

Issue 776

PS

★
July
2017

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-776

Approved for
Public Release;
Distribution is
Unlimited

FLY HIGH
WITH GOOD
PM!

USANIC
LOGSA

U.S. ARMY



COMBAT VEHICLES

M1-Series Tanks Turret Race Ring Lubing
M2/M3-Series Bradley PMCS Pointers
M2/M3-Series Bradley, Revised Operator TMs
Howitzer Bore Cleaning Kit
M119A3 Towed Howitzer W16 Cable w/Grips
Stryker, Secure Battery Box Cover
M113A3 FOV, Install Correct Ramp
Hydraulic System



TACTICAL VEHICLES

HMMWV Air Intake Weather Cap Inspection
M1152, M1165 HMMWV Body Harness P-Clamp
M1048A1 Trailer, Brake Shoe & Wheel Assemblies
FMTV Spacer Plate for A/C V-Belt Pulley



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Construction Equipment Tire Wear Limits
CAT Construction Equipment,
Ether Start Valve Filter NSN
M1231 Husky MK III VMMD, PM Pointers
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Motor Pool Eyewash Safety
How to Get PS Back Issues

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60-61

TB 43-PS-776, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all Soldiers assigned to combat and combat support units and all Soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user. Masculine pronouns may refer to both genders. The use of product or company names does not constitute endorsement of those products, services or companies by the U.S. Army. The use of non-DoD hyperlinks, along with their content, does not constitute endorsement of DoD or DA. Neither DoD nor DA exercises any editorial control over, and cannot vouch for, content on non-DoD websites.

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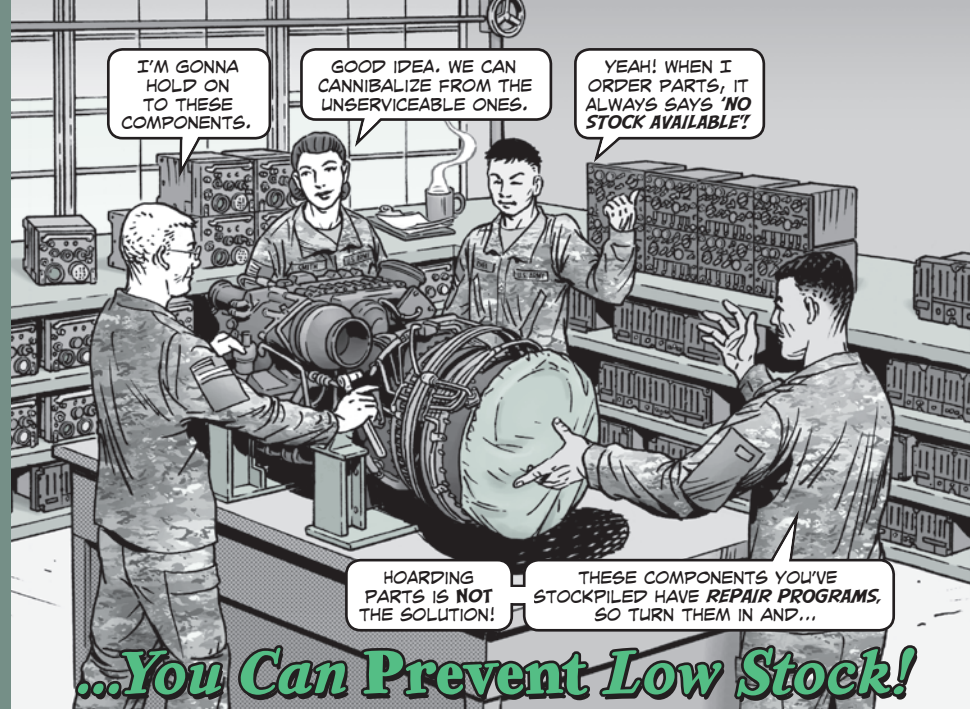
General, United States Army Chief of Staff

Official:

GERALD B. O'KEEFE

Administrative Assistant to the Secretary of the Army

1711001



Mechanics, you can have a powerful impact on the supply system by turning in unserviceable equipment. Turning in broken or busted equipment helps prevent low stock availability.

Stockpiling equipment like propulsion shafts, engine parts, stabilators or any other piece of equipment from a Black Hawk, Apache or Chinook, does a disservice to others who may need them. Holding on to unserviceable parts because you might need them later to replace others isn't a logical action. Many of those parts have repair and overhaul programs.

When parts aren't turned in, it causes a critical shortage in the supply system. Without those unserviceable parts, repaired parts can't be put back on the shelf for issue. That means you won't be able to order what you need and your aircraft could stay deadlined longer.

SO BE SMART AND DO YOUR PART BY TURNING IN EVERY PIECE OF UNSERVICEABLE EQUIPMENT. THAT'S THE ONLY WAY TO MAKE SURE THE PARTS YOU NEED ARE THERE WHEN YOU NEED 'EM!



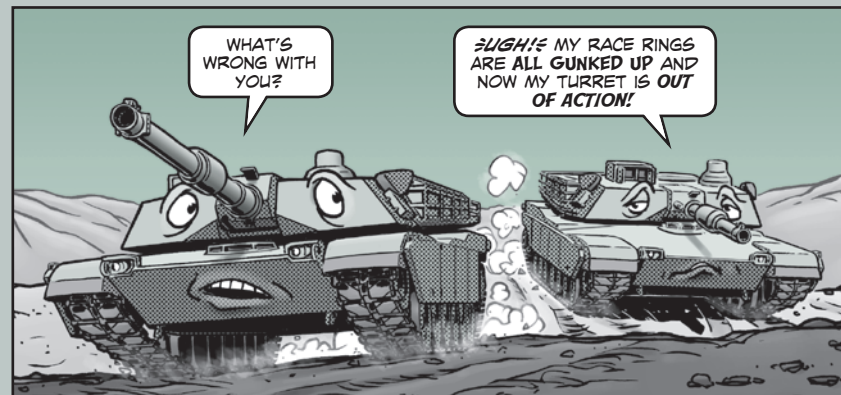
PS COMBAT VEHICLES

- Race Rings Around Turret Trouble
- What Not to Forget
- Get Your Revised Operator Manuals!
- Cannon Cleaning Made Easy
- New W16 Cable NSN!
- Secure Battery Box Covers
- Get the Right Ramp Hydraulic System



M1-Series Tanks...

RACE RINGS AROUND TURRET TROUBLE



Dear Editor,

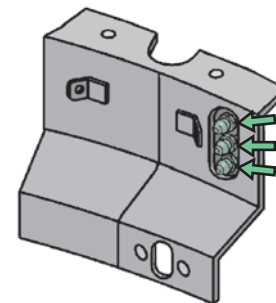
Crewmen need a reminder about lubing the wire race rings, NSN 1015-01-433-7999, on M1-series tanks. It's easy for sand and other stuff to gunk up the race rings. A little PM goes a long way toward keeping things running smooth.

Even if crews do lube the race rings, sometimes grease gets washed away and dirt is forced in when high pressure water or steam is used for cleaning.

The bottom line is too much dirt or too little lube leads to damage to the internal components of the race ring. Then your tank is out of commission!

There's no inspection criteria for the wire race ring, but you still need to lube it monthly. Here's how:

1. Remove the race ring's cover guard, NSN 5340-01-505-2887. You'll see three lube fittings underneath.
2. Use a grease gun to slowly pump two shots of WTR into the top grease fitting while manually traversing the turret two full revolutions.
3. Repeat Step 2, but use the middle grease fitting.
4. For the bottom grease fitting, slowly pump in one shot of WTR while manually traversing the turret one revolution.
5. Reinstall the cover guard.



SSG Scott Bradley
Ft Carson, CO

Look for three grease fittings under cover guard for wire race ring

Editor's note: Listen up, crewmembers. These tips will keep your tank's turret from grinding to a halt!

What Not to Forget

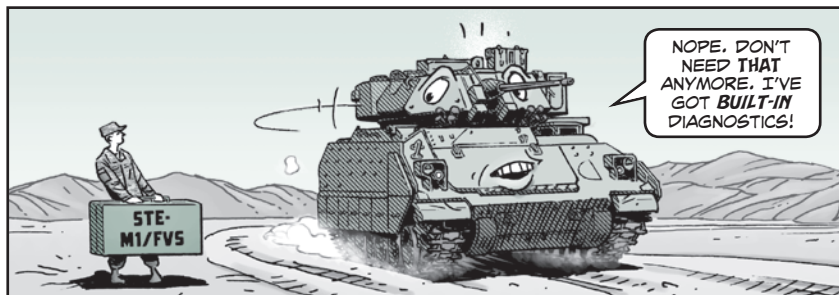


HERE ARE A FEW THINGS UNITS NEED TO **REMEMBER** TO KEEP THEIR BRADLEYS RUNNING AND SHOOTING RIGHT!

If you have the Bradley A3 or ODS-SA, turn in the STE-M1/FVS test set. Those vehicles come equipped with the test set diagnostics built in. Turn in the test set so other units can use it.

For instructions on turning in the test set, call DSN 786-8339, (586) 282-8339, or email: usarmy.detroit.tacom.list.ils-dsests@mail.mil

The STE-M1/FVS should be complete and include all critical test sets. Do not remove any items.

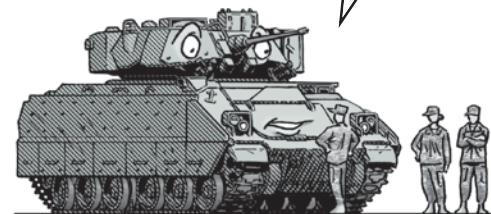


A thorough PMCS means more than checking out just the vehicle. It also means checking out the DAGR, the M240 machine gun, and the M242 bolt and track. These items are usually not in the motor pool, so your first trip on Monday should be to fetch them. This is the only way to make sure everything works and is working together. And don't depend on the Bradley's diagnostics to pick up faults. Go through the PMCS step-by-step. A thorough PMCS should take most of the day, not a couple of hours.



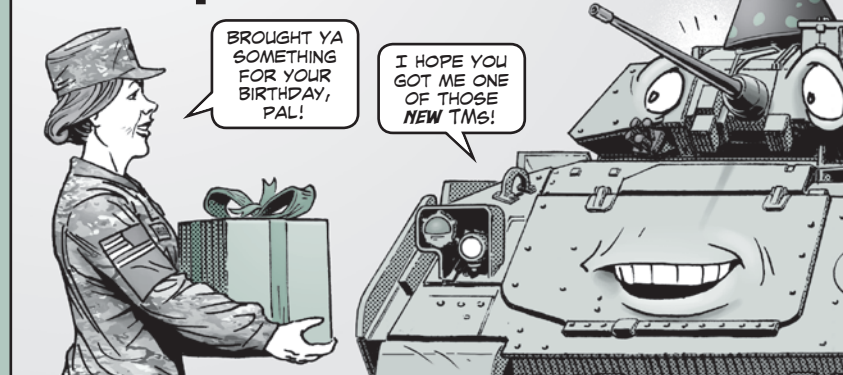
Crank up the engine during PMCS to 1,200 rpm and let it run until the batteries are fully charged. The batteries won't charge properly at normal idle. If the batteries discharge too much, they have to be replaced at \$385 each. Multiply that by eight and you're talking big bucks!

CRANK IT UP, GUYS! I NEED TO BE AT 1,200 RPM TO CHARGE THESE BATTERIES.



M2/M3-Series
Bradley...

Get Your Revised Operator Manuals!



BROUGHT YA SOMETHING FOR YOUR BIRTHDAY, PAL!

I HOPE YOU GOT ME ONE OF THOSE NEW TMS!



CREWMEN, DID YOU KNOW THAT THE BRADLEY'S OPERATOR'S MANUALS HAVE BEEN REVISED?

THEY'RE CHOCK FULL OF GOOD INFO AND READY TO BE ORDERED OR DOWNLOADED FOR FREE.

THE REVISED MANUALS ARE:

- TM 9-2350-294-10 (A3)
- TM 9-2350-373-10 (ODS SA)
- TM 9-2350-383-10 (BFIST SA W/F63)
- TM 9-2350-396-10 (A3 BFIST W/F63)
- TM 9-2350-411-10 (ODS)

GET PAPER TMS FOR FREE THROUGH THE ARMY PUBLISHING DIRECTORATE (APD) OR DOWNLOAD DIGITAL COPIES FROM THE LOGISTICS SUPPORT ACTIVITY ETMS ONLINE WEBPAGE AT:

<https://liw.logsa.army.mil/etmapp/#/etm/home>

TO GET PRINTED -10s, SET UP A PUBLICATIONS ACCOUNT BY EMAILING A COMPLETED DA FORM 12 TO APD'S ACCOUNT PROCESSING TEAM AT: usarmy.stlouis.106-sig-bde.mbx.dolwmdcustsrv@mail.mil

INSTRUCTIONS FOR SETTING UP AN ACCOUNT ARE AT: <http://www.apd.army.mil/Orders/HowtoEstablishAcct.pdf>

CANNON CLEANING MADE EASY

I KNOW YOUR CANNON TUBE NEEDS CLEANING BUT IT'S SUCH A HASSLE!



YOU COULD SAVE US **BOTH** A LOT OF TIME WITH A **BORE CLEANING KIT!**

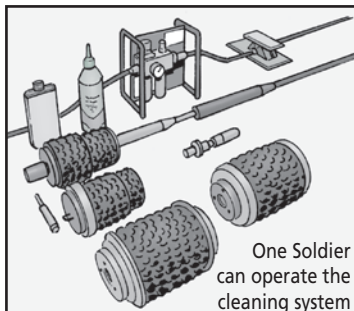
CREWMEN, CLEANING THOSE 155MM HOWITZER TUBES CAN BE A TOUGH AND TEDIOUS JOB. BUT IT'S A JOB THAT **HAS** TO BE DONE, NO MATTER HOW TIRED YOU ARE AFTER A FIRE MISSION.

BUT **DON'T DESPAIR!** THERE'S A CLEANING KIT THAT WILL HELP MAKE YOUR LIFE A WHOLE LOT **EASIER!**

THE **BORE CLEANING KIT**, NSN 1025-01-617-5620, IS AN AIR-POWERED TOOL THAT CAN BE USED BY **JUST ONE SOLDIER**. APPLY SOME CLP AND THE GUN TUBE CAN BE CLEANED IN **JUST A FEW MINUTES** FROM EITHER THE MUZZLE OR BREECH END.

NOT BAD, HUH?

HERE ARE **REPLACEMENT BRUSHES** FOR THE CLEANING KIT:



One Soldier can operate the cleaning system

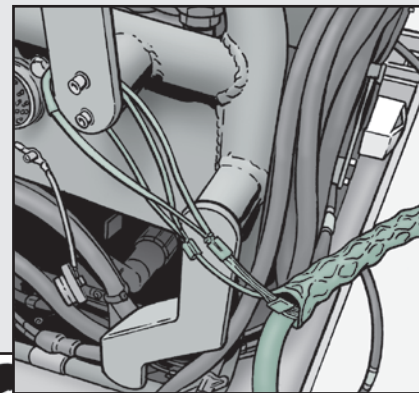
Item	NSN 1025-
Nylon oiling brush	01-617-5577
Nylon squeegee brush	01-617-5621
Steel cleaning brush	01-617-5586

NEW W16 Cable NSN!

Crewmen, there's a new NSN for the M119A3 towed howitzer's W16 cable.

If you order NSN 6145-01-547-8957, which is shown as Item 52 in Fig 64 of TM 9-1015-260-24P (Feb 15), you might get a W16 cable without cable grips.

Don't modify the cable if you receive one without cable grips. That just damages equipment and costs your unit money. Instead, order NSN 6150-01-659-3604 to get the right W16 cable.



NSN 6150-01-659-3604 BRINGS THE W16 CABLE WITH CABLE GRIPS.



SECURE BATTERY BOX COVERS

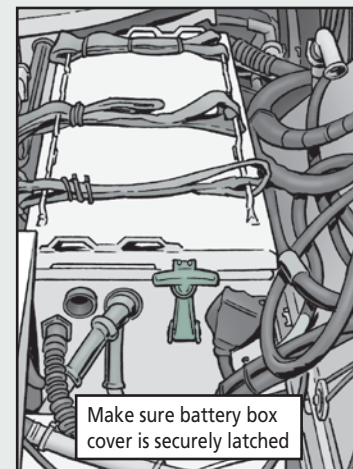
Crewmen, battery box covers that aren't secured the right way could mean a world of hurt if your Stryker's involved in a rollover accident.

The battery box cover and batteries will go flying around the crew compartment if the cover isn't tightened down. That'll cause expensive damage and maybe even seriously injure you and your fellow Soldiers!

Take a minute during Before PMCS to check the battery box cover. If it's latched good and tight, you're ready for your mission. If the battery box cover can't be secured because of damage to the cover or latches, tell your mechanic right away.

For more details, check out TACOM GPA 16-013 at:

<https://tulsa.tacom.army.mil/Safety/message.cfm?id=GPA16-013.html>



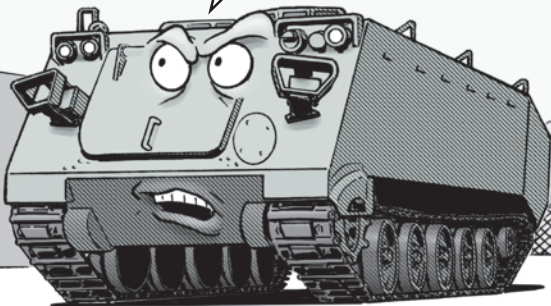
Make sure battery box cover is securely latched

Get the *Right* Ramp Hydraulic System



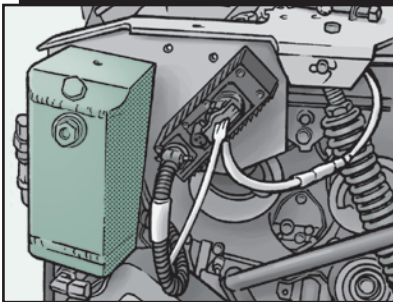
YOU READY FOR THE BIG MISSION TODAY?

