

Issue 771

# PS

February  
2017

## THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-771

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***TIRES ON A TANK!?**  
NOW WHO THOUGHT  
THAT WAS A GOOD  
IDEA? I'VE GOTTA  
FIX THIS.*

**For more about  
UNAUTHORIZED  
MODIFICATIONS,  
check out Page 50!**



**Ice and Snow Slowing Your  
M1 Down? Get Some Cleats!  
See Page 9**

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GERALD B. O'KEEFE  
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1631501

# Positively Presidential



ULYSSES S. GRANT,  
QUARTERMASTER



CHESTER A. ARTHUR,  
QUARTERMASTER



WILLIAM MCKINLEY,  
QUARTERMASTER



WILLIAMS,  
92A

THIRTY-ONE US PRESIDENTS HAVE SERVED IN THE MILITARY. SOME OF YOU MAY KNOW THAT FACT, BUT PROBABLY LESS KNOWN IS THAT THREE OF THEM SERVED AS LOGISTICIANS: ULYSSES S. GRANT, CHESTER A. ARTHUR, AND WILLIAM MCKINLEY.

GRANT, OUR 18TH PRESIDENT, WAS IN THE ARMY FROM 1839-1854 AND 1861-1869. DURING THE MEXICAN-AMERICAN WAR, HE WAS A QUARTERMASTER IN CHARGE OF SUPPLIES.

ARTHUR, OUR 21ST PRESIDENT, SERVED IN THE NEW YORK MILITIA FROM 1858-1863. DURING THE CIVIL WAR, HE WAS A QUARTERMASTER BRIGADIER GENERAL.

MCKINLEY, OUR 25TH PRESIDENT, SERVED IN THE ARMY FROM 1861-1865 AS A VOLUNTEER WITH THE 23RD OHIO INFANTRY. HE WAS ASSIGNED TO THE BRIGADE QUARTERMASTER OFFICE, WHERE HE WORKED TO SUPPLY HIS REGIMENT.

SOMETIMES LOGISTICS GETS LABELED AS DRY, BORING OR SOMEHOW OF LESSER IMPORTANCE THAN THE EQUIPMENT ITSELF. BUT IT'S NOT TRUE.

WE'VE SAID IT BEFORE: MAINTENANCE AND SUPPLY ARE THE PERFECT COUPLE. THE MILITARY CAN'T FUNCTION EFFECTIVELY UNLESS THEY'RE WORKING HAND-IN-HAND.



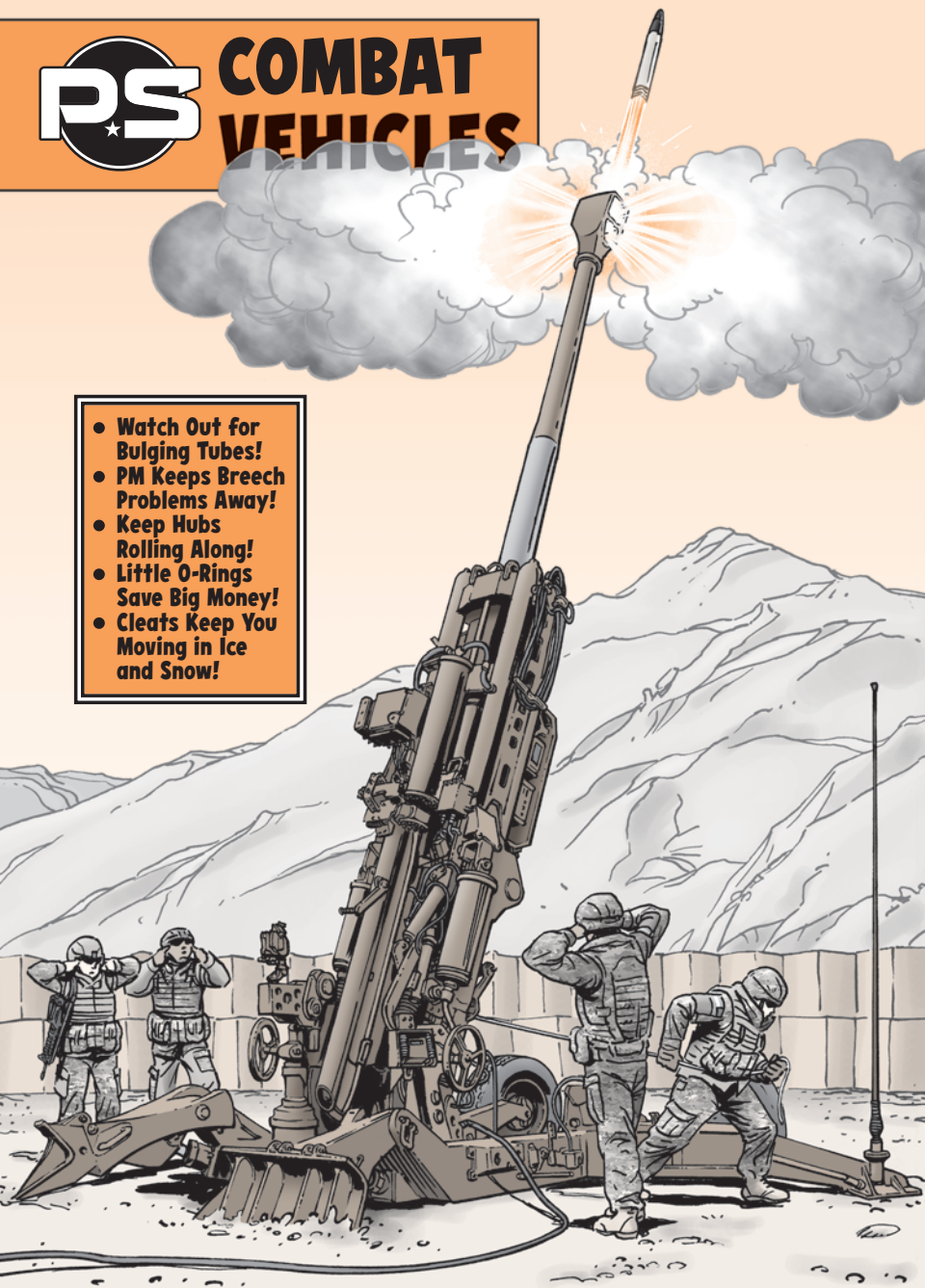
TAKE HEART, LOGISTICIANS! HISTORY REMINDS US OF YOUR INDISPENSABLE ROLE. BEFORE YOU EVER QUESTION THE IMPORTANCE OF WHAT YOU DO, REMEMBER THAT YOU'RE IN POSITIVELY PRESIDENTIAL COMPANY.



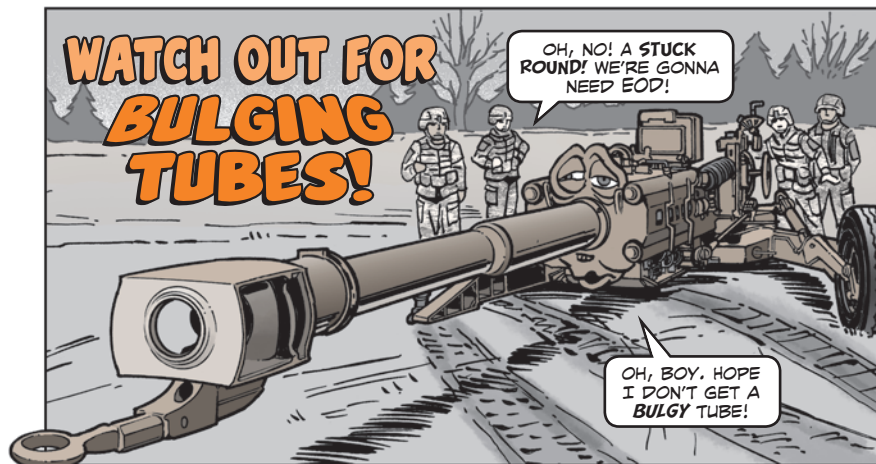


# COMBAT VEHICLES

- Watch Out for Bulging Tubes!
- PM Keeps Breech Problems Away!
- Keep Hubs Rolling Along!
- Little O-Rings Save Big Money!
- Cleats Keep You Moving in Ice and Snow!



Howitzers...



Crewmen, it's bad enough when explosive ordnance disposal (EOD) has to remove a stuck round from your 155mm howitzer. It's a lot worse if you're left with a bulging cannon tube!

That's what could happen to your howitzer if EOD uses the water blast method to remove a stuck round.

The 155mm cannon tubes most at risk are the M76 and M284 steel and M76 and M284A2 chrome barrels.

If EOD uses the water blast method to extract a stuck round from your howitzer, inspect the cannon tube with a borescope. A bulge means the tube has to be condemned.

If you suspect a bulge but can't see one, use a pullover gage to measure the area where you suspect damage. Or have field maintenance inspect the cannon tube with a borescope.

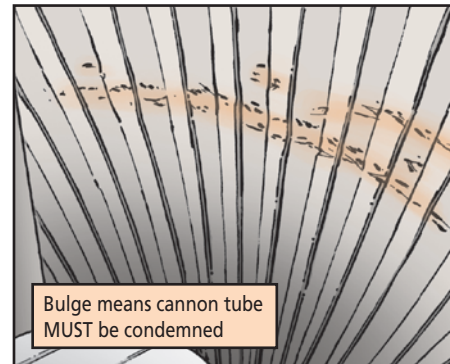
You'll find the full scoop on inspecting for damage in TM 9-1000-202-14, *Evaluation of Cannon Tubes*. Appendix T covers the M76 tube and Appendix U covers the M284 tube. EM 0065, which covers most small arms, has the TM, along with LOGSA's ETM website:

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

Be sure to immediately notify your logistics assistance representative (LAR) or field service representative (FSR) if EOD removes a stuck round from your howitzer.

You are also required to report EOD round removal, inspection conducted and any damage on DA Form 2408-4, *Weapons Record Data Card*, in the remarks column. You can access it at:

<https://tulsa.tacom.army.mil/guncard/index.cfm>





M777A2  
Towed  
Howitzer...

HEY! WHY  
AREN'T YOU  
DOIN' YOUR  
JOB?

MAYBE YOU SHOULDN'T  
A' WHACKED MY BREECHBLOCK  
WITH A HAMMER!

**PM KEEPS  
BREECH  
PROBLEMS  
AWAY!**

CREWMEN, A PROBLEM  
LIKE A BREECH THAT WON'T  
CLOSE PROPERLY OR A  
FROZEN BREECH PIVOT PIN  
CAN PUT YOUR M777A2  
**OUT OF ACTION.**

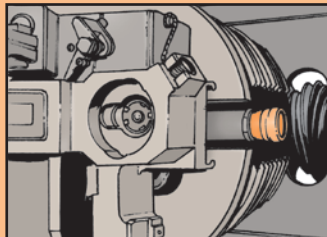
AT THAT POINT IT'S  
NOTHING MORE THAN  
A VERY LARGE  
PAPERWEIGHT!



Breech that won't close all the way makes M777A2 NMC

### PM Saves the Day

CHECK THE BREECHBLOCK  
ROLLER TO MAKE SURE IT'S  
ROLLING FREELY. IF IT'S  
**NOT**, THAT COULD KEEP THE  
BREECH FROM LOCKING.  
LUBE THE PIVOT PIN AND  
ROLLER WITH CLP,  
NSN 9150-01-054-6453.  
THEN LUBE THE PIVOT PIN  
AND BREECHBLOCK ROLLER  
AT LEAST QUARTERLY TO  
PREVENT ANOTHER  
FREEZE-UP.



Apply CLP here  
to keep breech  
pivot pin and  
breechblock  
roller moving  
freely

ANOTHER  
GOOD WAY TO  
PROTECT THE  
BREECH FROM  
CORROSION IS TO  
MAKE SURE THE  
BREECH COVER,  
NSN 1025-01-  
529-4351, IS IN  
**GOOD SHAPE AND  
INSTALLED WHEN  
THE HOWITZER  
ISN'T IN USE.**

Install breech  
cover when  
howitzer is not  
being used

### Treat Breech Block With Care



SOMETIMES  
CREWMEN HIT THE  
PIVOT PIN AND  
BREECHBLOCK  
ROLLER WITH A  
HAMMER WHEN  
TRYING TO ALIGN  
THE BREECH-  
BLOCK TO THE  
RACK IN THE  
CARRIER DURING  
INSTALLATION.  
**DON'T DO THAT!**  
THAT'LL JUST  
LEAD TO LOCKED  
OR FROZEN  
PIVOT PINS.

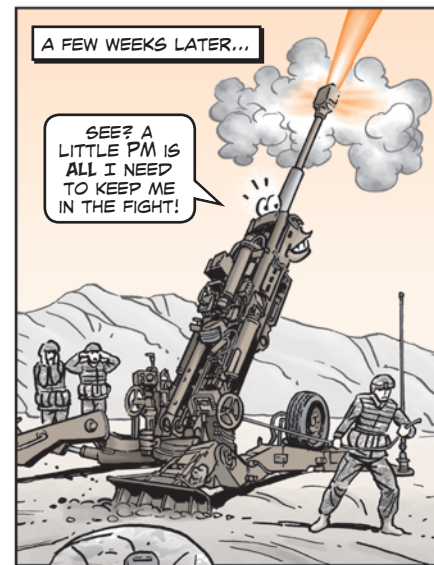
ALSO, **BE CAREFUL WHEN REMOVING**  
THE BREECHBLOCK. IF THE BLOCK IS  
DROPPED ON THE ROLLER, THE PIVOT  
GETS BENT OR THE BREECH THREADS  
GET **DAMAGED**. THEN THE ROLLER  
WON'T TURN FREELY AND THE BREECH  
MIGHT NOT CLOSE PROPERLY.

THE BREECHBLOCK WEIGHS **125  
POUNDS**. SO YOU ALWAYS WANT  
TO HAVE **HELP**. THAT LESSENS THE  
CHANCE OF THE BREECHBLOCK  
BEING DROPPED.

CHECK OUT WP 0051 AND WP 0064 OF  
TM 9-1025-215-10 (JAN 16) FOR MORE  
INFORMATION ON TROUBLESHOOTING  
PROCEDURES AND BREECH PM.

A FEW WEEKS LATER...

SEE? A  
LITTLE PM IS  
ALL I NEED  
TO KEEP ME  
IN THE FIGHT!



CREWMEN,  
TAKE CARE  
WITH YOUR  
HOWITZER'S  
BREECH-  
BLOCK. IF  
IT'S OUT OF  
ACTION, SO  
ARE YOU!

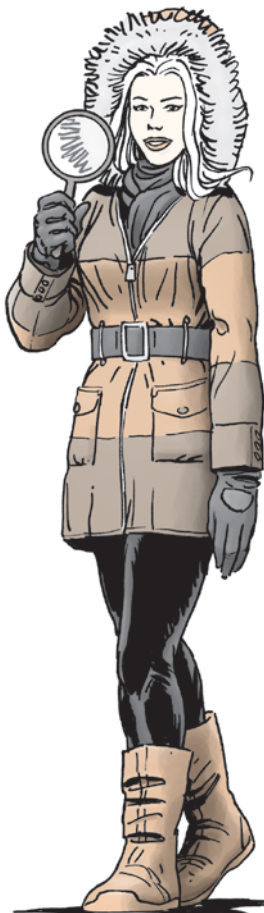
# KEEP HUBS ROLLING ALONG!

WE GOTTA GET YOU ON THE MOVE FAST!

WE HAVE A NEW FIRE MISSION!

GOOD THING MY HUBS ARE GOOD TO GO!

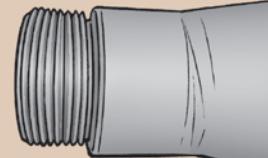
MECHANICS, PAYING CLOSE ATTENTION TO DETAILS DURING QUARTERLY SERVICES WILL KEEP THOSE M777A2 WHEEL HUBS ROLLING ALONG FOR THE NEXT FIRE MISSION.



WHEN TIGHTENING THE TAPERED ROLLER HUB BEARINGS ON THE HUB ASSEMBLY, PRELOADING THE WHEEL BEARING IS CRITICAL.

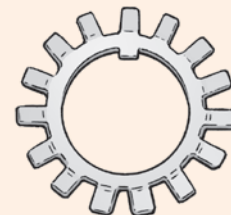
PRELOADING PREVENTS FAILURE OF THE WHEEL BEARINGS AND WHEEL ARM ASSEMBLY SPINDLE.

Wheel arm assembly spindle can fail if wheel bearing isn't installed properly

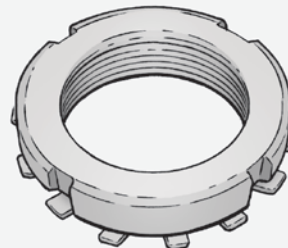


HERE'S HOW TO PRELOAD THE WHEEL BEARING THE RIGHT WAY AND KEEP THOSE HOWITZERS IN THE FIGHT WHILE AVOIDING EXPENSIVE DAMAGE:

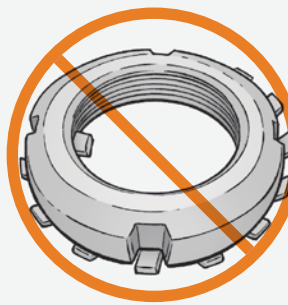
- DO NOT install the wheel bearing nut locking tab before preloading the bearing. If you do, the spindle lock tab can shear off. And then the wheel bearings, hub, brakes and spindle might fail.



- Be sure to install the wheel bearing lock nut with the flat side out...



...not with the bevel side out.



- Preload (torque) the wheel bearing to 74 lb-ft (100 NM).

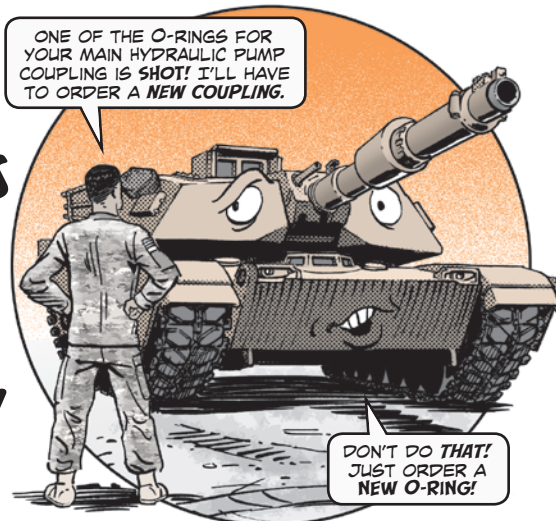
Use the M35 lock nut spanner, NSN 5120-99-339-5094.

- Torque the wheel bearing lock nut with locking tab to 26 lb-ft (35 NM), then back it to the nearest slot and lock tab.

CHECK OUT THE COMPLETE WHEEL HUB INSTALLATION PROCEDURE IN TM 9-1025-215-23&P ON IETM EM 0274 (SEP 16).



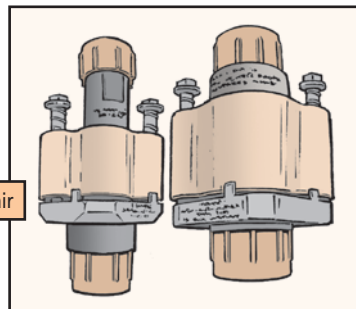
# Little O-Rings Save BIG Money!



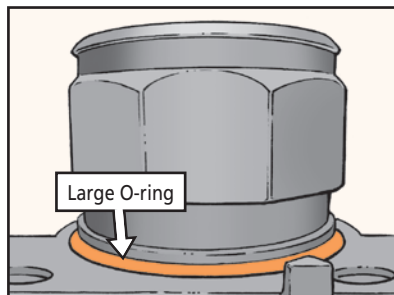
**M**echanics, when you're maintaining or replacing the main hydraulic pump on an M1-series tank, don't replace the entire coupling assembly if you find a damaged O-ring.

