



COMBAT VEHICLES

M119A2 Howitzer M137A2 Telescope Stowage
M88-Series Recovery Vehicle Hatch Lever Inspection
Army Driver Training Sample Tests



CONSTRUCTION

120M Road Grader Hydraulic Hose Rub
HEPPOE Breaker Drill Replacements
924H Wheel Loader Light Switch NSN
MHE-270/271 Forklift Tire Pressure Corrected
MHE-270 Forklift Starter Flywheel Ring Gears
HYEX Upper Support Roller Lubing



AVIATION

OH-58D Main Rotor Blade Expandable Bolts
FOD Removal Reminder
Aircraft Transfer Documentation Guidance

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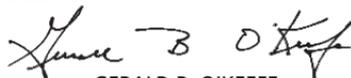
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By order of the Secretary of the Army:

RAYMOND T. ODIERNO

General, United States Army Chief of Staff

Official:



GERALD B. O'KEEFE

Administrative Assistant to the Secretary of the Army

1511102

Issue 752

PS

July
2015

THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-752

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Unlimited

CHECK **ALL** HUMIDITY
INDICATORS AND REPORT
ANY THAT ARE WHITE OR
TURNING PINK.

≡GULP≡
ALL OF
THEM?



For more about Containerization, see Pages 18-45!

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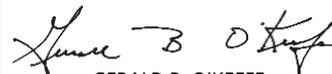
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Mom, Apple Pie, and PM



"...WASH YOUR FACE, BRUSH YOUR TEETH AND FASTEN YOUR SEATBELT."

THAT'S MOM'S RENDITION OF YOUR PERSONAL PREVENTIVE MAINTENANCE. WHETHER YOU WERE EIGHT OR TWENTY-EIGHT, THE ADVICE PROBABLY DIDN'T CHANGE MUCH OVER THE YEARS.

AND, LIKE MOM, SOMETIMES PS MIGHT SOUND A LITTLE REPETITIVE. MAYBE YOU'VE EVEN THOUGHT "YAPPA, YAPPA, YAPPA" A TIME OR TWO WHEN YOU'VE READ OUR PM WARNINGS AND REMINDERS.

BUT YOU KNOW MOM ALWAYS HAS YOUR BACK, AND PS DOES, TOO!

