140-amp alternator after it's installed, don't replace it. You can get a repair kit with NSN 2920-01-222-2183.

*Half-Mast*

# WHAT'S UP WITH TIRE SIZES?

I KNOW MY FRONT TIRES ARE SUPPOSED TO BE BIGGER THAN MY REAR TIRES... BUT THIS IS RIDICULOUS!



Dear Half-Mast,

We've noticed that the tires on some M915A3 front wheel assemblies are a different size than the ones on the rear. All our other M915-series trucks have the same size tires on the front and rear. What gives?

Mr. J.R.G.

Dear Sir,

Good eye! Here's the story.

Starting with serial number V71659, the M915A3-series tractor truck was built to support up-armor requirements. That requirement resulted in several component changes and upgrades to the suspension, brakes, air tanks and tires.

As you've noted, the front tire has changed in size and load range. The original 11R22.5 tires could not safely handle the added weight of the up-armor. That resulted in a change to the 12R22.5 tire.

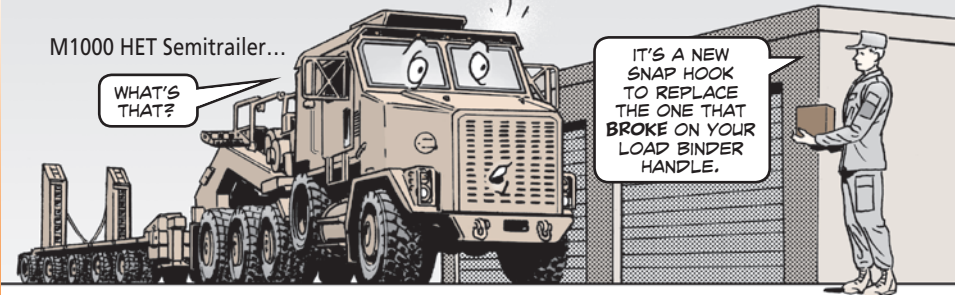
However, the vehicle's rear tires couldn't be increased because that would've changed the existing height requirement for the fifth wheel. Using 12R22.5 tires on the rear raised the fifth wheel enough that road permits would be required to haul full-sized containers.

So when you need to change out the front tire and wheel assembly on M915A3s with serial number V71659 and above, use NSN 2530-01-537-8297. That gets the right size tire for your truck.

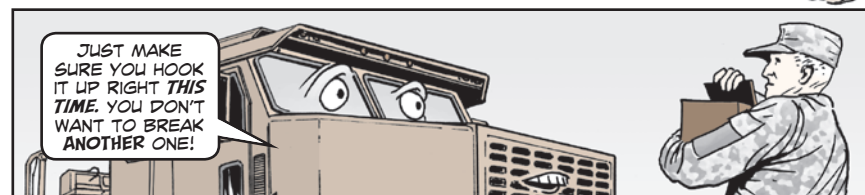
*Half-Mast*

WHAT'S THAT?

IT'S A NEW SNAP HOOK TO REPLACE THE ONE THAT BROKE ON YOUR LOAD BINDER HANDLE.



JUST MAKE SURE YOU HOOK IT UP RIGHT *THIS TIME*. YOU DON'T WANT TO BREAK ANOTHER ONE!



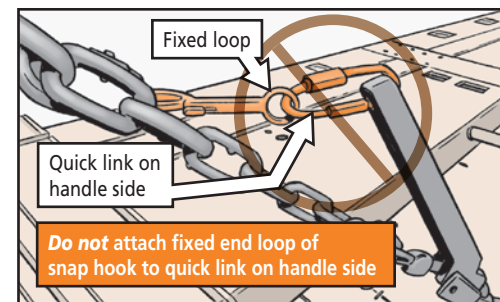
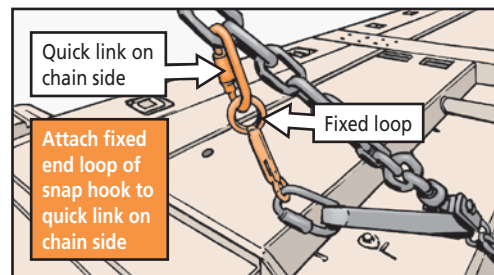
## AVOID SNAP HOOK SNAFU

Crewmen, it's easy to break the snap hook on the M1000 HET semitrailer's ramp chain restraint if it's not attached to the load binder handle the right way.

The snap hook, NSN 5340-01-471-7034, keeps the load binder handle in the locked position. The hook has to be attached correctly to keep it from hitting the trailer deck and breaking when the load binder handle is unlocked.

You can keep that from happening by attaching the fixed loop end of the snap hook to the quick link on the chain side.

Attaching the fixed loop end lets you detach the snap hook from the quick link handle side when unlocking the handle. The snap hook stays attached to the chain instead of hitting the deck and breaking.



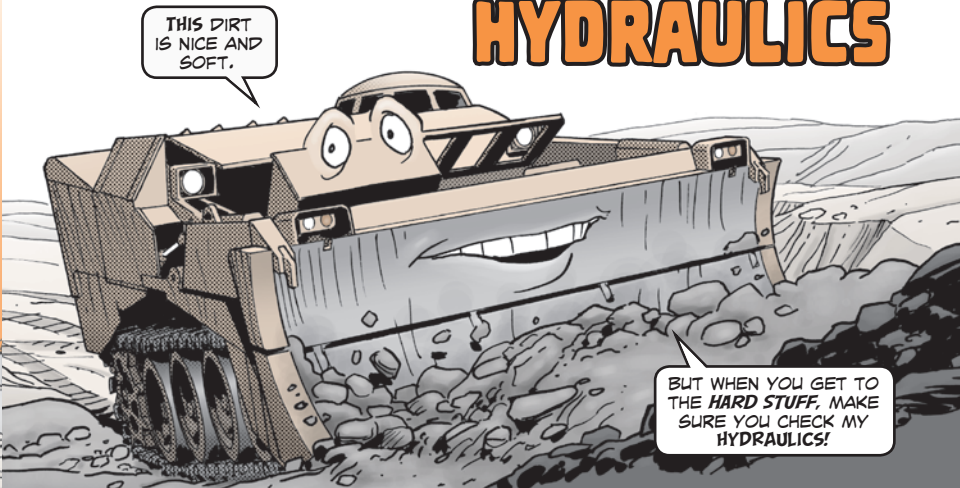




**Read**  
about M9 ACE,  
hydraulics, ATLAS  
fork extensions, and  
6k VRRF forklift  
solenoids.

M9 ACE...

## GET THE SCOOP ON HYDRAULICS

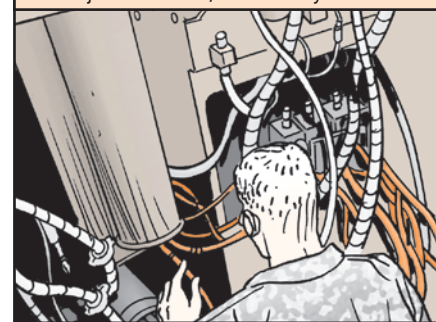


Operators, when it comes to hydraulics, the M9 armored combat earthmover (ACE) is known for being very temperamental, especially when dealing with hard-packed dirt.

Experienced operators have a rule of thumb: They take a break and shut down every two hours during operations. During that break, they check for problems, especially hydraulic ones.

To make hydraulic checks easier at the worksite, leave the earthmover's ejector out about two feet. With the ejector forward, there's enough room to look behind it for a busted compensation pump or leak in the valve bank.

With ejector forward, check for hydraulic leaks



### Hydraulic Fluid Level

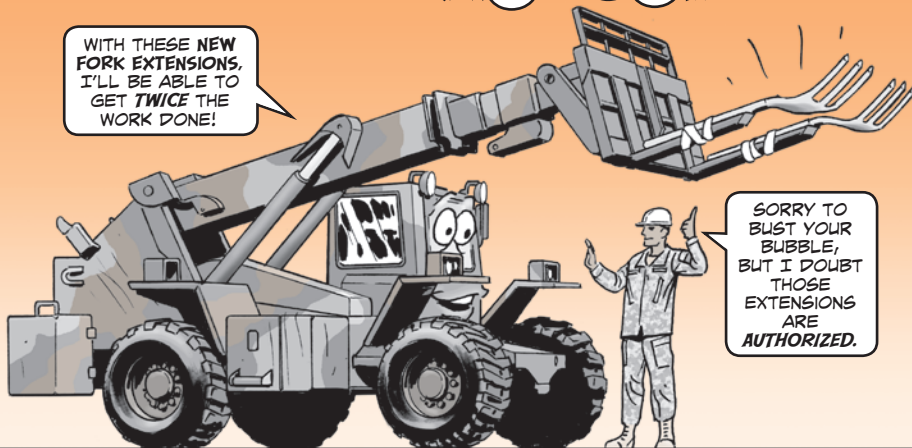
Before you check the oil level in your vehicle's hydraulic reservoir tank, make sure the ACE is in SPRUNG mode with the engine off, ejector retracted (back), apron down and hydraulic pressure relieved.

Why retract the ejector? The oil that's used to extend the cylinder inside the bowl isn't in the hydraulic reservoir tank to be measured. It's in the cylinder doing its job. So if you measure the fluid level with the ejector extended, the hydraulic oil level appears low.



# FORK EXTENSIONS ARE A No-Go!

WITH THESE NEW FORK EXTENSIONS, I'LL BE ABLE TO GET **TWICE** THE WORK DONE!



SORRY TO BUST YOUR BUBBLE, BUT I DOUBT THOSE EXTENSIONS ARE **AUTHORIZED**.

Dear Half-Mast,

A buddy of mine ordered some fork extensions for his unit's ATLAS, ATLAS II and 6K variable reach rough-terrain (VRRT) forklift a while back. But now he can't remember where he got them.

Are the extensions available in the supply system?

SSG M.E.H.



SERGEANT, FORK EXTENSIONS ARE **NOT** AVAILABLE IN THE SUPPLY SYSTEM. EXTENDING THE FORKS CAN RESULT IN AN **UNBALANCED LOAD**.

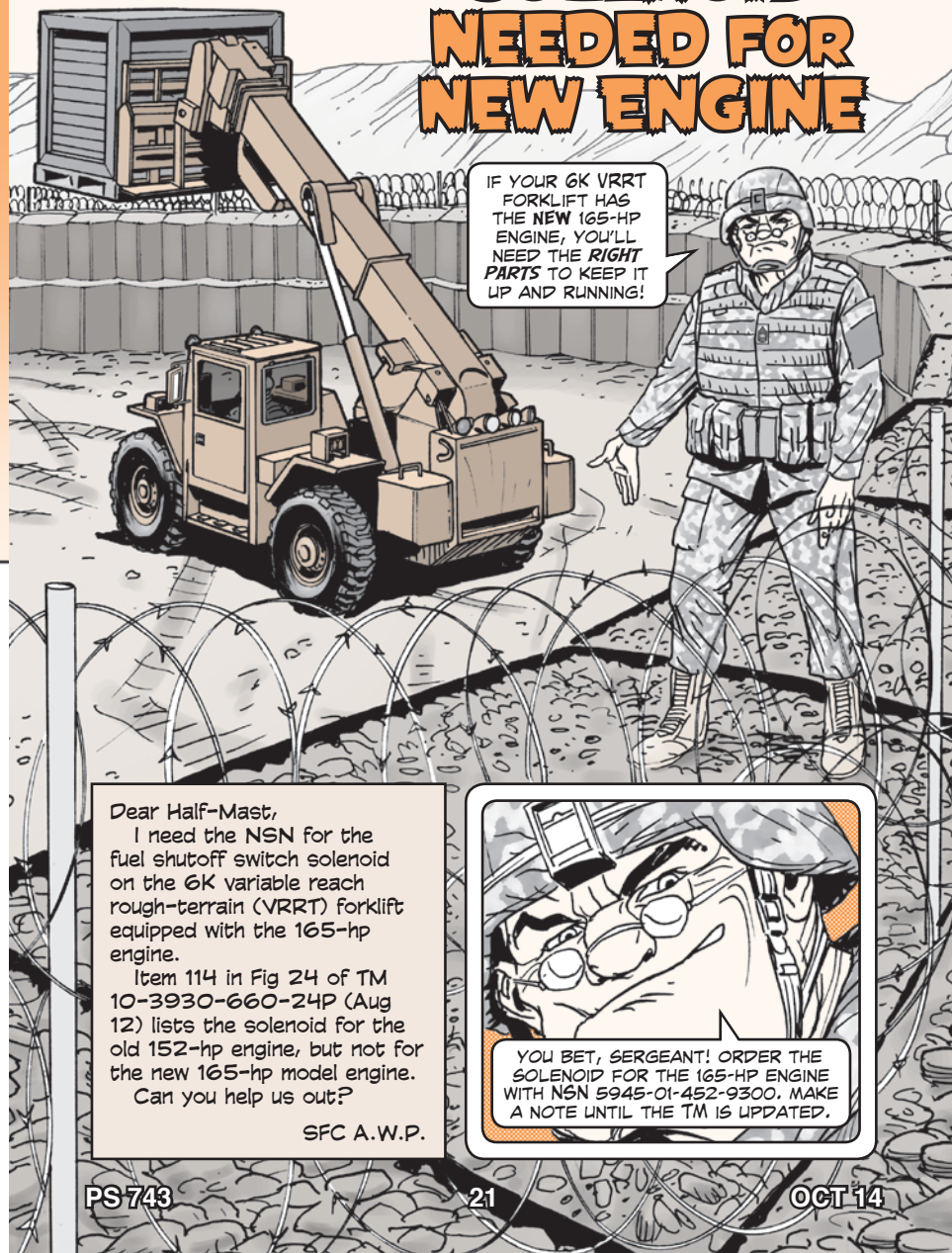
THAT'S WHY TACOM LCMC SPECIFICALLY **DOES NOT AUTHORIZE** THEM FOR THESE FORKLIFTS. THE FORKLIFT MANUFACTURER, JLG, ALSO RECOMMENDS AVOIDING THE EXTENSIONS.