NOPE! I'M NMC 'CAUSE SOMEBODY INSTALLED THE **WRONG** HYDRAULIC SYSTEM FOR MY RAMP!



INSTALLING THE **WRONG** RAMP HYDRAULIC SYSTEM IN YOUR M113A3 CAN COST YOUR UNIT **BIG MONEY** OR EVEN MAKE YOUR VEHICLE **NON-MISSION CAPABLE (NMC)**.

THERE ARE **TWO** RAMP HYDRAULIC SYSTEMS AVAILABLE FOR THE M113A3 FOV. THE ONE THAT'S RIGHT FOR YOUR VEHICLE **DEPENDS** ON WHETHER YOUR VEHICLE HAS **RAMP ARMOR**.



THE HYDRAULIC PRESSURES OF THE TWO SYSTEMS ARE A LOT **DIFFERENT**.

MAKE SURE TO INSTALL THE **CORRECT** RAMP HYDRAULIC SYSTEM COMPONENTS LIKE THE **RAMP RESERVOIR...**

INSTALL THE **WRONG** SYSTEM AND YOUR RAMP MIGHT **NOT** WORK RIGHT.

AND WITH A RAMP THAT'S OUT OF ACTION, YOUR VEHICLE IS OUT OF THE FIGHT!

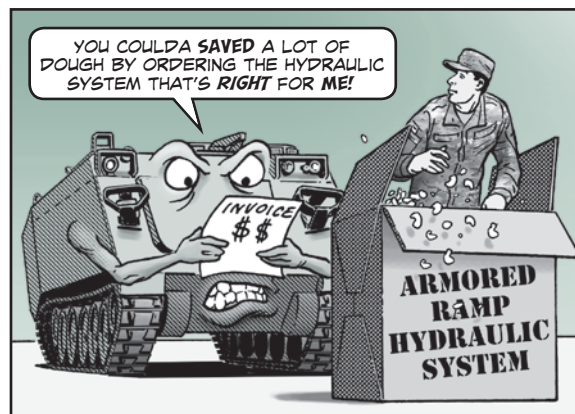
...AND THE **CYLINDER ASSEMBLY**.



ALSO, THE HYDRAULIC SYSTEM FOR VEHICLES **WITH** RAMP ARMOR COSTS NEARLY \$16,000, WHILE THE THE SYSTEM FOR **UNARMORED** RAMPS COSTS AROUND \$1,000.

IF YOUR UNIT **ONLY** HAS VEHICLES WITH NON-ARMORED RAMPS, **DON'T WASTE MONEY** BY ORDERING THE HYDRAULIC SYSTEM FOR ARMORED RAMPS!

HERE'S A LIST OF THE COMPONENTS FOR THE RAMP HYDRAULIC SYSTEMS!



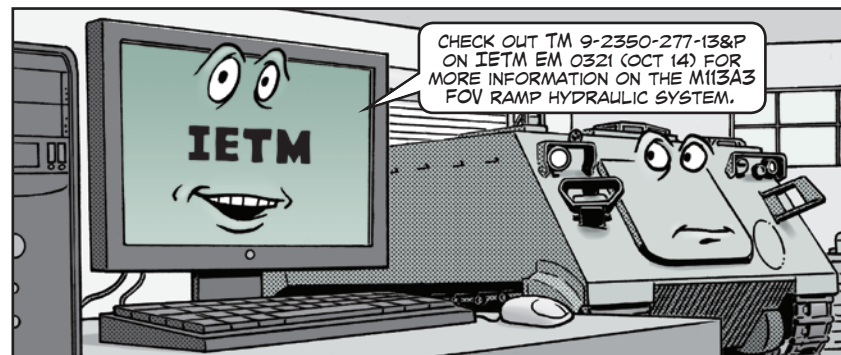
YOU COULDA **SAVED** A LOT OF DOUGH BY ORDERING THE HYDRAULIC SYSTEM THAT'S **RIGHT** FOR ME!

Without Ramp Armor

Part	NSN
Hydraulic reservoir	2590-01-239-1831
Rotary valve	4820-01-411-1225
Adapter	4730-00-322-8457
Pipe coupling	4730-00-269-6695
Cylinder assembly	3040-01-329-2189
Rubber boot	2530-01-062-5651
Elbow pipe	4730-01-103-3275
Nonmetallic hose	4720-01-248-8812

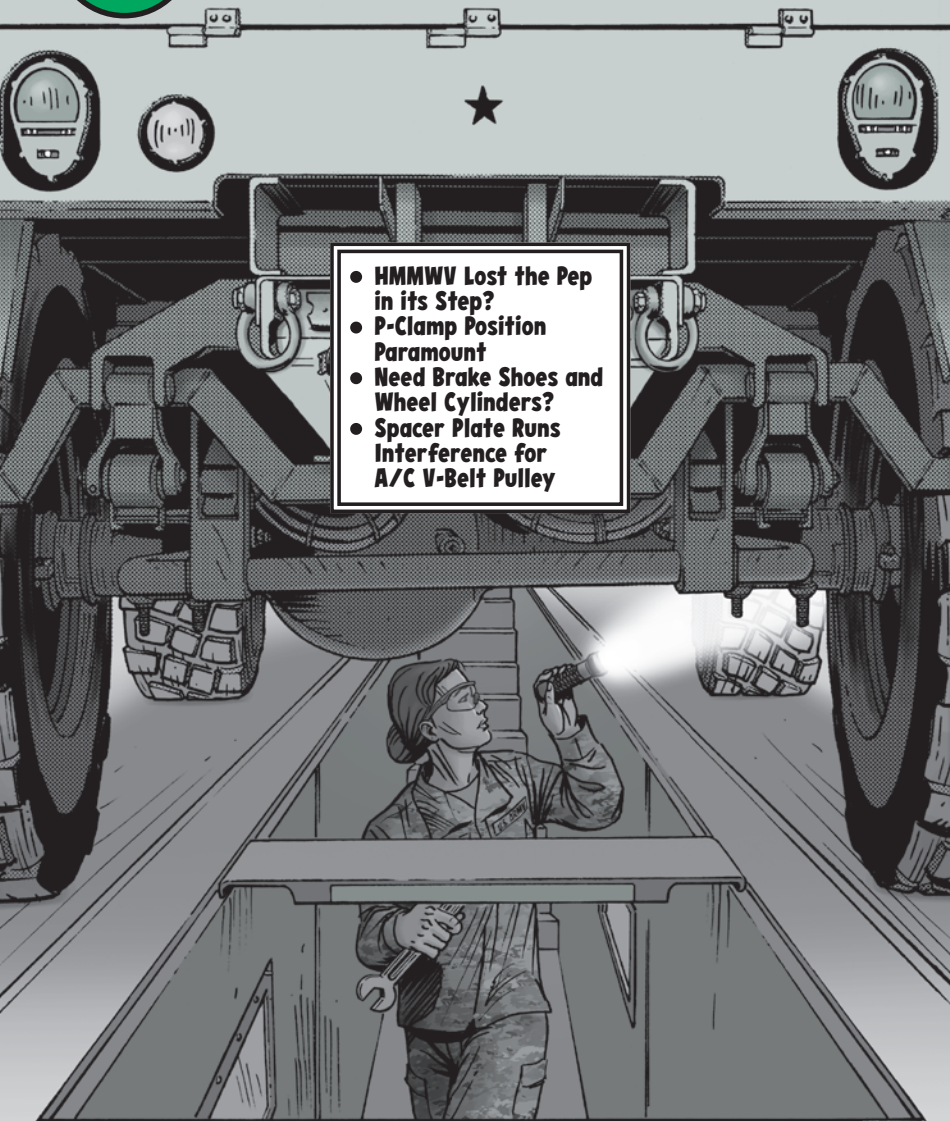
With Ramp Armor

Part	NSN
Hydraulic reservoir	4320-01-586-5416
Rotary valve	4810-01-588-2838
Connector tube	4730-01-587-5527
Pipe coupling	4730-01-587-5619
Cylinder assembly	3040-01-589-2063
Rubber boot	2530-01-588-9759
Pipe elbow	4730-01-587-5716
Nonmetallic hose	4720-01-587-2291



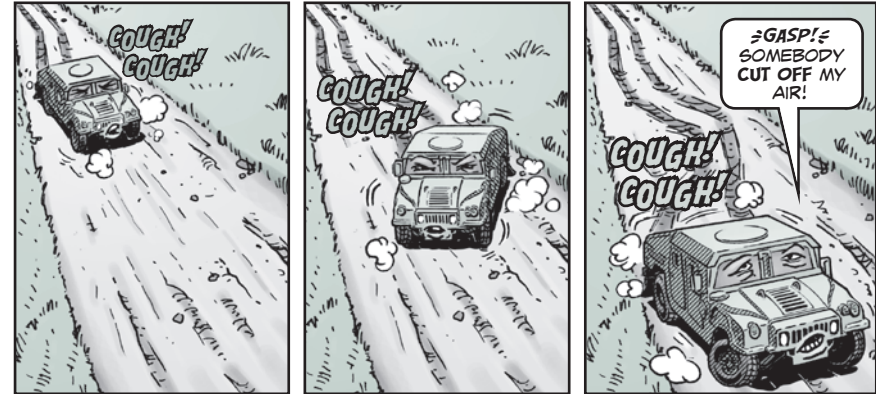
CHECK OUT TM 9-2350-277-13&P ON IETM EM 0321 (OCT 14) FOR MORE INFORMATION ON THE M113A3 FOV RAMP HYDRAULIC SYSTEM.

PS TACTICAL VEHICLES



- HMMWV Lost the Pep in its Step?
- P-Clamp Position Paramount
- Need Brake Shoes and Wheel Cylinders?
- Spacer Plate Runs Interference for A/C V-Belt Pulley

HMMWV Lost the PEP in its STEP?

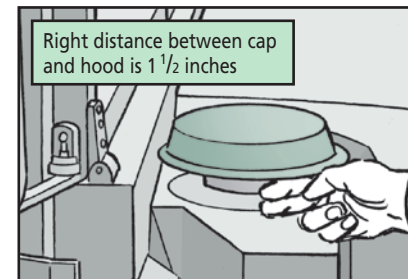


Operators, when you hop in your HMMWV and head out for the day's run, does something seem a little off? For instance, does the engine run a little rough or have no power under a load? Maybe it stalls when you slow down or idles poorly.

Well, sometimes solving a maintenance problem takes a little detective work. But if you find enough clues, an answer is right around the corner.

If you've experienced some of these symptoms before, the answer could be as close as your vehicle's air intake weather cap. If enough air's not getting through, engine performance will suffer.

With the engine shut down, measure the distance between the cap and air intake housing. If it's less than 1 1/2 inches (about two finger widths), someone probably stepped on the cap. That cuts off air flow and chokes the engine.



Right distance between cap and hood is 1 1/2 inches



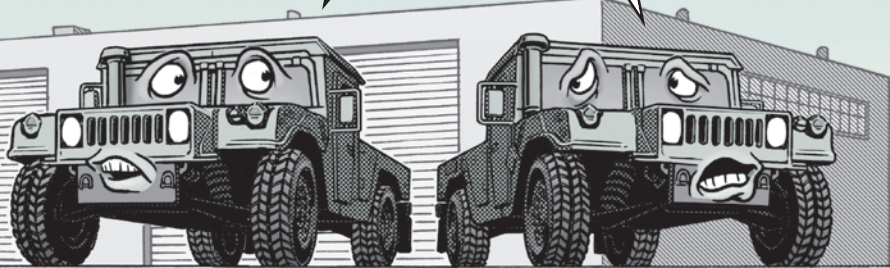
Less means cap may have been stepped on

If your HMMWV's weather cap looks suspect, have your mechanic check it out. He can replace it with NSN 2940-01-189-1809 if necessary.

M1152, M1165 HMMWVs...

WHY SO GLUM, CHUM?

MY MAIN BODY HARNESS IS **DROOPING**. NEXT TIME THEY FIRE ME UP, I'M AFRAID IT'LL **MELT**!



P-Clamp Position Paramount

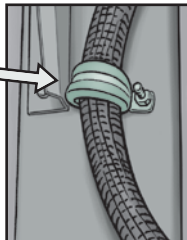
MECHANICS, IF **YOUR** UNIT HAS M1152 AND M1165 HMMWVs WITH SERIAL NUMBERS BETWEEN 890001 AND 891083. **LISTEN UP!**

THE P-CLAMP USED TO HOLD THE MAIN BODY HARNESS IN PLACE **MAY NOT HAVE BEEN POSITIONED CORRECTLY.**

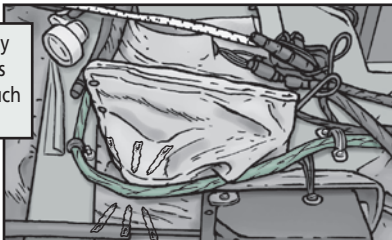
THAT CAN ALLOW THE HARNESS TO **DROOP**, TOUCHING THE EXHAUST HEAT SHIELD AND **DAMAGING THE HARNESS.**

LOOK FOR P-CLAMPS THAT ARE INSTALLED AT THE **9 O'CLOCK POSITION**. THAT POSITION ALLOWS THE SAG AND CONTACT WITH THE HEAT SHIELD. **DAMAGED HARNESSES SHOULD BE REMOVED AND REPLACED** FOLLOWING THE INSTRUCTIONS IN TM 9-2320-387-13&P IN IETM EM 0323 (MAR 14).

With P-clamp at 9 o'clock position...

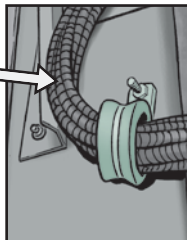


...main body harness sags and can touch heat shield

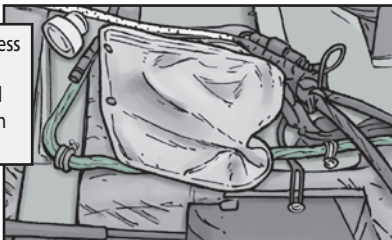


IF THE HARNESS IS **UNDAMAGED**, REMOVE THE P-CLAMP AND **REPOSITION** IT TO THE **6 O'CLOCK POSITION**. MAKE SURE YOU PULL THE HARNESS TIGHT TO PREVENT SAG, THEN TUCK IT BEHIND THE TRANSMISSION SHIFTER BAG.

Reposition clamp to 6 o'clock position...



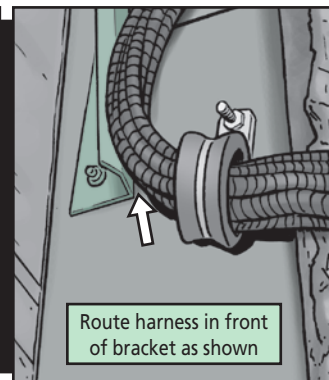
...pull harness tight and tuck behind transmission shifter bag



WITH THE HARNESS REPOSITIONED, YOU **MAY** BE TEMPTED TO ROUTE IT BEHIND THE METAL BRACKET AFTER IT COMES THROUGH THE P-CLAMP. **DON'T!**

VIBRATION WILL CAUSE THE EDGE OF THE BRACKET TO **CUT** THE HARNESS.

Route harness in front of bracket as shown



FOR ALL INSPECTED HMMWVs, WHETHER THE P-CLAMP IS REPOSITIONED OR NOT, YOU'LL NEED TO REPORT YOUR FINDINGS IN LOGSA'S MODIFICATION MANAGEMENT INFORMATION SYSTEM (MMIS). GO TO: <https://iiv.logsa.army.mil/mmis/>

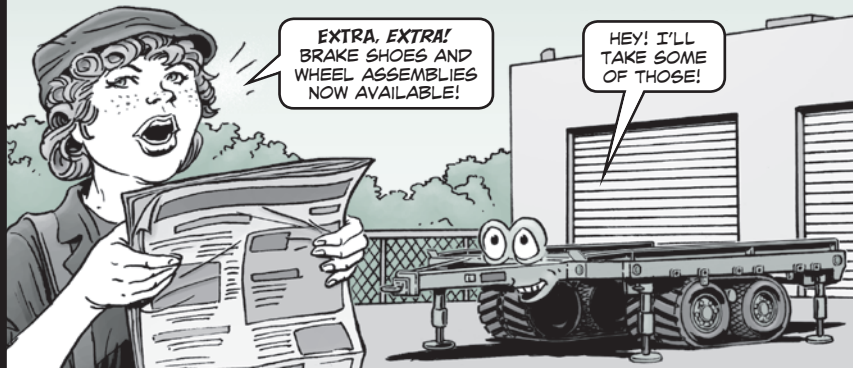
CAC LOGIN IS REQUIRED.

FOR MORE INFORMATION, CHECK OUT TACOM MAINTENANCE ACTION MESSAGE 16-015:

<https://tulsa.tacom.army.mil/Maintenance/message.cfm?id=MA16-015.html>

M1048A1 6-ton Flatbed Trailer...

NEED BRAKE SHOES AND WHEEL CYLINDERS?



Mechanics, here's an update on the M1048A1 flatbed trailer's brake shoes and wheel cylinders. Keep this info handy until TM 9-2330-396-14&P is updated.