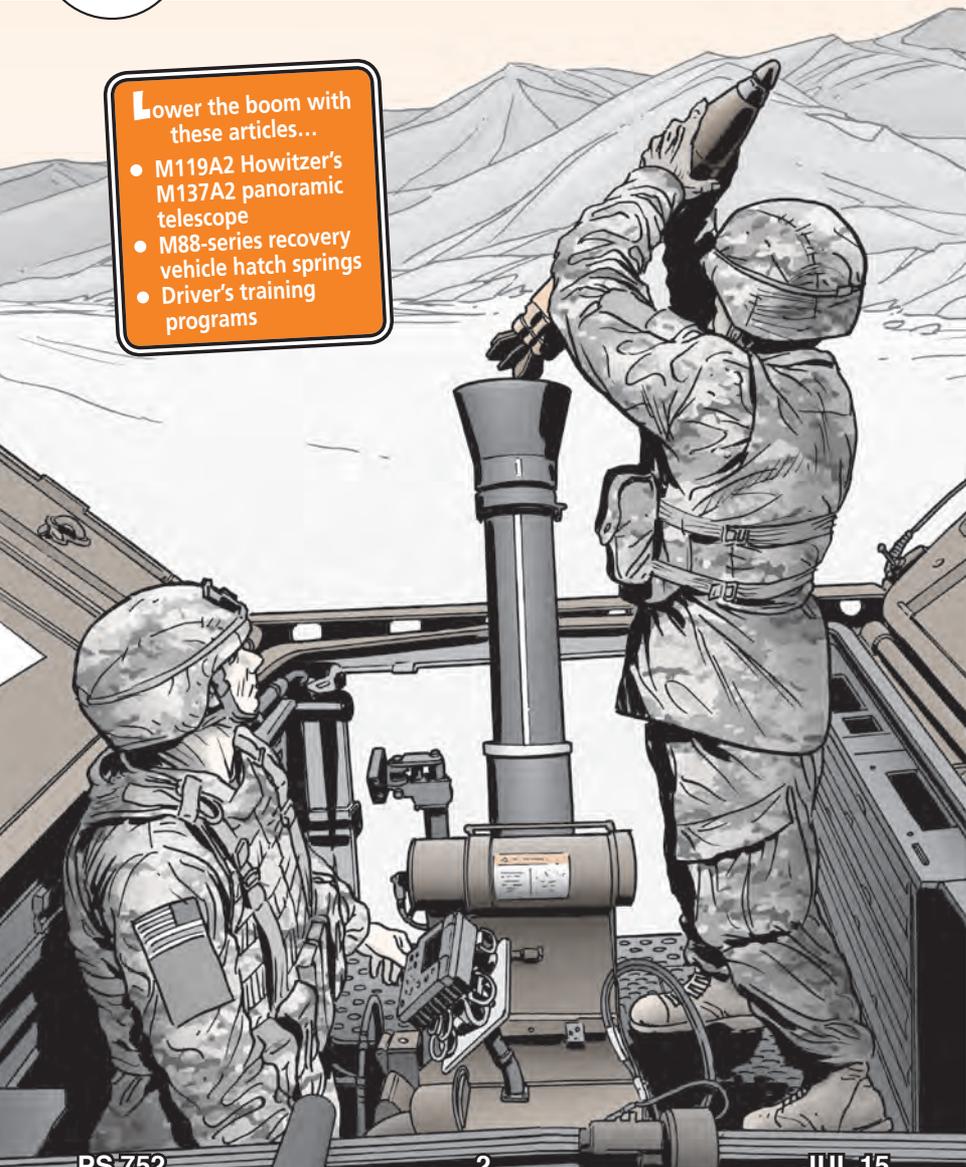
SO, MAYBE IT'LL HELP TO THINK OF PM THIS WAY: WHEN YOU TAKE CARE OF YOURSELF AND YOUR EQUIPMENT, YOU MAKE MOM DOUBLY PROUD!



PS COMBAT VEHICLES

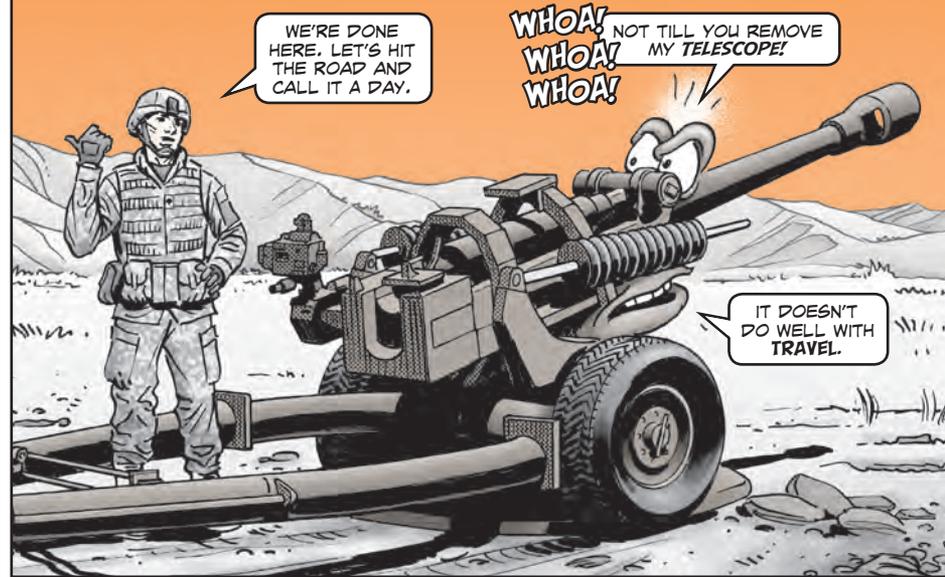
Lower the boom with these articles...