SO TELL YOUR BUDDY, AND ANYONE ELSE WHO ASKS, THOSE EXTENSIONS ARE **OFFICIALLY UNAUTHORIZED!**



# SOLENOID NEEDED FOR NEW ENGINE

IF YOUR 6K VRRT FORKLIFT HAS THE NEW 165-HP ENGINE, YOU'LL NEED THE **RIGHT PARTS** TO KEEP IT UP AND RUNNING!



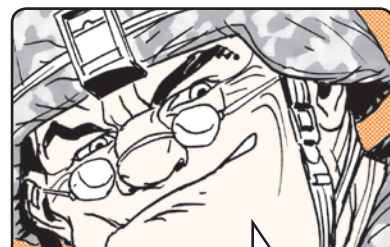
Dear Half-Mast,

I need the NSN for the fuel shutoff switch solenoid on the 6K variable reach rough-terrain (VRRT) forklift equipped with the 165-hp engine.

Item 114 in Fig 24 of TM 10-3930-660-24P (Aug 12) lists the solenoid for the old 152-hp engine, but not for the new 165-hp model engine.

Can you help us out?

SFC A.W.P.



YOU BET, SERGEANT! ORDER THE SOLENOID FOR THE 165-HP ENGINE WITH NSN 5945-01-452-9300. MAKE A NOTE UNTIL THE TM IS UPDATED.

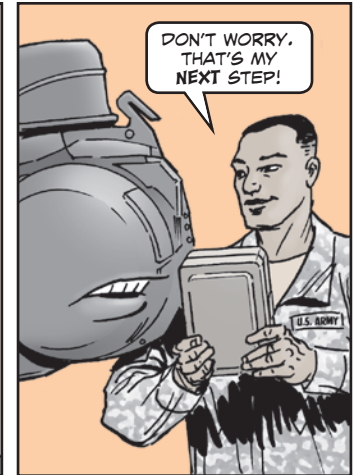
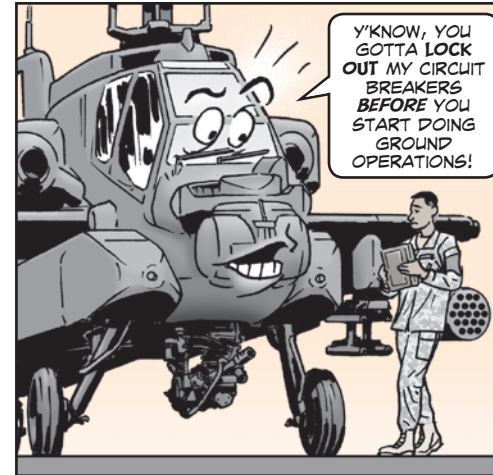




Read about electrical systems, helmet PM and Air Warrior.

All Aircraft...

## BE SAFE WITH ELECTRICAL SYSTEMS!



MECHANICS, WHEN WORKING ON ELECTRICAL SYSTEMS, ALWAYS MAKE SURE CIRCUIT BREAKERS ARE IN THE OFF (PULLED) POSITION.

IF THEY **MUST** BE LOCKED OR DEACTIVATED, FOLLOW THE PROCEDURES IN PARA 65. B. 1 OF WP 028 00 IN TM 1-1500-323-24-1, INSTALLATION AND REPAIR PRACTICES AIRCRAFT ELECTRIC AND ELECTRONIC WIRING.



DURING AIRCRAFT GROUND OPERATIONS, THERE ARE TIMES WHEN POSITIVE LOCKOUT DEACTIVATION OF CIRCUIT BREAKERS WILL BE REQUIRED TO **PREVENT DAMAGE** TO THE AIRCRAFT AND YOURSELF.



UNFORTUNATELY, IT'S **NOT** HAPPENING. AND THAT'S ALMOST ALWAYS BECAUSE MECHANICS SAY THEY DON'T HAVE THE EQUIPMENT TO LOCK CIRCUIT BREAKERS.

CIRCUIT BREAKERS **MUST** HAVE A LOCKOUT RING, COLLAR OR SAFETY LOCKOUT SLEEVE INSTALLED ON THE CIRCUIT BREAKER ANYTIME YOU WORK ON ELECTRICAL SYSTEMS.

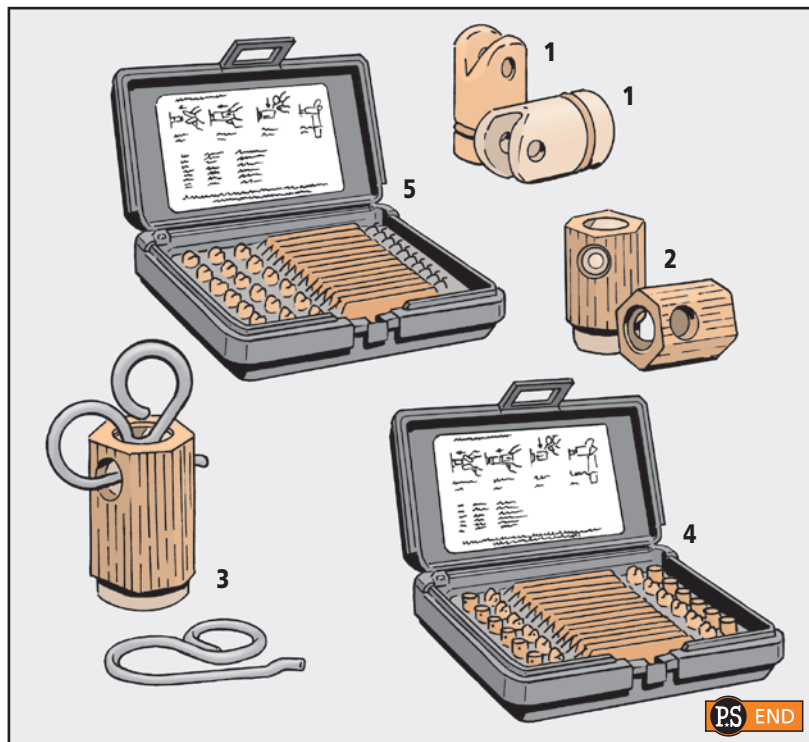
IF YOU **DON'T** HAVE ANY OF THESE ITEMS, ORDER THEM **NOW**.

**DO NOT** WORK ON AIRCRAFT ELECTRICAL SYSTEMS UNTIL YOU GET THEM.

THE TM LISTS THE PART NUMBERS FOR THE LOCKOUT SLEEVES AND KITS YOU'LL NEED BUT NOT THE NSNs. HERE'S A COMPLETE LIST...

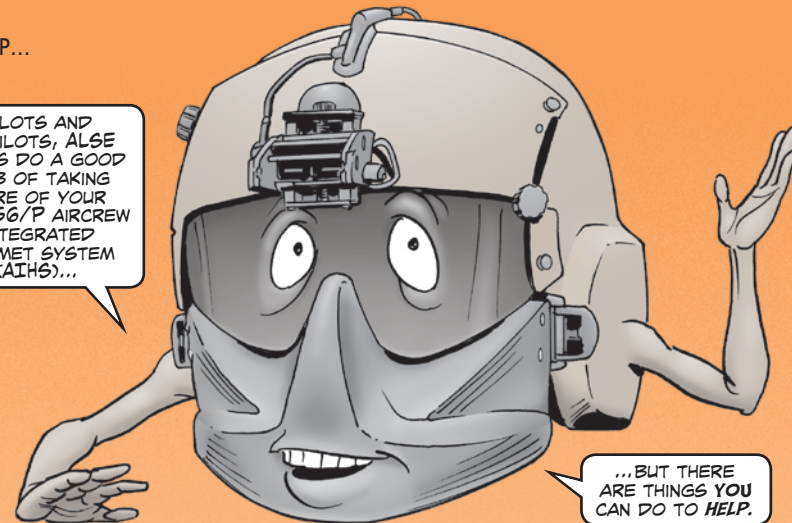


#	Item	NSN	PN
1	Safety lock, small (for 3/8-in circuit breakers)	5925-01-581-4662	296050002-1
1	Safety lock, large (for 7/16-in circuit breakers)	5925-01-609-6121	296050008
2	Safety lock sleeve	5925-01-609-6208	296050009
3	Clip for safety lock and sleeve	5925-01-609-6211	296050018
4	Safety lock kit (contains 10 small safety locks, 2 large safety locks, 12 safety lock sleeves, 12 warnings/danger tags and 12 clips)	5935-01-609-6893	296050020-1
5	Safety lock kit (contains 18 small safety locks, 18 warning/danger tags, and 18 clips)	5935-01-609-6266	296050020-2



HGU-56/P...

PILOTS AND COPILOTS, ALSE TECHS DO A GOOD JOB OF TAKING CARE OF YOUR HGU-56/P AIRCREW INTEGRATED HELMET SYSTEM (AIHS)...

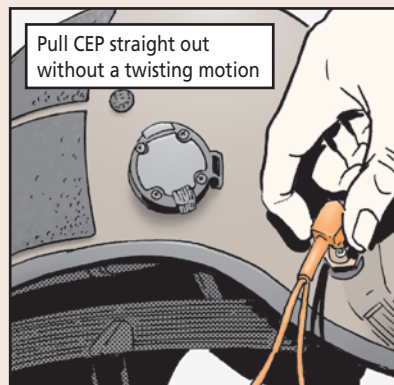


## Helmet PM Is NOT Negotiable

**PMCS** is not negotiable. Don't leave it for the ALSE folks to take care of. Good helmet care means doing your Before and After helmet PMCS like it says in WP 0020 00 of TM 1-1680-377-13&P.

For example, when you remove your helmet after a mission, don't leave the communication earplug (CEP) connected. Remove the CEP by pulling it straight out of the connector and placing it in its plastic storage container. Never remove the CEP cable from the back of the helmet with a twisting motion. That could loosen the locknut on the backside of the connector and allow the connector to turn. If that happens, the soldered wires behind the connector assembly can come loose and short out.

Leaving the CEP connected causes damage to the connector flange while it's carried in the helmet bag. The protrusion that sticks out from the helmet can bang against other equipment. That widens the flanges on the connector. Then you'll lose the interface in the helmet and the earcups because of broken wires.





**DONNING** THE HELMET IS AN EXERCISE IN PREVENTIVE MAINTENANCE, TOO.

REMEMBER, IF YOU SPREAD THE HELMET TOO MUCH WHEN PUTTING IT ON, YOU WEAKEN IT, AND THAT CAN LEAD TO **CRACKS**.

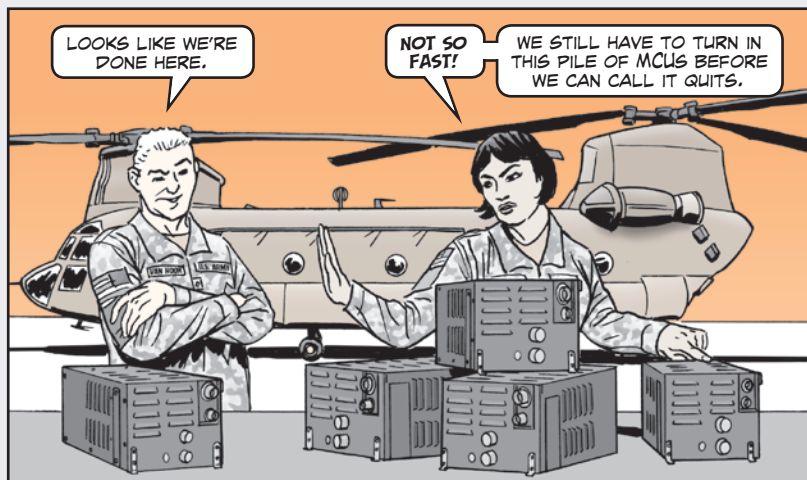
HERE'S THE RIGHT WAY...

1. Hook your thumbs over the ear cups and spread the helmet just slightly.
2. Place the front edge of the helmet firmly against your forehead.
3. Rotate the helmet rearward and down onto your head.
4. Press the helmet down firmly with both hands.
5. Adjust the nape straps, but do not pull on both straps at the same time. Pull on one end and then the other in a see-saw fashion for a snugger fit.
6. Adjust the chin strap.

**PS END**

Air Warrior...

## Turn-in of MCUs



**M**echanics, the microclimate cooling unit (MCU), NSN 8415-01-508-6626, is currently available through the wholesale supply system.

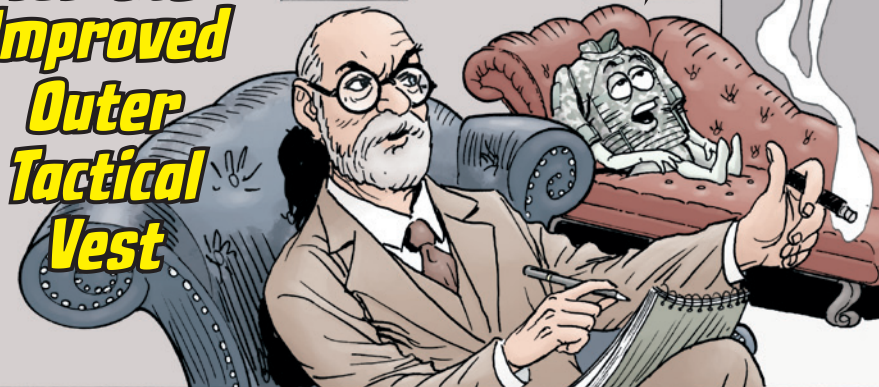
Excess MCUs should be turned in to the wholesale supply system for repair or proper demil and disposal. To turn in MCUs and request serviceable or unserviceable credit, your unit should submit a report of excess using document identifier code (field turn-in equipment).