That's a money waster! A large coupling assembly, NSN 4730-01-193-6781, will set your unit back more than \$1,000. A small coupling assembly, NSN 4730-01-296-5759, costs more than \$600. Compare that to less than a buck for one O-ring!

Main hydraulic pump couplings are expensive to repair



Get the large O-ring with NSN 5331-00-173-3023 and the small O-ring with NSN 5331-00-166-8412.

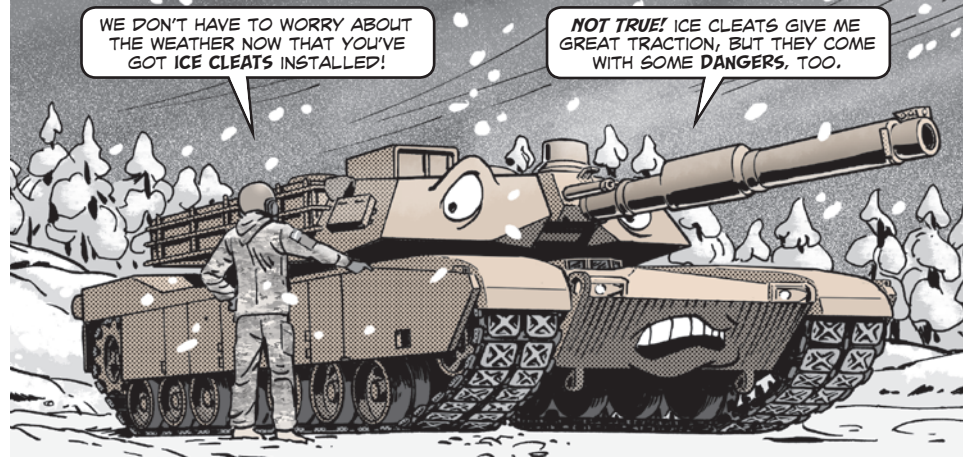


KEEP IN MIND THAT THE O-RINGS ARE **ONLY** MEANT TO KEEP OUT **DUST**. THEY **WON'T** STOP A FLUID LEAK.

SO IF YOU FIND A LEAKY COUPLING, YOU'LL NEED TO ORDER A NEW ASSEMBLY TO FIX THAT PROBLEM.



# Cleats Keep You Moving in ICE and SNOW!

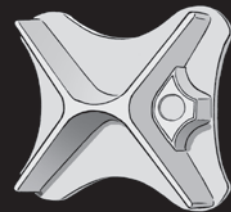


**W**hen icy conditions prevail, semis and other big vehicles install tire chains for added traction. You can't do that with your M1-series tank, but you do have the option of ice cleats, NSN 2530-01-369-9994.

While cleats provide better traction, operating with them on your tank requires a lot of extra care and strict adherence to track PMCS.

Unlike rubber track pads, ice cleats are metal with sharp and unforgiving edges. That's what makes them so effective. But the added grip also makes it easier to throw track. When track that's equipped with ice cleats is thrown, the cleats take a big bite out of the bottom of the battery box. That's damage that'll have your tank on the sidelines for an expensive repair.

Metal ice cleat can cause serious damage when loose



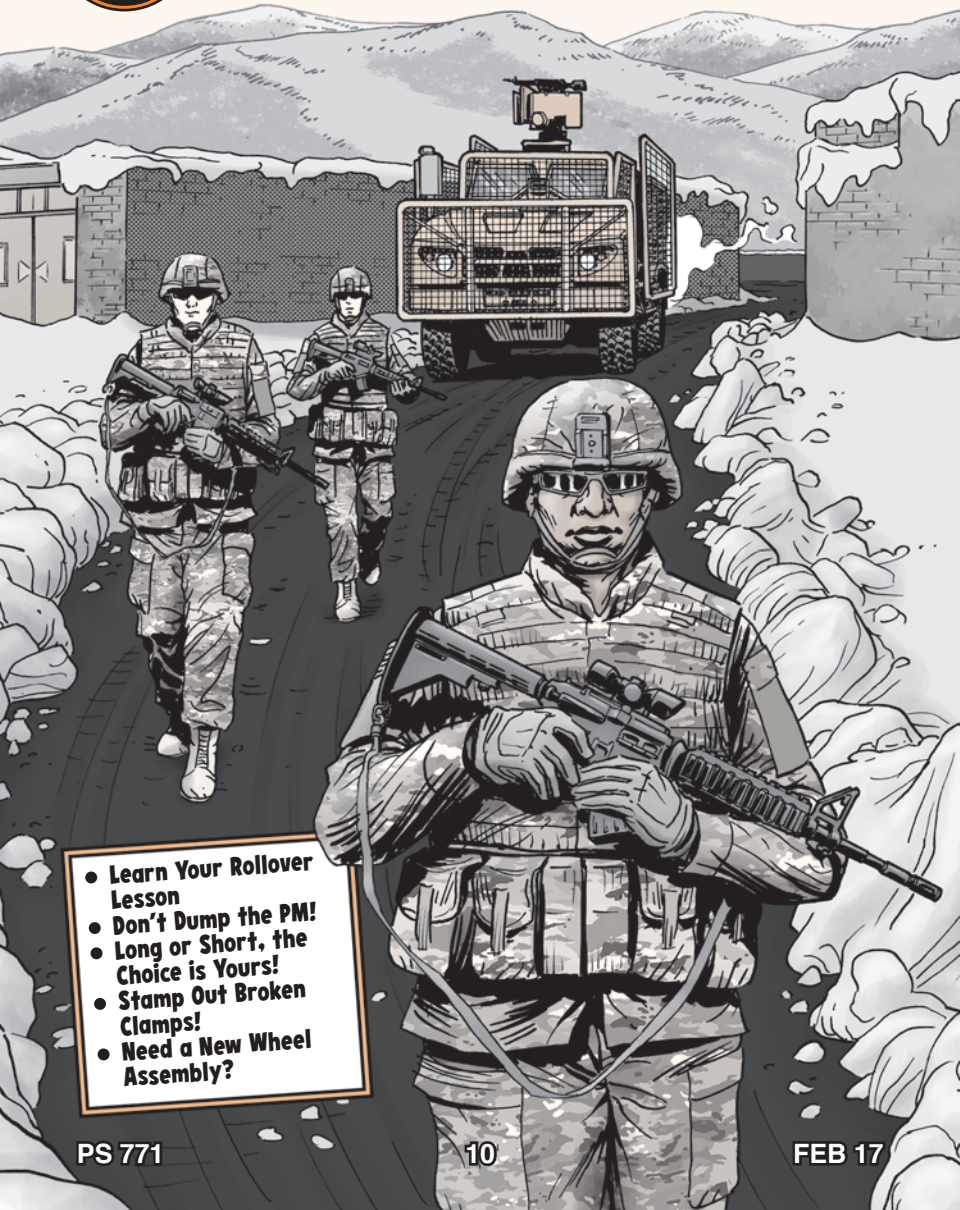
## So remember:

- Keep a close eye on track tension
- Minimize maneuvers that are likely to throw track
- At halts and during After Operation PMCS, look for loose cleats. Unlike a loose pad, loose cleats can cause significant damage.

For more details, contact your local TACOM logistics assistance representative (LAR). And be on the lookout for the next IETM update with these and other special operator instructions.



# PS TACTICAL VEHICLES



- Learn Your Rollover Lesson
- Don't Dump the PM!
- Long or Short, the Choice is Yours!
- Stamp Out Broken Clamps!
- Need a New Wheel Assembly?

MRAPs...

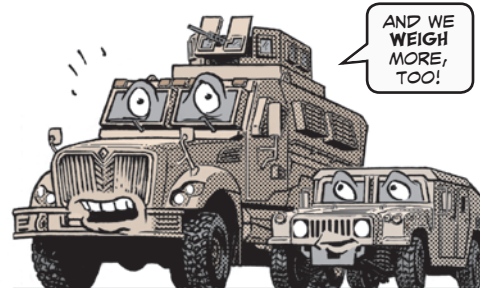
## LEARN YOUR ROLLOVER LESSON

IT'S ALWAYS BETTER TO AVOID A ROLLOVER THAN TO EXPERIENCE ONE.

REMEMBER THESE LESSONS LEARNED BEFORE YOU START THE DAY'S MISSION...

- Perform rollover drill rehearsals with the gunner and crew prior to all missions.
- Keep all equipment properly stowed.
- Maintain an appropriate speed for road conditions.
- Make sure crewmembers wear seat belts or their gunner's restraint systems (GRS).
- Use a ground guide whenever tactical procedures permit.
- Unlock combat door locks in non-conflict situations. That allows rescuers to enter the vehicle quickly if needed.

WHEN PLANNING MISSION ROUTES, REMEMBER THAT MRAP VEHICLES HAVE LARGER PROFILES THAN UP-ARMORED HMMWVs.

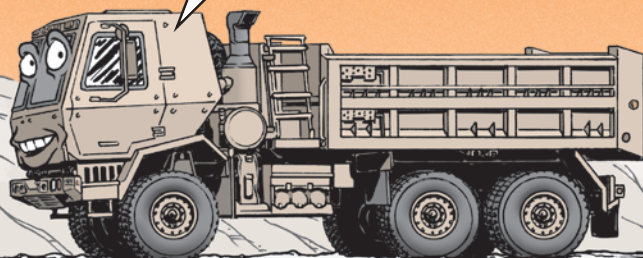


ALSO CONSIDER THE MISSION'S CRITICALITY AND KEEP WEATHER AND TERRAIN IN MIND.





**DON'T  
DUMP  
THE  
PM!**



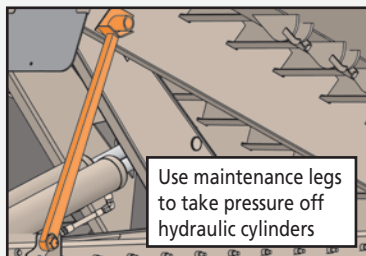
WANT TO KEEP  
YOUR M1157A1P2  
DUMP TRUCK **HAULIN'**  
AND **DUMPIN'**?

THEN MAKE PM  
YOUR **FIRST LOAD** BY  
KEEPING THESE **THREE**  
**POINTERS** IN MIND...

### Keep the Bed Dry

You don't want standing water in the dump bed. If it's there long enough, you'll end up with a rusted bed.

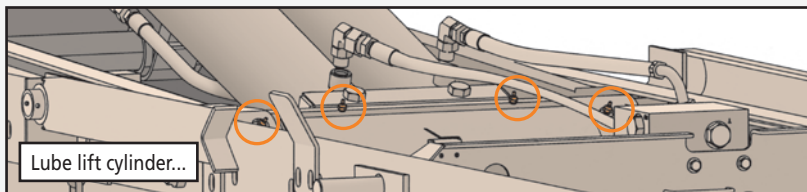
So if your dump truck is going to be sitting for a while, keep the bed elevated so water can drain easily. Just make sure you use the dump body maintenance legs to hold the bed up and keep pressure off the hydraulic cylinders.



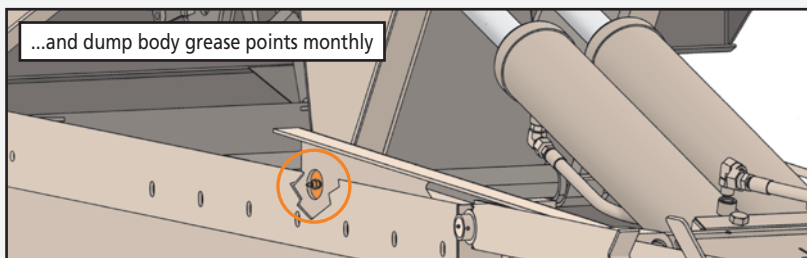
Use maintenance legs  
to take pressure off  
hydraulic cylinders

### Keep 'em Lubed

Monthly, you'll need to lube the lift cylinder and dump body grease points. They're often overlooked because the bed has to be raised to get at 'em.



Lube lift cylinder...



...and dump body grease points monthly

Without regular shots of GAA, the bed has a harder time raising and lowering, especially when under a load.

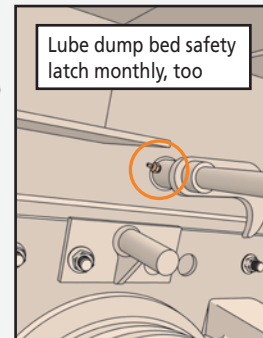
### Get the Latch

AND **DON'T FORGET**  
TO LUBE THE DUMP  
BED SAFETY LATCH  
MONTHLY WITH GAA,  
TOO.

**WITHOUT LUBE,**  
THE HOOK CAN  
**FREEZE** IN PLACE.  
THEN IT-OR THE  
LATCH MOUNT-WILL  
**BREAK** WHEN YOU  
RAISE THE BED.

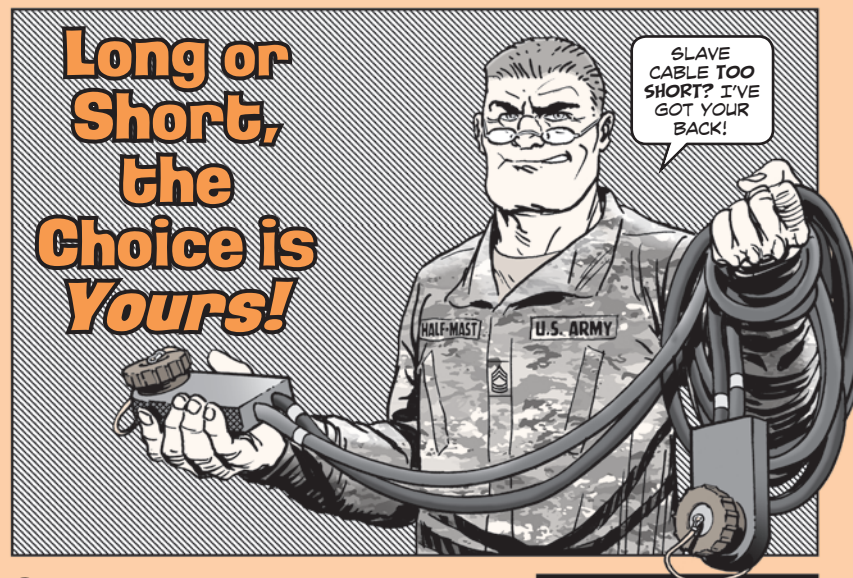


Lube dump bed safety  
latch monthly, too



### NATO Slave Cable...

**Long or  
Short,  
the  
Choice is  
Yours!**



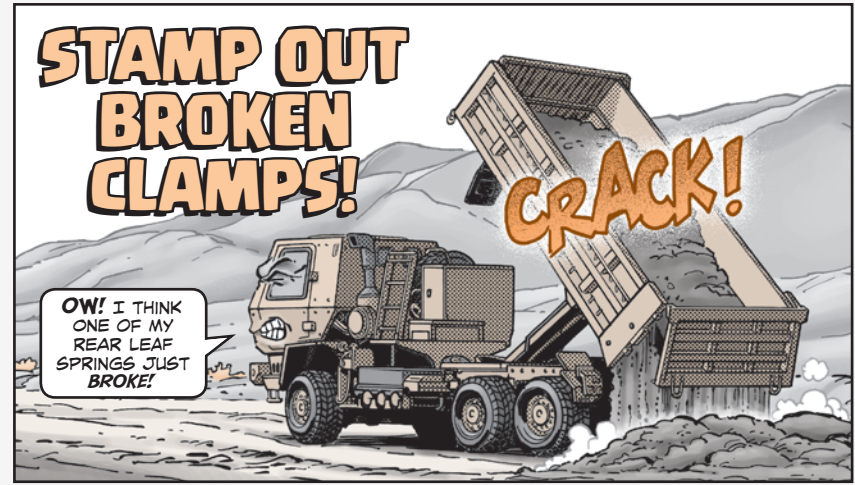
SLAVE  
CABLE TOO  
SHORT? I'VE  
GOT YOUR  
BACK!

**S**lave cables are handy and easy to use for getting vehicles with dead batteries back into operation. Unless, of course, the cable you use is too short to reach.

Here's a list of slave cables in different lengths. Keep this list handy so you don't come up short around the motor pool.

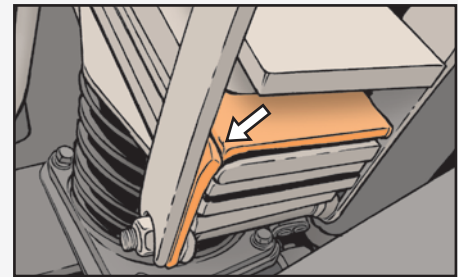
Cable Length	NSN 6150-
6 feet	01-390-7058
12 feet	01-222-7943
20 feet	01-022-6004
35 feet	01-248-9555
50 feet	01-310-1829





Operators, get down on your hands and knees and check out the rear leaf spring, NSN 5360-01-375-7092, on your M1088A0/A1/A1R/A1P and M1157A1P2 FMTVs and M142 HIMARS.

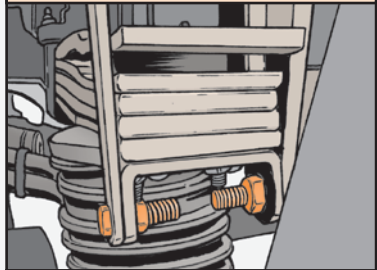
The spring has a series of retaining clamps on each end: a short clamp on the bottom, an intermediate clamp that bands the #1 through #4 leaves, and a long clamp that binds everything together. The intermediate clamp on some vehicles is breaking from wear-and-tear and vehicle vibration.



Intermediate clamp cracks from vibration

While a broken clamp doesn't make your vehicle NMC, you should still get your mechanic to remove it.

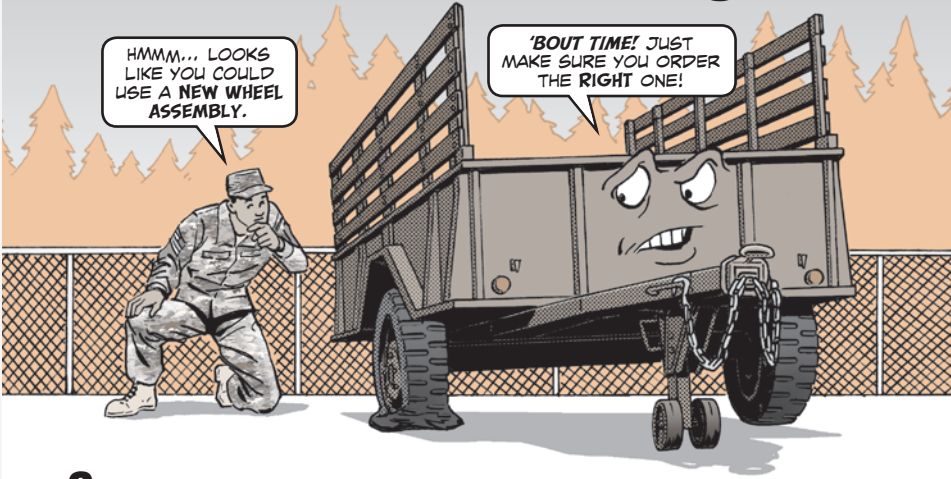
1. Remove the long bolt and nut at the bottom.
2. Pull out and discard the intermediate clamp.



3. Insert two grade 8 (7/16"-14) bolts, NSN 5306-01-253-4429, through each side of the remaining two clamps. Secure them with two self-locking nuts, NSN 5310-00-241-6659 and torque to 75 lb-ft (95 mm).

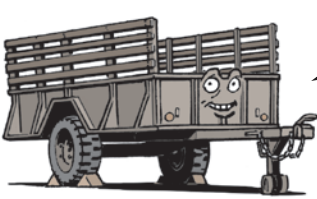
By the way, if you order a new replacement spring with NSN 5360-01-375-7092, it will already be upgraded to the configuration without the intermediate clamp.