- M119A2 Howitzer's M137A2 panoramic telescope
- M88-series recovery vehicle hatch springs
- Driver's training programs



M119A2 Howitzers...

Stow Before You Go



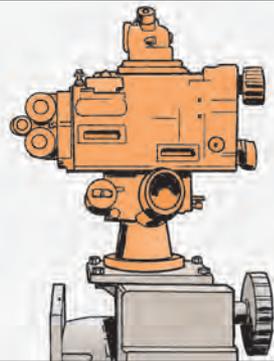
WE'RE DONE HERE. LET'S HIT THE ROAD AND CALL IT A DAY.

WHOA! WHOA! WHOA! NOT TILL YOU REMOVE MY TELESCOPE!

IT DOESN'T DO WELL WITH TRAVEL.

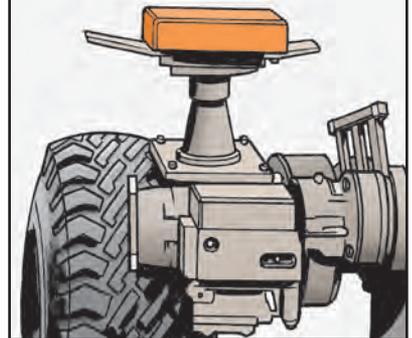
Your M119A2 howitzer's M137A2 panoramic telescope doesn't travel well. If you leave it installed during travel, the telescope won't be working for long. So eyeball these tips to give your howitzer 20/20 vision:

- Stow the M137A2 for travel. If it's installed, vibration damages both the telescope and the M187A1 mount.

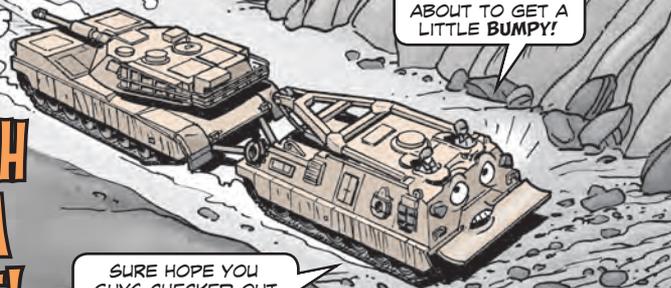


- Install the canvas fire control telescope mount cover, NSN 1240-00-819-4527, before you tow. That protects the M187A1 mount from debris.

- After you remove the M137A2, install the plastic quick-release protective cover, NSN 5340-01-042-1330. Without the cover, the quick-release handles can loosen and fall off.



DON'T LET HATCH SPRING A SURPRISE!



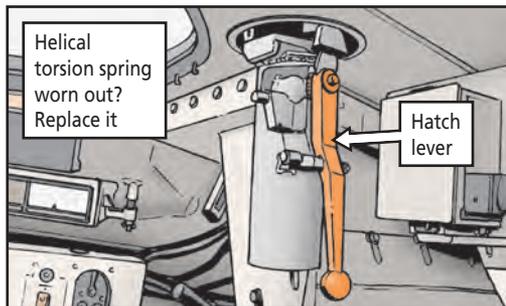
SURE HOPE YOU GUYS CHECKED OUT THE SAFETY LATCHES ON MY HATCH LEVERS!

Mechanics, your M88's top hatches might not weigh a ton, but they certainly weigh enough. So the last thing you want is an open hatch crashing down on your head!

A driver was hurt recently by a hatch that closed without warning. The accident was caused by a worn-out spring in the hatch lever's safety latch.

Inspect your M88's hatch levers right away. Follow the PMCS checks in TM 9-2350-256-10 (Oct 14) for the A1 and TM 9-2350-292-10 (Oct 14) for the A2. Make sure the helical torsion spring, NSN 5360-00-999-5125, is properly tensioned and that the latch spring is mounted in the small hole that anchors it to the housing.