If you have questions about turning in MCUs, contact Rakeshia Ransaw, DSN 897-2008, (256) 313-2008 or email: [rakeshia.d.ransaw.civ@mail.mil](mailto:rakeshia.d.ransaw.civ@mail.mil)

## Therapy for the Improved Outer Tactical Vest

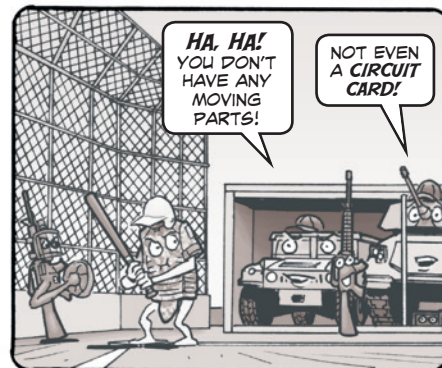
VERY INTERESTING. SO TELL ME ABOUT YOUR CHILDHOOD.

WHEN I WAS A LITTLE BOY BODY ARMOR, NONE OF THE OTHER EQUIPMENT WOULD PLAY WITH ME.



HMMWVS ROLLED, HOWITZERS BOOMED, TANKS CLATTERED, MIGS FIRED. BUT NOT ME.

THE OTHER EQUIPMENT TAUNTED ME BECAUSE I DIDN'T CLICK, CLACK, WHIRR, BUZZ, RUMBLE, BOOM OR LIGHT UP.

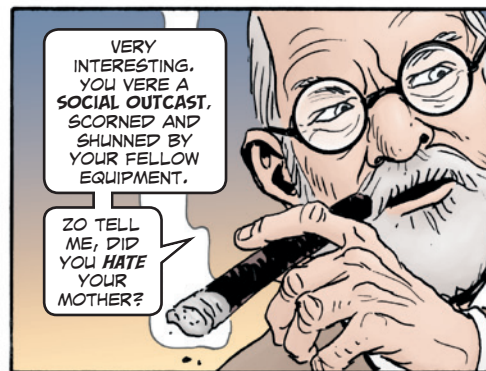


NOT EVEN A CIRCUIT CARD!



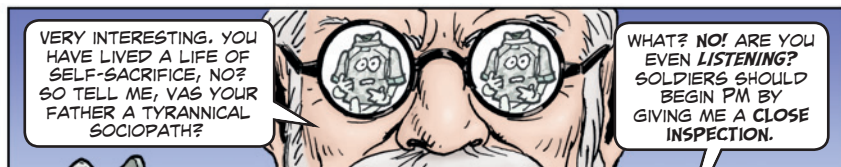
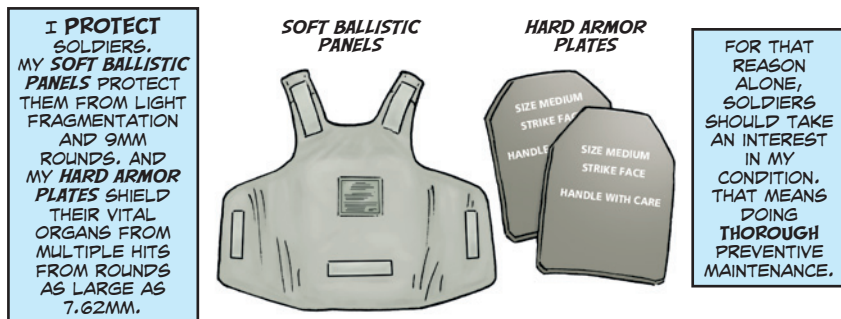
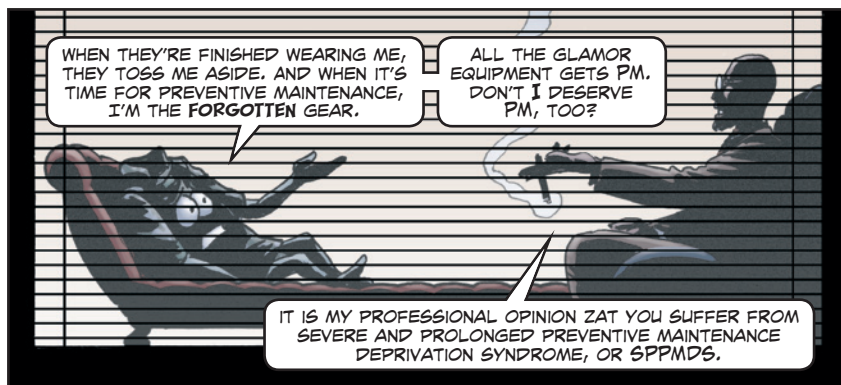
VERY INTERESTING. YOU WERE A SOCIAL OUTCAST, SCORNNED AND SHUNNED BY YOUR FELLOW EQUIPMENT.

SO TELL ME, DID YOU HATE YOUR MOTHER?

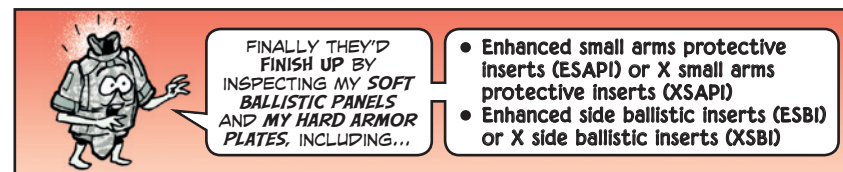
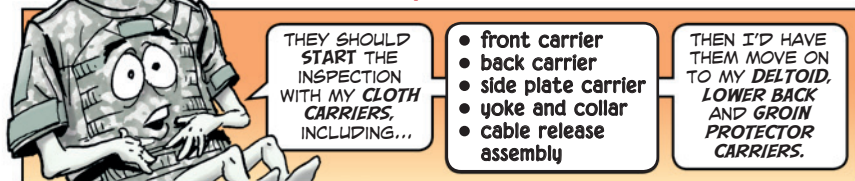


THAT'S THE SAD STORY OF MY CHILDHOOD, DOC. EVEN TODAY, SOLDIERS TREAT ME LIKE I'M A NOBODY.

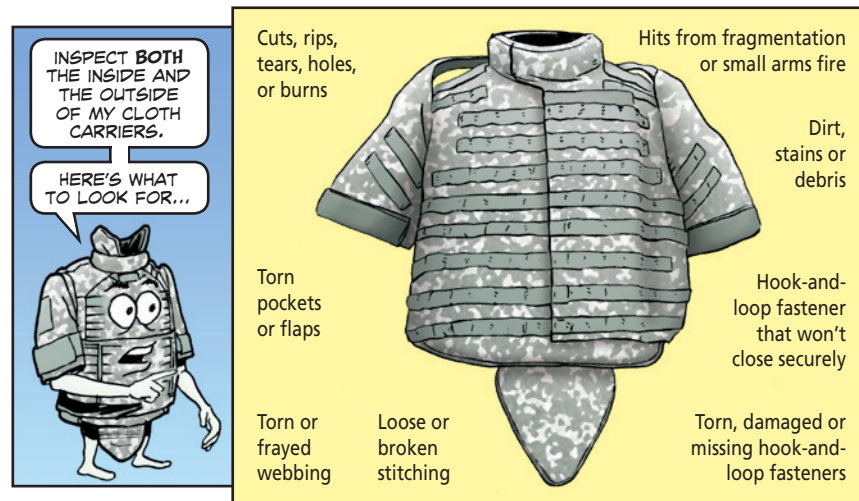




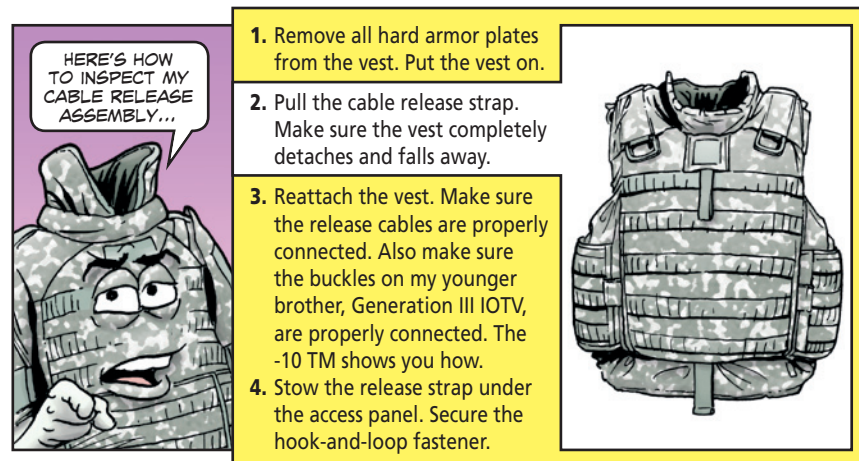
## Inspection



## Inspecting Cloth Carriers



## Inspecting the Cable Release Assembly





## Inspecting Soft Ballistic Panels

YOU ALSO NEED TO INSPECT ALL **SOFT BALLISTIC PANELS**. LOOK FOR...

Cuts, rips, tears, holes, or burns

Dirt, stains or debris

Hits from fragmentation or small arms fire

Bunching or lumping that cannot be flattened

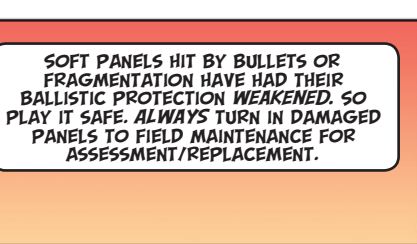
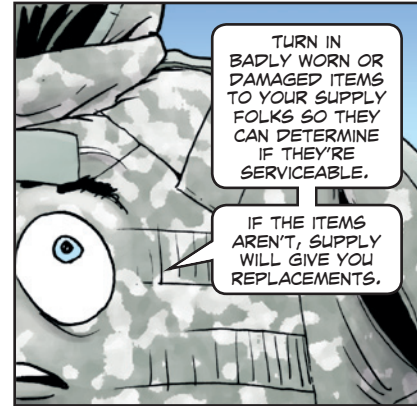


DEPENDING ON THE AMOUNT OF DAMAGE, MY CLOTH CARRIERS AND SOFT BALLISTIC PANELS COULD EITHER BE REPAIRED OR REPLACED.

ASK FIELD MAINTENANCE FOR GUIDANCE.

TURN IN BADLY WORN OR DAMAGED ITEMS TO YOUR SUPPLY FOLKS SO THEY CAN DETERMINE IF THEY'RE SERVICEABLE.

IF THE ITEMS AREN'T, SUPPLY WILL GIVE YOU REPLACEMENTS.



SOFT PANELS HIT BY BULLETS OR FRAGMENTATION HAVE HAD THEIR BALLISTIC PROTECTION **WEAKENED**. SO PLAY IT SAFE. ALWAYS TURN IN DAMAGED PANELS TO FIELD MAINTENANCE FOR ASSESSMENT/REPLACEMENT.

## Inspecting Hard Armor Plates

FINALLY, YOU NEED TO INSPECT MY **HARD ARMOR PLATES** FOR CRACKS BEFORE EACH MISSION AND ONCE A DAY DURING GARRISON OR FIELD USE.

IT TAKES MORE THAN JUST A QUICK GLANCE BECAUSE **CRACKS** MAY BE **HIDDEN** UNDERNEATH THE FABRIC. HERE'S HOW TO INSPECT A PLATE...

- Handle my plate to see if it flexes.
- Listen for crunching sounds that indicate broken pieces.
- Look for rips, tears or holes in the fabric that expose the ceramic tile.
- Pinch the outer 1/2-in edge of my plate. Can you feel or hear the ceramic tile cracking?
- Look closely at my plate. Has it been hit by bullets or fragments?

- Shake my plate and listen for loose pieces rattling around.



IF YOU FIND **ANY** OF THESE PROBLEMS, MY PLATE IS **UNSERVICEABLE**. TURN IT IN TO FIELD MAINTENANCE AND GET A REPLACEMENT.

AS A FIELD FIX DURING OPERATIONS, YOU CAN PATCH TORN FABRIC WITH **100-MPH TAPE**. NSN 7510-00-266-5016.

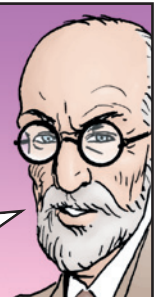
**BUT REMEMBER, THIS IS A TEMPORARY FIX UNTIL YOU CAN REPLACE MY PLATE.**

IF MY **ESAPI**, **XSAPI**, **ESBI** OR **XSBI** GETS HIT BY BULLETS OR FRAGMENTATION, ITS BALLISTIC PROTECTION IS **WEAKENED**. PLAY IT SAFE. TURN IN DAMAGED PLATES TO FIELD MAINTENANCE.



VERY INTERESTING HOW YOU EXPOSE YOUR **FLAWS** FOR ALL ZA WORLD TO SEE.

SO TELL ME, WHEN YOU WERE A LEETLE BOY BODY ARMOR, DID YOUR BELOVED PUPPY STRAY FAR FROM HOME NEVER TO BE HELD IN YOUR ARMS AGAIN?