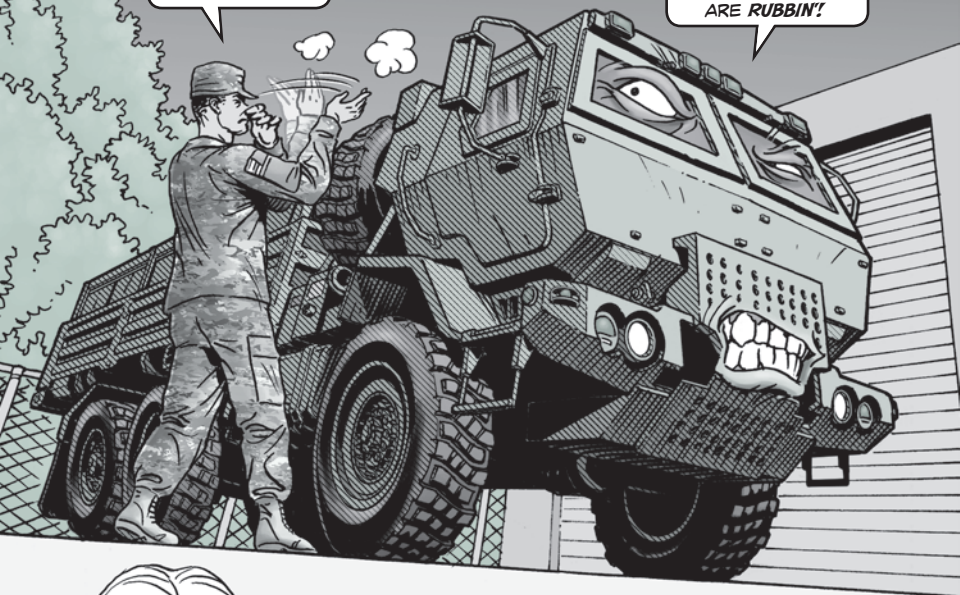
The parts information for the right- and left-hand brake shoes, listed as Items 4 and 19 in Fig 4, is obsolete. So until a new NSN can be assigned, order the right- and left-hand brake shoe assemblies with PN AH132840 directly from West Side Tractor Sales. Call the Parts Manager, Al Walker, at (630) 355-7150. You can also order the brake shoes on a DD Form 1348-6 using the part number and CAGE 02YK8.

Wheel cylinders are also available. Order the right side wheel cylinder with NSN 2530-01-420-7922. The left side cylinder comes with NSN 2530-01-422-3968.

Spacer Plate Runs Interference for A/C V-Belt Pulley

WHAT IS THAT?
SMELLS LIKE
BURNING METAL!

I'VE BEEN TRYING
TO TELL YOU! MY
FAN CLUTCH BOLTS
ARE RUBBIN'!



OPERATORS, YOU
MAY HAVE A **PROBLEM**
WITH THE FAN CLUTCH
IF YOUR UNIT'S FMTVP1,
FMTVAIP1, FMTVAIP2,
LVAD AND HIMARS
TRUCKS (SERIAL
NUMBERS 740,345
AND BELOW) HAVE
AIR CONDITIONING.

THAT'S BECAUSE
THERE MAY BE
CONTACT BETWEEN THE
ENGINE FAN CLUTCH
BOLTS AND THE
A/C V-BELT PULLEY.

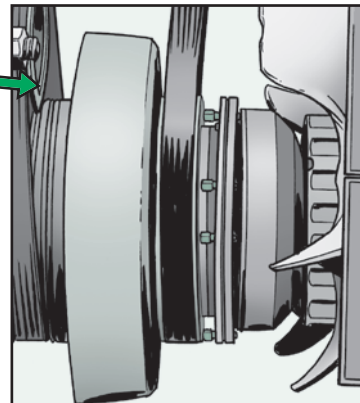
THE CONTACT ITSELF **DOESN'T**
MAKE YOUR TRUCK
NON-MISSION CAPABLE (NMC).
BUT IF THERE'S **TOO MUCH**
CONTACT, THE CLUTCH COULD
FAIL OR THE FAN CLUTCH
ASSEMBLY **COULD BE DAMAGED**.
AND THAT **DOES** MAKE YOUR
TRUCK NMC!

THE PROBLEM IS SOLVED BY
INSTALLING A NEW, REDESIGNED
SPACER. THE SPACER IS
THICKER AND PROVIDES THE
CLEARANCE NEEDED TO
PREVENT DAMAGE.

The Get Well Plan

HERE'S
WHAT YOU
NEED TO
DO:

1. Look for metal-to-metal contact from the fan clutch bolts heads to the face of the A/C PULLEY.

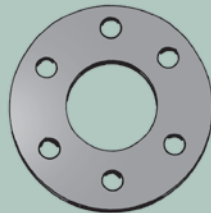


Check for sufficient clearance between fan clutch bolts and A/C pulley

2. If there's damage, your mechanic will replace the fan clutch, NSN 2930-01-399-0852, and add the new spacer, NSN 5365-01-601-2918. He'll need to use longer 40mm bolts, NSN 5305-01-532-1072, to mount the spacer.

The bolts must be installed using medium strength thread locking compound, NSN 8030-01-014-5869, and torqued in a star-shaped pattern at 42-52 lb-ft (55-71 Nm).

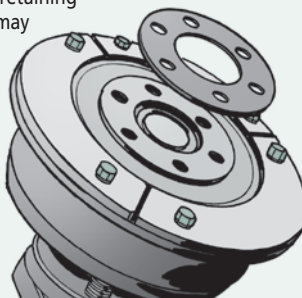
Fan clutch spacer plate provides extra clearance



3. Fan clutch retaining ring bolts that are really worn and can't be tightened also mean the fan clutch has to be replaced. Your mechanic will add the new spacer plate then, too.

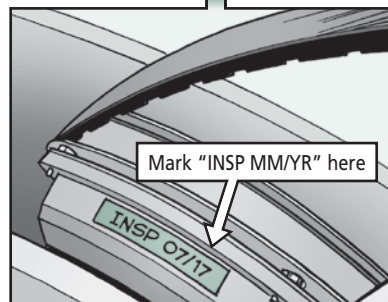
4. Undamaged or slightly worn retaining ring bolts with no other signs of damage to the fan clutch or A/C pulley can be tightened. Loose retaining bolts should be torqued to 30 lb-in.

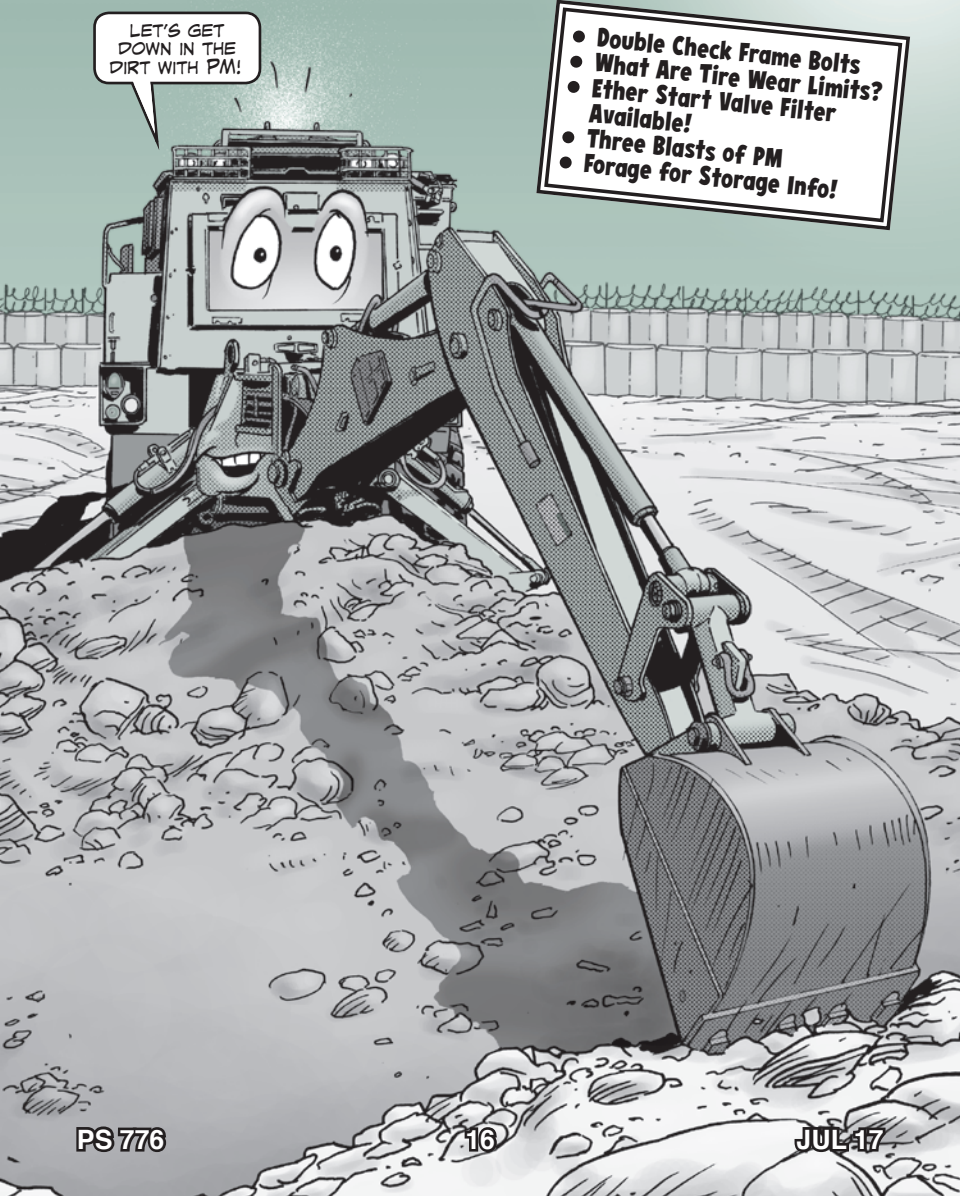
Fan clutch retaining ring bolts may loosen from contact and friction with A/C pulley



5. Once the inspection and maintenance is complete, your mechanic should use a paint pen to mark serviceable fan clutches with the inspection month and year. For example: INSP 10/16

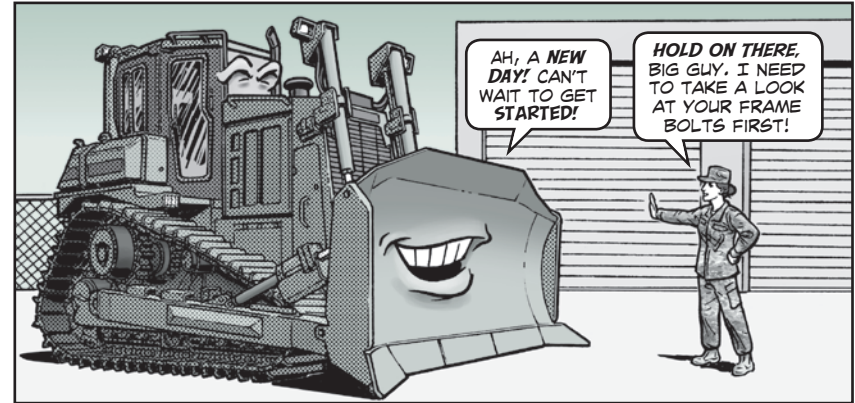
Mark "INSP MM/YR" here





- Double Check Frame Bolts
- What Are Tire Wear Limits?
- Ether Start Valve Filter Available!
- Three Blasts of PM
- Forage for Storage Info!

DOUBLE CHECK FRAME BOLTS



One of the first items you'll find in the D7R II dozer's TM 5-2410-241-10 PMCS is a statement that says to make sure the vehicle's bolts, nuts and screws are not loose, missing, bent or broken. Any problems are supposed to be reported to your mechanic.

Well, there are a handful of bolts that need **special** attention before you fire up your dozer at the worksite.

Frame Bolts

Take a close look at the bolts that mount into the frame just above the track in the back of the vehicle. These bolts are easy to overlook, especially if the dozer is coated in mud. But they loosen from vibration and, in some cases, back out completely. Loose bolts chew into the frame, causing too much sway in the vehicle.

So clean off the bolts and look for any shiny spot or corrosion around the head that indicates movement. If the bolts are still tight, use a white marker pen or some torque seal, NSN 8030-00-408-1137, to make a line across the bolt and frame. The next time the bolt moves, the lines won't line up.



What Are Tire Wear Limits?



Dear Half-Mast,

The backhoe loader's (BHL) TM 5-2420-231-10 (Feb 09) deadlines the vehicle if the tires have "excessive wear." But the TM doesn't define excessive wear. And there are no wear bars or stripes to help.

Our shop has several BHLs with minimal tread on the rear tires. At some point, that wear will become a safety issue. Can you provide specific guidance on wear for the BHL's front and rear tires?

Mr. C.N.

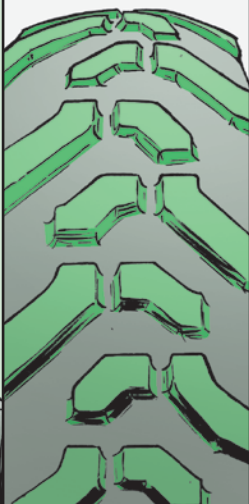
THAT'S A VERY GOOD QUESTION, SIR! WE PASSED IT ON TO THE COMBAT ENGINEER GROUP AT TACOM FOR MORE GUIDANCE ON WEAR LIMITS FOR THE BHL, 120M GRADER, 621G SCRAPER, AND M924H WHEEL LOADER (EXCLUDING THE HMEE-1).

HERE'S
WHAT
THEY
HAD
TO SAY...

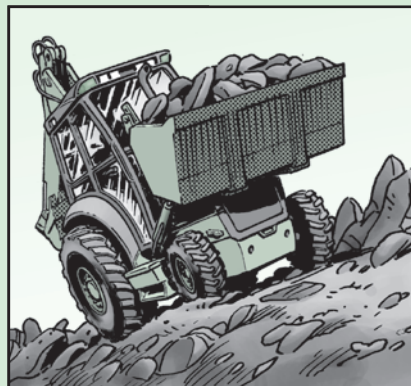
IT'S TRUE
THAT THE
GUIDANCE IN
CONSTRUCTION
EQUIPMENT
(CE) TMS IS A
LITTLE VAGUE.

THAT'S PRIMARILY DUE
TO THE LARGE NUMBER
OF TIRE MANUFACTURERS
WHO PROVIDE THE ARMY
WITH MULTIPLE TIRE
TYPES, TREAD DESIGNS
AND PATTERNS, AND
DIFFERENT TOLERANCES
AND SPECIFICATIONS.

Tire serviceability depends
on several factors



OPERATIONAL USE HAS A BIG EFFECT, TOO. FOR EXAMPLE, A TIRE THAT IS PERFECTLY SERVICEABLE IN THE DIRT OF A NORMAL CONSTRUCTION SITE MIGHT BE UNSUITABLE FOR USE IN A ROCK QUARRY.



MANUFACTURERS CAN HAVE CONFLICTING DATA AS WELL, SO YOU MUST CONSIDER WHAT IS ADEQUATE FOR YOUR TERRAIN AND APPLICATION NEEDS.

YOU CAN FIND MORE SPECIFIC GUIDANCE IN TM 9-2610-200-14, CARE, MAINTENANCE REPAIR AND INSPECTION OF PNEUMATIC TIRES AND INNER TUBES (SEP 05).

IT PROVIDES LOTS OF INFORMATION ON TIRE WEAR LIMITS AND OTHER MAINTENANCE ISSUES.



CAT Construction Equipment...

ETHER START VALVE FILTER AVAILABLE!

Newer CAT construction equipment like the 120M road grader, 924H wheel loader, D7R II dozer, and 621G scraper all use the same ether start aid valve, NSN 4820-01-551-9292.

But inside the valve is a filter that gets plugged with debris, is damaged or just plain disappears. Don't look for it in the TMs, though. It's not there!

The good news is you can now order just the filter with NSN 2910-01-658-4647. The filter costs \$5.18. That's a big savings when you consider that a new valve is \$157!

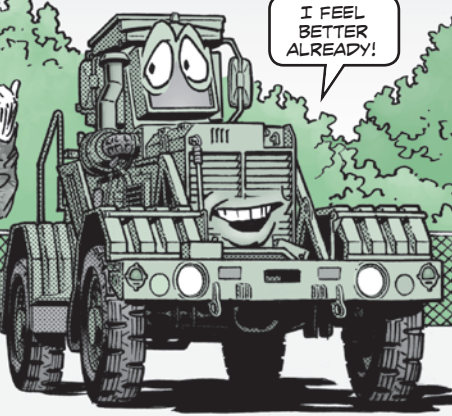
Order filter with
NSN 2910-01-658-4647



M1231 Husky MK III VMMD...

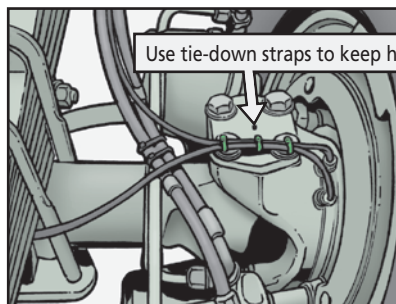
THREE BLASTS OF PM

OPERATORS, HERE ARE THREE MORE PM POINTERS TO KEEP IN MIND FOR YOUR HUSKY VEHICLE MOUNTED MINE DETECTION (VMMD) SYSTEM.

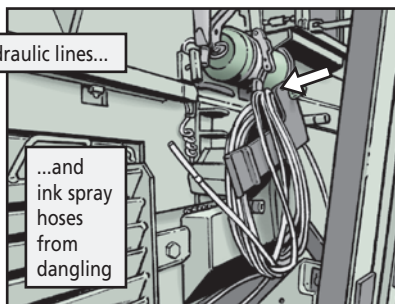


Keep Lines Snug

A tie-down strap, NSN 5975-00-570-9598, comes in real handy to keep one or more hydraulic lines in place. Wrap a tie-down strap around lines to keep them from dangling where they can be torn off the vehicle.



Use tie-down straps to keep hydraulic lines...



...and ink spray hoses from dangling

It's also a good idea to use a tie-down strap to keep the Husky's ink spray hoses tucked away when the vehicle's detention panels are in the elevated position.

A/C Filter Arrow

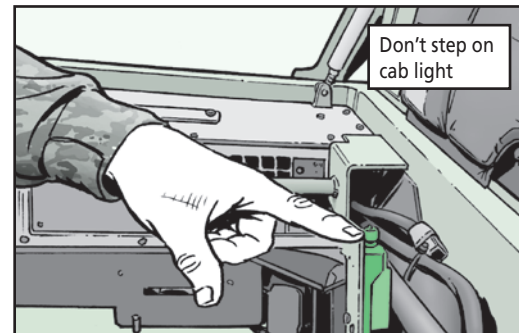
Make sure the air conditioning filter goes back in place the right way. The arrow on top of the filter element needs to point in the direction of the air flow, which means it points to the rear of the vehicle. That way, the air flows smoothly.



Arrow on filter should point in direction of air flow

Cab Light TLC

Be very careful when using the hand and foot holds to climb in and out of the vehicle's cab. Do not grab, lean against or step on the cab's interior light. A moment's distraction results in a broken light. The interior light comes on when the cab roof door is lowered and closed.