If the hatch lever doesn't operate smoothly or have full range of motion, replace the helical torsion spring. It's listed as Item 16 in Fig 221 of TM 9-2350-256-24P-1 (May 92, w/Ch 2, Aug 98) for the A1 and Item 29 in Fig 241 of TM 9-2350-292-24P in IETM EM 0266 (Jun 07) for the A2.



For more details, check out TACOM ground precautionary action message 15-001 on the TACOM-Unique Logistics Support Applications (TULSA) website:

<https://tulsa.tacom.army.mil/Safety/message.cfm?id=GPA15-001.html>

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

Questions? Contact TACOM's Terry Smart at DSN 786-7849, (586) 282-7849 or email: terry.d.smart2.civ@mail.mil

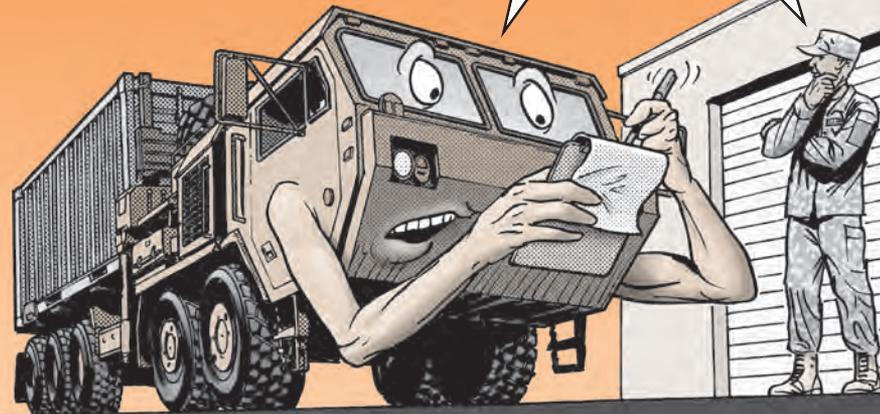
or Matthew Safron at DSN 786-0157, (586) 282-0157 or email:

matthew.m.safron.civ@mail.mil

HEY BUD, LET'S DO A LITTLE KNOWLEDGE CHECK BEFORE YOU PICK UP MY KEYS TODAY. MY MAXIMUM WATER FORDING CAPABILITY IS...

A. 28 INCHES.
B. 48 INCHES.
C. 36 INCHES.
D. 60 INCHES.

UHHH... **NOT SURE!** BUT IF WE'RE GONNA START HAVING **POP QUIZZES**, I'D BETTER **BRUSH UP!**



MANY VEHICLES, MANY TESTS?

Dear Half-Mast,
Are there different written driver's training tests for different vehicles?

MSG K.M.

Dear Master Sergeant,

We asked the experts at the Army Driver Standardization Office (ADSO) for the latest scoop. The word from ADSO is that you can find examples of written driving tests in AR 600-55, The Army Driver and Operator Standardization Program (Selection, Training, Testing, and Licensing), and in various training circulars (TCs).

For example, Page 5-63 in Chapter 5 in TC 21-305-1, Training Program for the HEMTT, PLS, and LHS Family of Vehicles (Feb 14), shows a written test that units can use as an example when designing tests for their own driver's training programs.