# Need a New Wheel Assembly?



Getting the right wheel assembly for small trailers can be a little confusing. So use this chart to get the right NSN when it comes time to replace the trailer's hub. Remember, it's the hub that determines which wheel assembly to use for your small trailer.

	Hub NSN	Hub PN	Wheel Assembly NSN 2530-	Wheel Rim Single piece NSN 2530-
M103A3, M105A3, M149, M149A1, M200A1 SS, M105A2, M332	2530-00-677-0202 3040-01-120-3041	8719915 11682127-1	01-528-9461	01-528-7038
M149A2, M200A1 D, M313, M750, M373A2	2530-00-677-0202 2530-01-119-1838 3040-00-735-5316	8719915 8710741 7263712	01-611-7619	01-588-9171



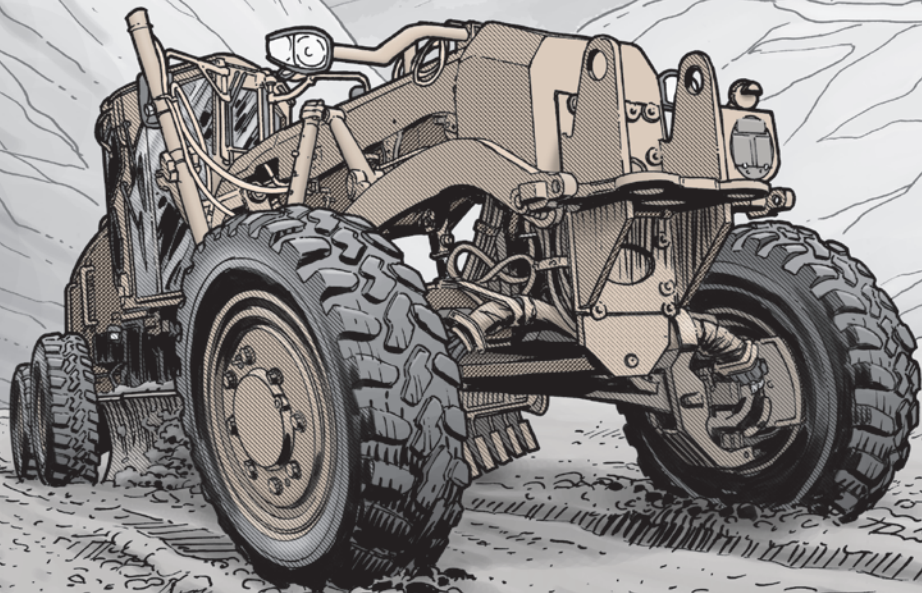
BY THE WAY, NSN 2530-01-611-7619 IS THE ONLY WHEEL ASSEMBLY ALLOWED FOR M149A2 WATER TRAILERS.

IF YOU TRY TO USE THE M149A1 WHEEL ASSEMBLY, NSN 2530-01-528-9461, IT'LL PROTRUDE PAST THE WHEEL WELL.

ALSO, THE 9.00X20 TIRES HAVE ALL BEEN REPLACED WITH 10R22.5 TIRES, NSN 2610-01-063-7947.



- Avoid the Front Fender Bracket Blues
- Some Tips for the Tractor
- No Quick Volcano Fixes

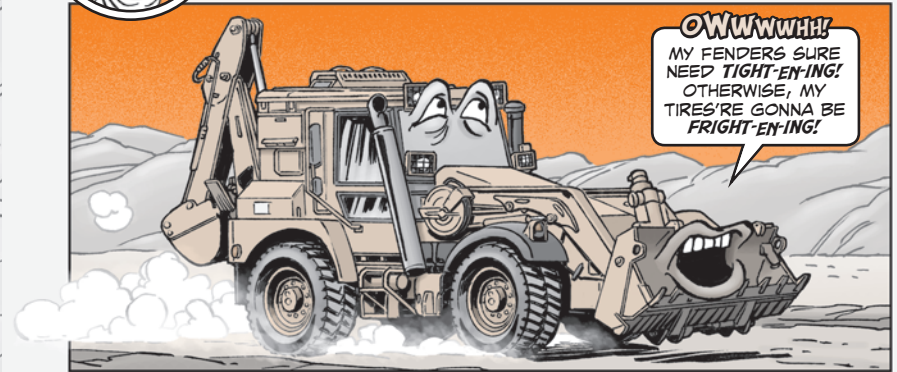


HME-1...



COMING IN AT #3 IN TODAY'S TOP FIVE SINGLES:  
OUR VERY OWN HME-1 WITH THE...

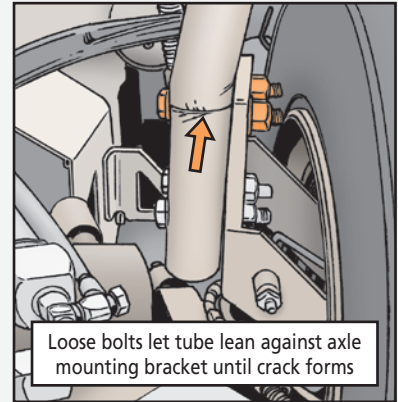
## "Avoid the Front Fender Bracket Blues"



**T**he jig's up, operators. The mounting bolts on the HME-1's front fender assembly are on the loose! Vibration during construction operations is the culprit.

Loose bolts allow the fender's bracket tube to lean against the axle mounting bracket. That weakens the bracket tube. Eventually it bends and then cracks. That can let the fender rub against the tire and cause even more damage.

A good rule of thumb is to check these bolts for looseness at least weekly. See if the nut turns. Then try to move the fender up and down. Report any movement to your mechanic right away.



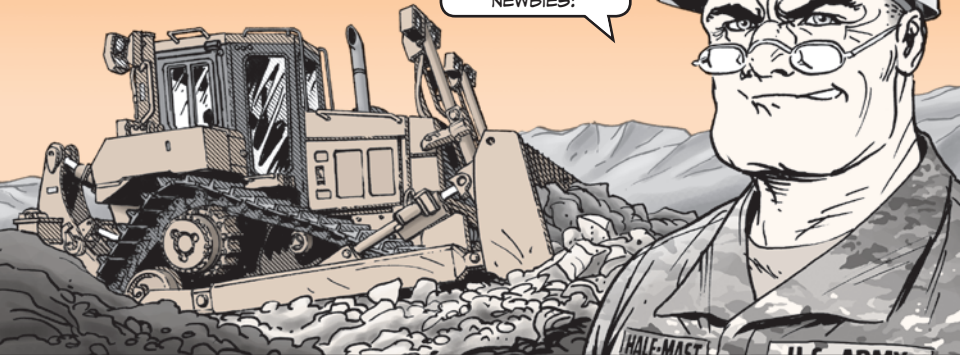
WE'D BE **SNUG**  
AT HOME IF THE  
DRIVER HAD  
CHECKED US FOR  
LOOSENESS!

YEAH, BUT...  
SSNIIFFFFS... SMELL THIS  
FRESH COUNTRY AIR!



# SOME TIPS FOR THE TRACTOR!

OPERATORS, HERE ARE A FEW REMINDERS TO KEEP IN MIND BEFORE THE DAY'S RUN... ESPECIALLY YOU NEWBIES!



## Parking Brake

You can grind the engine's starter all day long, but it won't start unless the parking brake is locked (engaged). So if the engine won't start, make this your first check!

Lock parking brake to start engine



## Winch Area Reminder

No storage here!

DON'T USE THE AREA BEHIND THE WINCH HANDLE FOR STORAGE.

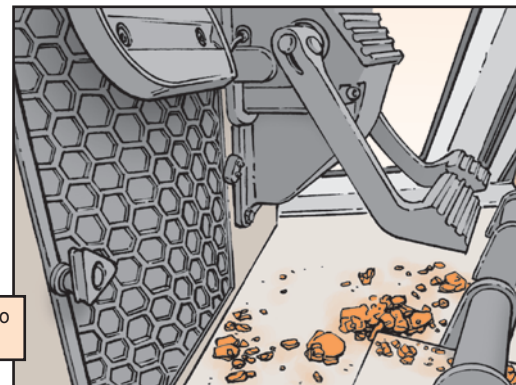
SURE, IT'S AN OPEN AREA AND YOUR BACKPACK FITS PERFECTLY. PROBLEM IS, ANYTHING PLACED THERE CAN MOVE AND ACTIVATE THE WINCH. NOT GOOD WHEN YOU'RE NOT EXPECTING IT!



## A Clean Cab

Dirt and sand on the dozer's cab floor gets kicked around and sucked into the cab's air filter. It's a good idea to take a rag or whisk broom and brush the dirt out of the cab after each day's run.

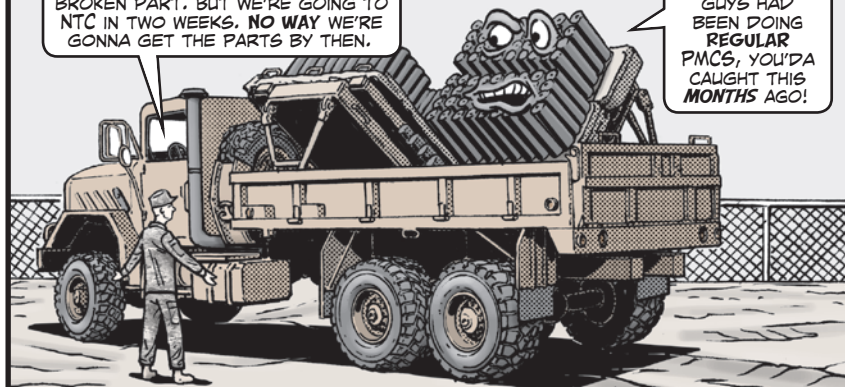
Keep dirt cleaned up to protect cab air filter



# NO QUICK VOLCANO FIXES

LOOKS LIKE YOU'VE GOT A BROKEN PART. BUT WE'RE GOING TO NTC IN TWO WEEKS. NO WAY WE'RE GONNA GET THE PARTS BY THEN.

IF YOU GUYS HAD BEEN DOING REGULAR PMCS, YOU'DA CAUGHT THIS MONTHS AGO!

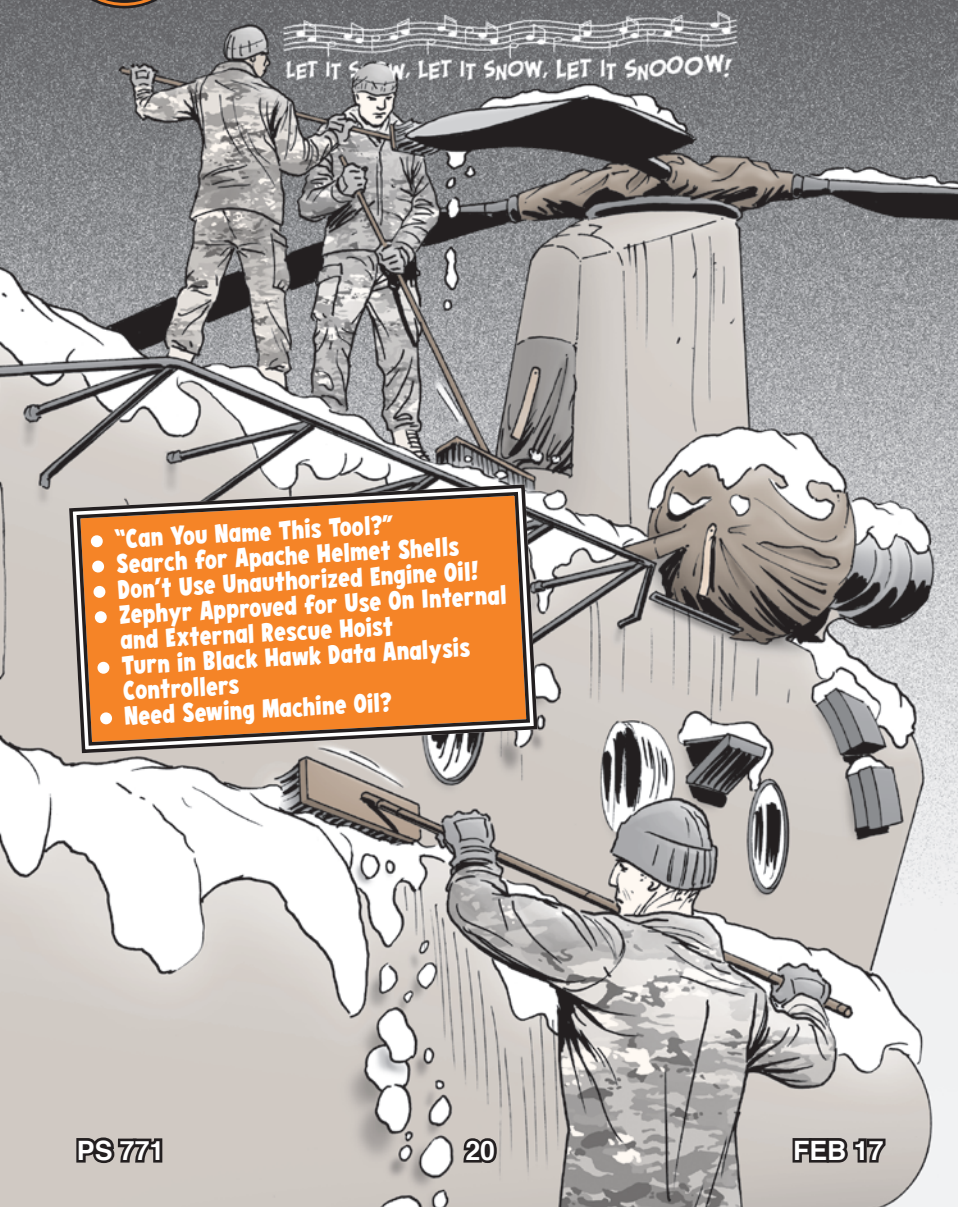


**D**on't wait until the last minute to get your M139 Volcano mine dispensers ready for action.

It takes a long time to get Volcano repair parts. If you're not doing the PMCS called for in TM 9-1095-208-13&P in IETM EM 0209 (Jan 06)) on a regular basis, you won't be able to identify problems in time to get parts to fix them before you deploy or go to NTC. If the IETM isn't handy, see TM 9-1095-208-10-1.

Volcano questions? Contact Michael VanDriessche at DSN 786-1247, (586) 282-1247 or email: [michael.r.vandriessche.civ@mail.mil](mailto:michael.r.vandriessche.civ@mail.mil)



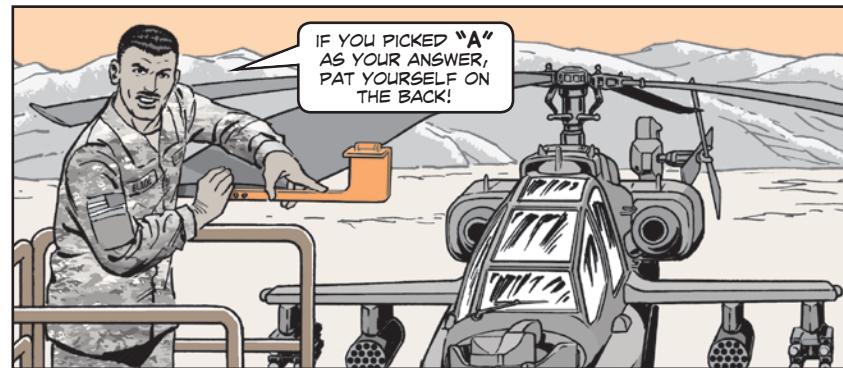


- "Can You Name This Tool?"
- Search for Apache Helmet Shells
- Don't Use Unauthorized Engine Oil!
- Zephyr Approved for Use On Internal and External Rescue Hoist
- Turn in Black Hawk Data Analysis Controllers
- Need Sewing Machine Oil?

# "CAN YOU NAME THIS TOOL?"

WHAT TOOL DOES THE APACHE-LONGBOW IETM TELL YOU TO USE TO ADJUST THE BLADE LEAD/LAG?

- A) Main rotor blade phase adjustment tool
- B) Trim tab bender
- C) Tip cap removal tool
- D) None of the above

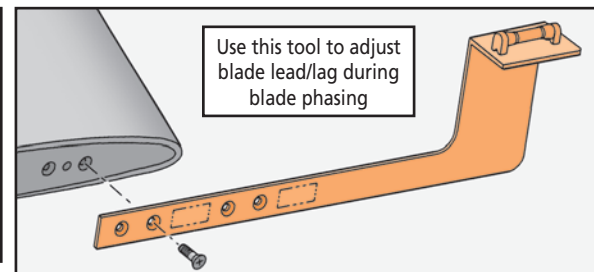


THE MAIN ROTOR BLADE PHASE ADJUSTMENT TOOL. NSN 4920-01-517-3110 (PN 7-262100008-615) COMES IN A KIT SUPPLIED BY DLA.

THE KIT CONTAINS THE FOLLOWING COMPONENTS:

- **Laser/telescope and phasing tool.** This gets attached to the rotor head.
- **Target.** This is attached to the main rotor blade (MRB) tip.

ALL OF THE PARTS ARE USED **TOGETHER** TO ADJUST THE LEAD/LAG OF EACH MAIN ROTOR BLADE.



IF YOU DIDN'T KNOW WHAT THIS TOOL WAS FOR, BRUSH UP ON THE IETM TASK TITLED, **ROTOR SYSTEM: PHASE MAIN ROTOR BY ADJUSTING LEAD/LAG DAMPERS (TYPICAL).**

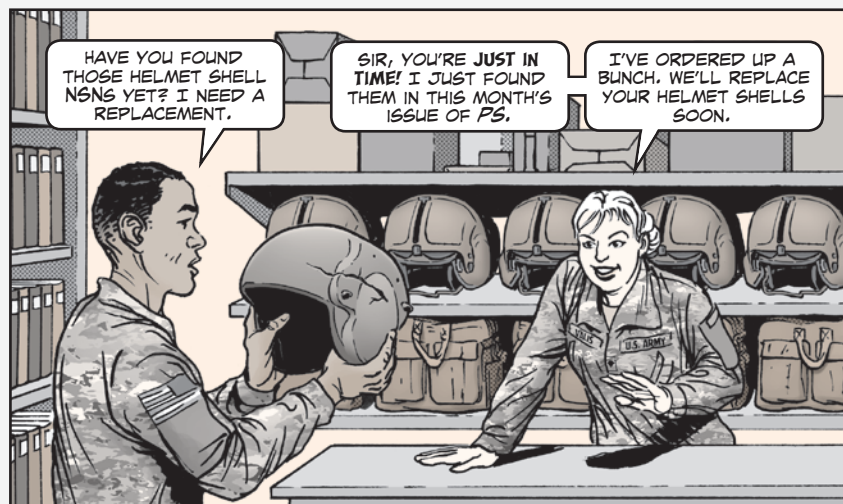
AS YOU PERFORM THIS ADJUSTMENT, KEEP IN MIND THAT FINE BLADE ADJUSTMENT IS ACCOMPLISHED BY ADJUSTING THE LEAD OR LAG DAMPER ROD END **ONLY ONE-HALF TURN AT A TIME.**

## DON'T

ADJUST EITHER DAMPER MORE THAN ONE-HALF TURN WITHOUT ADJUSTING THE OTHER DAMPER ONE-HALF TURN.

DISCONNECT BOTH DAMPER ROD ENDS AT THE SAME TIME AND **DO** MAKE SURE EACH OF THESE BOLTS DROPS IN UNASSISTED.

# SEARCH FOR APACHE HELMET SHELLS



WHEN ORDERING THE OUTER GREEN SHELL FOR THE AH-64D APACHE INTEGRATED HELMET AND DISPLAY SIGHT SYSTEM (IHADSS) INTEGRATED HELMET UNIT (IHU), THE **RIGHT** NSNs CAN MAKE ALL THE DIFFERENCE.