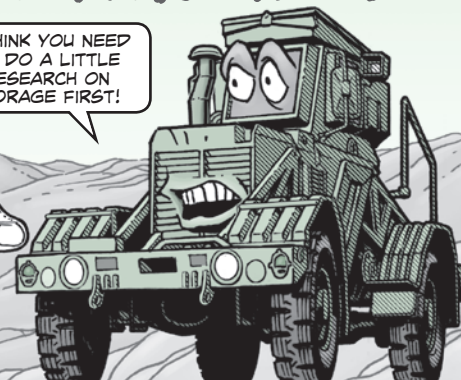
MK III VMMD Husky...

FORAGE FOR STORAGE INFO!

OK, BIG GUY, YOU READY TO GO INTO STORAGE?

I THINK YOU NEED TO DO A LITTLE RESEARCH ON STORAGE FIRST!

GIGANTIC ZIP-LOCK BAGS Qty 1



OPERATORS, DID YOU KNOW THAT STORING YOUR HUSKY FOR SIX MONTHS OR LONGER REQUIRES SPECIFIC TASKS AND TOOLS?

PROPER STORAGE IS VITAL TO KEEP THE VEHICLE READY WHEN IT'S NEXT NEEDED.

STORAGE INSTRUCTIONS ARE FOUND IN WP 0095 (PREPARATION FOR RECOVERY AND TIEDOWN PROCEDURES) OF TM 9-2355-316-10 (APR 16).

ONCE YOU GET THERE, YOU'LL NOTICE IT REFERENCES TB 9-2355-316-13 (APR 12). CHAP 3 OF THE TB CONTAINS WP 0014 THROUGH 0019 AND PROVIDES EVERYTHING YOU NEED FOR PROPER STORAGE. THAT INCLUDES REFERENCES TO ALL NECESSARY MIL-STDs, TMS, AND ARS.

STAY IN THE KNOW SO YOUR HUSKY WILL BE MISSION-READY WHEN IT'S PULLED FROM STORAGE!

PS SOLDIER SUPPORT

- **LAMS Support Now Available!**
- **When Noise is the Enemy**

Large Area Maintenance Shelters...

THIS NEW LAMS SHELTER SURE BEATS WORKING IN THE SUN!

LAMS Support Now Available!

LARGE AREA MAINTENANCE SHELTERS (LAMS), ALSO KNOWN AS CLAMSHELL SHELTERS, HAVE LONG BEEN USED AS HANGARS, VEHICLE MAINTENANCE SHOPS, AND FOR OTHER MISSIONS.

THERE IS NOW A CENTRAL POC FOR PROCUREMENT AND TECHNICAL SUPPORT FOR LAMS.

THE TACOM INTEGRATED LOGISTICS SUPPORT CENTER'S (ILSC) SOLDIER PRODUCT SUPPORT INTEGRATION DIRECTORATE (SOLDIER-PSID) OFFERS PROCUREMENT, MAINTENANCE, SPARE PARTS, AND RESET SERVICES.

LAMS FALLS UNDER MIL-PRF-32504B. THOUGH ALL NEWLY PROCURED SHELTERS WILL CONFORM TO THIS SPEC, OLDER SYSTEMS FROM DIFFERENT VENDORS MAY **NOT** HAVE INTERCHANGEABLE PARTS.

SOLDIER-PSID CAN PROVIDE:

- technical information
- assist in identifying shelters and repair parts
- procure new shelters
- coordinate on-site support

YOU MAY THINK ANY LARGE FABRIC-SKINNED SHELTER IS A LAMS, EVEN IF BOUGHT LOCALLY.

BUT LAMS ONLY APPLIES TO THESE SHELTERS:

Item	NSN 5410-	Size (in feet)	Manufacturer
LAMS, aircraft	01-334-3158	75x192	Clamshell™
LAMS, aircraft	01-612-8219	75x192	CTI™
LAMS, vehicle	01-333-9299	75x122	Clamshell™
LAMS, vehicle	01-610-8773	75x122	CTI™
LAMS, vehicle	01-611-2401	75x122	CTI™

FOR LAMS HELP, CALL SOLDIER-PSID AT DSN 256-4434, (508) 233-4434 OR EMAIL: bernice.a.bristolplentie.civ@mail.mil

OR CALL DSN 256-4115, (508) 233-4115 OR EMAIL: paul.a.brooks5.civ@mail.mil

WHEN NOISE IS THE ENEMY



LISTEN UP!

**YOUR HEARING
MIGHT DEPEND
ON IT!**



**EVERYDAY NOISE
FROM**

- engines
 - compressors
 - jackhammers
 - shop equipment
 - power generators
 - artillery fire
- INJURES YOUR
HEARING OVER TIME!**

EXPOSURE TO CERTAIN
CHEMICALS CALLED
OTOTOXINS
(**EAR POISONS**),
ALONE OR IN
COMBINATION WITH
HAZARDOUS NOISE,
CAN **ALSO** CAUSE
HEARING LOSS.

EXAMPLES INCLUDE:

- fuels
- pesticides
- nerve agents

ACTIVITIES WHERE
NOISE AND OTOTOXINS
OFTEN COMBINE
INCLUDE:

- painting
- fueling vehicles or aircraft
- firing weapons

EVEN IF A NOISE DOESN'T
SEEM LOUD IT CAN HARM YOU,
EVEN DURING TRAINING.



HEARING LOSS IS USUALLY PAINLESS AND GRADUAL.

BY THE TIME YOU REALIZE
YOU'RE LOSING YOUR
HEARING, THE DAMAGE HAS
ALREADY BEEN DONE.

**FOR SOLDIERS, THIS CAN BE
ESPECIALLY DANGEROUS!**

NOT ONLY CAN HEARING
LOSS RISK YOUR SAFETY, IT CAN
PUT COMBAT COMMUNICATIONS
IN JEOPARDY. MISSION SAFETY
AND EFFECTIVENESS CAN BE
COMPROMISED.

IT'S IN THE REGS!



SOLDIERS AND DA CIVILIANS **MUST** WEAR THE RIGHT HEARING PROTECTION WHEN **WORKING** WITH OR AROUND EQUIPMENT, VEHICLES, AIRCRAFT OR WEAPONS THAT PRODUCE HAZARDOUS NOISE LEVELS.

FOR SPECIFIC NOISE LIMITS AND HEARING PROTECTOR REQUIREMENTS, SEE SECTION 7-13 IN DA PAM 40-501, ARMY HEARING PROGRAM, (JAN 15):
<http://www.armypubs.army.mil>
AND SEARCH FOR DA PAM 40-501.

SOLDIERS AND DEPLOYED PERSONNEL **MUST** WEAR AUTHORIZED HEARING PROTECTORS IN **COMBAT**, PARTICULARLY WHEN FIRING WEAPONS, RIDING IN TACTICAL VEHICLES OR IN AIRCRAFT.

HEARING PROTECTORS ALSO IMPROVE READINESS AND PRESERVE COMMUNICATIONS!

TACTICAL COMMUNICATIONS AND PROTECTIVE SYSTEMS (TCAPS) ARE DESIGNED TO AMPLIFY LOW-VOLUME SOUNDS AND HELP FACE-TO-FACE AND RADIO COMMUNICATIONS, WHILE **PROTECTING** THE EARS FROM HAZARDOUS IMPULSE NOISE LIKE WEAPONS FIRE.

ADDITIONAL INFO ON TCAPS AND OTHER OPERATIONAL
HEARING PROTECTION DEVICES CAN BE FOUND IN
CHAPTER 6 OF DA PAM 40-501.

IF YOU WORK IN A
NOISY AREA OR YOUR
TM DIRECTS YOU
TO WEAR HEARING
PROTECTION, YOU
MAY NEED EARPLUGS,
NOISE MUFFS,
NOISE-ATTENUATING
HELMETS, TCAPS OR A
COMBINATION OF THESE.

YOUR INSTALLATION
INDUSTRIAL HYGIENIST,
SAFETY OFFICER OR
PREVENTIVE MEDICINE
REPRESENTATIVE CAN
TEST YOUR WORKPLACE
FOR DANGEROUS NOISE
LEVELS AND **RECOMMEND**
APPROPRIATE HEARING
PROTECTION.

**REMEMBER
TO PROTECT
YOUR HEARING
-- IT'S EAR-
REPLACEABLE!**



**GET A FACT SHEET
ABOUT OTOTOXINS AT:**

https://phc.amedd.army.mil/PHC%20Resource%20Library/Ototoxin_FS_51-002-0713.pdf

Hearing Protection Choices



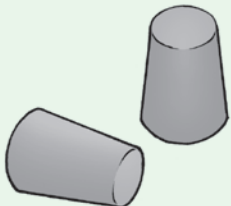
THE **MOST COMMON TYPES** OF HEARING PROTECTION INCLUDE TRIPLE- OR QUAD- FLANGE PREFORMED EARPLUGS, HANDFORMED (FOAM) EARPLUGS, AND NOISE MUFFS.

ACTIVE HEARING PROTECTION DEVICES (HPDS) AND OTHER SPECIALIZED HPDS CAN BE USED AS WELL, IF APPROPRIATE FOR THE LISTENING ENVIRONMENT.

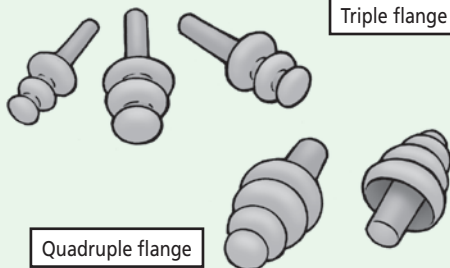
EAR CANAL CAPS **CAN** BE USED TO PROTECT AGAINST **SHORT OR INTERMITTENT NOISE** AT 95 DECIBELS OR LESS.

BUT THEY'RE NOT AS EFFECTIVE IN CUTTING OUT NOISE AS EARPLUGS OR NOISE MUFFS.

HANDFORMED (FOAM) EARPLUGS ARE **DISPOSABLE**. CAN BE USED OVER MULTIPLE DAYS IF KEPT CLEAN, AND **DO NOT** REQUIRE FITTING BY MEDICALLY TRAINED PERSONNEL.



HOWEVER, MEDICAL PERSONNEL **MUST** FIT THE REQUIRED PREFORMED TRIPLE- OR QUAD-FLANGE EARPLUGS FOR EVERY SERVICE MEMBER.



Triple flange

Quadruple flange

NOISE MUFFS ARE POPULAR DUE TO EASE OF USE. HOWEVER, TO BE EFFECTIVE, THE HEADBAND AND EARCUPS **MUST** BE PLACED SNUGLY AGAINST THE HEAD WITH NO GAPS. THAT MAKES THEIR USE IMPRACTICAL IN SOME SITUATIONS.

YOU CAN ORDER NOISE MUFFS THROUGH THE FEDERAL SUPPLY SYSTEM OR FROM COMMERCIAL SOURCES.



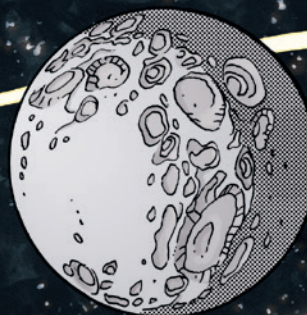
FOR A LIST OF **APPROVED HEARING PROTECTION** AND THE NSNs TO ORDER THEM IN VARIOUS SIZES, SEE TABLES 7-3 TO 7-5 IN DA PAM 40-501.

YOU'LL **ALSO** FIND INFO ABOUT THE ARMY HEARING PROGRAM (AHP), INCLUDING HEARING TESTING, PROTECTOR USE AND REQUIREMENTS, NOISE EXPOSURE LIMITS AND MORE.

QUESTIONS? CALL THE AHP OFFICE AT THE ARMY PUBLIC HEALTH CENTER AT (410) 436-3797, OR EMAIL: usarmy.apg.medcom-aphc.mbx.army-hearing-program@mail.mil

PS
END

Flight of the TRANQUILITY



We deliver for a fee, our ship's called Tranquility...

WHAT ARE YOU PICKING UP ON THE SENSORS?



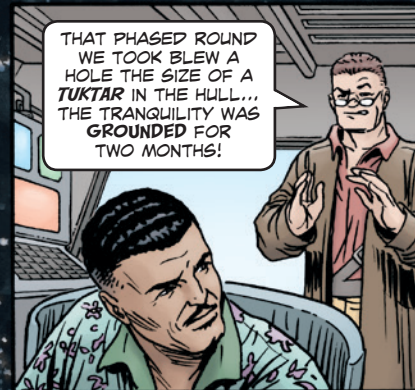
SHIPS AND LOTS OF THEM. I'VE NOT SEEN THIS MANY SQUADRONS TOGETHER SINCE CAESON IV, BUT THESE ARE LARGER, FASTER AND BETTER ARMED!

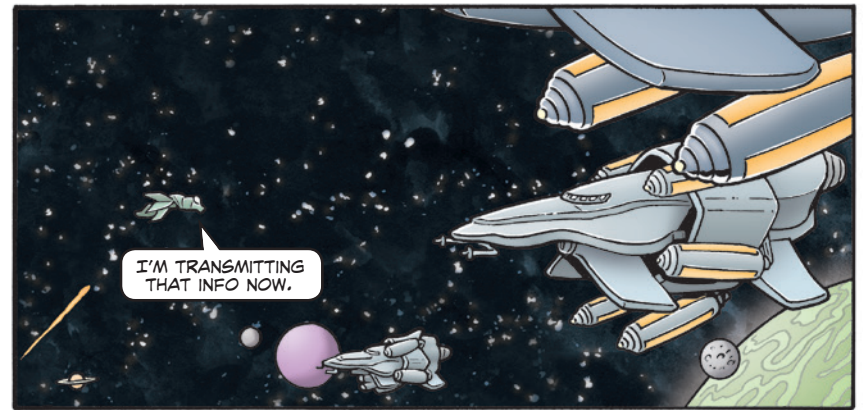
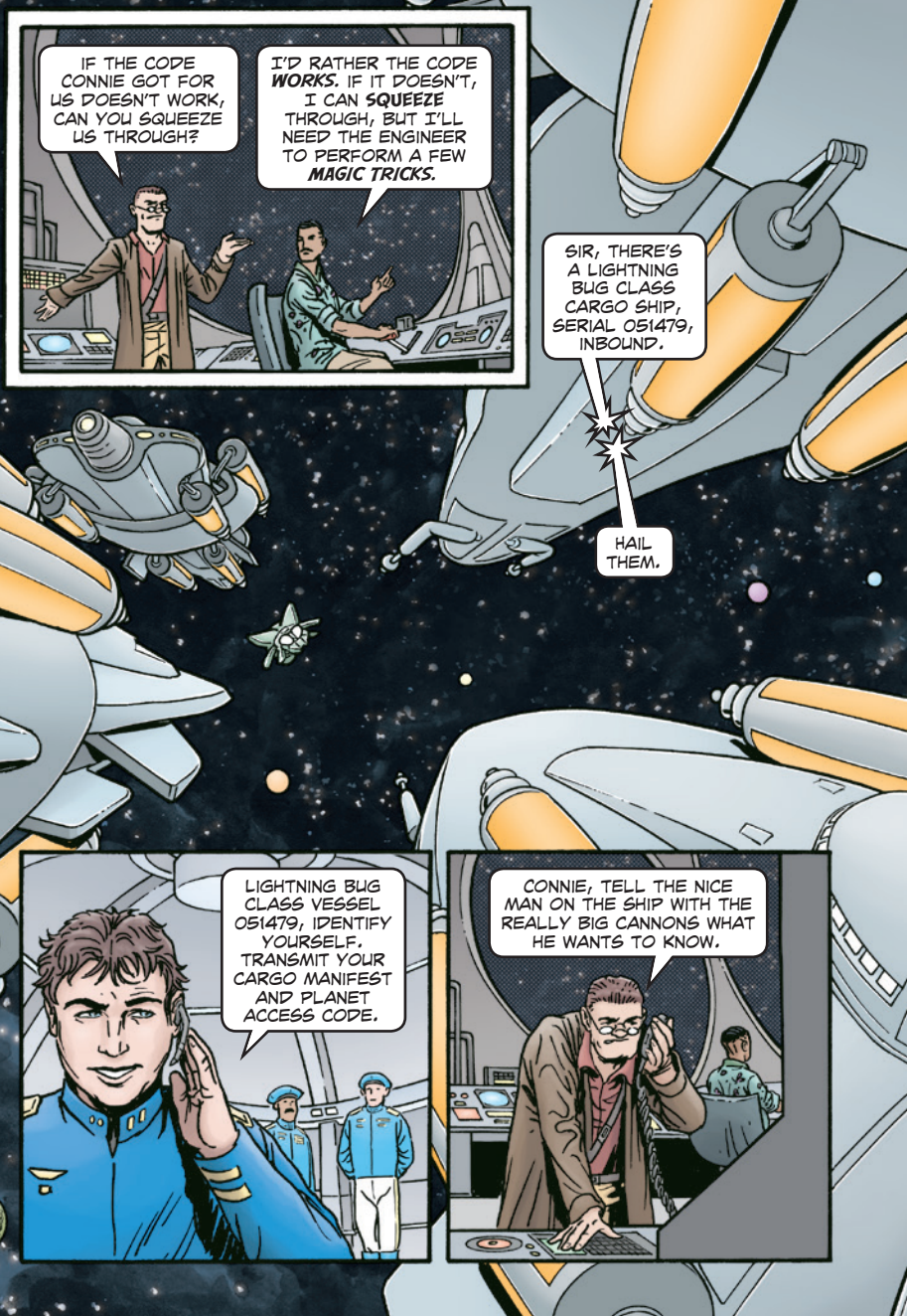
IT'S ALMOST AS IF THEY'RE **WAITING** ON SOMETHING...