## Cleaning

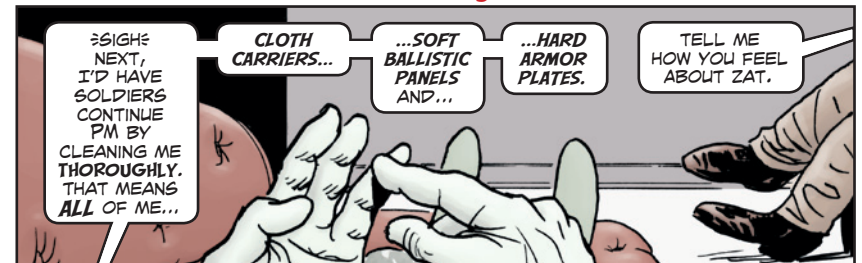
SIGHE NEXT, I'D HAVE SOLDIERS CONTINUE PM BY CLEANING ME THOROUGHLY. THAT MEANS **ALL** OF ME...

**CLOTH CARRIERS...**

...**SOFT BALLISTIC PANELS** AND...

...**HARD ARMOR PLATES**.

TELL ME HOW YOU FEEL ABOUT ZAT.



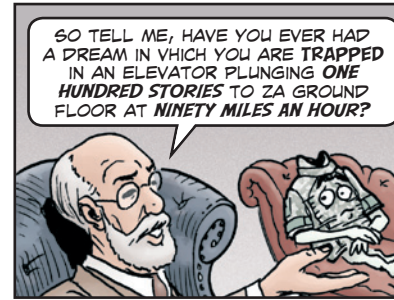
## Cleaning Cloth Carriers



CLOTH CARRIERS LAYERED WITH MUD AND GRIME DESERVE A GOOD CLEANING. SO WASH THEM NOW AND THEN.

THAT'LL HELP PROLONG THEIR LIVES AND MAKE THEM MORE COMFORTABLE TO WEAR. HERE'S HOW...

- Use a cloth or soft brush, NSN 7920-00-282-2470, to sweep away loose dirt from my carriers and the hook-and-loop fasteners. Don't use a wire, metal or stiff-bristle brush. It'll damage the fabric.
- Remove all soft ballistic panels and all hard armor plates (ESAPI, XSAPI, ESBI and XSBI) from my carriers before washing.
- Wet my carriers with cold or lukewarm water. Hand-wash with mild detergent, NSN 7930-00-929-1221, and a soft brush. Never machine wash. It causes too much wear and tear on the fabric.
- To clean heavy grease and oil, apply a mix of detergent and water directly on the spots and scrub with a soft brush. Repeat if the stain is stubborn.
- After washing, rinse thoroughly in clean lukewarm water until all suds are gone.
- Hang my cloth carriers to dry. Dry them either indoors or outdoors in the shade. Never dry them in a machine dryer or near a heater or open flame. That can fade and shrink the fabric.
- Do not use chlorine bleach, solvents, cleaning fluids or petroleum products to clean any carrier. They can stain, fade and weaken the fabric and shorten its life.



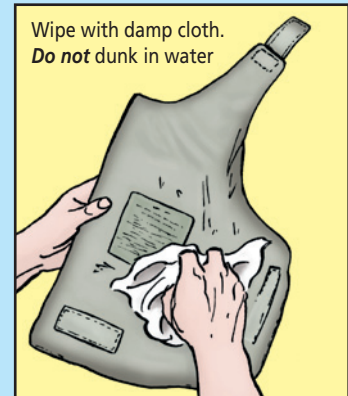
## Cleaning the Cable Release Assembly



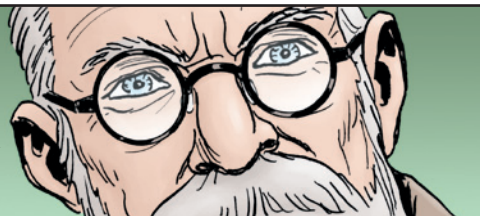
## Cleaning Soft Ballistic Panels



- Use a moistened cloth or soft brush to sweep away loose dirt from my panels.
- Do not dunk my panels in water. That can damage the layers of ballistic protective fibers inside. When panels get soaked, the layers and the weave begin to pull apart or bunch up. Either way, they start to degrade. Once that happens, they start to lose their ballistic protection.
- Never machine wash or dry clean panels. If they become wet, let them air dry flat, indoors or outdoors in the shade. Never dry them in a machine dryer. And never dry them near a heater or open flame.
- Do not use chlorine bleach, solvents, cleaning fluids or petroleum products to clean my panels.
- If they become soaked with bleach, gasoline, oil or lubricant, turn them in to field maintenance for assessment/replacement.



I ZEE, YOU UNDERGO A **CLEANSING RITUAL** IN AN EFFORT TO **EXPUNGE ZA REPRESSED GUILT** IN YOUR UNCONSCIOUS MIND. VERRY INTERESTING.





## Cleaning Hard Armor Plates



AND FINALLY, I'D HAVE SOLDIERS CLEAN MY HARD ARMOR PLATES.

- Never machine wash or dry. That causes too much wear and tear on my plates, not to mention the washer and dryer. And never submerge the plates in any liquid, including water.
- Use a cloth or soft brush to sweep loose dirt or lint from the surface. Never use a stiff-bristle brush. You could tear the fabric.
- Wet my plates with warm (not hot) water. Apply a mild soap or detergent to soiled areas and scrub with a cloth or soft brush. Scrub badly soiled areas only long enough to remove the soil.
- After washing, rinse with clean, warm water until all suds are gone.
- Lean my plates against a post or wall and let them air dry. **Never** dry them near a heater or open flame. That could degrade the ballistic protection.



GET THE FULL STORY OF IOTV PREVENTIVE MAINTENANCE IN THESE TMS...

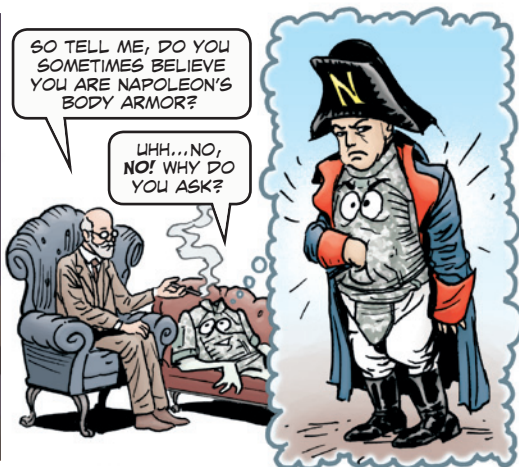
- TM 10-8470-208-10
- TM 10-8470-208-10PMC
- TM 10-8470-208-24&P
- TM 10-8470-210-10
- TM 10-8470-210-10PMC

**CONGRATULATIONS!** DESPITE YOUR NEUROSES, IT IS EVIDENT ZAT YOU HAVE TAKEN ZA FIRST TENTATIVE STEPS TOWARD **SELF-ACTUALIZATION.** VERRYRY INTERESTING.



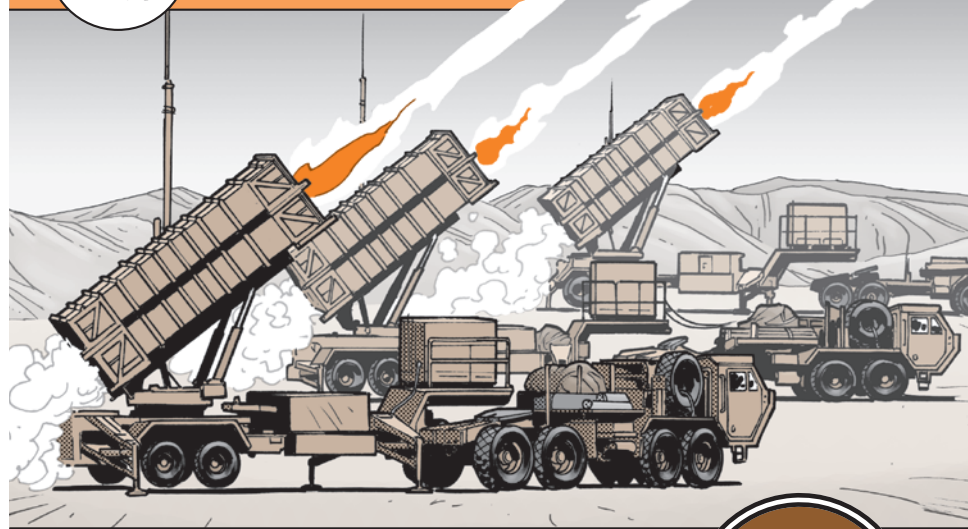
SO TELL ME, DO YOU SOMETIMES BELIEVE YOU ARE NAPOLEON'S BODY ARMOR?

UHH...NO, NO! WHY DO YOU ASK?



PS

# MISSILES



ALSO  
FEATURING  
CBRN AND  
TOOLS!



# SMALL ARMS



THE PATRIOT IS ONE OF THE ARMY'S **MOST COMPLEX** SYSTEMS, WHICH MEANS IT NEEDS **ALL** YOUR ATTENTION IF IT'S GOING TO DO ITS JOB.

YOU GOT THAT **RIGHT, HALF-MAST!** I NEED **CONSTANT ATTENTION.** HERE'S...

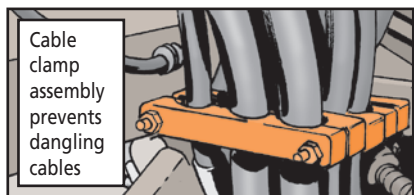
**HOW YOU CAN HELP!**

**Carefully remove missile desiccant panels.** To change the missiles' desiccant, you have to remove the panel. But you must remove and install the back plate bolts in the proper order and use the right torque or you can crack the panel. That could mean you have to code out the missile.

Torque the bolts to 16.0+/-2 lb-in and remove and install them in this order:

○ 1	○ 9	○ 5	○ 15	○ 3
○ 13				11 ○
○ 8				7 ○
○ 12				14 ○
○ 4	16 ○	6 ○	10 ○	2 ○

**Secure those cables!** Every year launcher cables are ripped out because they've been left dangling. When the launcher swings around, it catches those loose cables and r-i-i-i-p. One unit lost a J box, cables and wiring harness this way. Total bill: \$491,032.



To help you secure the cables, you can order a launcher cable clamp assembly, NSN 4030-01-582-8341. Then use the diagrams on Page 37 to secure the cables with clamps and straps.

FOLLOW THESE THREE DIAGRAMS FOR **SECURING THE CABLES** AND YOU'LL NEVER NEED TO WORRY ABOUT THAT HAPPENING AGAIN...

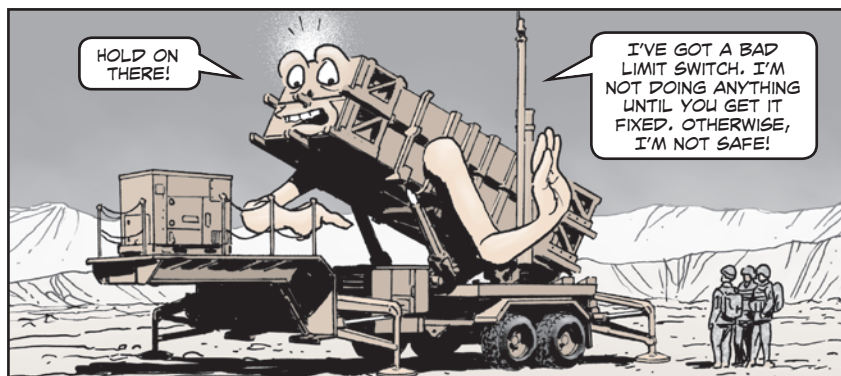
**Rear of launcher**

**Curbside View**

**Roadside View**

**PS MORE**





**Don't bypass limit switches.** Limit switches can take a beating during travel and then they stop working. But if you bypass limit switches to keep operating, you cause safety problems: Outriggers overextend and break or outriggers won't stabilize the launcher correctly. That could get somebody killed. If a limit switch has stopped working, report it ASAP so it can be fixed.

**Protect the launcher actuator covers...and order extras.** The covers are flimsy and break easily. Handle them with care. Take them off every few months and clean under them. Some units zip-tie them on to keep them from disappearing. But you'll still need to order extras with NSN 1420-01-354-9685. They'll probably wear out in six months.

**BE CAREFUL RAISING THE OUTRIGGERS IN COLD WEATHER.**

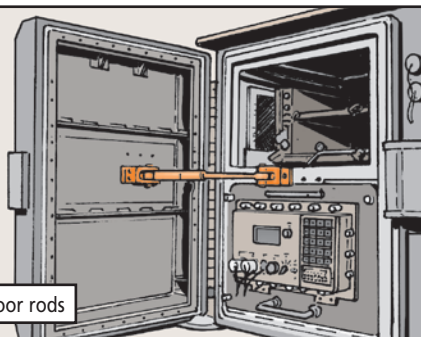
IF THE PADS FREEZE TO THE GROUND, THEY CAN BREAK WHEN THE LEGS ARE LIFTED. FOLLOW THE DEICING PROCEDURE IN WP 0157 IN TM 9-1440-1600-10 (DEC 04, W/CH 9, SEP 13) BEFORE LIFTING THE OUTRIGGERS.



### Easy with the eight launcher doors.

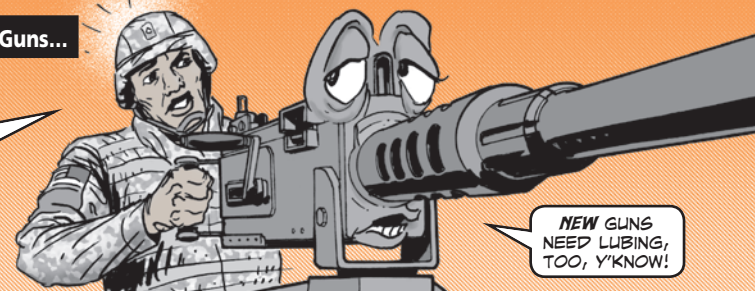
If you jerk the doors open or slam them shut, the door rods break. Then you can't keep the door open. Open the doors without over-muscling them. Lock the rod in place to keep the door locked open so the wind can't slam it shut. When you're done, release the rod and carefully shut the door.