SOME UNITS HAVE BEEN ORDERING THESE HELMET SHELLS...

Helmet Shell	NSN 8470-
Medium	01-470-7193
Large	01-471-0048
Extra-large	01-471-0049

PROBLEM IS, THEY HAVE AN SMR CODE OF XA000.

THE XA MEANS THE SHELLS AREN'T STOCKED AND YOU HAVE TO ORDER THE NEXT HIGHER ASSEMBLY.

INSTEAD, USE THESE NSNS TO GET THE CORRECT REPLACEMENT HELMET SHELLS!

Helmet Shell	NSN 8470-
Medium	01-218-2061
Large	01-218-2062
Extra-large	01-283-6527

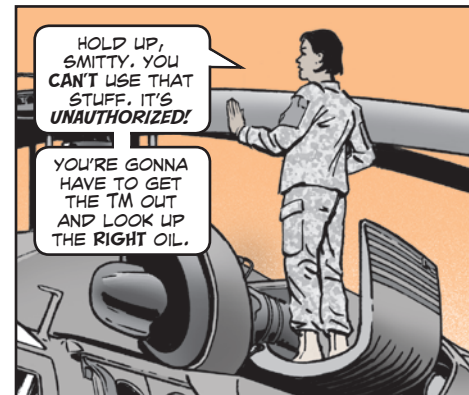
THESE NSNS HAVE AN SMR CODE OF PA0ZZ, WHICH MEANS THEY'RE STOCKED ITEMS.



UH-60/  
AH-64  
Series...



## DON'T USE UNAUTHORIZED ENGINE OIL!



**M**echanics, doing Black Hawk or Apache maintenance by the seat of your pants and not by the book puts your aircraft in harm's way.

For example, engine oil that's OK to use on one aircraft type doesn't mean it's OK for your Black Hawk. If you want to know what oil can be used to service an engine, follow the guidelines in the engine's TM 1-2840-248-23&P-1 and the associated aircraft manuals for the Black Hawk: TM 1520-237-10, TM 1520-280-10-1 or Apache TM 1-1520-251-1, TM 1-1520-251-10-2 or TM 1-1520-263-10.

There have been some incidents where T700 engines were serviced with high thermal stability (HTS) oil. Both the operator and engine manuals caution **against** using HTS oil.

Using unauthorized oil may not cause an immediate failure, but over time it can shorten component life, chip engines, plug oil passages and cause premature leaks from the fuel boost pump through the accessory gearbox common drain. Draining and purging engine oil is much harder than putting in the correct oil in the first place. So it's a good idea to have a seasoned mechanic shadow novice mechanics when doing maintenance on any part of the aircraft. Service aircraft engines the TM way, not any old way. Check out the HTS oil info in aviation maintenance action message (AMAM), UH-60-08-AMAM-03.

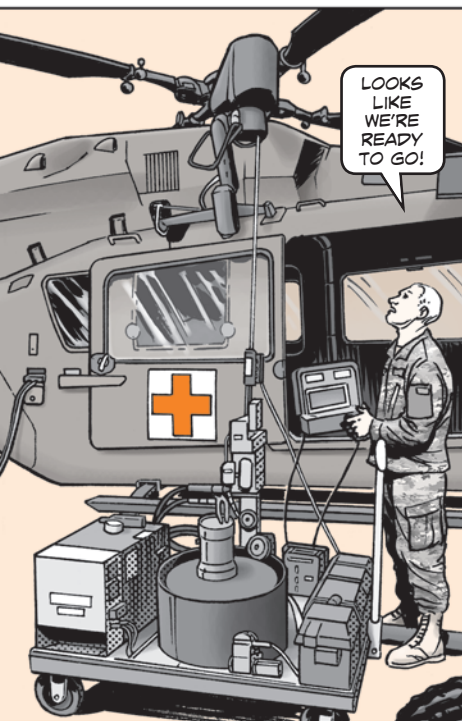
You can find the message on the AMCOM Safety & Maintenance Messages website:

<https://asmprd.redstone.army.mil/Guest/MessageDetails.aspx>



# Zephyr **APPROVED**

## for Use On Internal and External Rescue Hoist



LOOKS LIKE WE'RE READY TO GO!



I'M GLAD WE GOT APPROVAL TO USE THE ZEPHYR AS AN ALTERNATE METHOD!

MECHANICS, THE ZEPHYR RESCUE HOIST GROUND SUPPORT EQUIPMENT (RHGSE) HAS BEEN USED TO CLEAN AND MAGNETICALLY INSPECT AIRCRAFT HOIST CABLES FOR YEARS.

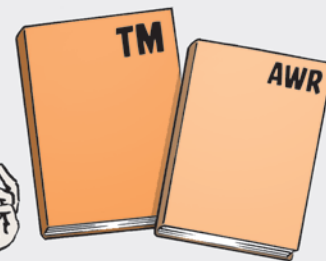
IT ALLOWS YOU TO STORE CABLE WHILE ALSO APPLYING VARIABLE TENSION DURING REMOVAL AND INSTALLATION OF HOIST CABLE.

BUT THERE'S ALWAYS BEEN A PROBLEM.

THE PROBLEM IS A QUESTION...

DO MECHANICS HAVE THE AUTHORITY TO USE THE RHGSE?

NORMALLY, THE MEDEVAC HEADSHED WOULD ISSUE THIS AUTHORITY THROUGH TM INSTRUCTIONS OR AN AIR WORTHINESS RELEASE (AWR).



BUT THAT HASN'T HAPPENED BECAUSE GROUND SUPPORT EQUIPMENT HAS NOTHING TO DO WITH AIRWORTHINESS.



THE AVIATION ENGINEERING DIRECTORATE (AED) FINALLY TURNED OVER APPROVAL AUTHORITY FOR THE ZEPHYR TO THE UTILITY HELICOPTER PROGRAM OFFICE (UHPO).

UHPO, IN TURN, ISSUED A SIGNED MEMO THAT APPROVES THE ZEPHYR FOR THE FOLLOWING MAINTENANCE ACTIONS ON THE RESCUE HOIST...



- To store the cable in an unstressed state to aid in removal, storage, and/or replacement of the cable.
- To wash, dry, and lube the hoist cable if required.
- To perform a magnetic inspection of the cable as part of an ongoing record of cable integrity. This supplements, but **does not replace**, AED's required visual inspection of the cable.
- To perform a hook load test following the disassembly and/or replacement of the hook hoist. This should not exceed 600 pounds.
- To use as an **alternate method** of cable tensioning, to include cable reseal if necessary, to ensure smooth and even wraps of the wire rope on the drum while under load (see note).
- To use as an **alternate method** of conditioning or seasoning the cable during initial installation on a hoist (see note).
- To use as an **alternate method** for the external hoist's 500- to 600-lb in-flight (rated) load test after initial installation of the hoist cable (see note).

**(NOTE):** REMEMBER THAT USING A FREE WEIGHT DURING HOVERING FLIGHT IS STILL A SUPERIOR METHOD FOR RESEATING AND CONDITIONING A WIRE ROPE. THIS METHOD LOADS THE ENTIRE LENGTH OF THE CABLE SIMULTANEOUSLY, ALLOWING THE ENTIRE LENGTH OF THE CABLE TO ROTATE AND SETTLE UNDER LOAD.



OVER TIME, THE EXCLUSIVE USE OF ALTERNATIVE METHODS MAY **REDUCE** THE LIFE OF THE CABLE...

...AND **INCREASE** THE FREQUENCY OF CABLE REPLACEMENTS.



UNIT SOPs SHOULD ADDRESS THE USE OF FREE WEIGHTS AS THE PRIMARY METHOD OF PERFORMING CABLE RESEATING AND/OR CONDITIONING AND MAKE ADJUSTMENTS AS REQUIRED FOR THE MISSION.

NSNs FOR THE ZEPHYR AND ITS SPECIFIC USES ARE LISTED HERE:

- Zephyr, hydraulic operated with inspection system (MagSens), NSN 1730-01-573-2486 (aircraft ground hydraulic winch)
- Zephyr, hydraulic operated without MagSens, NSN 4920-01-577-1794 (aircraft maintenance fixture)
- Zephyr MagSens only, NSN 3950-01-580-1775 (inspection system)
- Zephyr, manually operated without MagSens, NSN 3950-01-580-0783 (wire rope hoist)
- Zephyr, manually operated with MagSens, PN ZGS-11000-4

ZEPHYR INTERNATIONAL OFFERS **NO COST TRAINING** TO AVIATION UNITS AT THEIR FACILITY IN CONWAY, SC.

THE TRAINING IS DESIGNED FOR **BOTH** NEW AND EXISTING USERS OF THE ZEPHYR RHGSE.

TO SIGN UP FOR UPCOMING TRAINING CLASSES, CONTACT THE MANUFACTURER AT (843) 365-2675. OR EMAIL: [info@zephyrintl.com](mailto:info@zephyrintl.com)



## Turn in Black Hawk Data Analysis Controllers

Mechanics, check your area now for unserviceable Black Hawk data analysis controllers (DAC), NSN 5895-01-576-1873 (PN 30279-0301 and PN 70600-02806-103). Turn in any you find for repair. These DACs are critically needed to support repair programs and maintain availability of assets.

## Need Sewing Machine Oil?

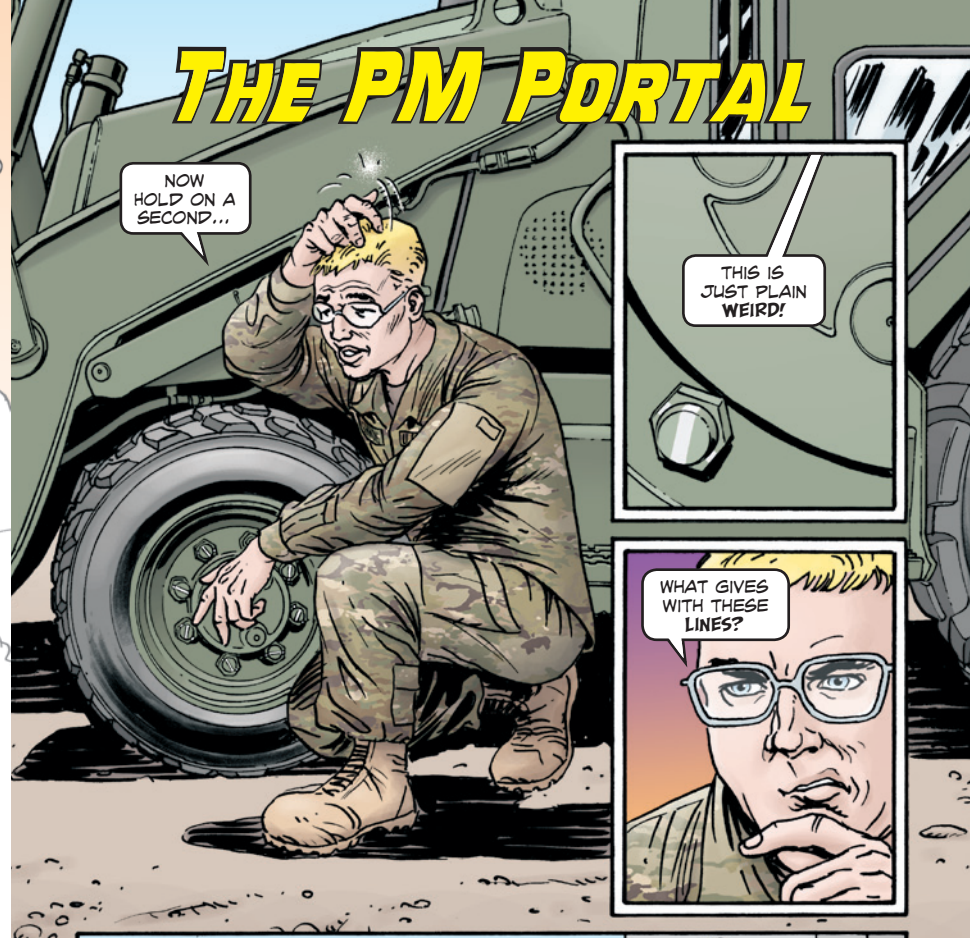
Got a Consew or Seiko sewing machine, NSN 3530-01-507-4081, in the shop that needs oil? Get a 4.5-oz bottle with NSN 6505-00-068-4243 or 16-oz can with NSN 6505-01-573-2305.

# THE PM PORTAL

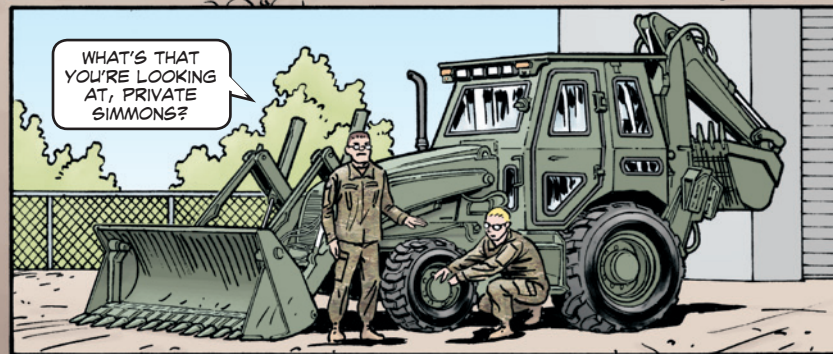
NOW HOLD ON A SECOND...

THIS IS JUST PLAIN WEIRD!

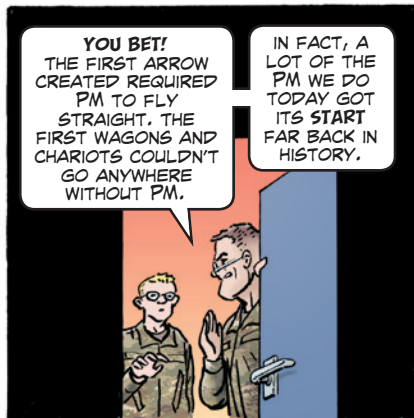
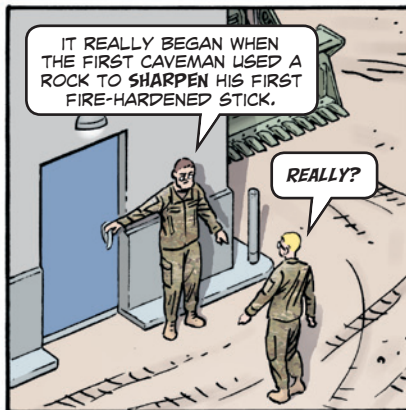
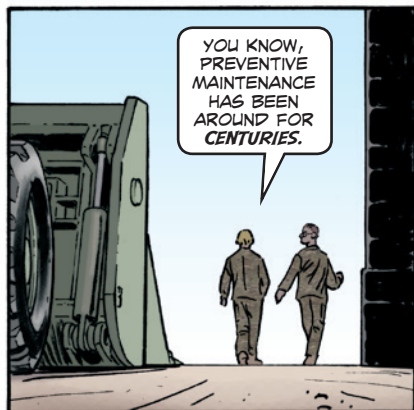
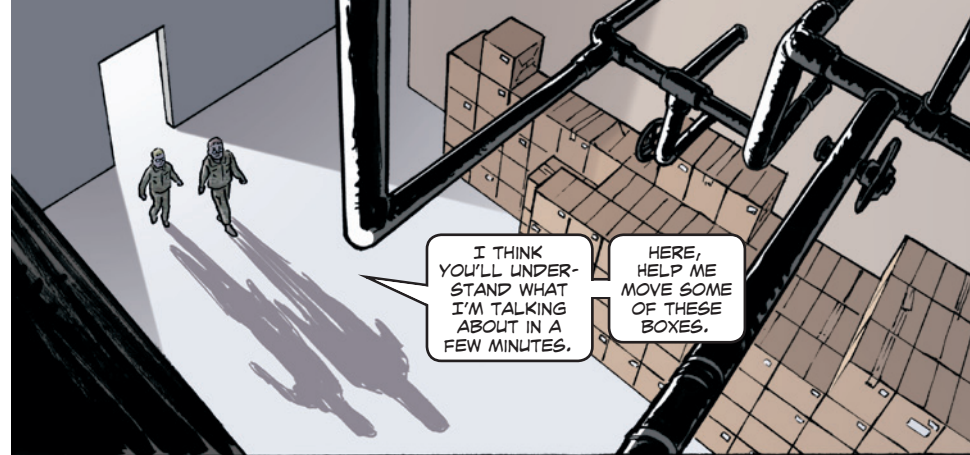
WHAT GIVES WITH THESE LINES?



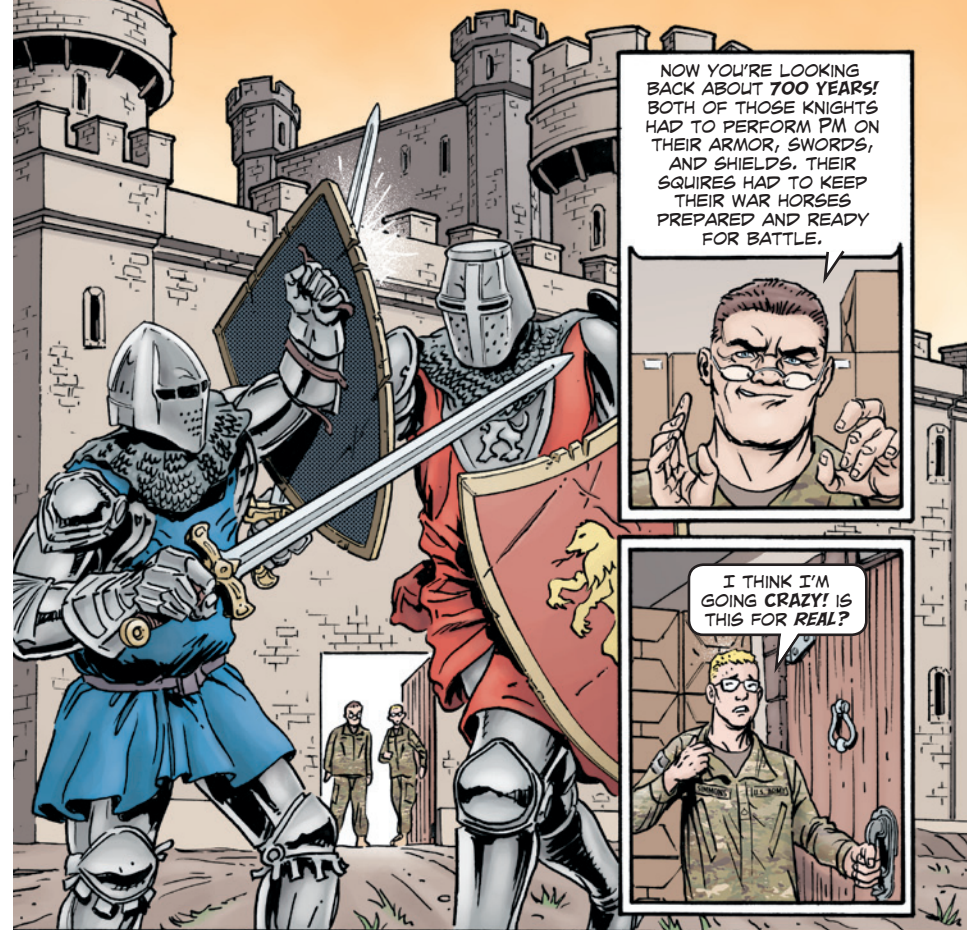
WHAT'S THAT YOU'RE LOOKING AT, PRIVATE SIMMONS?