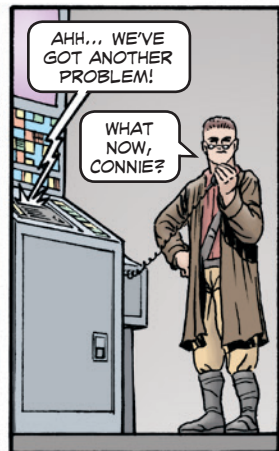
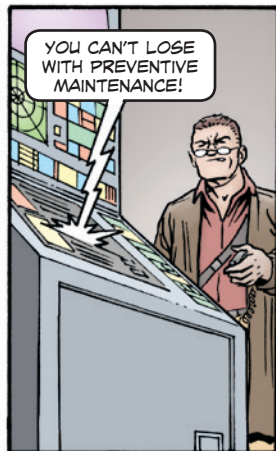
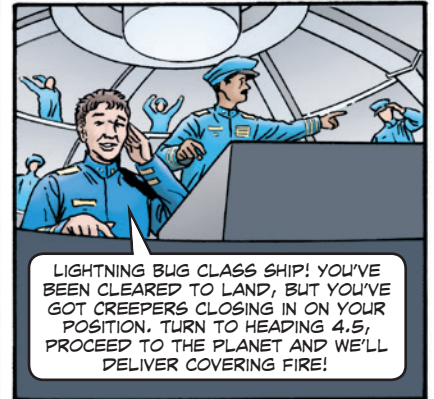
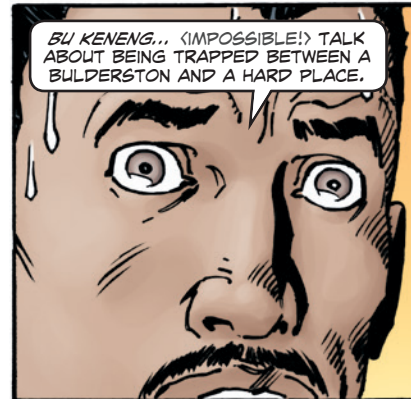
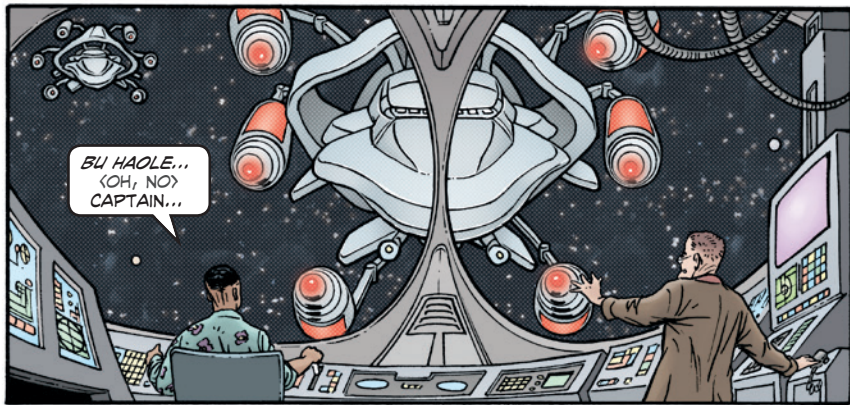
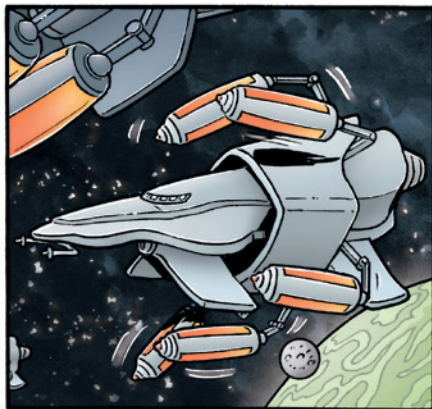
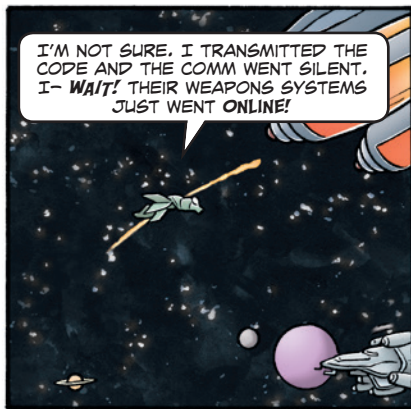
WO DE TIAN A! (MY GOODNESS!) WE **BARELY SURVIVED** CAESON IV.

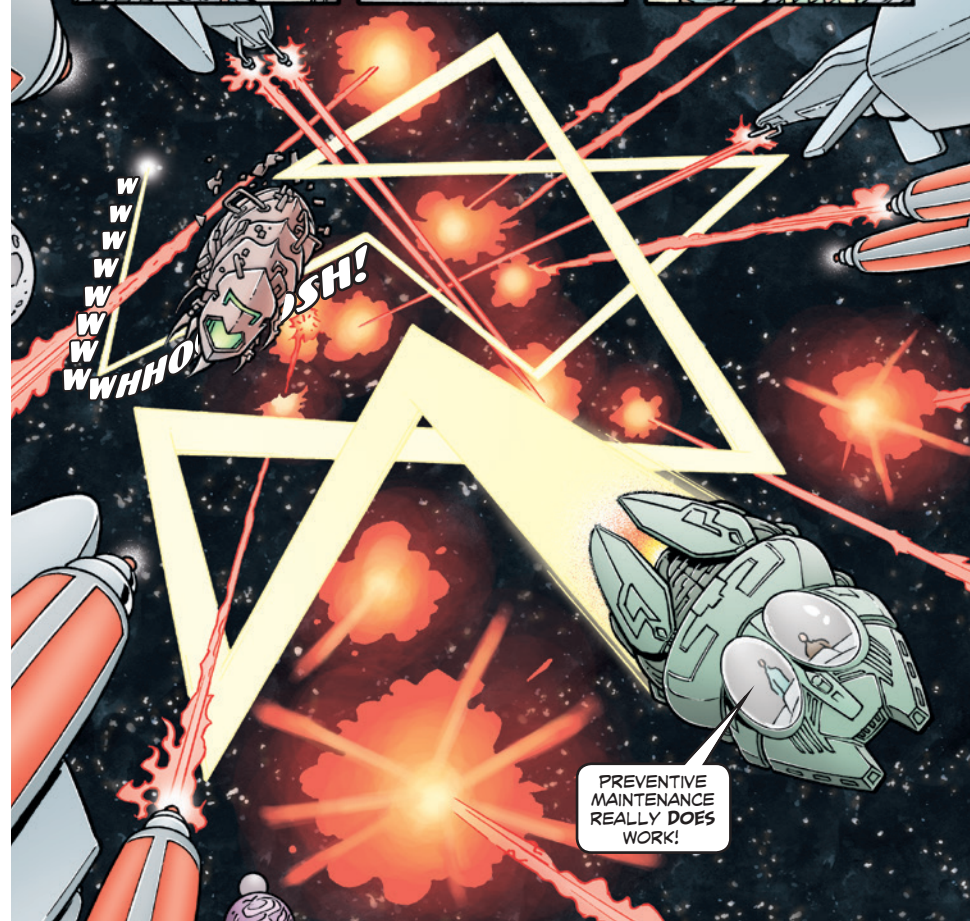
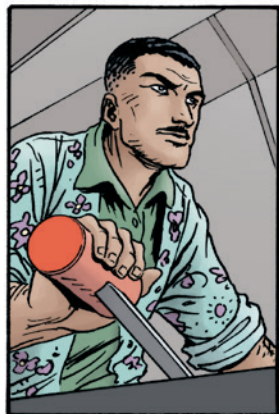
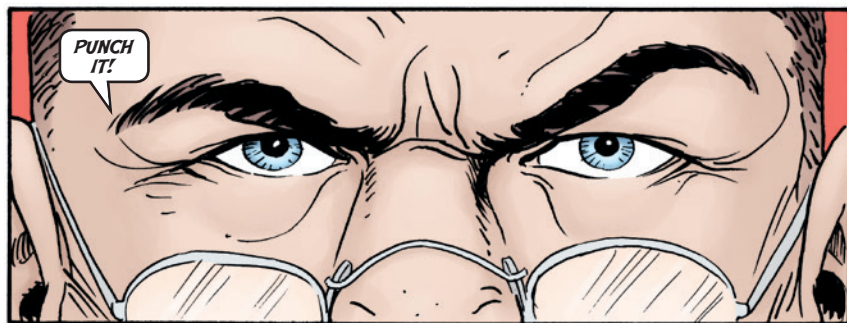


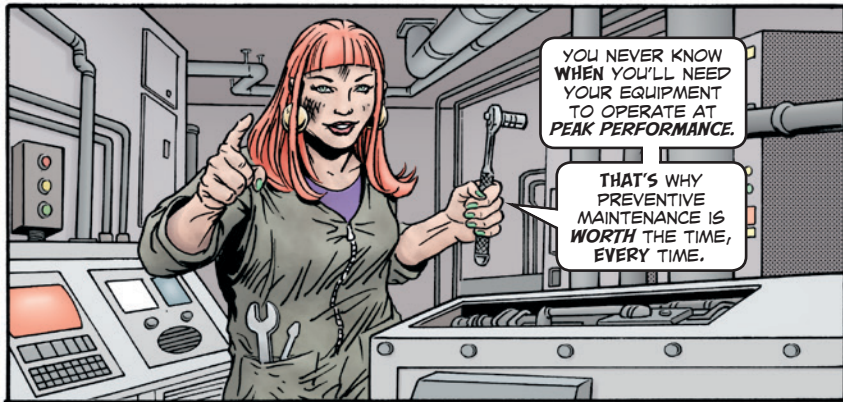
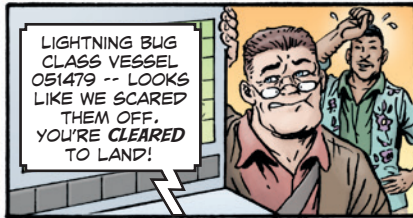
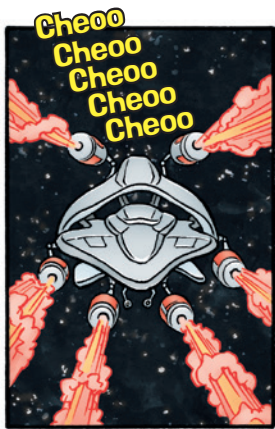
THAT PHASED ROUND WE TOOK BLEW A HOLE THE SIZE OF A TUKTAR IN THE HULL... THE TRANQUILITY WAS **GROUNDED** FOR TWO MONTHS!







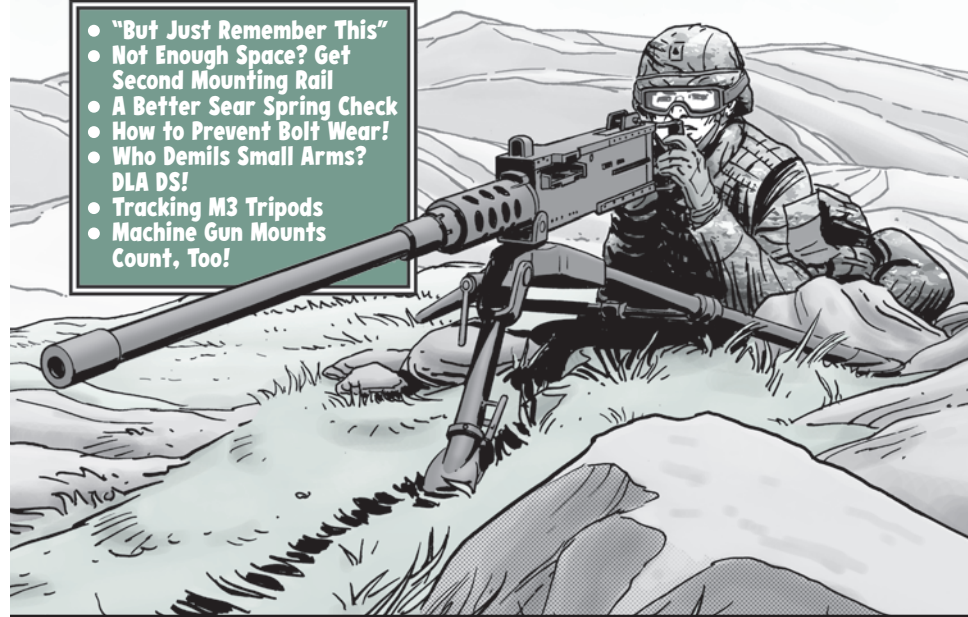




PM made the job easy... PM on Tranquility...

PS SMALL ARMS

- "But Just Remember This"
- Not Enough Space? Get Second Mounting Rail
- A Better Sear Spring Check
- How to Prevent Bolt Wear!
- Who Demils Small Arms? DLA DS!
- Tracking M3 Tripods
- Machine Gun Mounts Count, Too!



PS CBRN

- The ABCs of JCAD PM!



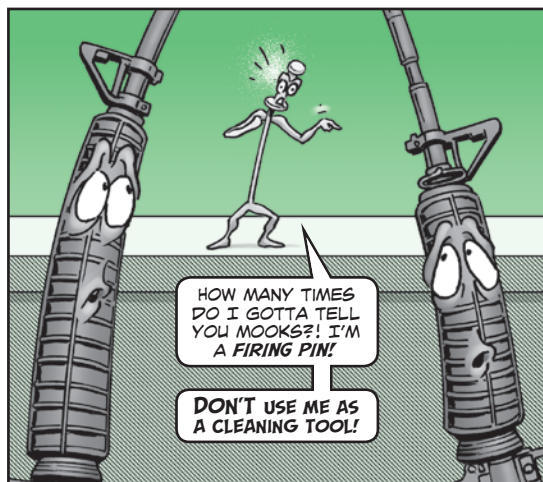
M16-Series Rifle,
M4/M4A1 Carbine...

"But Just Remember This"



The firing pin is not a cleaning tool. Somewhere—possibly in basic training—Soldiers get the idea that the firing pin is great for cleaning the bolt and inside the bolt carrier. That blunts the tip of the firing pin, which means it may not be able to ignite the cartridge. Of course, a rifle that doesn't fire could make a fire fight somewhat one-sided. Cleaning with the firing pin also scores the inside of the bolt carrier, making carbon buildup worse.

The best way to clean inside the bolt carrier is to coat its insides with CLP. Let the CLP sit for several minutes to give it a chance to loosen up carbon. Then use a **worn** bore brush to clean out carbon. Don't use a new bore brush because running it inside the carrier ruins it for cleaning the barrel.



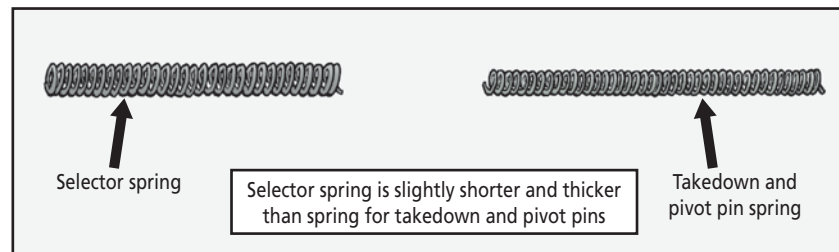
Use worn bore brush



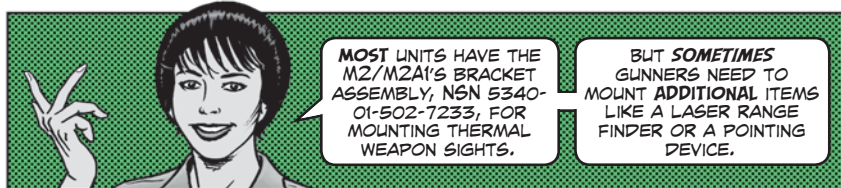
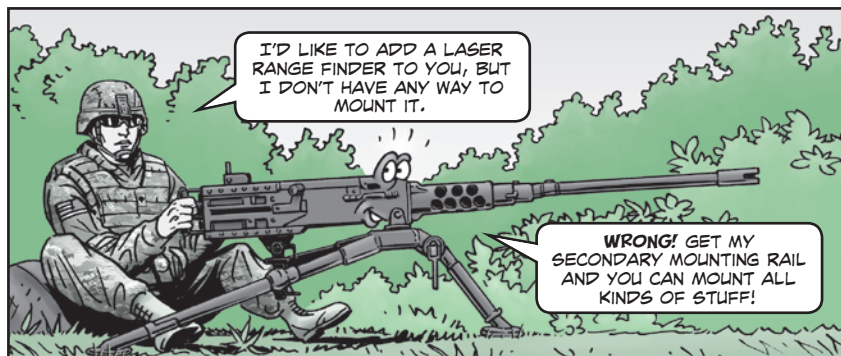
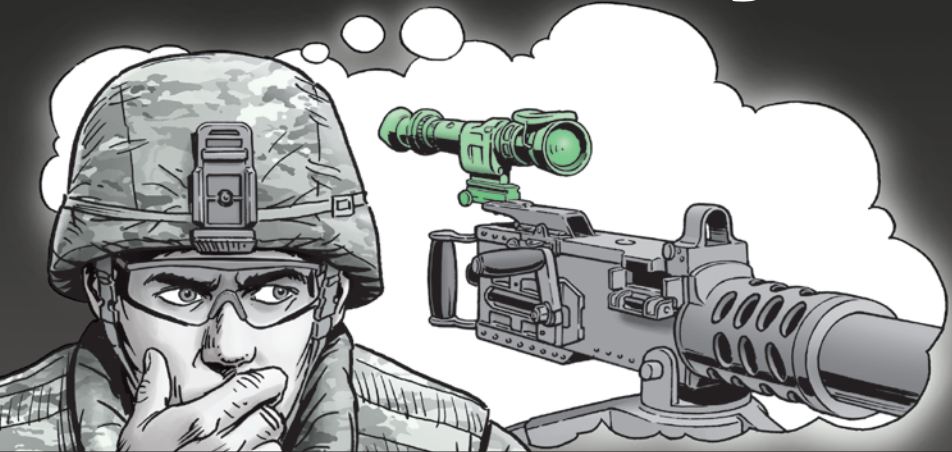
Cleaning inside bolt carrier **ruins** a good bore



Don't mix up the selector spring and the spring for the takedown and pivot pins. Neither will work well if you use the wrong spring. Just remember the selector spring is thicker and slightly shorter than the spring for the takedown and pivot pins.