Jerking or slamming launcher doors breaks door rods



### M2A1 Machine Guns...

WHAT'S WRONG WITH YOU? YOU'RE BRAND NEW AND YOU HARDLY FIRE!



## CURE SLUGGISH FIRING

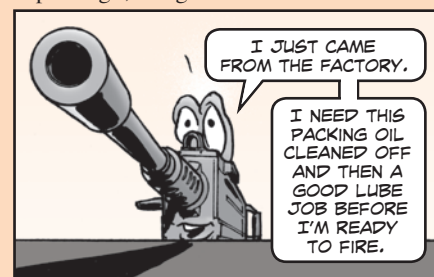
Some units are reporting that their new M2A1 machine guns are firing sluggishly. If your M2A1 just doesn't have any get-up-and-go, energize it like this:

Make sure the preservative packing oil is completely removed and the weapon is lubed like it says in TM 9-1005-347-10. If the packing oil is left on or the weapon isn't lubed, the weapon will fire sluggishly. That's why it's so important to do the -23&P's Service Upon Receipt on new M2A1s before they go to the field.

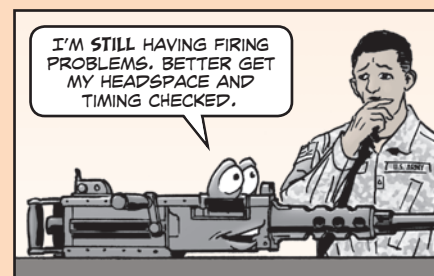
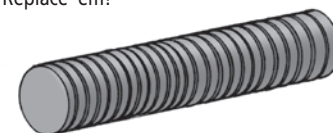
But if you've cleaned and lubed your M2A1 completely and it's still firing poorly, the problem may be that the buffer discs on the back plate are saturated. To check for this, repairmen should remove the disks following the procedure in WP 0017 of the -23&P. Replace wet disks with NSN 1005-00-515-2835.

When reassembling the back plate, make sure there's no in-and-out movement of the recoil mechanism buffer. You may need to add an extra disk if it's loose.

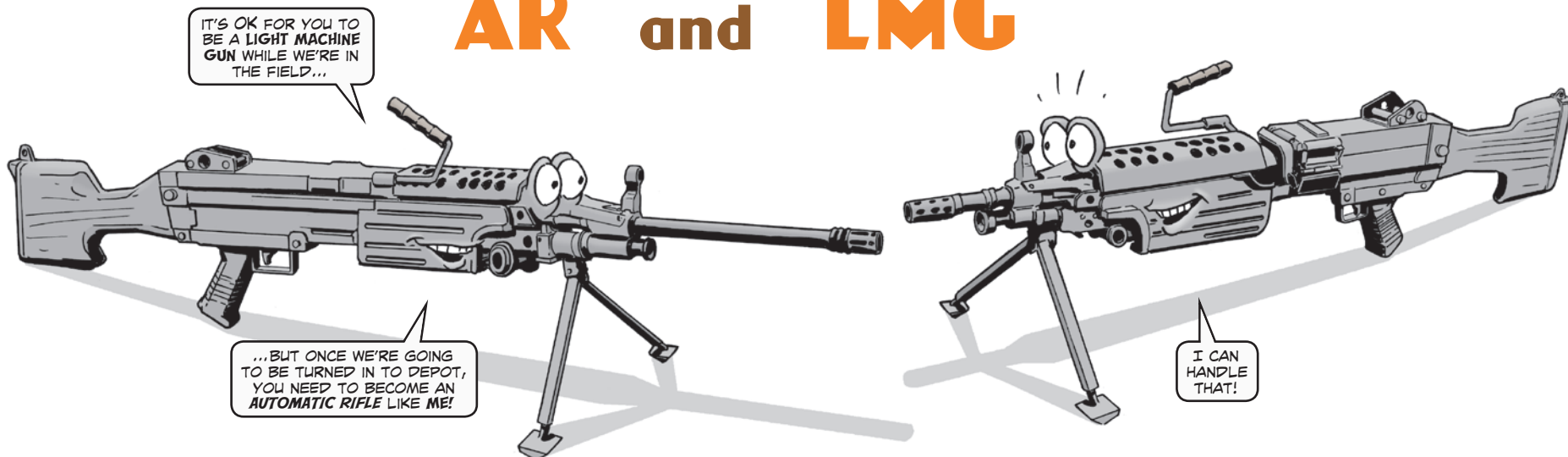
If that still doesn't fix sluggish firing, repairmen should check and adjust the M2A1's headspace and timing like it says in WP 0032 and WP 0033 of the -23&P.



Backplate discs saturated? Replace 'em!



# Differences Between AR and LMG



There are two NSNs and LINs for the M249 machine gun:

- Automatic rifle (AR), NSN 1005-01-127-7510 and LIN M09009
- Light machine gun (LMG), NSN 1005-01-451-6769 and LIN M39263

But the only version stocked, stored and issued is the AR, no matter which NSN is ordered.

When you order the LMG, its NSN will be substituted in the system by the AR's. The supply system and property books will reflect this substitute as "LIN: M39263 and SUBLIN: M9009." Both LINs will be listed.

To change the M249 from AR role to the LMG role, you will need to requisition the ammunition bracket adapter, NSN 1005-01-425-6541, from DLA and the M192 tripod, NSN 1005-01-503-0141, from the tripod/mount item manager. The tripod/mount item manager is Mariann Haniak, DSN 786-1649, (586) 282-1649, email:

[mariann.haniak.civ@mail.mil](mailto:mariann.haniak.civ@mail.mil)

But when you request LMG disposition instructions or place your LMG as FTE (report of excess) through the supply system, property book officers must change the LMG LIN and NSN back to the AR NSN and LIN before turning in the weapon. Units should keep the ammunition bracket adapter and M192 tripod.

If you place an LMG into the supply system, your supply status will be TD, which means "not returnable—special instructions provided." The special instructions will tell you that the M249 must be turned in as an AR.

When you ship M249 ARs to depot, remember to package them correctly so they make the trip undamaged. Include all the documentation and serial numbers so the depot folks can easily process the weapons.

Send M249s to this address:

RIC: BA4  
(DODAAC)SV3120  
DLA Disposition Anniston  
7 Frankfort Ave  
Bldg 360 ATTN: Justin Houston  
Anniston, AL 36201

Outside of the address block, put:  
POC: Justin Houston,  
[justin.houston@dla.mil](mailto:justin.houston@dla.mil), (256) 741-5343

The depot's DODAAC and POC can change. It's a good idea to first check with the major item manager, who's listed below, before sending in the weapon.

If you have questions about turn-in procedures or about the M249 in general, contact these POCs:

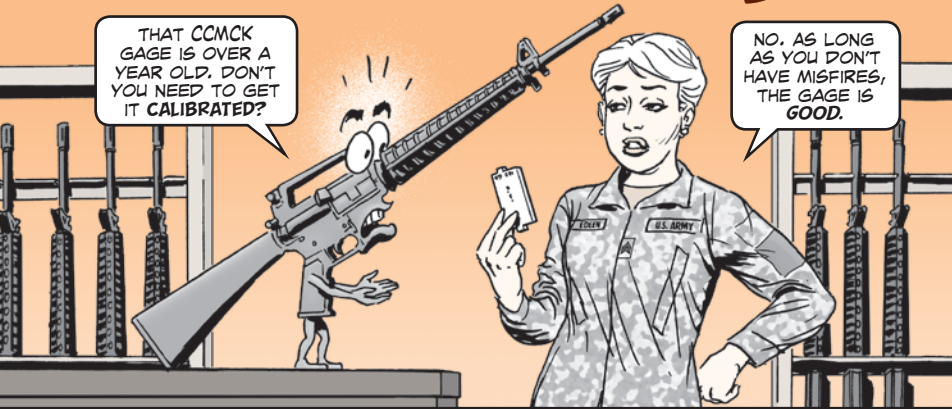
- Patti St. Clair (major item manager), (586) 282-1342, email: [patricia.a.stclair2.civ@mail.mil](mailto:patricia.a.stclair2.civ@mail.mil)
- Anna Kersey (secondary item manager), (586) 282-1337, email: [anna.l.kersey.civ@mail.mil](mailto:anna.l.kersey.civ@mail.mil)
- Andre Pilgrim (equipment specialist), (586) 282-1245, email: [andre.v.pilgrim.civ@mail.mil](mailto:andre.v.pilgrim.civ@mail.mil)
- Amber Brasseur (weapon system manager), (586) 282-1338, email: [amber.j.brasseur.civ@mail.mil](mailto:amber.j.brasseur.civ@mail.mil)



# CCMCK Gage Need Calibrating?

THAT CCMCK GAGE IS OVER A YEAR OLD. DON'T YOU NEED TO GET IT CALIBRATED?

NO. AS LONG AS YOU DON'T HAVE MISFIRES, THE GAGE IS GOOD.



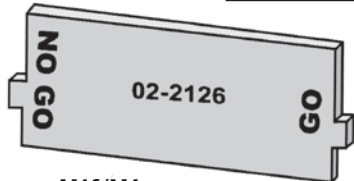
Dear Half-Mast,  
We just got the close combat mission capability kit (CCMCK) gage, NSN 5220-99-776-0695, for the M16 rifle/M4 carbine CCMCK kits. This gage measures firing pin protrusion. Is TMDE supposed to calibrate this gage? We can't find any information on this.

Mr. P.R.

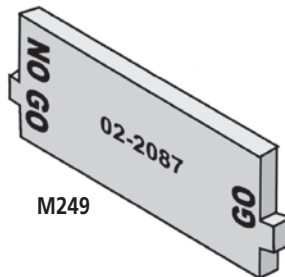
Dear Sir,

There's really no way to calibrate the CCMCK firing pin protrusion gage, so the answer is no. Because these are low-powered training rounds, misfires due to out-of-spec firing pin protrusion shouldn't be a safety problem. Just make sure to clear and clean the weapon after firing CCMCK rounds. As long as there are no noticeable misfires from a CCMCK bolt, the firing pin protrusion is OK and the gage is doing its job.

Neither M16/M4 nor M249 gages need calibrating



M16/M4



M249

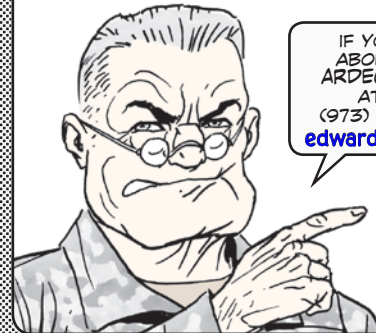
The same is true for the M249 gage, NSN 5220-99-232-8749.

Don't use a new M16/M4 barrel that has fired fewer than 200 standard rounds for CCMCK. Older barrels are less likely to have problems with a stuck CCMCK round.

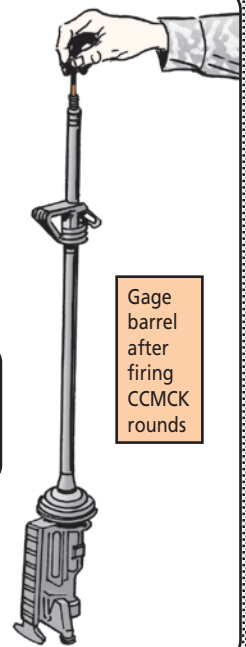
After training with CCMCK, it's a good idea to check M16s and M4s with the barrel straightness gage. See WP 0015-24 in TM 9-1005-319-23&P.

For the complete word on CCMCK, see TM 9-6920-3700-10. It's on the LOGSA ETM website:

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



IF YOU HAVE QUESTIONS ABOUT CCMCK, CONTACT ARDEC'S EDWARD GILLIGAN AT DSN 880-4992, (973) 724-4992, OR EMAIL: [edward.gilligan2.civ@mail.mil](mailto:edward.gilligan2.civ@mail.mil)



## MWO Changes M240L BFA

THE M24 BLANK FIRING ATTACHMENT (BFA), NSN 1005-01-480-0289, IS USED FOR ALL VERSIONS OF THE M240.

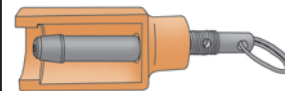
BUT MWO 9-1005-313-50-4 CREATES AN EXCEPTION FOR THE M240L.

THE MWO CHANGES THE M240L'S STANDARD BARREL TO A SHORT ONE. THAT MEANS THE M240L CAN NO LONGER USE THE M24 BFA.

INSTEAD, YOU MUST USE THE M26 BFA, NSN 1005-01-565-6693, ON THE MODIFIED M240L.

IT'S EASY TO TELL THE BFAS APART:

THE M24 IS RED AND...



...THE M26 IS YELLOW.

# CBRN QUESTIONS? Ask JACKS

HERE'S HOW TO GET UPDATES ON ALL THINGS CBRN!

FROM MASK VALVE PROBLEMS TO THE LATEST ISSUE OF CHEM-BIO DEFENSE MAGAZINE...

...JACKS HAS THE FACTS!



If you're scratching your head about mask filter expiration dates or where to find CBRN advisory messages, you don't know JACKS (Joint Acquisition Chemical Biological Radiological Nuclear Knowledge System).