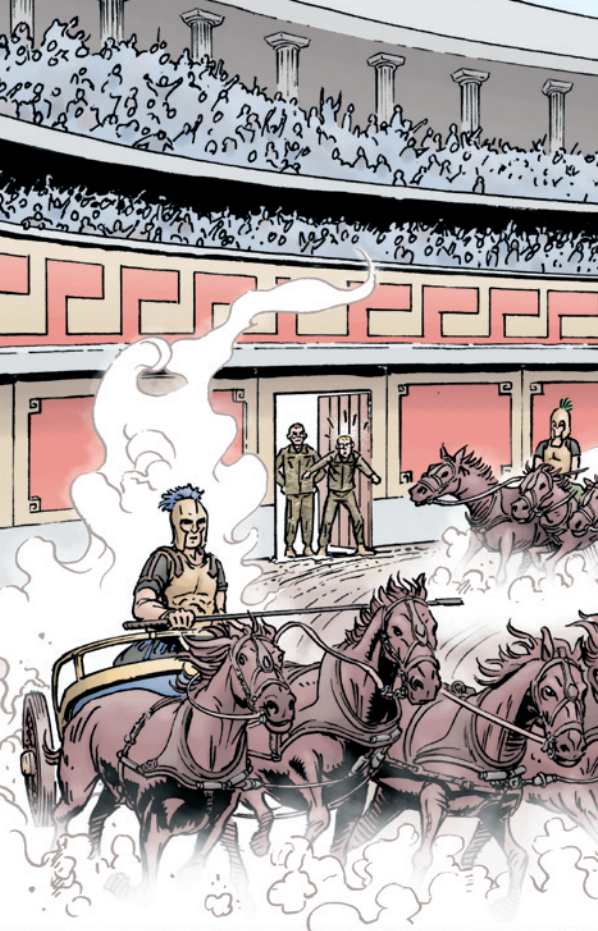




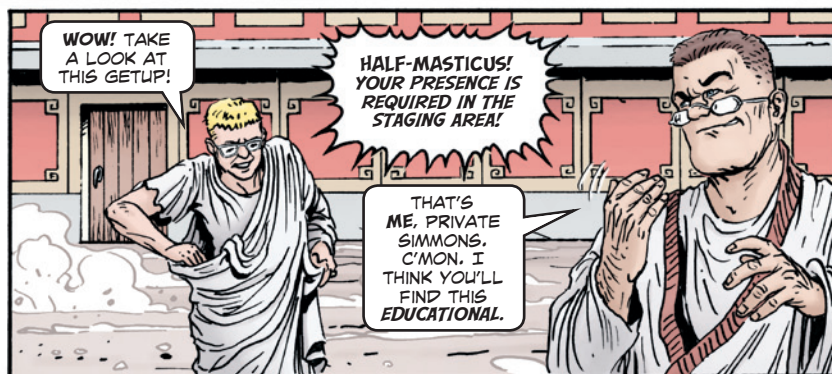
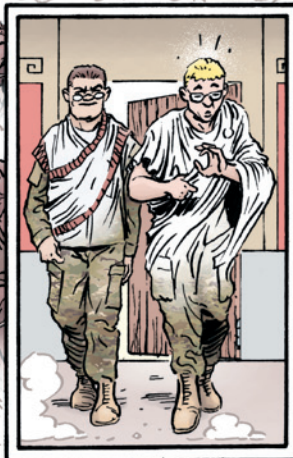








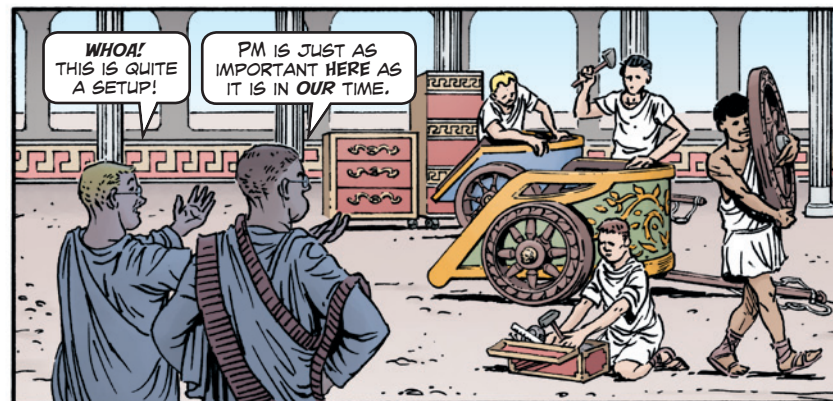
WELL, DON'T JUST STAND THERE. LET'S GO INSIDE!



WOW! TAKE A LOOK AT THIS GETUP!

HALF-MASTICS! YOUR PRESENCE IS REQUIRED IN THE STAGING AREA!

THAT'S ME, PRIVATE SIMMONS. C'MON. I THINK YOU'LL FIND THIS EDUCATIONAL.

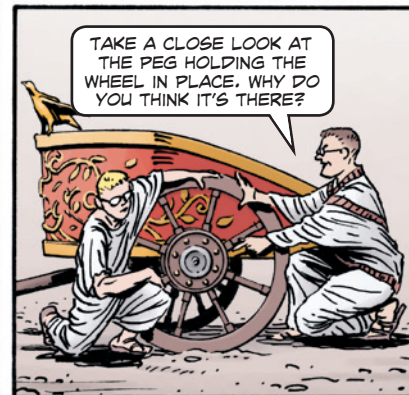


WHOA! THIS IS QUITE A SETUP!

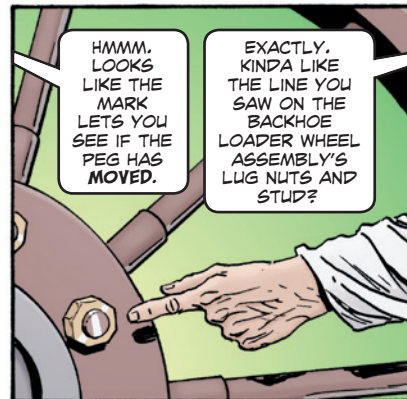
PM IS JUST AS IMPORTANT HERE AS IT IS IN OUR TIME.



TAKE A LOOK AT THIS CHARIOT, FOR INSTANCE.

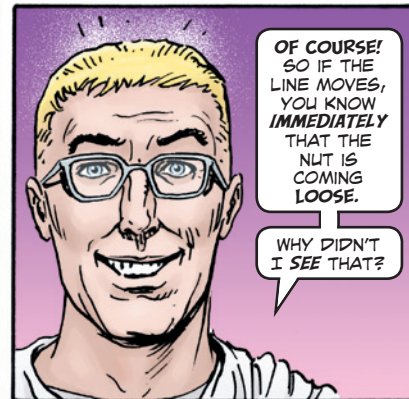


TAKE A CLOSE LOOK AT THE PEG HOLDING THE WHEEL IN PLACE. WHY DO YOU THINK IT'S THERE?



HMMM. LOOKS LIKE THE MARK LETS YOU SEE IF THE PEG HAS MOVED.

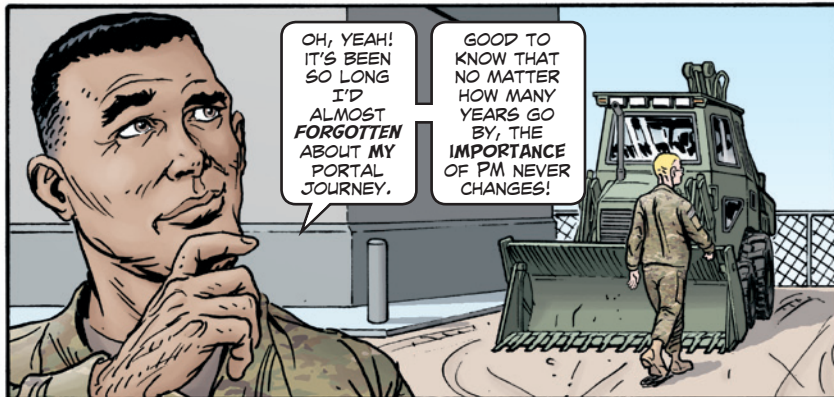
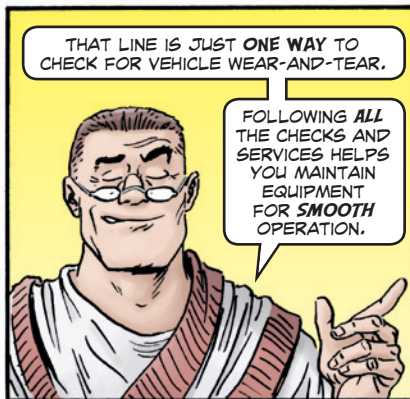
EXACTLY. KINDA LIKE THE LINE YOU SAW ON THE BACKHOE LOADER WHEEL ASSEMBLY'S LUG NUTS AND STUD?



OF COURSE! SO IF THE LINE MOVES, YOU KNOW IMMEDIATELY THAT THE NUT IS COMING LOOSE.

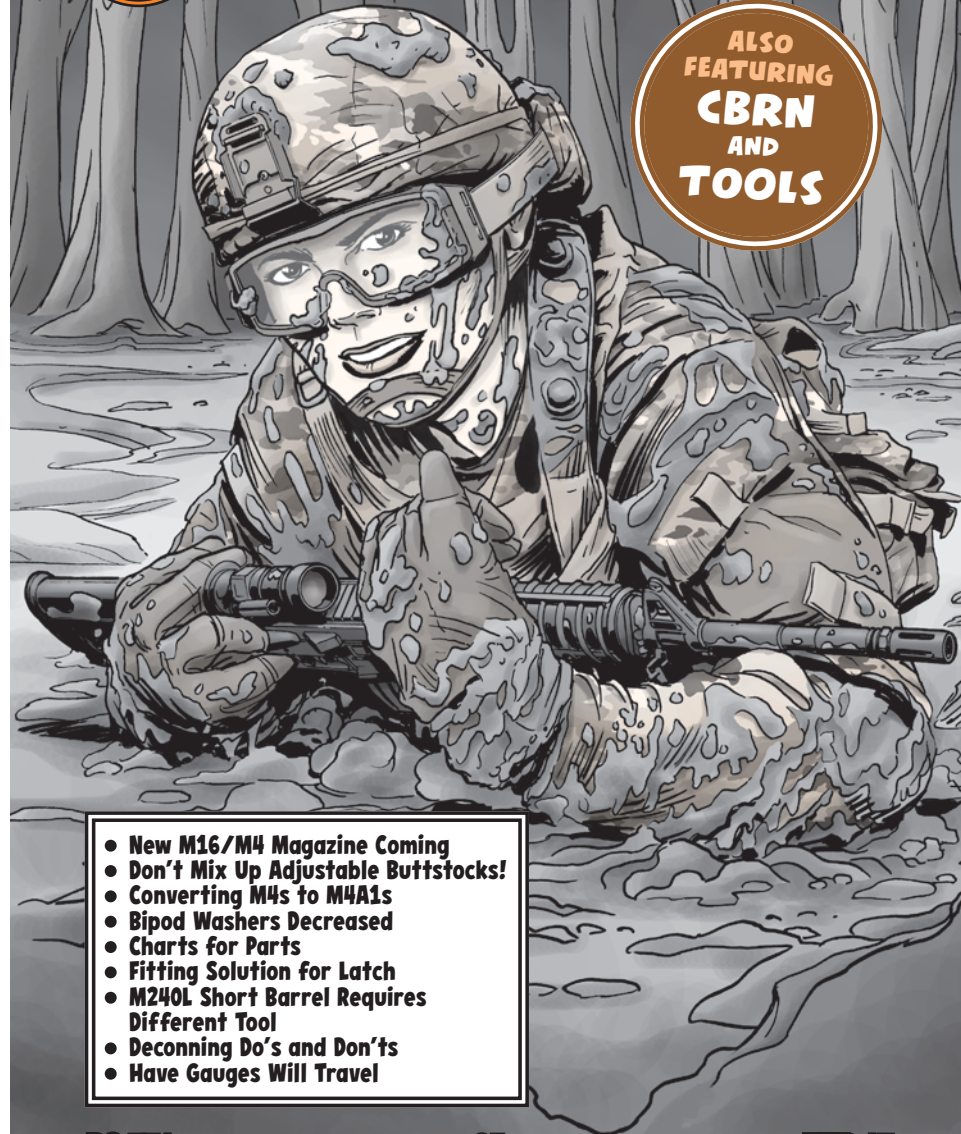
WHY DIDN'T I SEE THAT?





# PS SMALL ARMS

ALSO  
FEATURING  
**CBRN**  
AND  
**TOOLS**



- New M16/M4 Magazine Coming
- Don't Mix Up Adjustable Buttstocks!
- Converting M4s to M4A1s
- Bipod Washers Decreased
- Charts for Parts
- Fitting Solution for Latch
- M240L Short Barrel Requires Different Tool
- Deconning Do's and Don'ts
- Have Gauges Will Travel

# New M16/M4 Magazine Coming



**T**HE CURRENT M16/ M4 CARBINE MAGAZINE, NSN 1005-01-561-7200, IS BEING **REPLACED** WITH THE ENHANCED PERFORMANCE MAGAZINE (EPM), NSN 1005-01-630-9508.

THE EPM **REDUCES** WEAR ON THE WEAPON WHEN FIRING THE M855A1 ENHANCED PERFORMANCE ROUNDS BY OPTIMIZING HOW THEY FEED. THE EPM ALSO **INCREASES** WEAPON RELIABILITY AND **REDUCES** JAMS.

THE EPM WORKS WITH ALL 5.56mm AMMO.

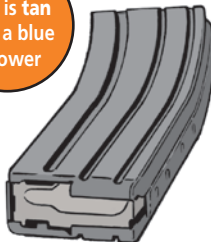
EPMs ARE BEING FREE-ISSUED, SEVEN PER WEAPON, WITH ALL NEW M4A1s THAT ARE FIELDIED. UNITS CAN CONTINUE TO USE THE OLD MAGAZINES UNTIL THEY WEAR OUT. **BUT DO NOT ORDER THE OLD MAGAZINES** IF YOU NEED REPLACEMENTS. ALL MAGAZINE ORDERS WILL BE FILLED WITH EPMs.

THE EPM IS **TAN** WITH A **BLUE FOLLOWER**.

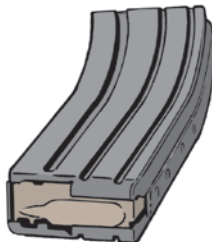
**QUESTIONS?**  
CONTACT KEN HILTUNEN AT (586) 282-1271 OR EMAIL: [kenneth.r.hiltunen2.civ@mail.mil](mailto:kenneth.r.hiltunen2.civ@mail.mil)

EPM magazine,  
NSN 1005-01-630-9508

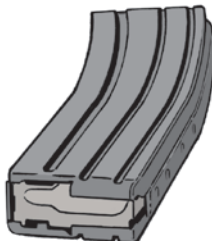
New  
EPM is tan  
with a blue  
follower



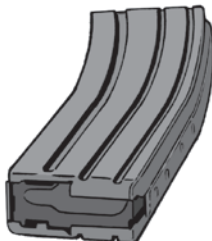
Black w/tan follower,  
NSN 1005-01-561-7200  
(replace through attrition)



Black w/green follower,  
NSN 1005-00-921-5004  
(replace through attrition)

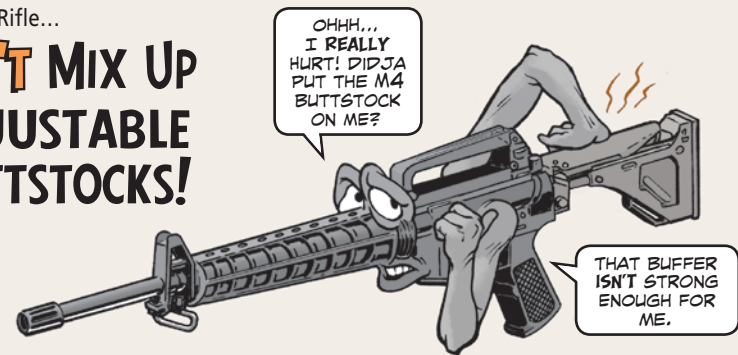


Black w/black follower  
(obsolete, do not use)



M16-Series Rifle...

## DON'T MIX UP ADJUSTABLE BUTTSTOCKS!



Dear Editor,

The hybrid buttstock kit, NSN 1005-01-569-6938, was added to the M16 rifle's AAL several years ago. But in my role as a weapon's inspector, I'm running into M16's that have been modified with the M4 collapsible buttstock instead of the hybrid buttstock.

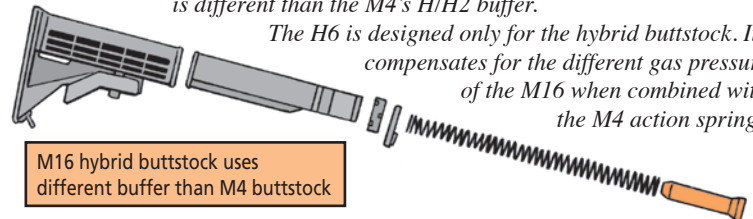
Please alert your readers that the M16 hybrid buttstock and the M4 collapsible buttstock **can't** be interchanged.

Deryl Gensler II

Editor's note:

You're absolutely right, Sir. The M16 hybrid buttstock uses the H6 buffer, which is different than the M4's H/H2 buffer.

The H6 is designed only for the hybrid buttstock. It compensates for the different gas pressure of the M16 when combined with the M4 action spring.



Using the carbine buffer with the hybrid buttstock on the M16 could cause functioning problems.

You can tell which buffer you have by checking its face. It will be stamped H, H2 or H6.

Remember, the M16 hybrid buttstock is a **temporary** modification. Before an M16 is turned in for replacement or transfer, it must be returned to its original configuration. That's why you must save all the original buttstock parts when you install the hybrid buttstock.

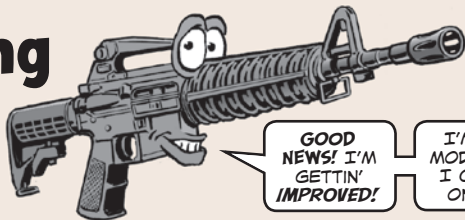
The hybrid buttstock should be installed only by a 91F small arms repairman.

The buttstock should come with a letter of instruction on how to install it. If it doesn't, contact Ken Hiltunen at (586) 282-1271 or email:

[kenneth.r.hiltunen2.civ@mail.mil](mailto:kenneth.r.hiltunen2.civ@mail.mil)



# Converting M4s to M4A1s



GOOD NEWS! I'M GETTIN' IMPROVED!

I'M BEING MODIFIED SO I CAN FIRE ON AUTO!

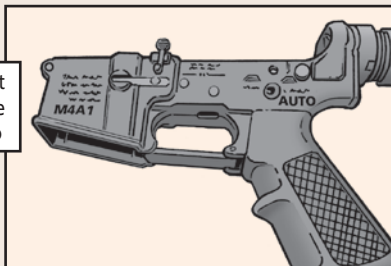
If your unit has M4 carbines, count on them being converted to M4A1s in the next five years. The conversion lets you fire M4s on auto.

MWO 9-1005-319-50-1 handles the conversion and it's being performed on site by teams from Anniston Army Depot.

The MWO provides a new:

- barrel assembly
- auto trigger assembly
- ambidextrous selector
- bolt assembly
- gas tube assembly

MWO makes it possible to fire M4A1 on auto



If you have questions about the MWO, contact Carey Doss at (586) 282-1258 or email: [carey.doss.civ@mail.mil](mailto:carey.doss.civ@mail.mil)

M252 Mortar...

## BIPOD WASHERS DECREASED

THE ARMY HAS DECIDED THE M252 MORTAR'S M177 BIPOD **DOESN'T** NEED SO MANY SPRING WASHERS.