Not Enough Space? Get Second Mounting Rail

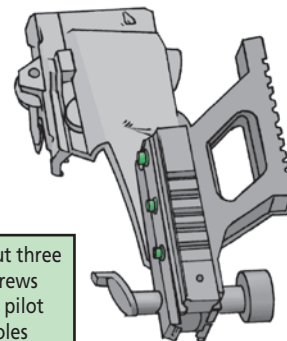


WITH THE SECONDARY MOUNTING RAIL KIT, NSN 5340-01-536-6189, YOU CAN DO THAT! THE KIT BRINGS...

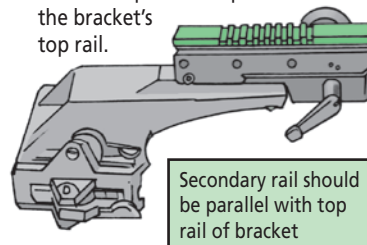
...THE SECONDARY RAIL, THE BRACKET ASSEMBLY AND ALL THE MOUNTING HARDWARE.

Here's how to put it on:

- Put the lock washers and then the flat washers on the three socket head cap screws.
- Make sure there is nothing blocking the three pilot holes on the bracket.
- Put the secondary rail against the bracket and install the three screws in the three pilot holes. Leave the screws loose enough so that the secondary rail is moveable.



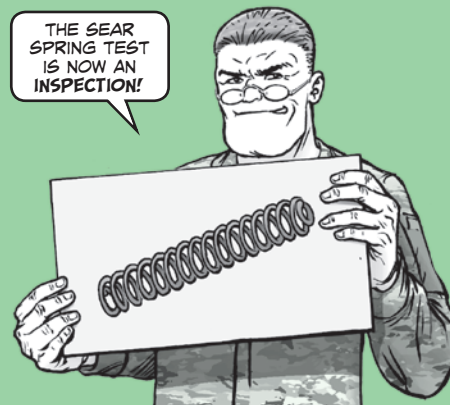
- Position the secondary rail against the bracket so that the rail's back edge butts up against the bracket's knob. Level the secondary rail so that it's as parallel as possible with the bracket's top rail.



- Tighten the three screws with a hex-head wrench. Be careful not to tighten them so much that you strip out the socket heads. If a torque wrench is available, tighten the screws to 75 lb-in.

A BETTER SEAR SPRING CHECK

THE SEAR SPRING TEST IS NOW AN INSPECTION!



Dear Half-Mast,

Item 10c in the M2/M2A1 machine gun's PMCS in TM 9-1005-347-10 says the sear spring "should not be able to be compressed fully with fingers." This is not an accurate measurement since people have different hand strengths. I have had inspectors fail M2s for this even with a brand new sear spring. Is there a better check?

Mr. J.C.

Dear Sir,

TACOM agrees that this is a poor test. They are replacing that sentence with "Check sear spring for deformity, collapsed coils, weakness, elongation, crisp spring action and/or correct installation. It must be in sear hole and recess in bottom of the bolt."

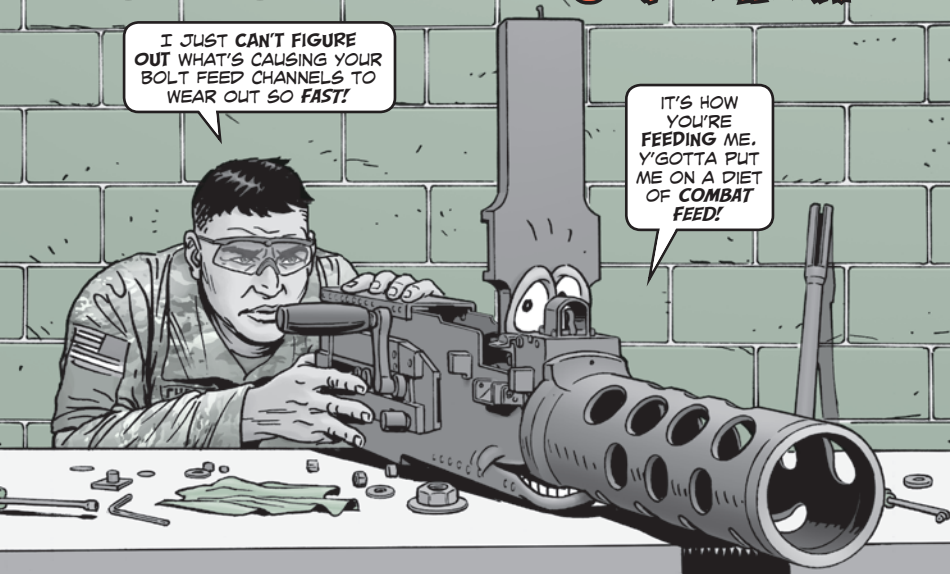
Everyone who uses or maintains the M2/M2A1 needs to make a note of this. It could be some time before the TM is revised.

Half-Mast

HOW TO PREVENT *BOLT WEAR!*

I JUST CAN'T FIGURE OUT WHAT'S CAUSING YOUR BOLT FEED CHANNELS TO WEAR OUT SO FAST!

IT'S HOW YOU'RE FEEDING ME. Y'GOTTA PUT ME ON A DIET OF *COMBAT FEED!*

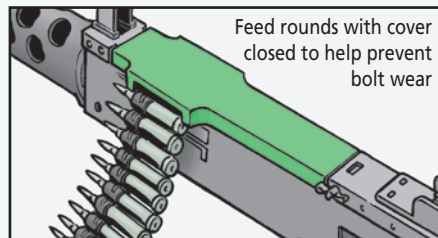


Dear Editor,

We were having problems with excessive wear on the M2 and M2A1 machine gun bolts, especially in the left-feed channel.

Turns out the wear was caused by how Soldiers load the M2. Normally you push the rounds over to the bolt with the feed cover up, push down the extractor, close the feed cover and then charge the weapon. But this method leaves the rounds not quite aligned. That causes the feed slide assembly to be misaligned just enough to put pressure on the feed lever, which wears the bolt feed channels.

TACOM told us we could prevent the excessive bolt wear by doing a "combat feed," which means loading the rounds with the feed cover closed. This lets the M2 feed the rounds so they seat perfectly in the feed pawls. But you must **charge the weapon twice** to make sure the round is pulled onto the bolt face and is ready to fire.

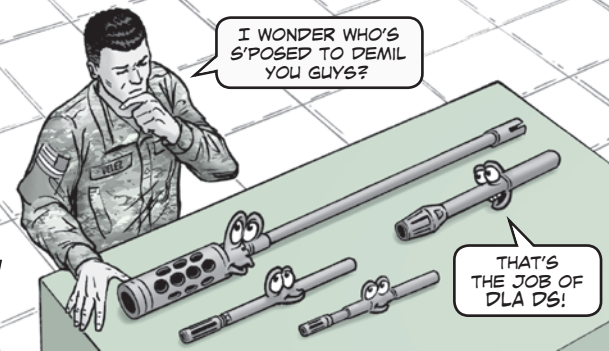


Feed rounds with cover closed to help prevent bolt wear

SGT Ronald Edwards
OHARNG

Editor's note: The combat feed is definitely a healthy diet for your M2s. Thanks, Sergeant.

Who Demils Small Arms? DLA DS!



Dear Editor,

Page 20 of PS 694 (Sep 10) told units not to demil unserviceable small arms parts. We're running into units who aren't sure who does demilling. Please repeat that information.

James Garner
JBLM, WA

Editor's note: Sure thing!

Demilling is the job of DLA Disposition Services (DLA DS). Unserviceable small arms parts should be turned in to your local supply support activity, which will then send the parts to DLA DS.

If you have any questions about the process, call DSN 786-1314, (586) 282-1314, or email:

randy.d.garwood.civ@mail.mil

Machine Gun Mounts...

TRACKING M3 TRIPODS

Dear Half-Mast,

How are you supposed to track M3 tripods? They used to have serial numbers, but the newer ones don't.

SGT A.H.

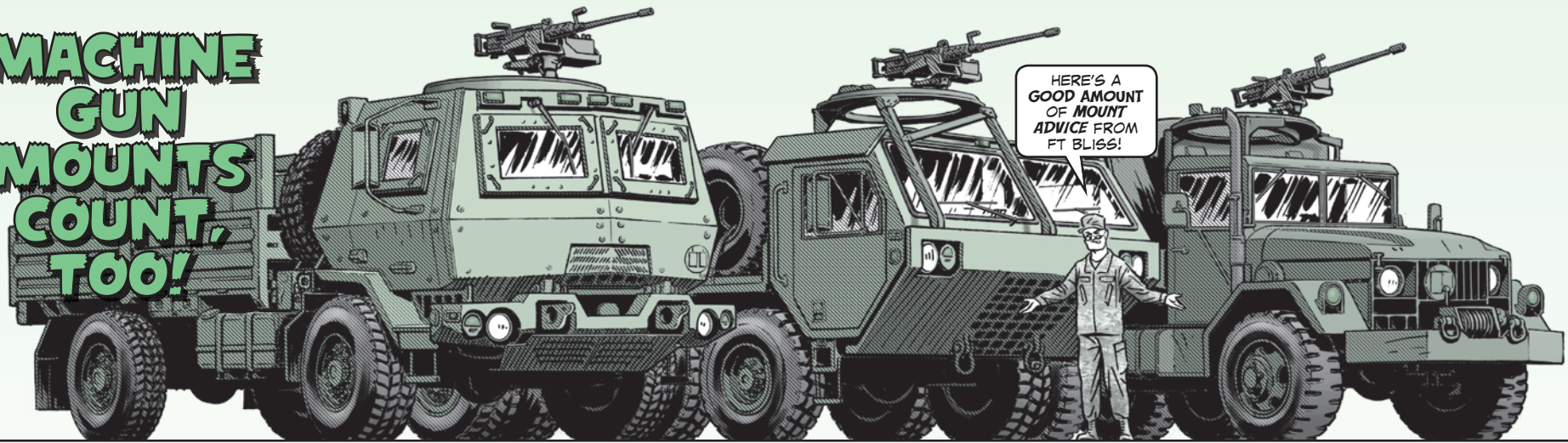
GOOD QUESTION. SERGEANT! THE ARMY NO LONGER PUTS SERIAL NUMBERS ON ITEMS THAT COST LESS THAN \$5,000. AND THE M3 FALLS INTO THAT CATEGORY.

THE EASIEST M3 TRACKING SOLUTION IS TO CREATE A SERIAL NUMBER FOR EACH TRIPOD. BUT **DON'T** STAMP THE NUMBER ON IT. THAT CAUSES PROBLEMS WHEN YOU TURN IN THE TRIPOD BECAUSE IT'S CONSIDERED A MODIFICATION. INSTEAD, **STENCIL** THE NUMBER.

ONE OTHER OPTION IS TO HAVE YOUR PROPERTY BOOK OFFICER CREATE AN **EXCEPTION CODE** FOR THE MOUNT IN PBUSE.



MACHINE GUN MOUNTS COUNT, TOO!



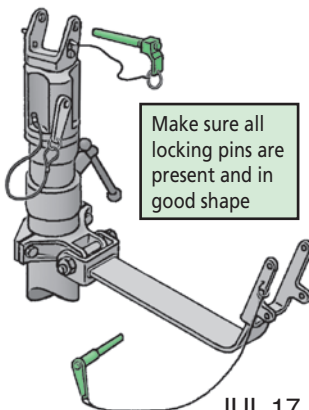
Dear Editor,

Often the most ignored items in arms rooms are machine gun mounts. They sit in the corner gathering cobwebs until it's time to go to the field. By then, the lack of PMCS can lead to a mount that's down for the count. If the mount doesn't work, the machine gun can't fire.

Units need to remember these points:

When you PMCS machine guns, get out the mounts and tripods and PMCS them, too. It doesn't take that much longer to check the mounts and tripods for damage and lube them so that they don't bind up from corrosion. Every unit with mounts should have TM 9-1005-245-13&P, which covers all the mounts except the M66. It's covered by TM 9-1005-451-13&P.

Check especially for locking pins. They often disappear. And if a pin looks even slightly damaged, get it replaced. You don't want a pin to break or fall out during firing. NSNs for the different pins are listed in the TMs mentioned earlier.



Never Fire an M240 From an MK 64 mount. We have run into several instances of this. If the M240 is mounted on an MK 64, there is no way to lock it down for travel. It flops up and down. We've seen units try to secure it with a bungee cord or have the gunner hold it in place while on the road. Not good! Generally the best mount for the M240 is the M197.



UNITS CAN COUNT ON YOUR MOUNT TIPS. THANKS, CHIEF.

BY THE WAY, THE MK 64 SHOULDN'T BE USED FOR ANY WEAPON. IT'S BEEN REPLACED BY THE MK 93 MOD 2.

IF YOU STILL HAVE ANY MK 64s, CONTACT YOUR LOCAL TACOM LAR FOR TURN-IN INSTRUCTIONS. SEE TACOM LCMC MI 16-025 FOR MORE INFO.



THE JOINT CHEMICAL AGENT
DETECTOR (JCAD) DETECTS LIKE A
BLOODHOUND IF YOU REMEMBER...

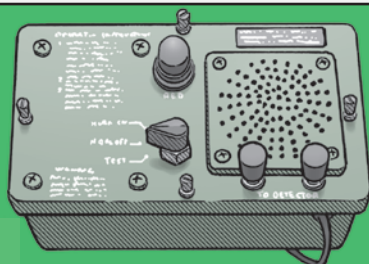
...THE ABCs OF JCAD PM!



IF YOU'RE JUST NOW
GETTING THE JCAD,
REMEMBER YOU MUST
TURN IN THE M22 ACADA,
WHICH JCAD REPLACES.

**BUT THERE ARE A
COUPLE OF CATCHES:**

- Keep the M42 alarm.
You'll need it for the JCAD.



- Because the ACADA's M88 detector has a radiation source, you can't just turn it in. You need to contact your unit radiation safety officer and transportation officer for help properly packing the detectors for shipping to Pine Bluff Arsenal. If you have questions, contact Denise Scott at (586) 282-4414 or email: armentha.d.scott.civ@mail.mil

STAY CONFIDENT IN CONFIDENCE SAMPLE

ONCE YOU TAKE A CONFIDENCE SAMPLE OUT OF ITS SEALED BAG, ITS SERVICE LIFE CLOCK STARTS CLICKING. SO LEAVE SAMPLES IN THEIR BAGS AS LONG AS POSSIBLE. IF JCAD IS HAVING TROUBLE READING A SAMPLE, IT MAY BE BECAUSE THE SAMPLE IS OLD AND NEEDS TO BE REPLACED.

OR THE PROBLEM COULD
BE **TOO MUCH BLOWING AIR**.
THE CALMER THE AIR, THE
EASIER IT IS FOR JCAD
TO READ THE SAMPLE.
IF YOU'RE OUTSIDE, TRY
TO GET OUT OF THE WIND.
IF YOU'RE INSIDE, TURN
OFF FANS.



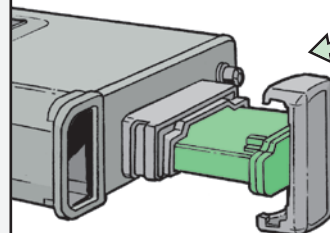
STORE THE CONFIDENCE SAMPLE IN THE SAMPLE POT AFTER USE.
THAT HELPS IT LAST LONGER.

TAKE CARE OF SIEVE PACKS

SIEVE PACKS ARE **CRITICAL** TO
JCAD PERFORMANCE. DON'T OPEN
SIEVE PACKS UNTIL YOU'RE READY
TO USE THEM. THAT HELPS THEM
LAST LONGER.



WHEN YOU REPLACE A SIEVE PACK, DON'T TOUCH IT WITH YOUR BARE FINGERS.
IF YOU DO, YOU COULD CONTAMINATE IT, WHICH LEADS TO BAD READINGS.

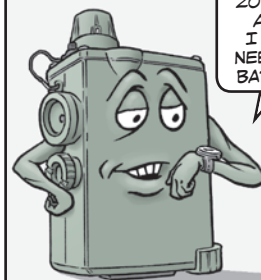


ALWAYS STORE JCAD WITH THE SIEVE PACK
INSTALLED. IF YOU DON'T, THE JCAD COULD
END UP CONTAMINATED. MAKE SURE THE SIEVE
PACK IS IN THE FULLY CLOSED POSITION. THIS
KEEPS THE SIEVE PACK IN GOOD CONDITION
AND MAKES SURE JCAD STARTS PROPERLY
NEXT TIME YOU POWER UP.

KEEP TRACK OF SIEVE PACKS. THEY OFTEN
DISAPPEAR. IF YOU NEED MORE, ORDER THEM
WITH NSN 6665-01-555-6120.

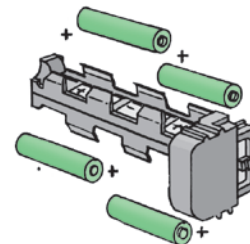
BATTERY BASICS

IF JCAD TAKES LONGER THAN
20 MINUTES TO BOOT UP, TRY THE
TROUBLESHOOTING PROCEDURES
IN WP 0011 FOR THE M4 OR
WP 0015 FOR THE M4A1.



NO LUCK? CALL IN YOUR REPAIRMAN.

USE FRESH
BATTERIES
AND INSTALL
THEM LIKE IT
SHOWS ON
THE BATTERY
TRAY. WEAK
BATTERIES
HURT
DETECTION.



REMEMBER TO
REMOVE THE
BATTERIES BEFORE
STORING JCAD!

LEAKING
BATTERIES
CAN RUIN US
DETECTORS!