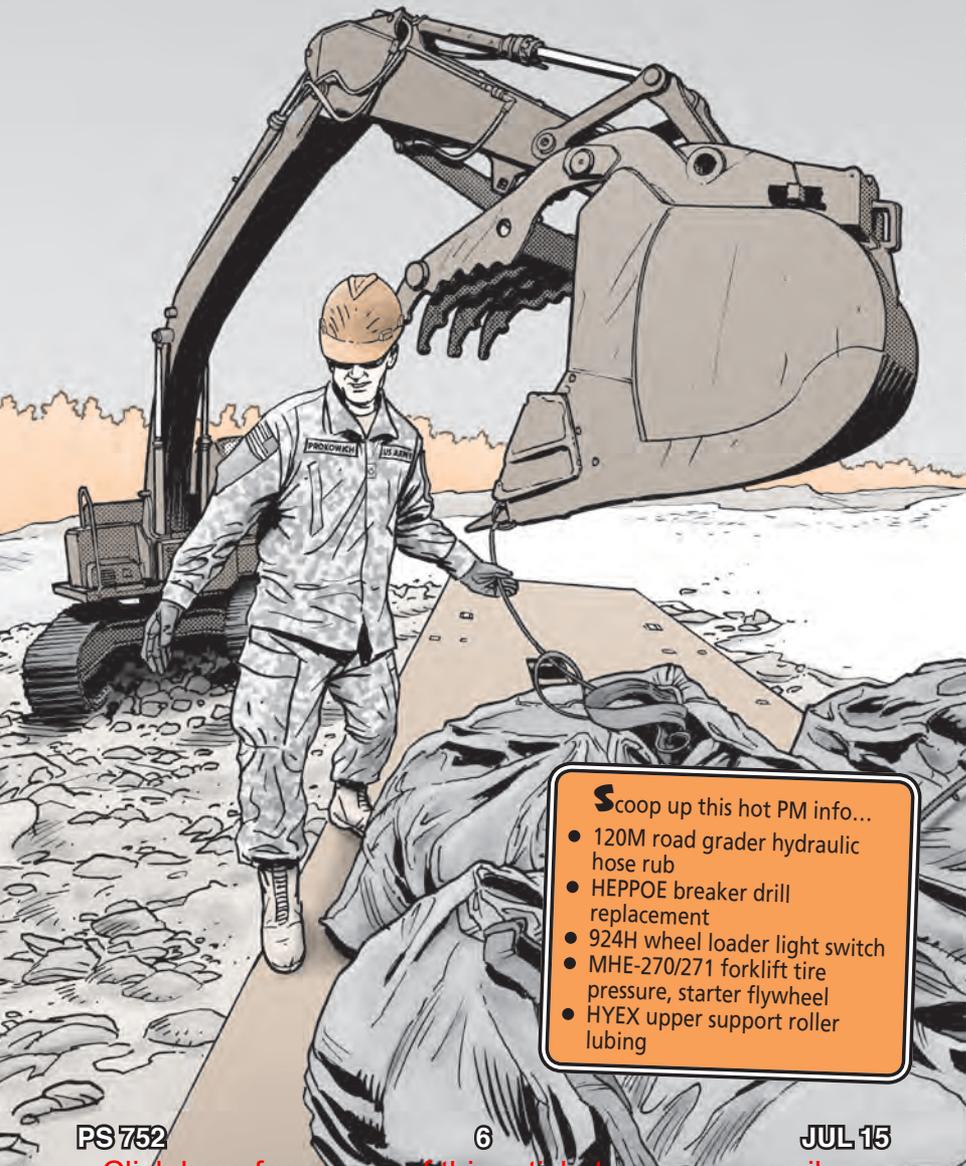
ADSO is revising 21-305 series TCs to be vehicle-specific. More TC updates are in the pipeline for publishing. You can find a list of active TCs on the Army Publishing Directorate's website at:

http://armypubs.army.mil/doctrine/TC_1.html

For more info on driver testing and training and related topics, check out ADSO's website:

http://www.transportation.army.mil/adso/adso_index.htm

Half-Mast



- S**coop up this hot PM info...
- 120M road grader hydraulic hose rub
 - HEPPOE breaker drill replacement
 - 924H wheel loader light switch
 - MHE-270/271 forklift tire pressure, starter flywheel
 - HYEX upper support roller lubing

120M Road Grader...