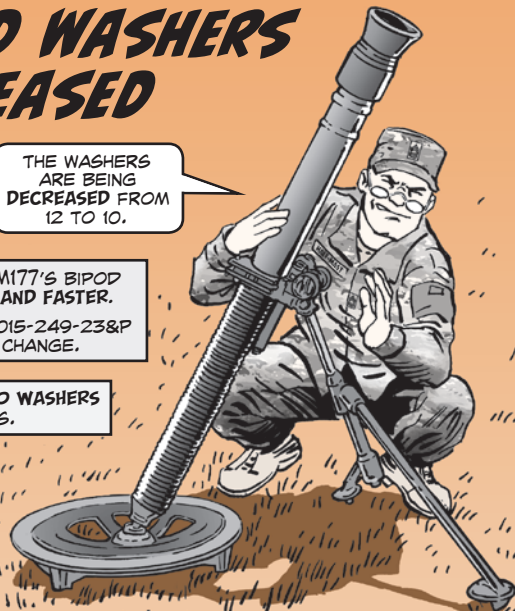
THE WASHERS ARE BEING DECREASED FROM 12 TO 10.

THE CHANGE WILL HELP THE M177'S BIPOD CLAMP LATCH WORK EASIER AND FASTER.

THE NEXT REVISION TO TM 9-1015-249-23&P WILL SHOW THE WASHER CHANGE.

IN THE MEANTIME, REMOVE TWO WASHERS FROM **ALL** YOUR M177s.

THE PROCEDURE IS IN BARREL CLAMP ASSEMBLY MAINTENANCE INSTRUCTIONS ON PAGE 3-8 OF THE TM.



Small Arms...

## CHARTS FOR PARTS

AS YOU WILL SEE FROM THIS CHART, MY BUFFER GOES HERE AND **ONLY** HERE!



Dear Half-Mast,  
Is there an official Army site that has breakdowns of the parts for different small arms? They would help Soldiers learn what parts go where on their rifles, machine guns and pistols.

R.M.

Dear Sir,

The best place to go is the new Central Army Registry (CAR):

<https://rdl.train.army.mil>

There you can download graphic training aids (GTA) that show parts breakdowns for various weapons.

Here's what's available:

- MK 19 machine gun, GTA 07-01-035
- M16A2 rifle, GTA 07-01-039
- M2 machine gun, GTA 10-08-007
- M9 pistol, GTA 07-01-036
- M249 machine gun, GTA 07-01-042
- M240B machine gun, GTA 07-01-044

Once at the website, type in the GTA number in the CAR search block and click the magnifying glass icon.

Half-Mast

M2A1 Machine Gun...

## Fitting Solution for Latch

Dear Half-Mast,  
What do you do about an M2A1 machine gun cover latch that **won't** fit? I've heard there's a fix, but I can't find anything in the TM.

SGT R.B.

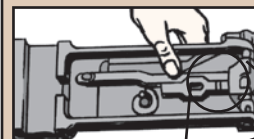
YEP, SERGEANT, THERE IS A FIX FOR COVER LATCHES THAT **DON'T** FIT!

TACOM HAS AUTHORIZED SMALL ARMS REPAIRMEN TO FILE OR STONE THE COVER LATCH TO FIT.



STEP 3 IN WP 0013 00 IN TM 9-1005-347-23&P IS BEING CHANGED TO READ...

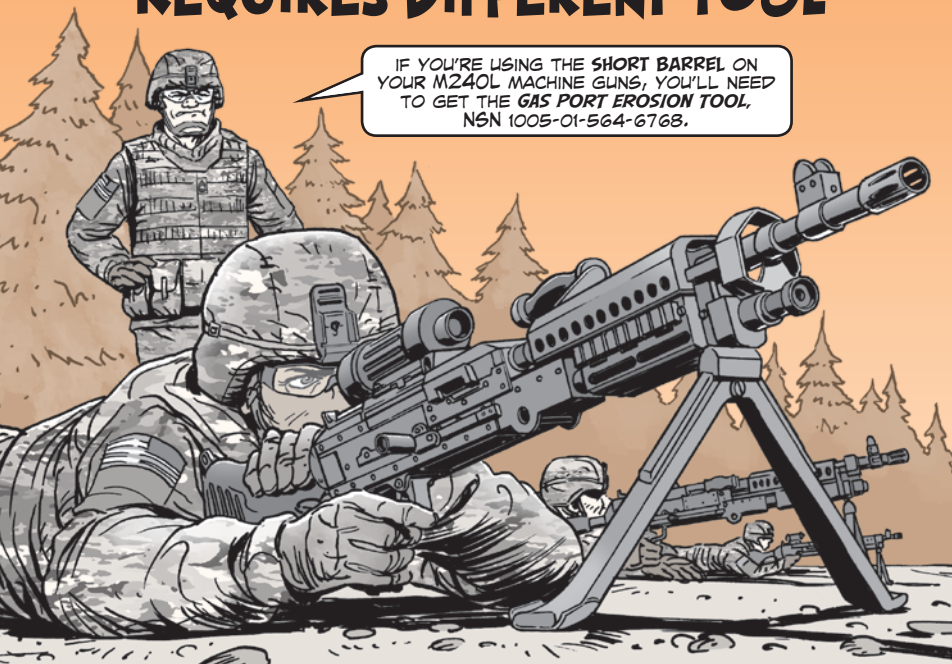
"Install cover latch (4) and cover latch lever (5) in subassembly cover (2). Be sure cover latch is under lip on flat spring (3). Cover latch is a File/Stone to Fit part. Remove only enough material to allow cover latch to maintain the top cover clearance (0.020 inch max) check as indicated in WP 0015 00."



Cover latch can be filed or stoned to fit



# M240L SHORT BARREL REQUIRES DIFFERENT TOOL



THIS TOOL IS SLIGHTLY **THICKER** THAN THE M240B GAS PORT EROSION TOOL.



WHEN YOU GET THE NEW TOOL, MARK IT AS **"M240L SHORT."** THAT WAY YOU CAN TELL IT FROM THE M240B. **THEY LOOK IDENTICAL.**

AFTER YOU CLEAN THE M240L SHORT BARREL GAS SYSTEM WITH THE SCRAPER, TRY TO INSERT THE GAS PORT EROSION TOOL. IF THE TOOL GOES INTO THE HOLE OR THE HOLE IS ENLARGED OR OUT-OF-ROUND, THE GAS PLUG NEEDS TO BE REPLACED.

CONTINUE TO USE THE M240B TOOL, NSN 1005-01-512-9284, TO GAGE THE M240B AND M240L LONG BARRELS.

ONCE YOU RECEIVE THE M240L SHORT BARREL, THE M240L LONG BARREL SHOULD BE USED **ONLY** ON THE M240B.

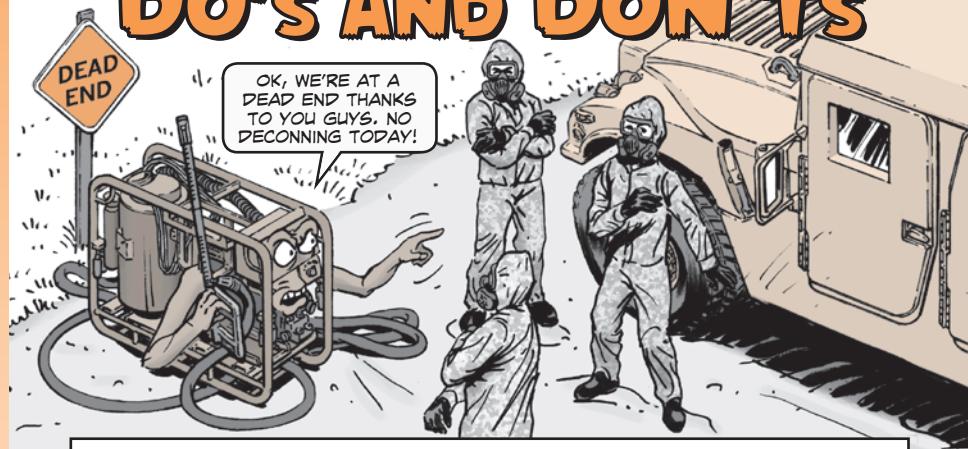
FOR MORE INFO, CHECK OUT TACOM MI 16-037:

<https://tulsa.tacom.army.mil/Safety/message.cfm?id=MI16-037.html>

QUESTIONS? CONTACT ANDRE PILGRIM AT (586) 282-1355 OR EMAIL: [andre.v.pilgrim.civ@mail.mil](mailto:andre.v.pilgrim.civ@mail.mil)

M26 Decon...

# DECONNING DO'S AND DON'TS



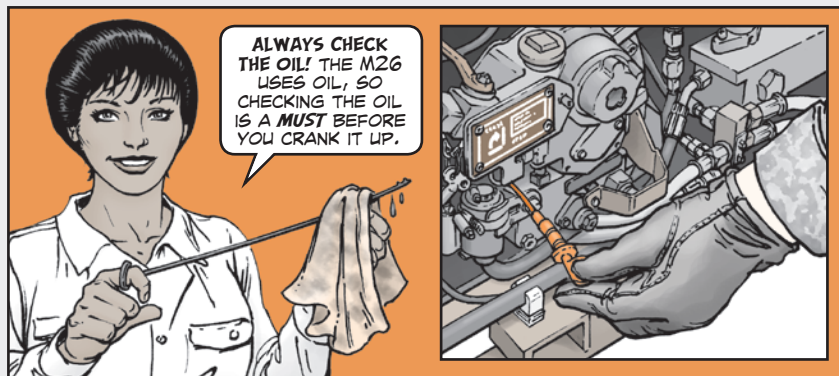
**Wear hearing protection and gloves.** The M26 can put out lots of noise, so if you operate without at least ear plugs you'll soon be saying "What?" Remember, if you're going to be in JSLIST, you need to put in the plugs **BEFORE** you don the suit.

Gloves protect your hands from both diesel fuel and the very hot exhaust.



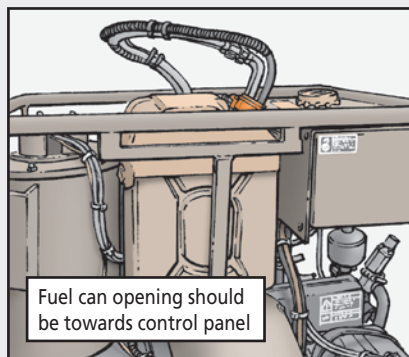
**PS MORE**



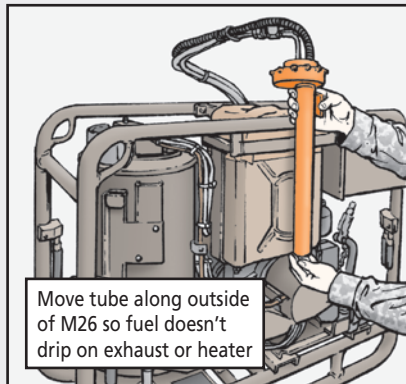


**Position the fuel can so its opening is toward the control panel and away from the heater.** That way the fuel line isn't over the hot exhaust.

**Careful pulling out the fuel can tube.** Move it along the outside of the M26 so fuel doesn't drip on the exhaust or heater.

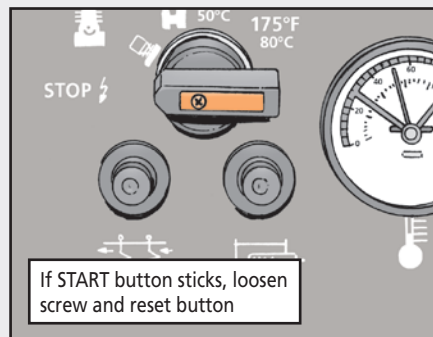


Fuel can opening should be towards control panel

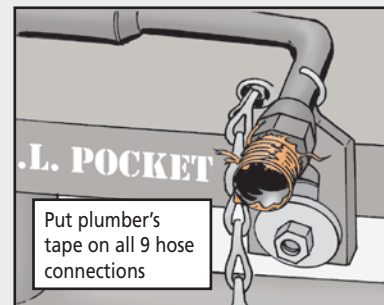


Move tube along outside of M26 so fuel doesn't drip on exhaust or heater

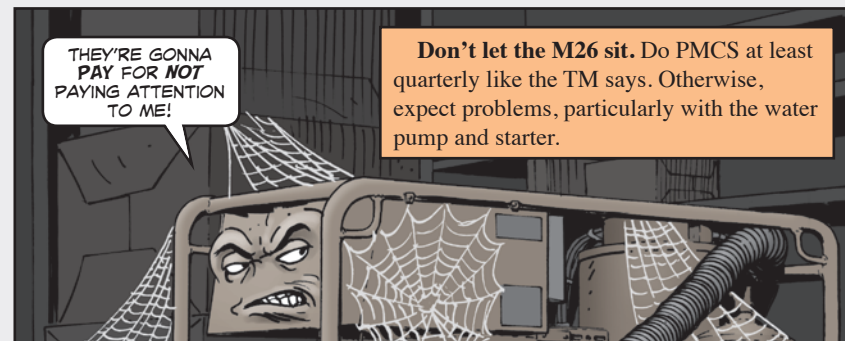
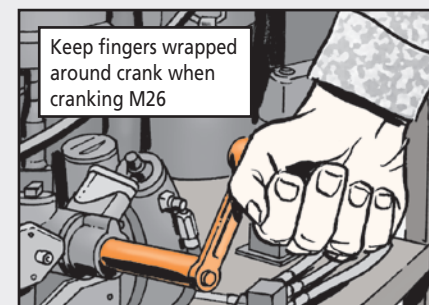
**Stop muscling the START button.** The START button on the function switch can stick when pushed in and then the function switch itself stops working. The solution is NOT to muscle the switch past its normal settings. That damages the function switch. Loosen the screw in the START button until the button can be pulled back. Then re-tighten the screw. If this is a chronic problem, tell your repairman. The switch may need to be replaced.



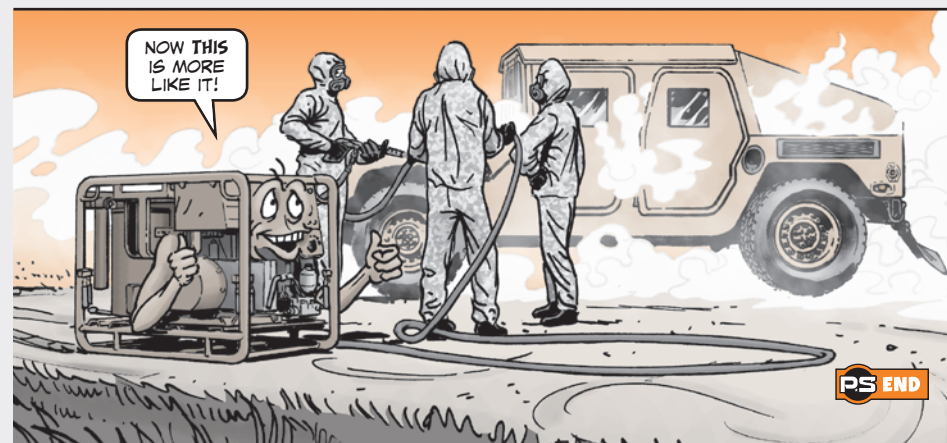
**Use plumber's tape.** Plumber's tape, NSN 8030-00-889-3534, helps prevent messes when you decon. Wrap the tape around the threads for the nine hose connections to prevent leaks. The tape is only good for 4-5 decons and then needs to be replaced.



**Don't get hammered by the hand crank.** It can snap back and do a number on your hand if your fingers are sticking out. Crank with your hand completely around the handle with all your fingers balled into a fist. Use an overhand grip and be prepared for the crank to snap back.

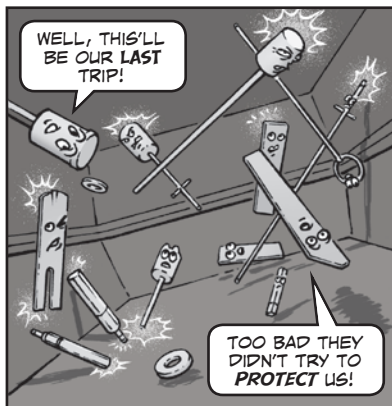
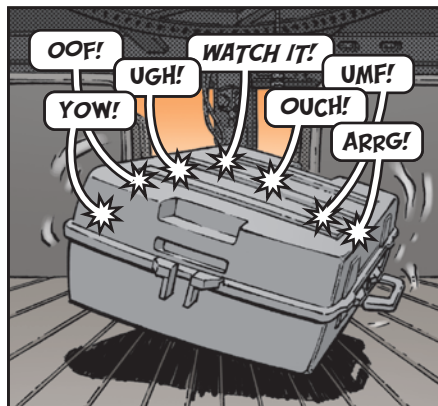


**Don't let the M26 sit.** Do PMCS at least quarterly like the TM says. Otherwise, expect problems, particularly with the water pump and starter.





# HAVE GAUGES WILL TRAVEL



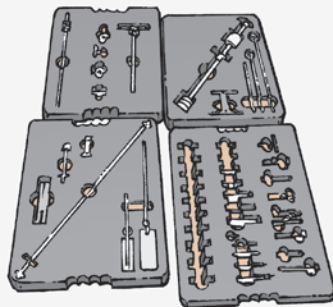
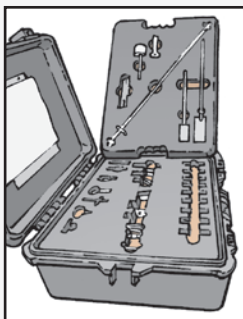
Dear Editor,

We travel quite a bit to support National Guard units. And that means the gauges we use to check equipment also travel quite a bit.

These gauges aren't cheap. The set we have is worth roughly \$10,000, so we don't want them bouncing around loose inside a case.

We had some tool folks build a special case that has foam inserts with cutouts for every tool. The case not only protects tools, but makes inventory much easier. They charged us \$750, which we thought was a good investment considering the cost of the gauges.

Cases and foam inserts do a good job protecting expensive gauges



Other units can cut the price considerably by buying a case with foam inserts and cutting slots for the gauges with an exacto knife. Pelican and a number of other companies sell cases with foam inserts. An Internet search produces lots of possibilities.

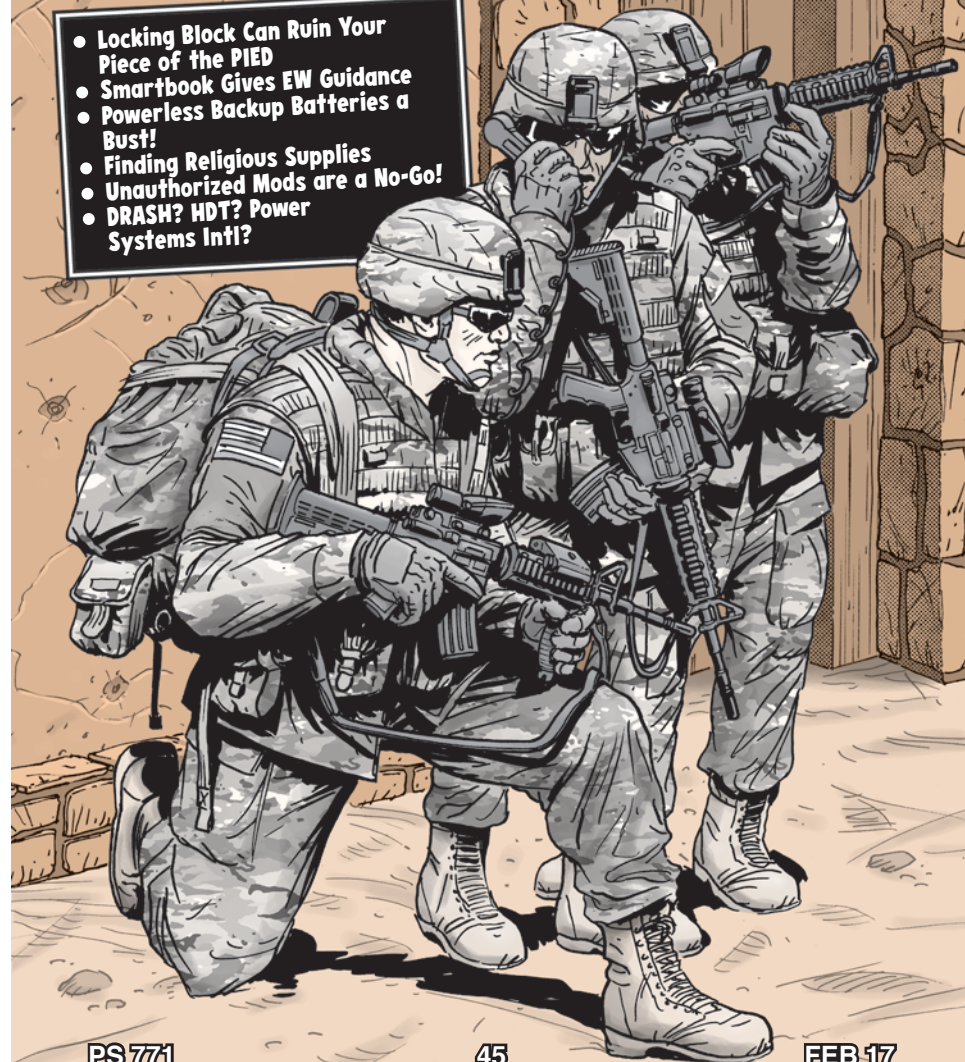
What you don't want to do is go down the road with your gauges absorbing every bump. That is a costly trip.