JACKS provides you with a wide range of information on almost all CBRN equipment. Examples include:

- more than 140,000 NSNs, which are updated weekly from FLIS.
- Code F demilitarization instructions.
- shelf life expiration, extension and condemnation info organized by both NSN and lot number.
- maintenance, logistical, supply and safety-of-use CBRN advisory messages.
- CBRN fact sheets.
- packaging and shipping info

You can search JACKS by equipment name, NSN, federal supply class (FSC), CAGE, LIN, table of authorized material control number (TAMCN), joint project manager (JPM) or part number.

To access JACKS, you will need a CAC card or an AKO, DKO, personal identity verification (PIV), or external certificate authority (ECA) account. Go to:

<https://jacks.jpeocbd.osd.mil>

If you run into problems, call CBRN-IRC at DSN 793-7349, (309) 782-7349, toll-free (800) 831-4408, or email: [cbrn.irc@us.army.mil](mailto:cbrn.irc@us.army.mil)

## CBRN Alerts

YOU DON'T HAVE TO GO TO JACKS FOR THE LATEST CBRN INFO.

HERE'S HOW TO SIGN UP FOR JACKS ALERTS...

JACKS WILL COME TO YOU.

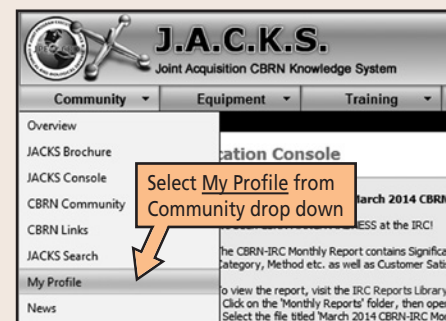


1. Go to the JACKS website and log in.
2. From the Community tab drop-down, click My Profile.
3. On the Profile toolbar, click My Subscription.
4. In the first section, **Step 1: Select Alerts**, place a check mark in the box preceding the alerts you want to receive:
  - \_\_\_ CBRN advisory messages
  - \_\_\_ Demil instructions
  - \_\_\_ New CBRN equipment
  - \_\_\_ Hot CBRN news
  - \_\_\_ Shelf life updates
  - \_\_\_ Chem-Bio Defense Magazine.

An alert will be sent to you whenever new information is available in these areas.

You can also have messages filtered by a custom equipment list so you get information only on equipment you're interested in.

5. In **Step 2: Select Alert Frequency**, choose if you want to receive messages daily or weekly. You can also choose no message if no updates have been made that day or week.
6. In **Step 3: Add Email addresses**, click on Add Email and list the email addresses where the alerts should be sent.
7. In **Step 4: Save Your Subscription**, choose either Save Subscription or Cancel and Exit to save or cancel your alert setting. To modify your subscription, follow the steps above. To cancel it, click on Unsubscribe.



Click boxes beside alerts you want to receive

Alerts		
<input type="checkbox"/>	<b>Advisory Messages</b>	Alerts will be sent to you
<input type="checkbox"/>	<b>Demil Instructions</b>	Alerts will be sent to you
<input type="checkbox"/>	<b>New CBRN Equipment</b>	Alerts will be sent to you
<input type="checkbox"/>	<b>News/Announcements</b>	Alerts will be sent to you
<input type="checkbox"/>	<b>Shelf Life Updates</b>	Alerts will be sent to you
<input type="checkbox"/>	<b>Chem-Bio Defense Magazine</b> View the latest magazine!	An alert will be sent to you

☒ Send me alerts for all new information added to JACKS that I have seen  
☐ Only send alerts for items on My Equipment list (return to Add Equipment)

☒ **Daily** (You will receive alerts daily for updates that occurred the previous day.)  
☐ **Weekly** (You will receive alerts at the beginning of every week for updates that have been made.)  
☐ Do not send me an email

**Email Address(es)**

Click Add Email to list where to send alerts...

...then click Save Subscription  
 or



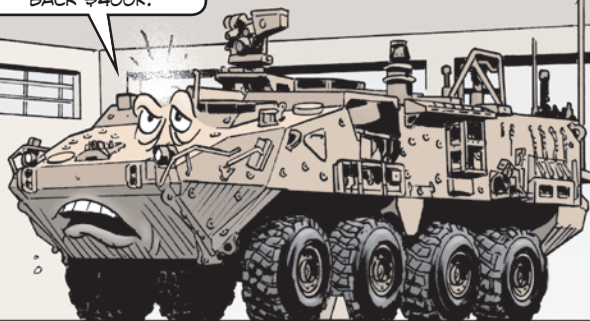
M1135 NBCRV Stryker...

SORRY YOU FEEL  
BAD. I'M GUESSING  
IT'S YOUR SSA...

...SO I'M GONNA  
REPLACE IT. THAT  
SHOULD DO THE  
TRICK.

WHAT!?! ARE YOU  
TRYING TO **BANKRUPT**  
US?! THAT'LL SET US  
BACK \$400K!

FIND OUT WHAT'S  
REALLY WRONG!



## Troubleshoot *Before* Replacing SSA

Some M1135 NBCRV Stryker maintenance folks are costing their units a lot of money by guessing instead of troubleshooting.

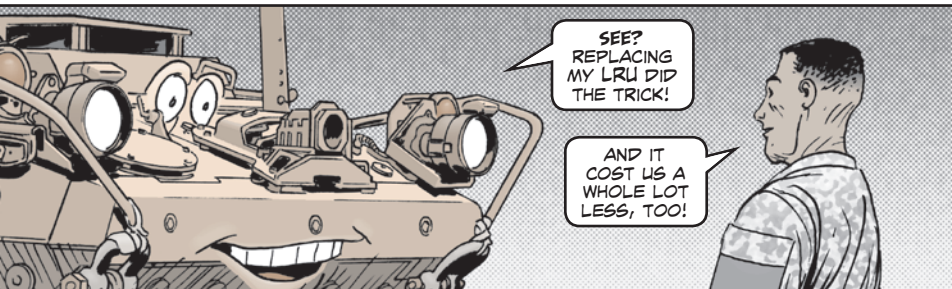
They do a quick fix by replacing the sensor scanner assembly (SSA), NSN 6665-01-537-2509, instead of doing the necessary troubleshooting to find the real problem. The SSA costs \$442,559, so it's an expensive quick fix.

There are only two reasons to replace the SSA: if the platform circuit breaker continually trips or if the SSA smokes or produces a burning smell.

If neither of those two symptoms is present, maintenance personnel need to follow the troubleshooting found in WP 0028 in the joint service lightweight standoff chemical agent detector's (JSLSCAD) TM 3-6665-353-13&P (Apr 13) down to the lowest line replaceable unit (LRU). That will be either the scanner assembly, NSN 6665-01-536-5638 or sensor electronics module, NSN 6665-01-536-7953.

Once the fault is identified, replace the faulty LRU according to the maintenance allocation chart (MAC).

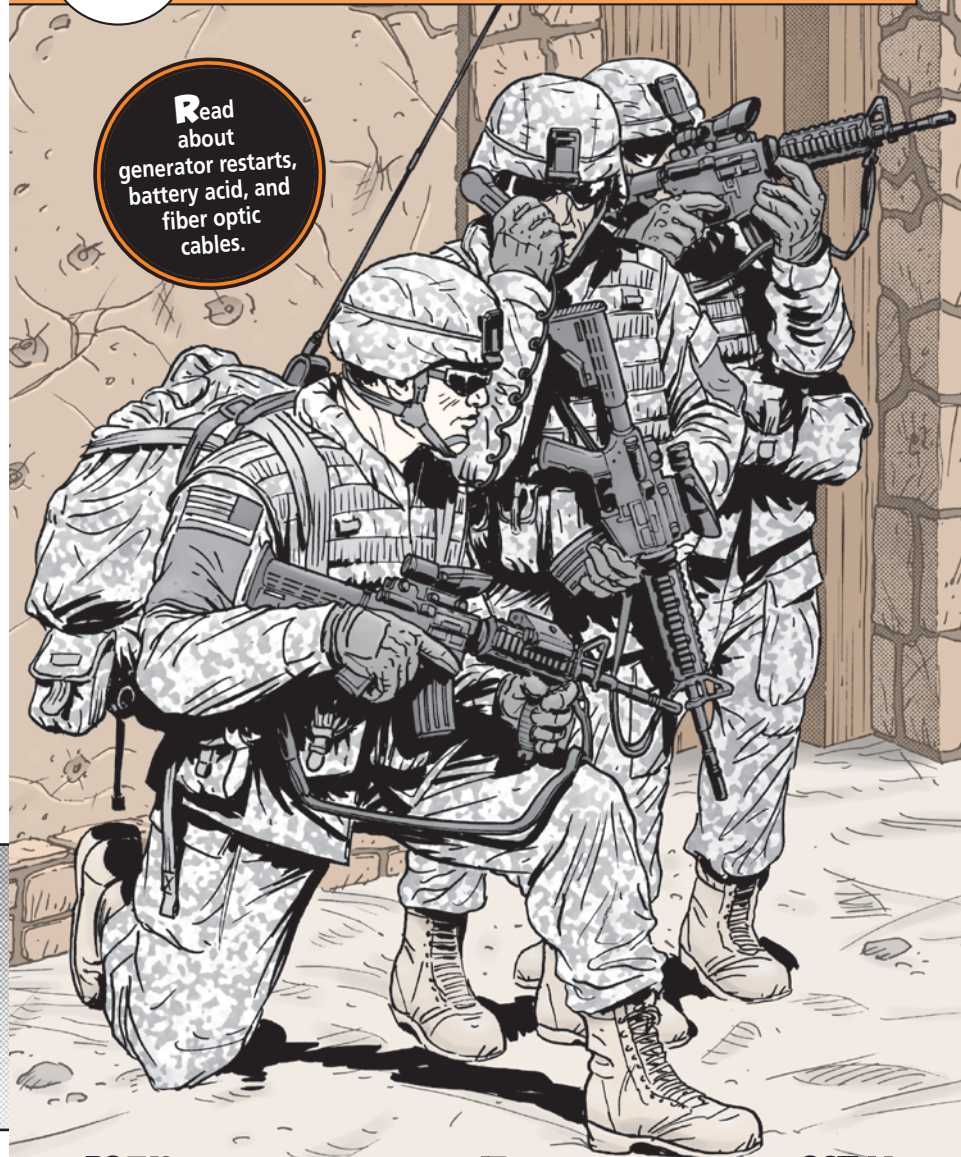
To put it mildly, the lowest level LRUs are cheaper than SSAs—and more readily available, for that matter.



SEE?  
REPLACING  
MY LRU DID  
THE TRICK!

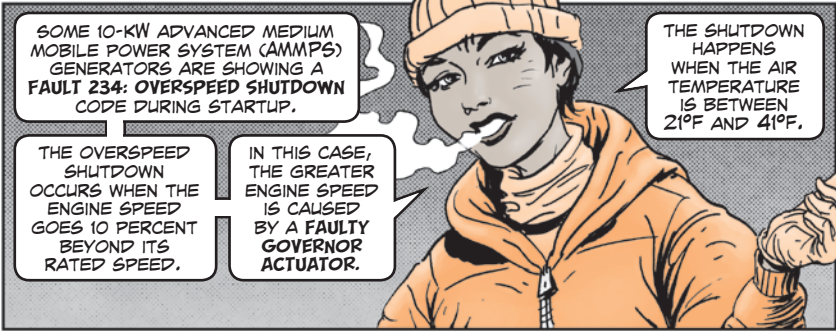
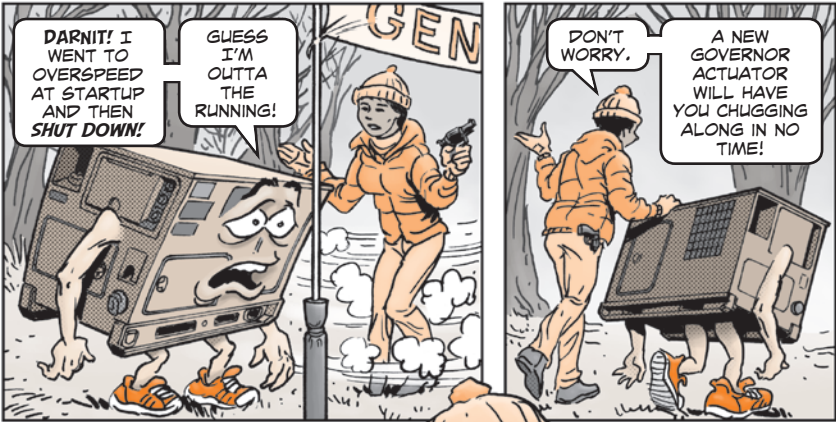
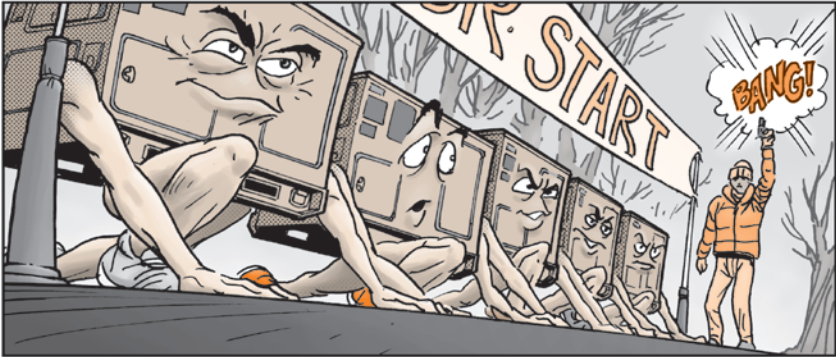
AND IT  
COST US A  
WHOLE LOT  
LESS, TOO!

Read  
about  
generator restarts,  
battery acid, and  
fiber optic  
cables.