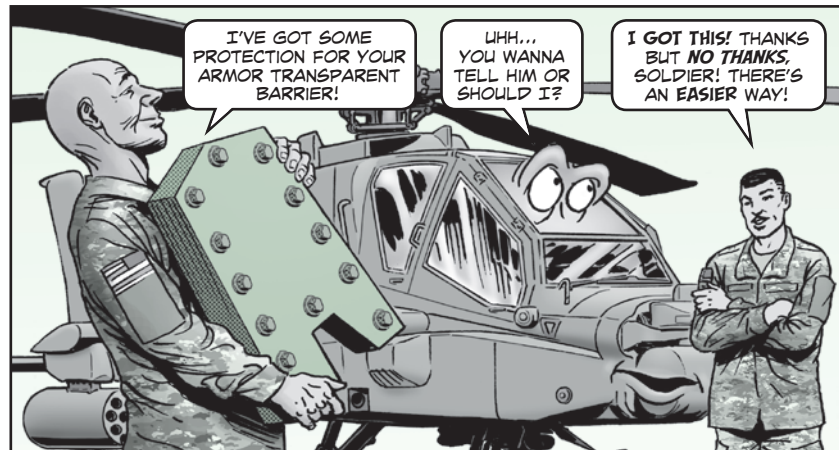




- Make Extra Protection for Armor Transparent Barrier!
- Ship Servocylinders in Original Containers
- When and Where to Use Aircraft Solvents
- Turn In Unserviceable UH-60M Drive Shaft Assemblies
- Turn In Unserviceable UH-60 Distribution Boxes

AH-64D/E Series...

MAKE **EXTRA** PROTECTION FOR ARMOR TRANSPARENT BARRIER!

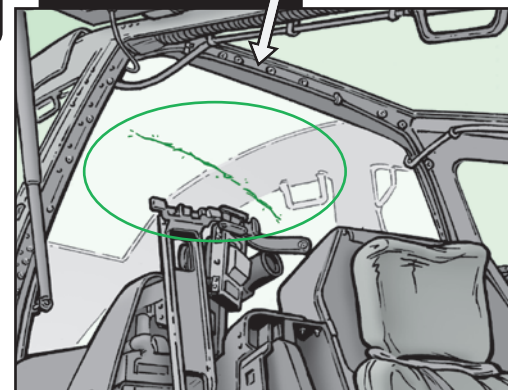


MECHANICS, WHEN IT'S TIME TO REMOVE OR INSTALL THE APACHE'S ARMOR TRANSPARENT BARRIER, NSN 1680-01-161-1182, AVOIDING DAMAGE ISN'T EASY!



THE BARRIER, WHICH IS LOCATED BETWEEN THE PILOT'S SEAT AND THE CO-PILOT GUNNER'S FRONT SEAT, OFTEN GETS SCRATCHED BY TOOLS.

A SCRATCHED BARRIER HAS TO BE REPLACED BECAUSE IT AFFECTS PILOT VISIBILITY.



A NEW BARRIER COSTS MORE THAN \$6,400 AND REQUIRES TWO MECHANICS AND ABOUT 16 HOURS TO REPLACE, SO YOUR UNIT TAKES A BIG HIT.

ON TOP OF THAT, THE DAMAGE BECOMES A CLASS D RECORDABLE INCIDENT BECAUSE IT EXCEEDS \$5,000.



A TRANSPARENT BARRIER FRESH OUT OF THE BOX COMES WITH A **PROTECTIVE FILM** THAT PROTECTS IT DURING INSTALLATION.

BUT FOR **FUTURE** REMOVAL AND INSTALLATION OR WHEN PERFORMING MAINTENANCE AROUND THE TRANSPARENT BARRIER, **USE EXTREME CARE!**

IF YOU WANT TO PLAY IT **SAFE**, HERE'S A VOLUNTARY OPTION TO MAKE A **TEMPORARY PROTECTIVE SHIELD** FOR THE TRANSPARENT BARRIER:

What You'll Need

IT'LL TAKE **ONE MECHANIC** ABOUT **TWO HOURS** TO CONSTRUCT THE PROTECTIVE COVER.

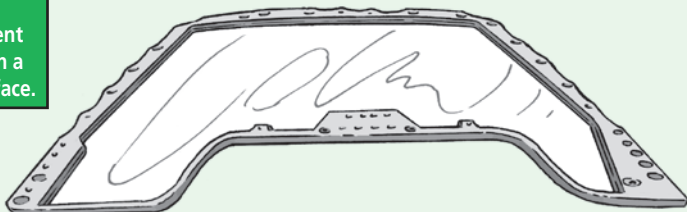
HERE'S WHAT YOU'LL NEED:

- **Transparent barrier**, NSN 1680-01-161-1182
- **Plastic sheeting**, NSN 9330-01-314-8346
- **Heavy duty scissors** for large cutting job such as "Fiskars" type scissors you can pick up at any big box store.
- **A marker** to outline the cutting area on plastic sheeting and label the cut sheets.

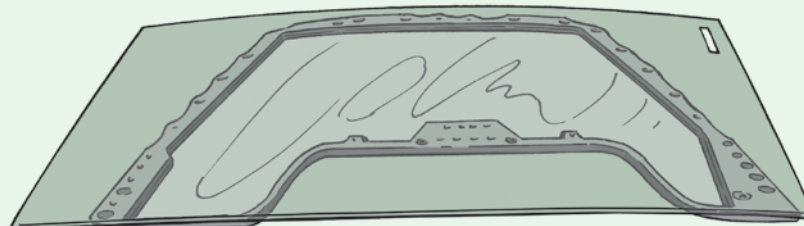


Instructions

1. Place the transparent barrier on a level surface.



2. Place the plastic sheeting over the transparent barrier.



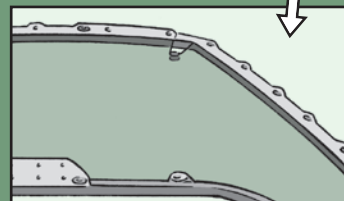
3. Using a marker, trace an outline of the transparent barrier onto the plastic sheeting. Repeat this step for the back side of the transparent barrier.

4. Using heavy duty scissors, cut along the outline on the plastic sheeting.

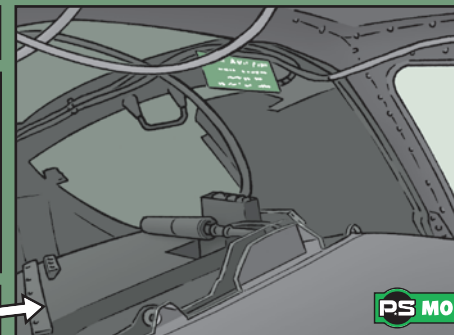


Note

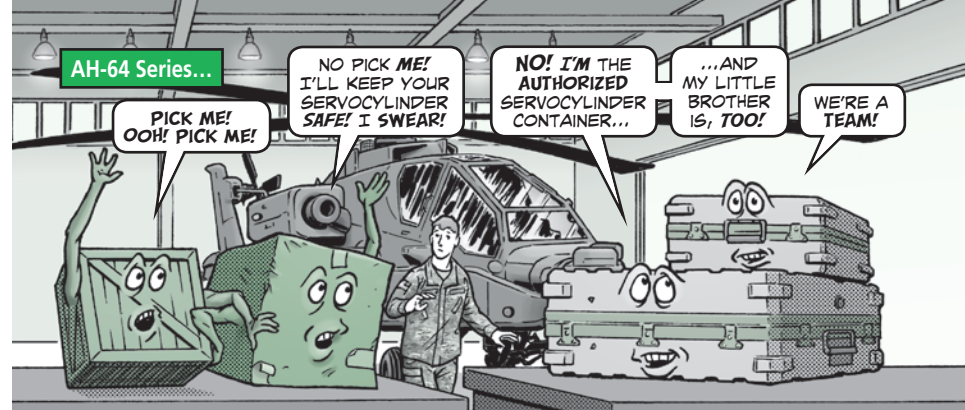
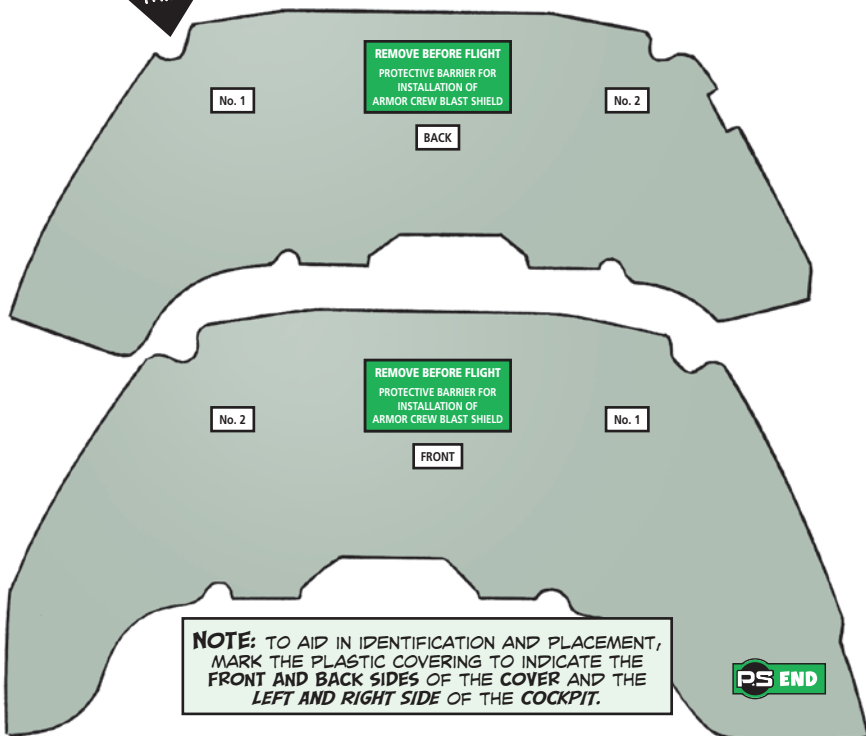
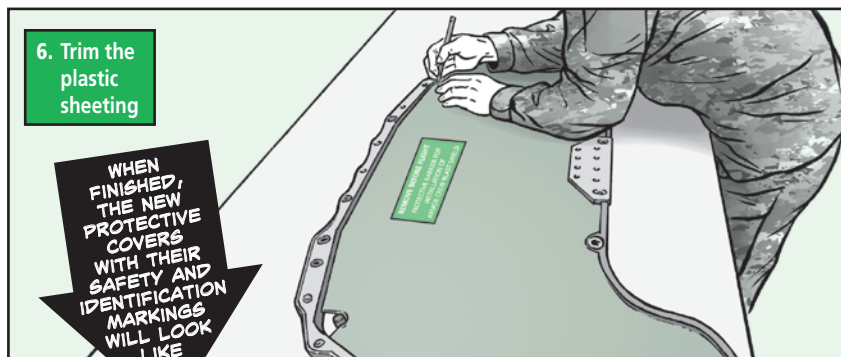
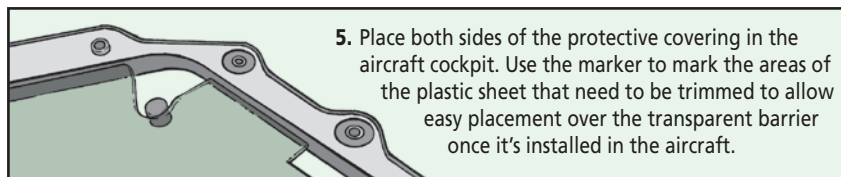
MARKINGS AND CUTS **DO NOT** HAVE TO BE PRECISE FOR THIS STEP...



...SINCE YOU WILL HAVE TO FORM FIT THE COVERS IN THE AIRCRAFT.



PS MORE



SHIP SERVOCYLINDERS IN ORIGINAL CONTAINERS



NEVER USE BOXES, CRATES OR ANY OTHER **UNAUTHORIZED** CONTAINER TO SHIP SERVOCYLINDERS.

ONLY THE ORIGINAL SHIPPING CONTAINERS WILL DO!

MECHANICS, WHEN YOU RECEIVE A **NEW** SERVOCYLINDER FOR YOUR APACHE, MAKE SURE YOU PLACE THE UNSERVICEABLE SERVOCYLINDER IT'S REPLACING IN THAT CONTAINER AND RETURN IT FOR REPAIR OR OVERHAUL.

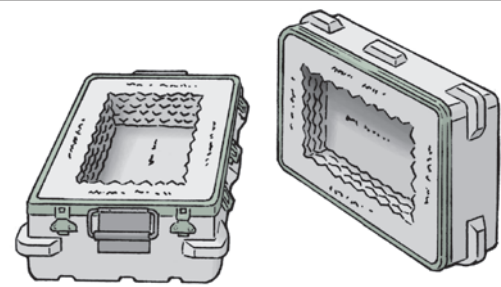
DON'T USE THE CONTAINERS FOR ANYTHING ELSE! SHIP AN UNSERVICEABLE SERVOCYLINDER IN A MAKESHIFT CONTAINER, BOX OR CRATE, AND THERE'S NO TELLING **WHAT** COULD HAPPEN TO IT DURING SHIPPING. BUT THE CHANCES ARE GOOD IT'LL ARRIVE WITH **EVEN MORE DAMAGE!**

THE CONTRACTOR THAT PERFORMS THE OVERHAUL IS REQUIRED TO SHIP THE SERVOCYLINDERS BACK TO THE DEPOT IN THE **PROPER** CONTAINER. IF THERE ISN'T ONE AVAILABLE, A NEW CONTAINER **MUST** BE PURCHASED AND SHIPMENT IS **DELAYED**.

IT'S ALSO IN **YOUR** BEST INTEREST TO MAKE SURE THOSE CONTAINERS ARE USED FOR SERVOCYLINDERS ONLY. IF YOU DON'T, YOUR UNIT FOOTS THE BILL FOR A NEW CONTAINER.

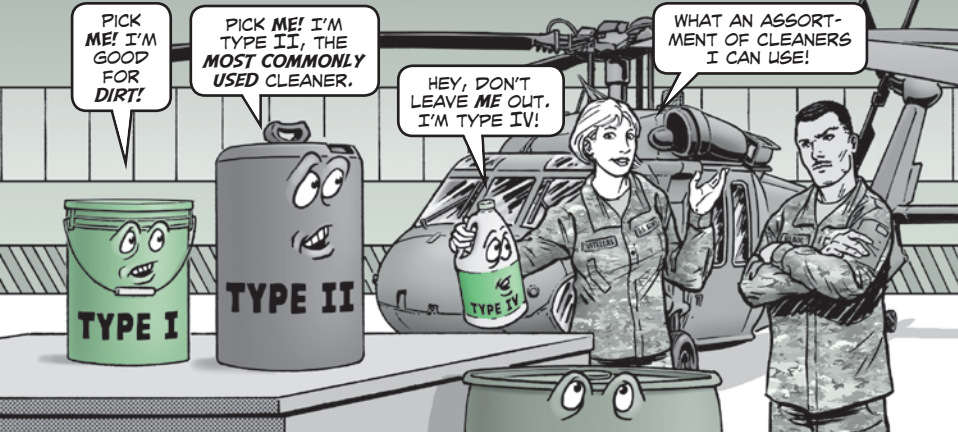
Use right containers for shipping servocylinders!

Two sizes:
32L x 21W x 17H (pictured)
and 18L x 17.75H x 13.75H)



TURNING IN SERVOCYLINDERS SHOULD BE A SIMPLE PROCESS, SO DON'T MAKE IT ANY HARDER OR MORE EXPENSIVE THAN IT NEEDS TO BE!

WHEN AND WHERE TO USE AIRCRAFT SOLVENTS



FOR MANY YEARS, MIL-PRF-680 TYPE II WAS THE APPROVED CLEANER FOR ARMY AVIATION COMPONENTS. IT WAS INTENDED MOSTLY AS AN IMMERSION CLEANER, BUT COULD ALSO BE USED AS A HAND WIPE CLEANER.

BUT ENVIRONMENTAL REGULATIONS IN SOME AREAS REQUIRE A SOLVENT WITH A VOLATILE ORGANIC COMPOUND LIMIT (VOC) OF LESS THAN OR EQUAL TO 25 GRAMS/LITER (g/l).

NAVSOLVE (MIL-PRF-32295) WAS DEVELOPED AS THAT ALTERNATIVE!

**BOTH
MIL-PRF-680
AND NAVSOLVE
ARE FREE OF
HAZARDOUS AIR
POLLUTANTS
(HAPS)!**

BELOW ARE THE APPLICATIONS AND RESTRICTIONS FOR USING MIL-PRF-680 AND NAVSOLVE. USE THIS LIST FOR GUIDANCE ON ARMY AIRCRAFT:

Spec	VOC (g/l)	NSN 6850-	Size	Comments
MIL-PRF-680 Type I	+/- 750	01-474-3202 01-474-3209 01-474-2313	1 gal 5 gal 55 gal	Used to clean parts contaminated with light dirt, oil, and grease.
MIL-PRF-680 Type II	+/- 750	01-474-2319 01-474-2317 01-378-0698 01-474-2316	1 gal 5 gal 15 gal 55 gal	Most commonly used solvent used to clean Army aviation components for many years.
MIL-PRF-680 Type III	+/- 830	01-474-2318 01-474-2321 01-474-2321	1 gal 5 gal 55 gal	Used when a higher flash point is required.
MIL-PRF-680 Type IV	+/- 750	N/A	N/A	Not approved for use on Army aviation equipment. It contains D-limonene which may cause corrosion on flight critical parts.
MIL-PRF-680 Type V	≤25	N/A	N/A	Not approved for Army aviation equipment, though approval could be pursued if requested. More expensive than MIL-PRF-32295.
MIL-PRF-32295 Type II NAVSOLVE	≤25	01-606-8356 01-606-8357 01-606-3293 01-606-8358	4 gal 5 gal 15 gal 55 gal	Approved as an alternative to MIL-PRF-680 Type II. The preferred alternative when environmental regulations require ≤25 VOC g/l. Flash point is lower than MIL-PRF-680 Type III. Local safety office must approve NAVSOLVE as an alternative to MIL-PRF-680 Type III before use.

THE TM I'M USING DOESN'T CALL OUT THE SOLVENT LISTED FOR MY APPLICATION. WHAT DO I DO?

YOU CAN GET PERMISSION TO USE AN ALTERNATIVE BY CALLING YOUR LOCAL AED LIAISON ENGINEER OR THE AMCOM ENVIRONMENTAL HOTLINE AT DSN 987-1711, (256) 313-1711 OR BY EMAIL: usarmy.amcom-environmental@mail.mil

THEY CAN ALSO PROVIDE HELP WITH TM CHANGES.