CW3 Don Gilmore  
Texas MATES

**Editor's note:** We gage that you make an excellent case for your case suggestion.

# PS COMMUNICATIONS & SOLDIER SUPPORT

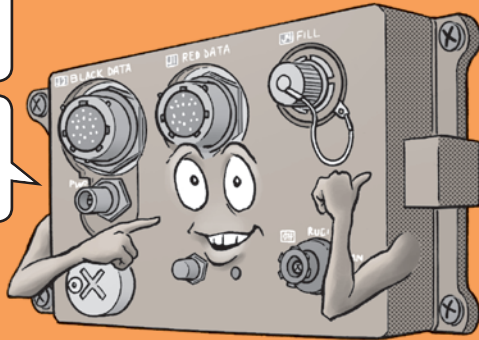
- Locking Block Can Ruin Your Piece of the PIED
- Smartbook Gives EW Guidance
- Powerless Backup Batteries a Bust!
- Finding Religious Supplies
- Unauthorized Mods are a No-Go!
- DRASH? HDT? Power Systems Int'l?



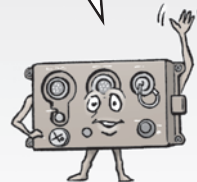


# Locking Block Can RUIN Your Piece of the PIED

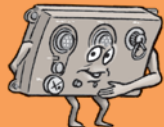
IF YOU WANT TO KEEP ME ON THE JOB...  
...TAKE GOOD CARE OF MY LOCKING BLOCK!



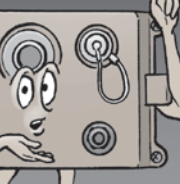
HELLO! I'M THE KGV-72 PROGRAMMABLE IN-LINE ENCRYPTION DEVICE (PIED), NSN 5810-01-564-3364 (LIN E05008)...



...AND I'M DESIGNED TO ENCRYPT BLUE FORCE TRACKING (BFT) MESSAGE TRAFFIC!



BUT WHEN IT'S TIME TO TURN ME IN, HERE'S A MESSAGE THAT REALLY NEEDS TO GET THROUGH...



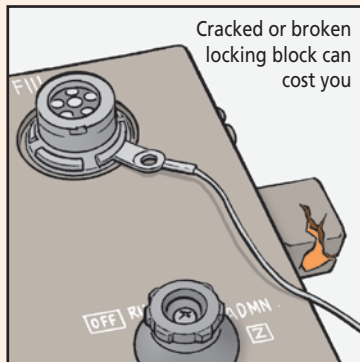
DON'T DAMAGE MY LOCKING BLOCK!



Too many units are losing or misplacing the padlock key. So when it's time to turn in the PIED, they use tools to remove the lock. Unfortunately, that almost always breaks the locking block.

A broken block can't be repaired. You can be held financially liable for replacing the \$2,565 PIED per AR 735-5, *Policy Property Accountability*. A DD Form 200, *Financial Liability Investigation of Property Loss* (FLIPL), along with a property book officer document number must be submitted at the time of the request to the item manager before an operational PIED can be issued.

So don't lose the key to your lock. If you do, contact the KGV-72 item manager for instructions on what to do next.



# SMARTBOOK GIVES EW GUIDANCE



EW OPERATORS WILL FIND PLENTY OF GUIDANCE IN CALL'S PUB NO. 16-15, *THE ELECTRONIC WARFARE SMARTBOOK*.

ISN'T ELECTRONIC WARFARE JUST ABOUT RADIO FREQUENCIES?

ELECTRONIC WARFARE-- ALSO KNOWN AS EW-- HAS CHANGED THE FACE OF THE MODERN BATTLEFIELD, BUT IT'S NOT LIMITED TO RADIO FREQUENCIES. IT'S ALSO A COMPLEX FORCE MULTIPLIER!



TO COVER EW CAPABILITIES, THE CENTER FOR ARMY LESSONS LEARNED (CALL) PUBLISHED *THE ELECTRONIC WARFARE SMARTBOOK* IN MAY 2016.

THE SMARTBOOK WAS DEVELOPED BY NCOS AT THE NATIONAL TRAINING CENTER (NTC) FROM LESSONS LEARNED AND BEST PRACTICES ADOPTED FROM TACTICAL AND OPERATIONAL EXERCISES DURING COMBAT TRAINING CENTER (CTC) ROTATIONS.

IT'S A USEFUL REFERENCE FOR SOLDIERS WHO WORK IN EW OPERATIONS AND SUPPLEMENTS FM 3-38, *CYBER ELECTROMAGNETIC ACTIVITIES* (FEB 14), AND JP 6-01, *ELECTROMAGNETIC SPECTRUM MANAGEMENT OPERATIONS* (MAR 12).

THE HANDLING INSTRUCTIONS FOR *THE ELECTRONIC WARFARE SMARTBOOK* ARE FOUO. A CAC IS NEEDED TO DOWNLOAD IT. GO TO:  
<https://call2.army.mil/toc.aspx?document=7383>



# POWERLESS BACKUP BATTERIES A BUST!



The uninterruptible power supply (UPS) batteries in the AN/TYQ-103C(V)3 intelligence processing center version 2 (IPC-2) are designed to give you up to 15 minutes of emergency backup power. But if those batteries are weak or completely dead, they won't have your back when you need 'em.

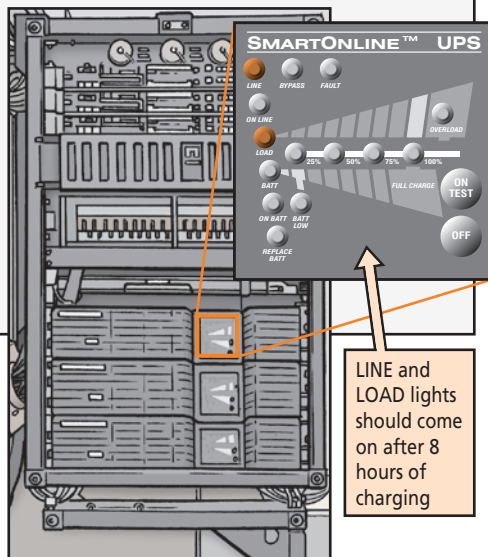
The battery cartridges, NSN 6140-01-561-3417, go bad if operators forget to charge them when the IPC-2 isn't used for longer than 30 days. Replacing dead battery cartridges is costly, too. Six cartridges at \$215 each adds up quickly.

You can preserve your backup power and save your unit money by charging the batteries every 30 days for 6-8 hours or weekly for 2-3 hours. Here's how:

1. Perform "PCA" steps 2a through 2f on Pages 0018-8 and 0018-9 of TM 11-7010-502-13&P (Apr 12).
2. Once power has been initiated to the UPS, let the batteries charge 6-8 hours monthly or 2-3 hours weekly.

If after 8 hours, the LINE and LOAD lights on the UPS front panel don't come on, let the UPS charge for 24 hours. If the LINE and LOAD light still fail to turn on, the UPS batteries need to be replaced.

**NOTE:** Do not turn on the UPS during charging. When the circuit breakers (CB) are turned on in Step 1, the batteries will begin charging. Turning on the UPS will only power up other components in the shelter.



LINE and LOAD lights should come on after 8 hours of charging

3. Once the charge is complete, turn off the CBs in reverse order: CB #2-7, CB #12 and CB #1.
4. Secure the shelter. If required, disconnect the shelter from the power source.

**NOTE:** There is no need to install hard drives or power up the individual components during the charging procedure.



## FINDING RELIGIOUS SUPPLIES

HI CONNIE, I NEED THE NSNs FOR RELIGIOUS FURNITURE LIKE PEWS, BENCHES AND CHAIRS. CAN YOU HELP?

SURE CAN, CHAPLAIN! THE DEFENSE LOGISTICS AGENCY (DLA) HAS A LARGE RELIGIOUS SUPPLY CATALOG ONLINE.



THE CATALOG INCLUDES THE NSNs NEEDED TO ORDER THE ITEMS, PLUS PRICES. GO TO:

<http://www.dla.mil/HQ/Chaplain/Business.aspx>

THE CATALOG CONTENTS INCLUDE:

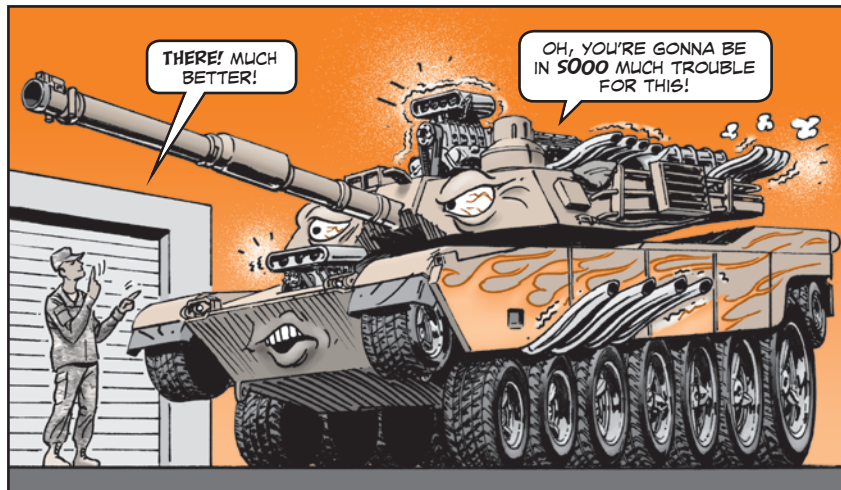
- chaplain kits and accessories
- clerical clothing and vestments
- field items
- furniture
- Buddhist, Muslim, Christian and Jewish items.

IF YOU DON'T FIND WHAT YOU'RE LOOKING FOR, CONTACT THE POC LISTED ON THE WEBSITE OR EMAIL:

[dlachaplain@dlamail](mailto:dlachaplain@dlamail)

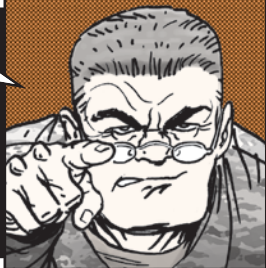


# UNAUTHORIZED MODS ARE A NO-GO!



SOLDIERS, IT MIGHT SEEM LIKE A GOOD IDEA TO **MODIFY** WEAPONS, VEHICLES OR OTHER EQUIPMENT TO MAKE THEM "BETTER."

BUT BEFORE YOU THINK ABOUT MODIFYING YOUR GEAR, **THINK AGAIN!**



NO MATTER WHO DOES THE WORK-YOU, YOUR BUDDIES, VENDORS OR CONTRACTORS-UNAUTHORIZED MODIFICATIONS ARE **AGAINST REGULATIONS.**

NOT ONLY THAT, **UNAUTHORIZED MODIFICATIONS** CAN IMPACT YOUR ABILITY TO CARRY OUT YOUR MISSION. IT MIGHT EVEN AFFECT SAFETY AND SURVIVABILITY!

**ALL** MODIFICATIONS HAVE TO BE MADE THROUGH AN APPROVED MODIFICATION WORK ORDER (MWO), JUST LIKE IT SAYS IN PARA 3-1E OF AR 750-10, THE ARMY MODIFICATION PROGRAM.

**COMMANDERS ARE NOT ALLOWED TO MODIFY EQUIPMENT UNLESS AN MWO AUTHORIZES IT.**

?????

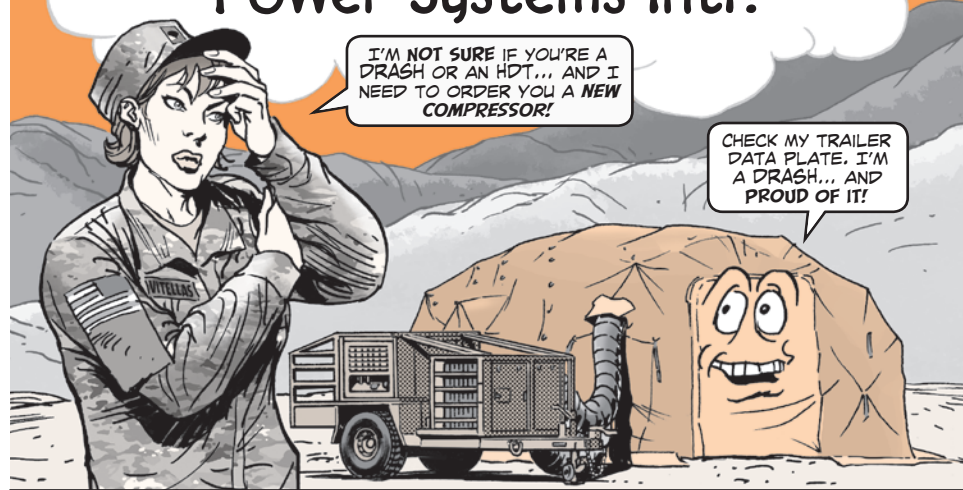
SEE A SUSPECT MOD?

REPORT IT TO YOUR MECHANIC AND LOCAL LAR. THEY'LL GET YOU SQUARED AWAY!

AND DON'T FORGET: AFTER COMPLETING AN MWO, AS WELL AS SAFETY OF USE MESSAGES (SOMS), MAINTENANCE ADVISORY MESSAGES (MAMS) AND/OR GROUND PRECAUTIONARY MESSAGES (GPAS), YOU **MUST** ENTER THAT INFORMATION INTO THE MODIFICATION MANAGEMENT INFORMATION SYSTEM (MMIS).

GO TO THE LOGISTICS INFORMATION WAREHOUSE (LIW) AND ACCESS MMIS THROUGH THE **APP WAREHOUSE:** <https://liw.logsa.army.mil>

# DRASH? HDT? Power Systems Intl?

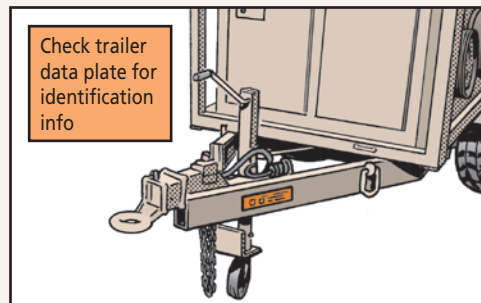


The Army has several kinds of high-tech shelter systems that integrate shelter, mobility, lighting, heating, cooling and power distribution.

But many are commercial-off-the-shelf (COTS) shelter systems, so getting TMs, repair parts, accessories and training requires a different approach.

The first step is identifying which system you have. Check the trailer's data plate. It usually tells you if you've got DRASH (also known as DHS), Power Systems Intl or HDT.

The ECU and generator may have been swapped out from another system, so it's usually best to track and log the system by the trailer data plate.



If you have a DRASH/DHS and need help, call (800) 977-3647 or email:

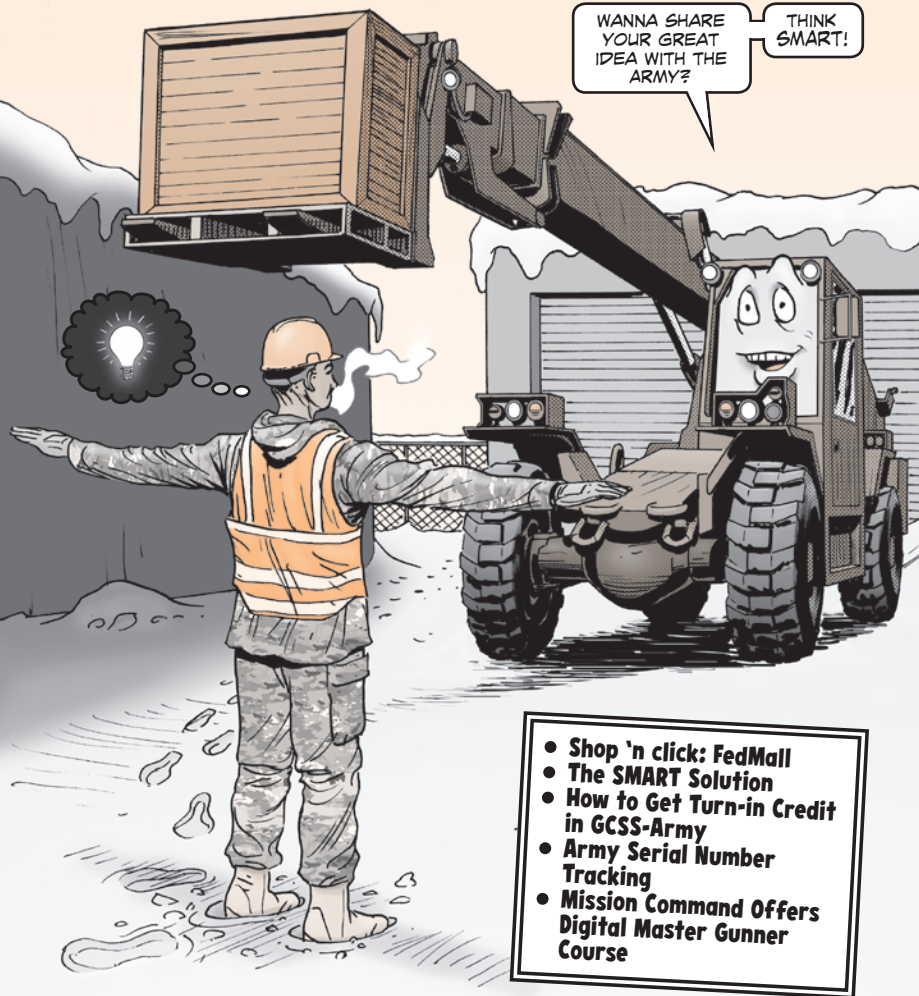
[jason.kerr@hdtglobal.com](mailto:jason.kerr@hdtglobal.com) or [customersupport@drash.com](mailto:customersupport@drash.com)

If you have Power Systems or HDT, call (800) 969-8527 or email:

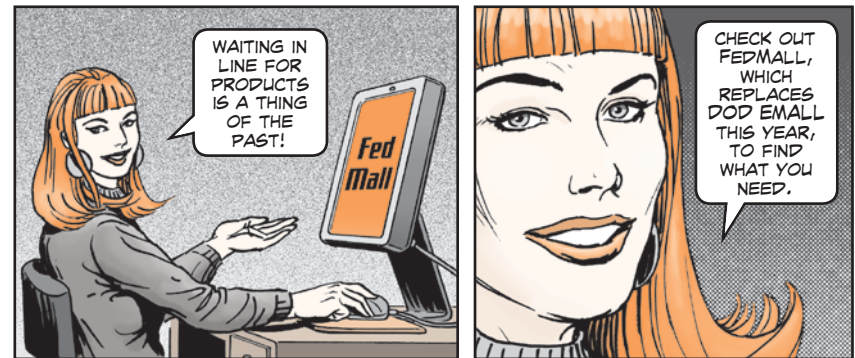
[richard.treen@hdtglobal.com](mailto:richard.treen@hdtglobal.com) or [sales@hdtglobal.com](mailto:sales@hdtglobal.com)

Have the serial, part or VIN numbers from the trailer data plate handy to make it easier for the support experts to help you with manuals and parts.