# Restart After Shutdown



If a Fault 234: Overspeed Shutdown code shows up on the generator's digital control system (DCS) screen, take the CORRECTIVE ACTION found in WP 0010 of TM 9-6115-750-10 (Feb 11):

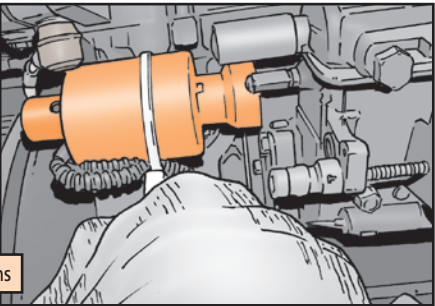
- STEP 1. Push FAULT RESET switch to clear fault on DCS display.
- STEP 2. Turn engine control switch to START position.
- STEP 3. If [Fault 234: Overspeed Shutdown] reappears, notify field maintenance.

Fault 234: Overspeed Shutdown										8.0 Hours	
Warning 1992: High Speed Warning										2014-03-04 15:21:30	
Genset Mode: Emergency Stop											
Configuration: 10 kW, 3-Phase, 120/208 V, 60 Hz											
Contactor Open	Power 11.0	Freq 66	Fuel 100	Battery 40	Battery +90	Oil 100	Coolant 240				
Switchbox Open	0.0 kW	54 0.0 Hz	0 38 %	10 24.3 Vdc	-90 +0 Adc	0 0 PSI	0 97°F				
Mode Unit	Genset Voltage L-L L1-L2 L2-L3 L3-L1		Bus Voltage L-L L1-L2 L2-L3 L3-L1		Genset Current L1 L2 L3						
Battleshort Inactive	270 0 0 0		270 0 0 0		51 0 0 0						
L-N ↔ L-L		Adjustments		About		Maintenance					

If Overspeed Shutdown occurs, restart generator

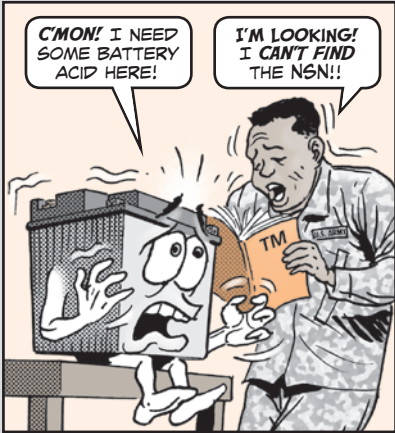
Usually, three startup attempts are enough to warm the engine for starting. If you have a winterization kit attached to the generator, you may want to start the kit before starting the generator.

The manufacturer has gotten rid of the faulty governor actuator from AMMPS production and replaced it with a new actuator, NSN 2910-01-595-5200, that should prevent overspeed shutdowns. Actuator replacement instructions are found in WP 0069-10 of TM 9-6115-750-24&P (Dec 11).



To replace actuator, follow TM instructions

## BATTERY ACID NSNs



Dear Master Sergeant Half-Mast,  
We have several dry 12V storage batteries in dire need of battery acid. Do you have the NSNs?  
MSG M.K.

Dear Master Sergeant,  
Indeed I do.  
Here are three NSNs for battery acid:

NSN 6810-	Qty in gallons
00-249-9354	1
00-843-1640	5
00-893-8138	15

Half-Mast



Cables...

# LET THERE BE [Fiber Optic] LIGHT

YOU'LL NEVER GET ME, CLEANER!

DON'T BE SO SURE, DIRT!

AND HERE'S THE ROUTINE FOR CLEANING...

NEXT TO ABUSE, DIRT IS THE GREATEST ENEMY OF FIBER OPTIC CABLE.

DIRT ACTS AS AN ABRASIVE, WEARING AWAY THE CABLE'S SHEATHING.

IT ALSO COATS CONNECTORS, PREVENTING GOOD CONTACT AND SLOWING DOWN OR BLOCKING THE SIGNAL.

THAT'S WHY IT'S **SMART PREVENTIVE MAINTENANCE** TO CLEAN CABLES AND CONNECTORS AFTER USING THEM.

YOU **ALSO** NEED TO CLEAN THEM **BEFORE AND AFTER** STORAGE OR TRANSPORT.

- Clean the outer surfaces of the cable, connectors and dust covers. Wipe off dirt with a cleaning cloth dampened with water. Wipe off grease, mildew or mold with a cleaning cloth dampened with isopropyl alcohol. Don't use any other solvents.

Wipe off dirt with damp cleaning cloth

- Clean stubborn dirt or mud by rinsing the cable in a tub of clean water. Just make sure to keep the connectors dry.
- When the cable is clean, wipe it dry with a cleaning cloth.
- Clean plugs and connectors with a lint-free cloth dampened with isopropyl alcohol. Use a foam-tipped swab dampened with alcohol to gently clean hard-to-reach places. Keep covers on the connectors when you're not using the cables.

Clean tight places with foam-tipped swab

- Use toothpicks to clean really tight areas.
- If you have fiber optic cables that stay dirty no matter how hard you clean them, take them to field level maintenance.

ONE MORE THING... CONSIDER ORDERING SOME **THREAD LOCKING COMPOUND**, NSN 8030-01-014-5869.

OF COURSE, THE COMPOUND IS **NOT** USED FOR CLEANING. BUT IT COMES IN HANDY FOR MAKING TIGHT CONNECTIONS THAT KEEP OUT DIRT AND MOISTURE.

HERE ARE THE **CLEANING SUPPLIES** YOU'LL NEED...

Item	NSN
Cleaning cloth	7920-00-634-2408
Lint-free cloth	8305-00-267-3015
Isopropyl alcohol	6505-00-205-6513

Item	NSN
Wooden toothpicks	7350-00-838-3919
Foam-tipped swabs	6515-01-251-7857 or 7920-01-333-9651



LOGISTICS IS SURELY CHANGING! READ ABOUT...

MATOS

US ARMY

...Data cleansing for GCSS-Army, quick step guides for PBUSE AIT, and AOAP protection for major equipment.

Logistics Management...

## GCSS-Army: Data Cleanup Is Job #1

WHAT ON EARTH ARE YOU DOING, SERGEANT DRISCOLL?

LIS

PBUSE  
ULLS-A (E)  
SAMS-E

GCSS-Army

JUST MAKING SURE OUR DATA IS SQUEAKY CLEAN BEFORE WE SEND IT!

SMITH

DRISCOLL

U.S. ARMY

U.S. ARMY

Is your supply support activity (SSA) already using Global Combat Support System-Army (GCSS-Army)? If so, a lot more data has to be processed in near-real time to get you the property, parts and supplies you need to keep your organization mission-ready.

That data also needs to be clean. So whether your SSA is about to transition to GCSS-Army or if it's already up and running in the new enterprise, it's important to focus on data cleanup now.

Good data starts with **you**, the logistics information system (LIS) users and managers. Focusing on data cleanup can help lighten the load on the entire enterprise and reduce processing errors. This means doing daily tasks like cleaning PBUSE, SAMS-E or ULLS-AE output queues. You should also do regular reconciliations with your supporting SSA.

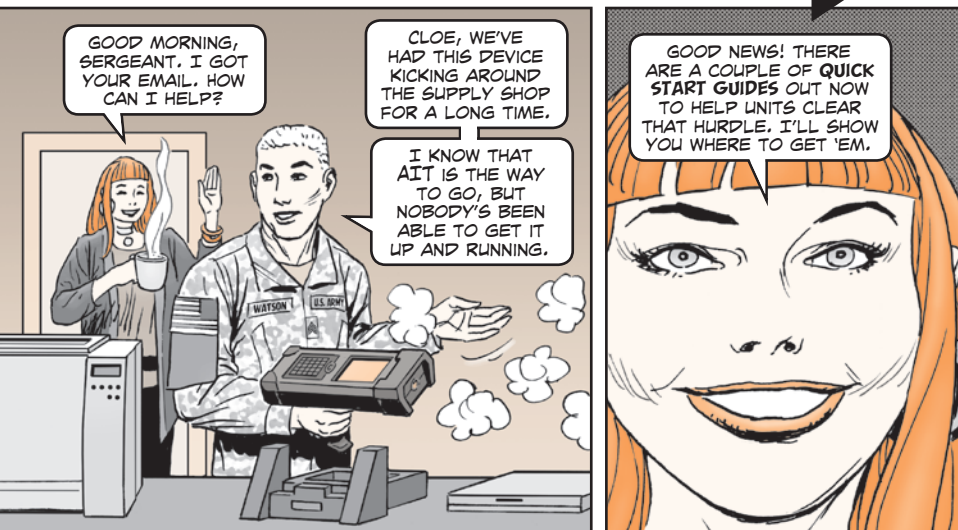
Want to know if you're on the right track? There's a way to check. You can download data discrepancy reports from AKO, find your DODAAC and take actions to purge any invalid data before transmitting it to GCSS-Army.

Visit: <https://www.us.army.mil/suite/files/42727139>

Questions? Email Sterling Hunt at: [sterling.m.hunt.civ@mail.mil](mailto:sterling.m.hunt.civ@mail.mil)

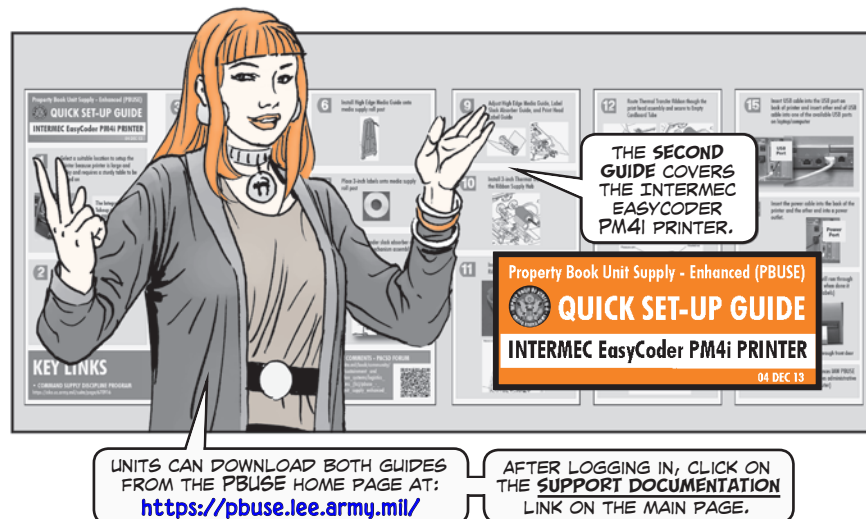


# PBUSE AIT QSGs Point the Way



The Property Book Unit Supply Enhanced (PBUSE) is the Army's web-based Combat Service Support property accountability system. Both tactical and garrison-level supply management personnel use it. In a nutshell, PBUSE integrates property book accountability and unit level logistics functionality across the total Army.

Although PBUSE's Automatic Identification Technology (AIT) has been around a while, HQDA discovered that some units aren't using it for the unit level supply module. To increase AIT understanding and usage, HQDA G-44(S) has released two instructional guides for PBUSE users, supervisors and trainers. These quick set-up guides (QSGs) help units get PBUSE AIT up and running fast so they can experience time-saving benefits.



## Breaking It Down

PBUSE system components include the enterprise server hardware and software, plus a laptop computer and printer.

The AIT suite includes a barcode printer, docking station and the HHT. It also includes the PBUSE HHT application and the PBUSE AIT Client application.

The PBUSE laptop has enough USB ports to support a barcode printer, docking station, paper printer and an external smart card reader.

The PBUSE application does not operate in a "stand-alone" mode but the HHT and AIT Client do. Data is batch processed to the PBUSE enterprise server when the user downloads/uploads (syncs) inventories and transactions.

The network and PBUSE computer must be set up correctly to support the AIT suite. During initial set-up, a unit's Sustainment Automation Support Management Office (SASMO), help desk and Information Management Officer (IMO) should work together.

## Looking Down the Road

As many Soldiers know, Global Combat Support System-Army (GCSS-Army) is now rolling out. It's replacing multiple logistics information systems.

Wave 2 of conversion, which replaces PBUSE and Standard Army Maintenance System-Enhanced (SAMS-E), is slated to roll out to units from 1QFY15 to 4QFY17, to approximately 154,000 users in all.

Ultimately, GCSS-Army will integrate supply, property book, supply support activities and maintenance. Units will use AIT with GCSS-Army and the QSGs will be included in future Programs of Instruction.

For more information on GCSS-Army and to check the fielding schedule, visit:

<https://gcss.army.mil/>

# AOAP PAVES PATH TO TOP-NOTCH MAINTENANCE



If you work on the maintenance side, odds are you know all about the Army Oil Analysis Program (AOAP). But if you're a new Soldier, you may be wondering why it's so important.

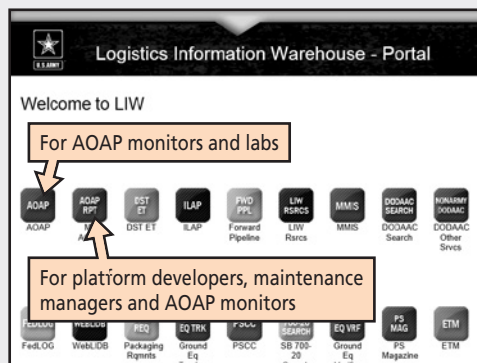
Simply put, AOAP is a Soldier's BFF in the maintenance world. It helps keep equipment going strong by:

- detecting potential component failure at an early stage.
- improving equipment safety.
- reducing maintenance costs and time through preventive actions.