Turn In Unserviceable UH-60M Drive Shaft Assemblies

The supply system is in critical need of unserviceable M-Model Black Hawk drive shaft assemblies, NSN 1615-01-491-1924 (PN 70361-23001-047). Turn in this needed asset **now** or you might not get the repaired part you need for your helicopter later.

Turn In Unserviceable UH-60 Distribution Boxes

Unserviceable Black Hawk distribution boxes, NSN 6110-01-324-2226 (PN 70550-02127-104), are not being turned in for repair. The supply system is in critical need of this item to support the flutter dampener repair program. So turn in this needed asset **now**. If you don't, you might not get the repaired part you need for your helicopter later.



- **AI2 Program Is Win-Win!**
- **Eyes on Safety**
- **3 Tips for Getting PS Back Issues!**

AI2 Program Is Win-Win!

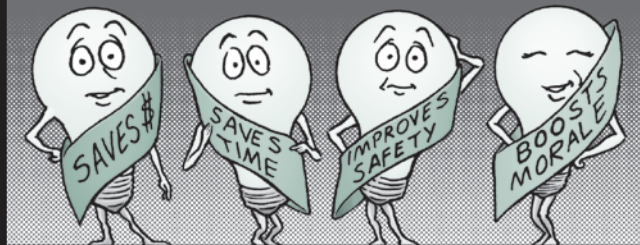


ARMY IDEAS FOR INNOVATION (AI2) REPLACES THE OLD ARMY SUGGESTION PROGRAM AS THE WAY TO SHARE YOUR IDEAS TO:

- save the Army time and money
- improve processes
- AND EVEN
- boost morale!

POINT YOUR WEB BROWSER TO: <https://www.milsuite.mil/ai2>

ONCE THERE, YOU CAN SUBMIT SUGGESTIONS, DISCUSS PROPOSALS WITH OTHER MEMBERS OF THE AI2 COMMUNITY AND VOTE FOR THE IDEAS YOU THINK ARE BEST.



ALL SELECTED SUBMISSIONS ARE OPEN FOR FEEDBACK AND VOTING OVER A TWO-WEEK PERIOD.

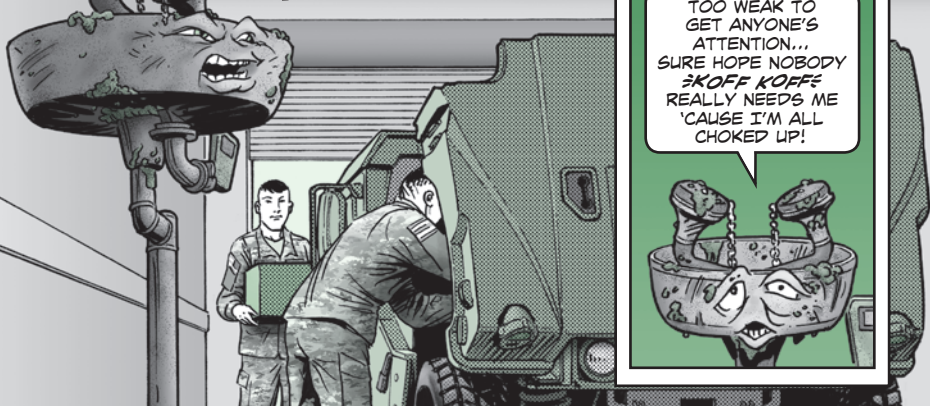
TOP IDEAS WILL BE TESTED BY DEPARTMENT OF THE ARMY EXPERTS. IF **ACCEPTED**, IT COULD BECOME AN ARMY-WIDE SOLUTION!

THAT AMOUNTS TO A LOT OF SELF-ESTEEM FOR HELPING TO IMPROVE READINESS. BUT IT CAN ALSO HAVE **TANGIBLE BENEFITS** FOR YOU. COMMANDERS ARE AUTHORIZED AND ENCOURAGED TO OFFER **REWARDS AND INCENTIVES** FOR IDEAS. YOU NOT ONLY HELP THE ARMY, BUT YOU MAY GET A LITTLE SOMETHING FOR YOURSELF TOO!

HOW'S THAT FOR A WIN-WIN SITUATION?!

Eyes on Safety

KOFF!
KOFF!



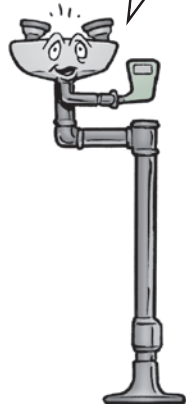
I'M ALL CRUDDY AND CLOGGED... THROAT'S FULL OF #KOFF KOFF SEDIMENT...

TOO WEAK TO GET ANYONE'S ATTENTION... SURE HOPE NOBODY #KOFF KOFF REALLY NEEDS ME 'CAUSE I'M ALL CHOKED UP!



THOSE OF YOU WHO WORK IN THE MOTOR POOL KNOW THERE ARE MULTIPLE RISKS TO YOUR EYES THERE, JUST FROM WORKING AROUND STUFF LIKE BATTERY ACID, ENGINE OIL OR FUEL, TO NAME A FEW.

THAT'S WHY IT'S IMPORTANT TO FOLLOW ARMY SAFETY RULES LIKE THOSE FOUND IN DA PAM 40-506, THE ARMY VISION CONSERVATION AND READINESS PROGRAM (JUL 09). WATCH FOR AN UPDATE FOR THIS PUB IN THE NEAR FUTURE.



BOTH THE ARMY AND OSHA DEFER TO THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) Z358.1...

ANSI Z358.1 EMERGENCY EYEWASH AND SHOWER EQUIPMENT

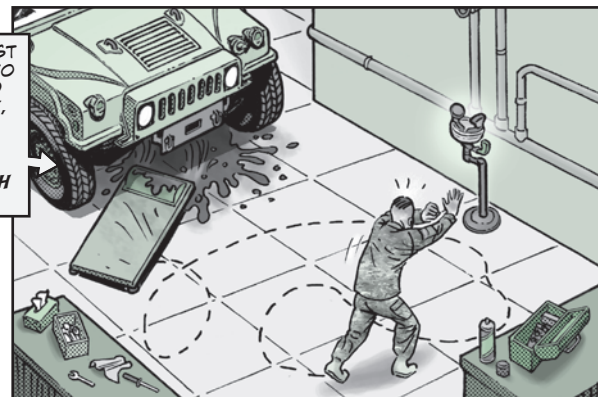
...FOR EYEWASH STATIONS AND EMERGENCY DRENCH SHOWER STANDARDS.

YOU CAN VIEW ANSI'S WEBSITE AT:
<http://www.ansi.org>

THE ANSI Z358.1-2014 STANDARD SETS UNIVERSAL MINIMUM PERFORMANCE AND USE REQUIREMENTS FOR EYEWASH AND EMERGENCY DRENCH SHOWER EQUIPMENT USED FOR TREATING THE EYES, FACE AND BODY OF ANYONE EXPOSED TO HAZARDOUS MATERIALS OR CHEMICALS. THE STANDARD COVERS EVERYTHING FROM EQUIPMENT LOCATION TO MOUNTING HEIGHT AND WATER TEMPERATURE.

EYEWASH STATIONS MUST ALSO BE ACCESSIBLE TO EMPLOYEES WITHIN 10 SECONDS OF AN INJURY. SO THEY NEED TO BE INSTALLED CLOSE TO POTENTIAL HAZARDS. KEEP PATHS TO EYEWASH STATIONS CLEAR!

BUT LIKE MOST EQUIPMENT, EYEWASH STATIONS AND EMERGENCY DRENCH SHOWERS NEED PMCS, TOO. A DIRTY, CLOGGED OR BROKEN STATION OR SHOWER POSES AN UNACCEPTABLE RISK TO WORKERS.

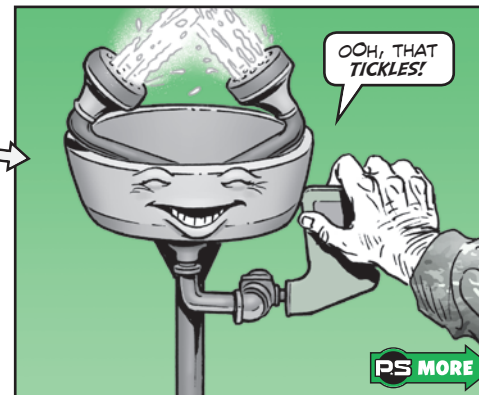


OF COURSE, MANY MANUFACTURERS INCLUDE MAINTENANCE GUIDES WITH THEIR EQUIPMENT. BUT TAKE A NOTE FROM ANSI, WHICH SAYS THAT PROPER MAINTENANCE AND WEEKLY TESTING IS NECESSARY TO ENSURE THAT EMERGENCY DRENCH SHOWERS AND EYEWASH STATIONS ARE FUNCTIONING PROPERLY.



WEEKLY TESTING HELPS CLEAR THE SUPPLY LINES OF SEDIMENT AND BACTERIA BUILD-UP CAUSED BY STAGNANT WATER. THE ANSI STANDARD STATES THAT PLUMBED FLUSHING EQUIPMENT: "SHALL BE ACTIVATED WEEKLY FOR A PERIOD LONG ENOUGH TO VERIFY OPERATION AND ENSURE THAT FLUSHING FLUID IS AVAILABLE."

THE ANSI Z358.1-2014 STANDARD ALSO REQUIRES THAT PORTABLE AND SELF-CONTAINED EQUIPMENT "BE VISUALLY CHECKED TO DETERMINE IF FLUSHING FLUID NEEDS TO BE CHANGED OR SUPPLEMENTED."



PS MORE

Eye Emergency Equipment Checklist

- Are eyewash stations, drench hoses and showers checked once a week?
- Are inspection records kept?
- Is flushing solution checked and replaced when needed?
- Are basins kept clean, free of trash or debris?
- Is each system tested weekly?
- Are plumbed lines flushed weekly to prevent bacterial or sediment buildup?
- If a contained unit has potable water in it, is the water changed weekly?
- If a contained unit has water with an antimicrobial agent in it or a buffered saline solution, is it changed at least once every six months?

FOR MORE WORKPLACE SAFETY TIPS, CHECK OUT THE U.S. ARMY COMBAT READINESS/ SAFETY CENTER'S ON-DUTY SECTION AT:

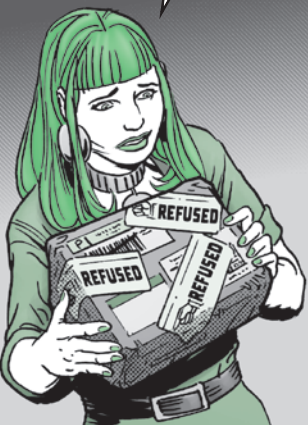
<https://safety.army.mil/ON-DUTY.aspx>



PS
END

3 TIPS FOR GETTING PS BACK ISSUES!

THIS WAS A *PS* BACK ISSUE REQUEST, BUT THE UNIT **REFUSED DELIVERY**. WONDER WHY?



MAYBE THE SOLDIER WHO ORDERED THESE BACK ISSUES **DIDN'T** LET THEIR UNIT'S MAIL CLERK KNOW THEY WERE **EXPECTING** A PACKAGE.



THAT'S ANOTHER **IMPORTANT TIP** WE SHOULD PASS ON TO OUR READERS.



WE GET LOTS OF REQUESTS FOR *PS* BACK ISSUES. **THAT'S GREAT!**

BUT WE ALSO GET RETURNS FROM THE POST OFFICE AFTER FILLING BACK ISSUE REQUESTS. **THAT'S NOT SO GREAT AND IT'S COSTLY, TOO.**



HERE ARE **THREE TIPS** TO HELP MAKE SURE THOSE BACK ISSUES **REACH** YOU...

1. Give us a good mailing address. Most returns are due to incomplete or inaccurate mailing addresses. Including a street with the address is critical. If you have any problems with mail reaching you at your military address, use your home address instead. No worries—our mailing list is never sold or shared.
2. We've gotten "refused" returns, too. Make sure that you tell whoever usually gets the mail at your unit that you're expecting a package from *PS*.
3. In your original request, specify the months or years and how many copies of each *PS* issue you want.

SEND YOUR BACK ISSUE REQUEST TO:
usarmy.redstone.logsa.mbx.psmag@mail.mil

YOU CAN ALSO REQUEST BACK ISSUES BY CLICKING ON THE **REQUEST BACK ISSUE** BUTTON AT OUR WEBSITE:
<https://www.logsa.army.mil/psmag/pshome.cfm>

JUST SCROLL DOWN TO THE BOTTOM OF THE TAN-COLORED COLUMN.



YOU CAN ALWAYS **DOWNLOAD *PS* IN DIGITAL FORM** FROM OUR WEBSITE, TOO!

FEEDBACK

YOUR FEEDBACK MATTERS TO *PS*!

Selecting a feedback topic will open an email on your PC.

In the email, include your:

- Name
- Rank/SS
- Unit
- Phone Number

QUESTION

ARTICLE IDEA

COMMENT

In the email, include your:

- Name
- Rank/SS
- Unit
- Phone Number
- Full Mailing Address
- Magazine Issue Number or Month/Year

REQUEST BACK ISSUE

PS
Mobile
App



YOU CAN ALSO LOAD RECENT ISSUES OF THE MAGAZINE TO YOUR MOBILE DEVICE BY USING THE *PS* MAGAZINE MOBILE APP. READ ABOUT IT AT:

<https://www.logsa.army.mil/psmag/ps-app-flyer.pdf>

Connie's POST SCRIPTS

STRYKER WINCH INFO WRONG!

OOPS!
ON PAGE 10 OF
PS 773, APR 17,
THE BROWN BOX
WITH THE ARROW
INCORRECTLY
STATED,
"LONGER
ELECTRICAL LEAD
IS #3 (OUT)."

IT **SHOULD**
HAVE READ,
"LONGER
ELECTRICAL LEAD
IS #3 (IN)."



M915A5 Radiator NSNs

The replacement radiator to order for your M915A5 tractor truck depends on the vehicle's serial number. For SN AS8388-AS8545 to AS8962-AZ3356, order NSN 2930-01-597-0622. For SN AJ1134-AS8387 to AS8546-AS8961, use NSN 2930-01-581-2109.

BRADLEY FUEL FILLER CAP REFURBISH

Is your Bradley's fuel filler cap, NSN 2590-01-482-1662, damaged or worn?

Put it back in tip-top condition by ordering a fuel cap gasket kit with NSN 2590-01-461-5874. A new fuel cap seal comes with NSN 5330-01-490-6605.

STRYKER WRONG-WAY WINCH

If the control electrical lead tags on your Stryker's winch aren't installed correctly, you could end up with a wrong-way or inoperable winch. That could damage equipment or get someone hurt. Get the scoop on preventing that by checking out TACOM Ground GPA 16-012 at:

<https://tulsa.tacom.army.mil/Safety/message.cfm?id=GPA16-012.html>

MIRCS Generator Mounting Bracket Pin

Get a replacement quick-release pin for the generator mounting bracket on the mobile integrated remains collection system (MIRCS) with NSN 5315-01-586-2176. Don't use NSN 5315-01-586-2186, which is listed as Item 7 in Fig 46 of TM 10-4110-263-23P (Dec 10). That NSN is one digit off and brings a \$1,000 circuit card assembly.

M149A2 Frame SMR Correction

TM 9-2330-267-13&P (Dec 15) lists the M149A2 water trailer's frame (Item 1 in Fig 14) with an SMR code of PAFZZ, indicating that it's a field replacement item. That's wrong! The correct SMR code is XAZZZ, requisition the next higher assembly. Make a note until the TM is updated.

CONTAINERIZED KITCHEN WATER PUMP

Order a new water pump for the sink in your containerized kitchen with NSN 4320-01-486-3601 (PN 2088-594-154). PN 2088-492-444, which is shown as Item 5 in Fig 19 of TM 10-7360-226-13&P (Aug 01, w/Ch 4, Mar 07), doesn't cross to an NSN.

DSESTS Help Available

Got problems with your direct support electronic systems test set (DSESTS)? Field service representatives (FSRs) can help over the phone or by email. Call John Moore at (256) 895-2472, (256) 361-8300 or email: john.moore@drs.com

To request an FSR field visit, contact your local LAR or email the TACOM DSESTS team at: usarmy.detroit.tacom.mbx.ilsc-dsests@mail.mil

TEST SETS TURN-IN

Mechanics, turn in the following obsolete test sets ASAP. Download the letter of instruction (LOI) from the MSD Homepage: <https://msd.us.army.mil>

Test Set	NSN
STE and STE-ICE/R	4910-00-124-2554 or 4910-01-222-6589
AN/PSM-80 V1	6625-01-352-7233
AN/PSM-80 V2	6625-01-352-3060
AN/PSM-80 V3	6625-01-352-7234
AN/PSM-95 SPORT	6625-01-445-0085
SPORT ICE	6625-01-477-1807
Electrical System Test Set (DMM/Black Ice)	6625-01-498-9881
AN/PSM-95B MSD	6625-01-493-8984

Bradley LRU TMs

Need a technical manual that covers line replaceable unit (LRU) troubleshooting and repairs? A two-volume TM, *Troubleshooting and Maintenance of Line Replaceable Unit's Field Maintenance Manuals with Repair Parts and Special Tool List*, for the M2A3, M3A3 BF1ST and M2A2 ODS SA Bradley is now available. Download TM 9-2350-406-23&P-1 and TM 9-2350-406-23&P-2 on LOGSA's Electronic Technical Manuals Online website:

<https://liw.logsa.army.mil/etmapp/#/etm/home>

M119A3 W16 Cable

If you order NSN 6145-01-547-8957, listed as Item 52 in Fig 64 of TM 9-1015-260-24P (Feb 15), you might get a W16 cable without cable grips for the M119A3 howitzer. If you do, **don't** modify the cable! Instead, order NSN 6150-01-659-3604 to get the right W16 cable.

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

Got a question
about

VEHICLE BATTERIES?

WE'RE
HERE TO
HELP!



**Call TARDEC's Battery Hotline at
DSN 786-8000 or (586) 282-8000!**