## Shop 'n click: FedMall



The Department of Defense (DOD) wants its customers, especially those in combat, to spend time on what truly matters. For this reason, the Defense Logistics Agency (DLA) upgraded their DOD EMALL e-commerce platform.

FedMall is the newly optimized and updated virtual shopping mall that allows you to buy whatever you need from wherever you are. FedMall brings federal, state and local government online shopping experience into the 21st century.

Similar to DOD EMALL, FedMall serves military facilities worldwide, giving military and civilians access to over 22 million products that are authorized for government purchasing.

You can register and use your government credit cards and/or MILSTRIP; browse and view product pictures and descriptions; and compare product brands, features and prices.

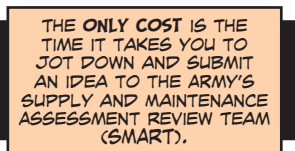
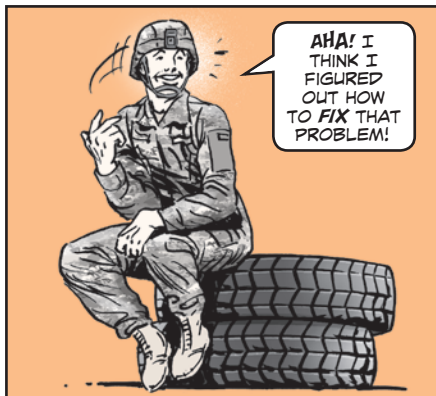
Once you make your product choices, a checkout function is available, where you've got a variety of shipping options specified by suppliers. After buying, you can track your purchases.

The latest FedMall information is available at the bottom right of the DOD EMALL website at: <https://dod.emall.dla.mil>

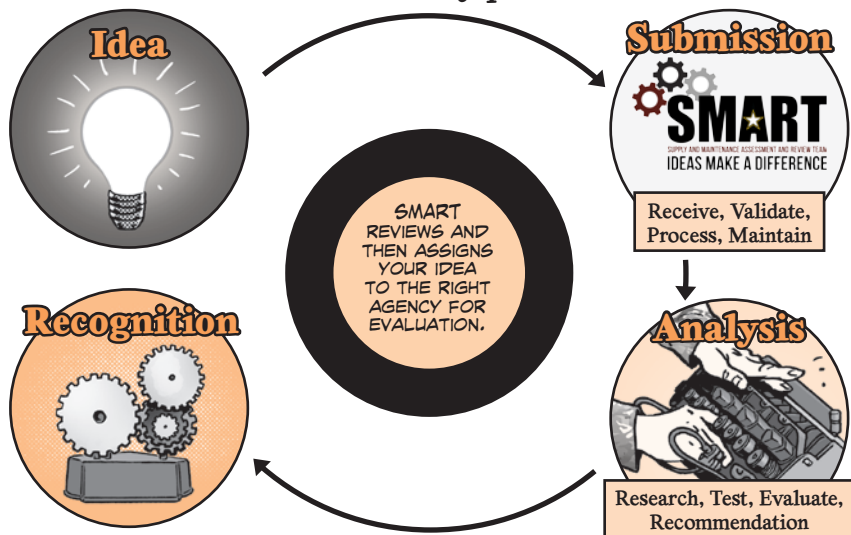
Questions? Email: [FedmallSupport@dlamail](mailto:FedmallSupport@dlamail)



# The SMART Solution



## Suggestion Flow 60 to 180 day process



LIKEWISE, THE TOOLS IMPROVEMENT PROGRAM SUGGESTIONS (TIPS) ALSO INVITES ARMY USERS TO SUBMIT TOOL IMPROVEMENT SUGGESTIONS DIRECTLY TO SMART FOR EVALUATION.

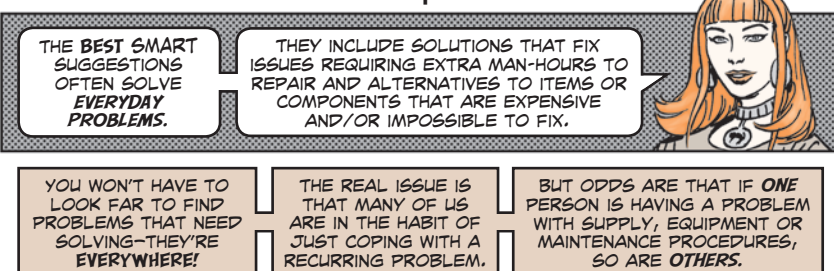
SO IF YOUR LOGISTICS-RELATED SUGGESTION OR TOOL TIP CAN SAVE THE ARMY TIME, MONEY OR LIVES, IT'S WORTH SENDING IN! APPROVED OR EVEN PARTIALLY APPROVED IDEAS CAN EARN CASH AWARDS.

## A SMART Success



SFC CHAD COREY, AN INSTRUCTOR ASSIGNED TO THE BASIC WHEEL DIVISION, WHEEL MAINTENANCE TRAINING DEPARTMENT AT THE ORDNANCE SCHOOL, WAS AWARDED \$500 FOR DESIGNING A QUICK DISCONNECT PART THAT PROTECTS THE UP-ARMORED HMMWV'S LINE CONNECTIONS TO THE HYDRO BOOST AND ENGINE OIL COOLER DURING MAINTENANCE. COREY'S IDEA RESULTED IN THE ISSUE OF RETROGRADE KITS FOR MORE THAN 50,000 VEHICLES!

## General SMART Tips and Guidelines



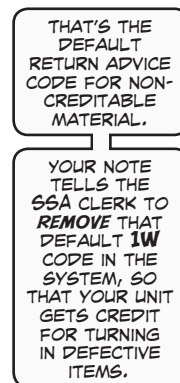
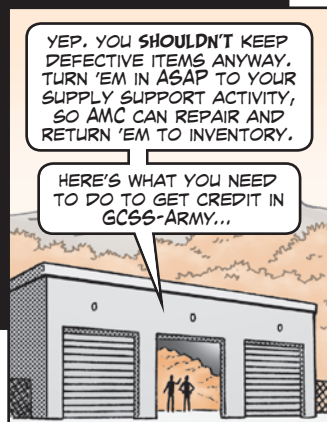
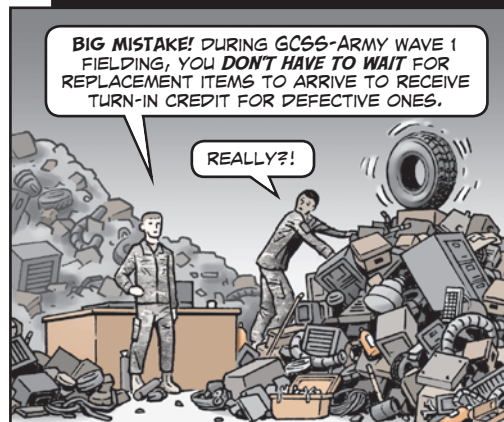
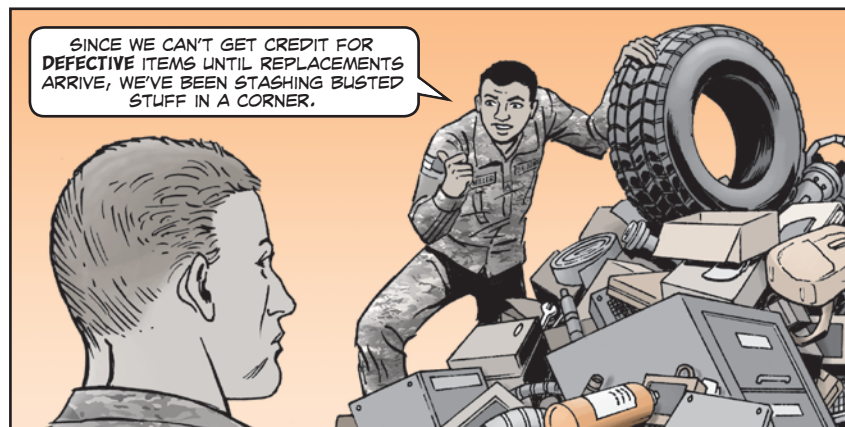
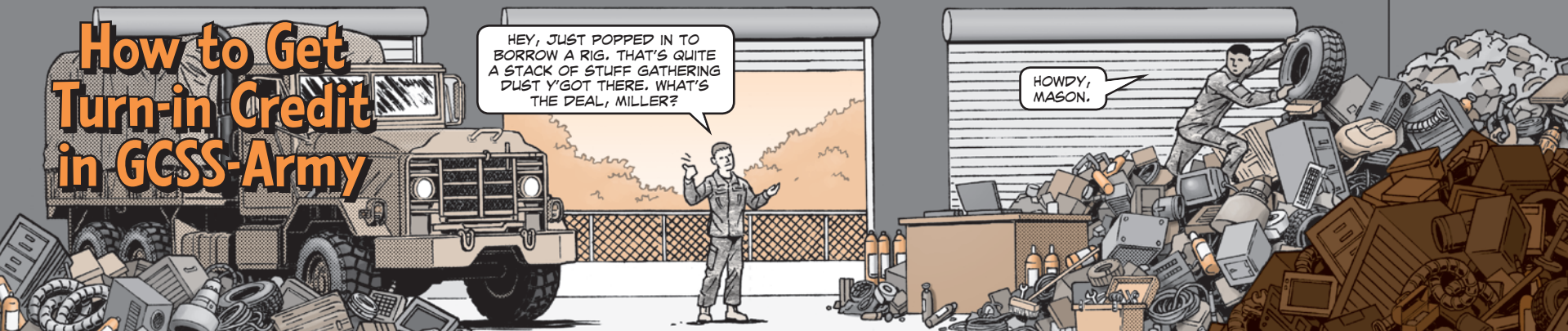
- Problem title (your choice)
- NSN (end item NSN)
- End item information (what is the end item?)
- References (TM, part numbers, etc.)
- Current procedure (and the problem with it). Include part numbers and NSNs.
- Recommendation (your suggested fix for the problem with the current procedure). Be specific. Include any cost savings estimates that might be realized with your solution.
- You can attach files to your suggestion that contain pictures, sketches, charts, etc., to help illustrate your idea. The total file size should not exceed 5 MB.

VISIT THE SMART WEBSITE FOR MORE INFO AND SUBMISSION FORMS:  
[http://www.cascom.army.mil/g\\_staff/cdi/smart1.htm](http://www.cascom.army.mil/g_staff/cdi/smart1.htm)

QUESTIONS? EMAIL SMART AT: [usarmy.lee.tradoc.mbx.smart@mail.mil](mailto:usarmy.lee.tradoc.mbx.smart@mail.mil)



# How to Get Turn-in Credit in GCSS-Army



GET INSTRUCTIONS FOR REMOVING THE 1W IN THE END USER'S MANUAL (EUM) ON THE GCSS-ARMY WEBSITE, PLUS TONS MORE INFO, AT: <http://gcss.army.mil/>

## Training... ARMY SERIAL NUMBER TRACKING

I'M WONDERING IF ANOTHER UNIT MIGHT HAVE SOME OF OUR MISSING EQUIPMENT. IS THERE ANY WAY TO FIND OUT?

THE ARMY SERIAL NUMBER TRACKER IS YOUR BEST BET.

PLUS LOGSA OFFERS TRAINING SO YOU CAN GET THE MOST MILEAGE OUT OF THIS GREAT TOOL.

ARSNT

Want to know how to track serial-numbered equipment? The Logistics Support Activity (LOGSA) can help with their serial number tracking training course.

The course has two parts. The first is the *Serial Number Tracking Overview*, and the second is the *Serial Number Serialization Officer (SO) Responsibilities and Procedures*.

Part one of the course is offered online as a Defense Collaboration Services (DCS)-based class. It's an overview that introduces users to the Army Serial Number Tracking (ARSNT) program in the Logistics Information Warehouse (LIW) WebLIDB.

Part one of ARSNT course is taught in DCS, DOD's web conferencing tool

Part one also covers:

- regulatory requirements to track serial-numbered items.
- data feeds that provide serial number data to LIW.
- how to run and interpret reports in ARSNT.
- how to use ARSNT data to ensure better item accountability.

Students need a CAC and must sign in on DCS in the chat box to confirm attendance. At the end of part one of the course, they'll get proof of completion.

Students who finish part one have met the prerequisite for taking part two. The second part of the course:

- teaches users WebUIT reporting procedures, policy and reporting specifics.
- covers researching, resolving and reporting serial number issues to the DOD Small Arms/ Light Weapons Registry and the Army Central UIT Registry.

DEFENSE COLLABORATION SERVICES

LAUNCH WEB CONFERENCE

GETTING  
STARTED

RESOURCES AND  
INFORMATION

FAQ

DCS Portal Navigation Map

**Note:** Part two is only for serialization officers who will be inputting transactions into WebUIT. Customers using PBUSE, GCSS-Army or LMP don't need to take part two, because ARSNT handles serialization transactions in WebUIT automatically and doesn't require manual intervention.

Part two serialization officer training can be scheduled directly with the UIT team at LOGSA. Email them at:

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

LOGSA normally offers ARSNT training once a month. For specific course dates, registration forms and student instructions, visit:

[https://www.logsa.army.mil/training/liw\\_training-asrnt.cfm](https://www.logsa.army.mil/training/liw_training-asrnt.cfm)

Training...

## MISSION COMMAND OFFERS DIGITAL MASTER GUNNER COURSE

THE ARMY HAS RECOGNIZED A NEED FOR MISSION COMMAND DIGITAL MASTER GUNNERS, SIMILAR TO MASTER GUNNERS IN ARMOR, INFANTRY AND OTHER UNITS.



THE MISSION COMMAND DIGITAL MASTER GUNNER COURSE PRODUCES EXPERTS ON THE OPERATION OF THE COMMAND POST OF THE FUTURE (CPOF) AND TEACHES ADVANCED INTEGRATION OF THE FULL SUITE OF MISSION COMMAND SYSTEMS.

THE THREE-WEEK ADDITIONAL SKILL IDENTIFIER (ASI)-PRODUCING COURSE (SC ASI) IS OFFERED BY THE MISSION COMMAND CENTER OF EXCELLENCE AT FT LEAVENWORTH, KS, PART OF THE COMBINED ARMS CENTER AND US ARMY TRAINING AND DOCTRINE COMMAND.

DIGITAL MASTER GUNNERS RETURN TO THEIR UNITS AFTER GRADUATION TO SERVE AS THEIR COMMANDERS' DIGITAL TRAINERS.

TO LEARN MORE ABOUT THE COURSE, INCLUDING DATES, VISIT:  
<http://usacac.army.mil/organizations/mccoe/dots/mission-command-master-gunner>





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SOME LOVE  
WITH GOOD  
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THE INFO  
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## SERIALIZED ITEM MANAGEMENT GUIDANCE

Army Directive 2016-21, *Interim Policy for Serialized Item Management*, was released in May 2016. It gives instructions for identifying items that require unique item-level traceability. To find the pub, type "ARMY DIR 2016-21" in the search block at:

<http://www.apd.army.mil/Search/ePubsSearch/ePubsSearchForm.aspx>

## CS563D Vibrator Roller Fuel Line NSN

Get a new fuel line for your CS563D vibratory roller with NSN 4710-01-529-2953 (PN 139-7024). It replaces PN 146-9446 (NSN 4710-01-471-4211) that's shown as Item 28 on Pages 56-57 of TM 5-3895-382-24P (Sep 99 w/Ch 1, Sep 03).

## D7R II Dozer Winch Cable

Get a new winch cable for your D7R II dozer with NSN 4010-01-259-2713. This NSN includes a 200-ft cable, a hook and attaching hardware. It's the same cable assembly used on the older D7G CAT dozers and is 25 feet longer than NSN 4010-01-585-3898, which is shown as Item 4 in Fig 136 of TM 5-2410-241-24P (Feb 12).

## AR 11-33 Revised

AR 11-33, *Army Lessons Learned Program* (May 16), underwent a major revision. The pub covers policy, procedures and responsibilities for the Army Lessons Learned Program. Updates include expanding the program to cover all levels of war and requiring commanders to embed a lessons learned capability in every unit. To get the pub, type "AR 11-33" in the search block at: <http://www.apd.army.mil/Search/ePubsSearch/ePubsSearchForm.aspx>

## BHL Steering Cylinder NSNs

Need repair parts for the front drive axle steering cylinder on your backhoe loader (BHL)? The NSNs for Items 1 and 4 are missing from Fig 64 of TM 5-2420-231-24P (Jun 13). Item 1, the steering pitman arm, comes with NSN 2530-01-546-1362. Get Item 4, the spherical joint, with NSN 2520-01-495-2664.

## 2-kW Generator Shutdown Cable

Get the LOP engine shutdown cable control assembly for your 2-kW tactical generator set with NSN 2990-01-467-7570. NSN 6620-01-467-7571, which is listed as Item 1 in Fig 34 of TM 9-6115-673-13&P (Jun 10), brings the wrong item.

## M1082, M1095 FMTV Trailer Tire and Wheel Assembly

The article on Pages 12-15 of PS 766 (Sep 16) listed the wrong NSN for the M1082 and M1095 FMTV trailers' tire and wheel assembly. Get the correct assembly with NSN 2530-01-500-4619. It comes with tire, NSN 2610-01-356-9098, that measures 395/85R20.

## M978A4 HEMTT Tanker FTSS Repair Kit

The M978A4 HEMTT tanker's TM 9-2320-326-13&P in IETM EM 0288 (Dec 15) lists the fuel tank self-sealing (FTSS) repair kit, NSN 2540-01-577-2372, as Item 14 in the Basic Issue Items (BII). However, the FTSS repair kit is actually an Additional Authorized Item. Make a note until the IETM is updated.

## M872A3 BRAKE SHOE KIT

Get a new brake shoe kit for your M872A3 34-ton flatbed semitrailer with NSN 2530-01-646-9395 (PN KSMA2124515P). This NSN includes two brake shoes with all attaching hardware. It replaces NSN 2530-01-179-7640, which is shown as Item 4 in Fig 14 of TM 9-2330-359-14&P (Aug 91).

## Corrosion Policy Pub

AR 750-59, *Corrosion Prevention and Control for Army Materiel (Maintenance of Supplies and Equipment)*, (Mar 14), lays out policies and responsibilities for corrosion prevention and control (CPC) for Army materiel, including training to support CPC at the field and sustainment levels. To find the pub, type "AR 750-59" in the search block at:

<http://www.apd.army.mil/Search/ePubsSearch/ePubsSearchForm.aspx>

## Need an Aircraft ICS Unit?

Order the Gentex interface communication unit using NSN 5895-01-457-8419 (PN 6015-1) for all aircraft. It'll cost you \$807 dollars. The Apache requires an additional part called the tempest adapter, NSN 5965-01-408-8066 (PN 94C8766), to use with the ICS unit on the Apache helmet.

## M113-Series FOV Fire Extinguisher Bottles

The M113-Series FOV fire extinguisher bottles should be hydrostatic tested every 12 years or after a discharge. The -10 TM currently says testing should be done every five years. Make a note until the TM is updated to reflect the change.

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

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the Condition of Your Equipment?**



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