AOAP enrollment is mandatory for all Army aircraft, combat vehicles, watercraft and locomotives unless the Deputy Chief of Staff, G-4, approves an exception. Select non-aeronautical equipment may be enrolled in the AOAP on a case-by-case basis. For an AOAP overview, see TB 43-0211, *AOAP Army Oil Analysis Program Guide For Leaders And Users* (Apr 10). You can get the pub at the Logistics Support Activity's (LOGSA) website: <https://www.logsa.army.mil/etms>

On the query screen, type "TB 43-0211" in the Pub Number box and click Search, then select the pub link that appears and the TB will open in PDF format. The pub walks you through how to take samples, correctly complete forms and it answers many FAQs.

You can also access AOAP info through LOGSA's Logistics Information Warehouse (LIW): <https://liw.logsa.army.mil>



## Small Commitment, Big Payoff

It's quick work to draw an AOAP sample. Yet that brief investment of time and effort can help save equipment, hours of maintenance downtime, and potentially lives. AOAP also gives commanders vital information about the condition of their unit's equipment and quality of maintenance services.

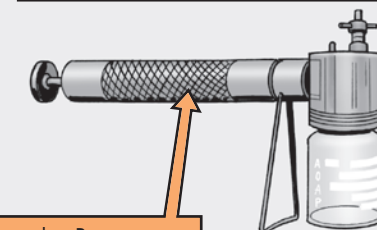
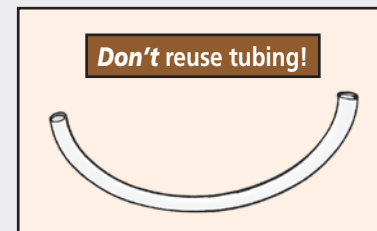
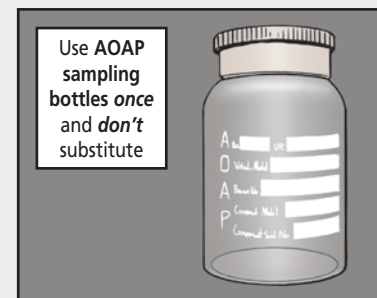
## Must-Dos for AOAP Monitors

If you're tasked to be your unit's AOAP monitor, always ensure that you:

- know when and what equipment is to be sampled and stay on schedule.
- follow safety procedures.
- draw reliable, uncontaminated samples.
- fill out forms completely, clearly and correctly.
- mail or deliver samples and paperwork immediately.
- follow lab recommendations for re-sampling and maintenance.
- give lab feedback when requested.
- keep accurate records.
- keep a 90-day supply of the following on hand:

Aeronautical AOAP Sampling Supplies	
Item (Qty)	NSN
Nonmetallic tubing, 15 x 3/8 inches (100)	4710-00-933-4415
Nonmetallic tubing, 30 x 3/8 inches (100)	4710-01-087-1629
Bottles with screw cap (144)	8125-00-933-4414
Shipping sack, 6 x 10 inches (250)	8105-00-290-0340
Pressure-sensitive labels, 3 1/2 x 15/16 inches (5000)	7530-00-082-2661
Plastic bag (1000)	8105-00-837-7754

Non-Aeronautical AOAP Sampling Supplies	
Item (Qty)	NSN
Oil sample bottle with cap (120)	8125-01-082-9697
Sampling pump, 43mm	4930-01-119-4030
Nonmetallic tubing, 1/4-in diameter (1000)	4720-00-964-1433
Shipping sack, 6 x 10 inches (250)	8105-00-290-0340
Oil sample bottle mailer kit (24)	8125-01-193-3440



Use oil sampling pump if equipment has no sampling valve. Pumps are reusable if properly handled, maintained and kept free of contamination



For both aeronautical and non-aeronautical sampling, the following may also be useful:

- Equipment TMs for reference, including AOAP TB 43-0211.
- DD Form 2026, *Oil Analysis Request* (manual form), unless using automated DA Form 5991-E in SAMS-E or ULLS-AE.
- Plastic gloves to prevent sample contamination and to protect hands from hazardous fluids.
- Clean cloths or rags.

PM AOAP offers detailed monitor training that covers all sampling steps, from taking samples to correctly completing and submitting forms.

To request training, call the AOAP hotline at DSN 645-0866, (256) 955-0866, or email:

[usarmy.redstone.logsa.mbx.aoop@mail.mil](mailto:usarmy.redstone.logsa.mbx.aoop@mail.mil)

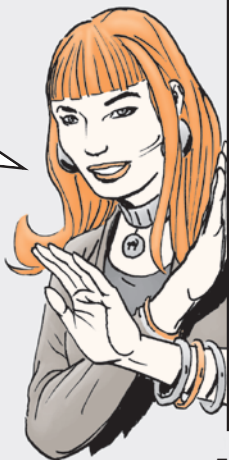
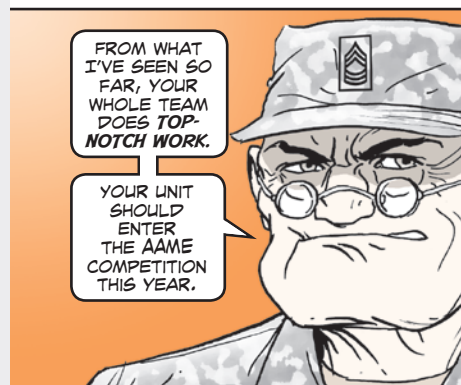
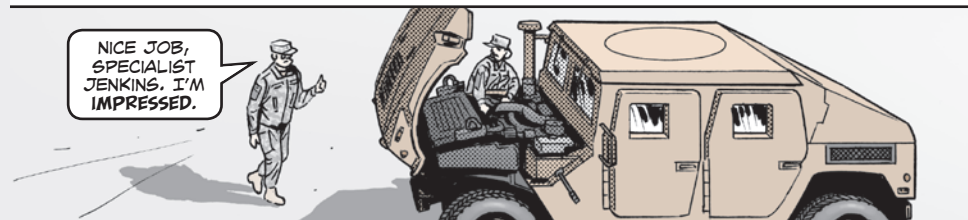
**DD Form 2026, *Oil Analysis Request*:**

Use manual form only if unit does not have SAMS-E or ULLS-AE

**DA Form 5991-E, *Oil Analysis Request*:** Units with SAMS-1E or ULLS-AE should use automated form in logistics information system

REMEMBER, AOAP IS AN EFFECTIVE MAINTENANCE DIAGNOSTIC TOOL, BUT IT'S **NOT** A SUBSTITUTE FOR MAINTENANCE.

PRACTICE GOOD MAINTENANCE HABITS AND AOAP WILL HELP YOU KEEP YOUR EQUIPMENT **ARMY STRONG.**

Put that wrench down, Soldier! Just for a minute. Remind everyone on your team it's time to prepare your unit's or depot's nomination packet for the FY14 Chief of Staff Army Award for Maintenance Excellence (AAME). Packets are due 7 Nov 2014 for field-level entries and 13 Feb 2015 for depot-level entries.

The annual AAME competition recognizes units and depots that excel in maintenance and help improve and sustain combat readiness.

Additional info on the AAME competition and its history can be found at:

<http://www.goordnance.army.mil/AAME/aame.html>

To download a complete list of categories and this year's submission guidelines, choose the "Message (CAC)" tab on the website above.

FY14 AAME winners will be recognized in calendar year 2015. They'll also be listed here in *PS*. The top winners will then go on to compete at the DOD level.

Questions? Contact Nelson Williams at DSN 224-0753, (703) 614-0753, or email:

[nelson.k.williams.civ@mail.mil](mailto:nelson.k.williams.civ@mail.mil)

# **Connie's POST SCRIPTS**

## **MaxxPro Dash/ Dash DXM Air Filler Valve NSN**

Get a new air filler valve for your MaxxPro Dash and MaxxPro Dash DXM vehicles with NSN 2640-01-537-1407. Make a note until the manuals are developed for the MaxxPro Dash family of vehicles.

## **MaxxPro AFES Battery Backup Kit**

Time to replace the batteries in your MaxxPro's automatic fire extinguishing system (AFES) battery backup (BBU)? Then get the BBU kit with NSN 6160-01-596-1366. The kit allows you to replace the batteries and get the AFES BBU ready for future inspections. For more info, check out TACOM maintenance action message 14-024 at:

<https://tulsa.tacom.army.mil/Maintenance/message.cfm?id=MA14-024.html>

## **GET AMMO QUESTIONS ANSWERED**

Got questions about ammunition or explosives management, operations, logistics, surveillance, training, engineering, safety, transportation, physical security or demilitarization technology? AMMO Help is the answer. Subject matter experts can answer most questions in 24-48 hours. Visit the AMMO Help website at:

[https://mhp.redstone.army.mil/modules/AMMO\\_HELP/AskQuestion.aspx](https://mhp.redstone.army.mil/modules/AMMO_HELP/AskQuestion.aspx)

Or email questions to: [usarmy.mcalester.usamc.list.dac-ammohelp@mail.mil](mailto:usarmy.mcalester.usamc.list.dac-ammohelp@mail.mil)

## **Extract Bad M249 Extractor Kits**

Some of the springs in the M249 machine gun's extractor kit, NSN 1005-01-383-0168, have been reported as out of tolerance. The bad springs can lead to extraction failures. Check for extractor kits from CAGE 06MA8 dated prior to 2014. If you find any, replace them by contacting TACOM's Anna Kersey at DSN 786-1337, (586) 282-1337, or email: [anna.l.kersey.civ@mail.mil](mailto:anna.l.kersey.civ@mail.mil)

For any other M249 problems, contact TACOM's Andre Pilgrim at DSN 786-1335, (586) 282-1335, or email: [andre.v.pilgrim.civ@mail.mil](mailto:andre.v.pilgrim.civ@mail.mil)

## **ORDER BLACK HAWK'S OLD CONTROL PANEL PARTS**

Mechanics, the electrical control panel, NSN 1680-01-596-1472, will replace three legacy blade de-icing components on the Black Hawk. This continuous technology refreshment (CTR) item is not yet in stock. So until assets are available, continue ordering the three legacy items: fault monitor assembly, NSN 1680-01-221-0482; indicator panel, NSN 1680-01-460-9549; and control panel assembly, NSN 1660-01-216-1936.

## **Free M240H Bipods Still Available**

MWO 9-1005-313-23-P for the new M240H bipods has expired. That's the bad news. The good news is that 1,000 of the bipods are still available for free issue. So if your unit missed the MWO, you can still get bipods by contacting TACOM's Robert Arellano at DSN 786-1336, (586) 282-1336, or emailing: [robert.l.arellano.civ@mail.mil](mailto:robert.l.arellano.civ@mail.mil)

## **Order the New 60K BTU IECU**

There is a new 60K BTU Improved Environmental Control Unit (IECU), NSN 4120-01-543-0741, LIN B29108, available that replaces the legacy Military Standard ECUs 54K, 60K, and 66K BTU FDECU models (LINs A26852 and A25860). These legacy MIL-STD ECUs will soon be obsolete.

Units need to update their authorizations, turn-in the MIL-STD ECUs to DLA Disposition Services, and contact Program Manager Expeditionary Energy & Sustainment Systems (E2S2) to receive the replacement 60K BTU IECU. PM E2S2 POCs are: Israel Sanchez, 703-704-1080, [israel.sanchez@us.army.mil](mailto:israel.sanchez@us.army.mil) and Jerome Walker, 703-704-3198, [jerome.walker@us.army.mil](mailto:jerome.walker@us.army.mil)

## **GCSS-Army Reminder**

Remember to check the GCSS-Army website for alerts, updated fielding and training schedules and other important info. Visit:

<https://gcss.army.mil/>

Or sign up to get automatic notifications at:

<https://gcss.army.mil/Support/register.aspx>

## **M870/A1 Decking Kit Update**

On Page 9 of PS 735 (Feb 14), we listed NSN 5510-01-525-6325 for the deck kit for M870 and M870A1 trailers. But that NSN is only for the M870 trailer. The kit for the M870A1 trailer comes with NSN 5510-01-540-5724.

## **M112 Brake Parts Revisited**

Make a note of these three corrections to the M112 water trailer hand brake article on Pages 14-15 of PS 741 (Aug 14): 1) The NSN for the left-hand brake assembly (the second Item 1) should be 2530-01-414-9314. 2) The NSNs for the right-hand and left-hand brake shoe kits were reversed. 3) At the very bottom of Page 15, the two NSNs listed for getting the left and right parking brake levers are correct, but they aren't brake shoe kits. NSN 2530-01-414-9317 is the right-hand brake assembly and NSN 2530-01-414-9314 is the left-hand brake assembly.

## **M-ATV MRAP Lube Order Update**

The lubrication instructions in WP 0068 of the M-ATV MRAP's TM 9-2355-335-10 (Aug 12) have changed. Specifically, the engine oil change interval has been changed to every 6,000 miles or 250 operating hours, whichever comes first. The straight scoop's in TACOM maintenance information message 14-035: <https://tulsa.tacom.army.mil/Maintenance/message.cfm?id=M14-035.html>

Until the TM is updated, you can download the new lubrication instructions at:

<https://tulsa.tacom.army.mil/Maintenance/?t=mam&f=LubinstrM-ATV.pdf>

DISTRIBUTION: To be distributed in accordance with the initial distribution number (IDN) 345239, requirements for the TB 43-PS-Series.

**Would You Stake Your Life *right now* on  
the Condition of Your Equipment?**



# TAKE SPARE BARRELS TO THE FIELD...

IF YOU FIRE AND FIRE  
**WITHOUT** CHANGING MY  
BARREL, IT GETS SO  
HOT IT **WARPS!**

THEN YOU  
HAVE TO SPEND  
**BIG BUCKS** FOR  
A **NEW BARREL.**



# ....AND USE THEM!