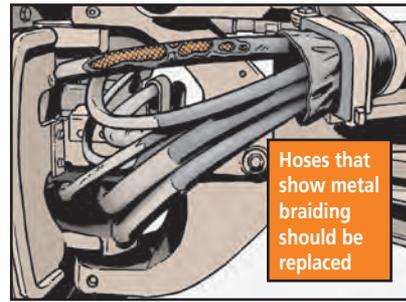
HOSES GETTING RUBBED THE WRONG WAY?

OPERATORS, THE HYDRAULIC HOSES NEXT TO BOTH OF THE 120M GRADER'S FRONT WHEEL DRIVE ASSEMBLIES ARE GETTING A RAW DEAL.



The hoses rub against each other and against the tire and wheel assemblies during operation. Eventually, all that rubbing wears holes in the hoses. Leaks lower the hydraulic pressure till there's not enough left to operate the grader.

So get down on your hands and knees to eyeball those hoses for indications of wear. If you find problems, particularly hoses worn enough to expose the metal braiding, contact your local Caterpillar dealer. They'll inspect the hoses, replace any that are badly damaged and add a special hose wrap for additional protection. Inspection and repair is free of charge to your unit.



Hoses that show metal braiding should be replaced



New spiral wrap protects hoses

While checking for hose chafing, Caterpillar will also inspect the hose hold down block for problems. Rubbing hoses can sometimes cause the hold down block's bolts to loosen or snap.

If you need help getting in touch with a Caterpillar dealer, contact your local TACOM LCMC logistics assistance representative (LAR).

For more details, check out TACOM Maintenance Advisory Message 14-034:
<https://tulsa.tacom.army.mil/Maintenance/message.cfm?id=MA14-034.html>

REPLACE PROBLEM BREAKER DRILLS

WHAT IS THAT?
MORSE CODE?

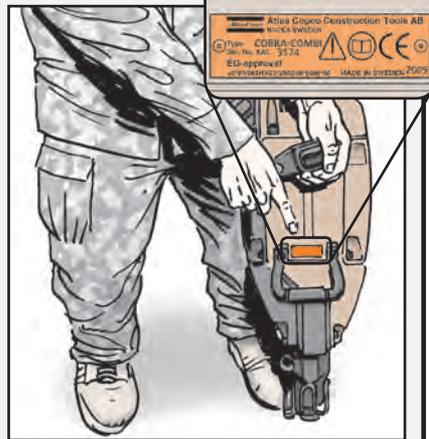
C'MON! LET'S
BREAK SOME
CONCRETE!

I JUST
DON'T
SEEM TO
HAVE ANY
POWER!



Operators, some gas-powered breaker drills that are part of the hydraulic, electric, pneumatic and petroleum operated equipment (HEPPOE), NSN 5180-01-555-6134, aren't up-to-snuff for work site operations.

The breaker drills affected have serial numbers from BES018255 to BES026401 and are in HEPPOE kits with serial numbers 212 to 256. Some of these drills are hard to start, run rough, and have a noticeable lack of power after a few minutes of operation.



If you have a problem breaker drill that falls under these serial numbers, don't try to fix it yourself. Instead, contact the SKOT group at DSN 786-3403, (586) 282-3403, or at their warranty website:

<https://tools.army.mil/login.aspx>

PROBLEM
BREAKER DRILLS
WILL BE REPLACED
AT NO COST
TO YOU AND
RETURNED TO THE
MANUFACTURER
FOR REPAIR.



Shedding Some Light on Light Switch

OK, WE GIVE!
WHAT'S WITH THE
LIGHT BULB?



EVER SINCE I READ
ABOUT HOW TO SAVE
MONEY ON MY 924H'S
LIGHT SWITCH,...

... IT'S
LIKE A
LIGHT
CAME ON!

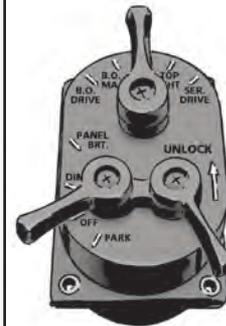
Dear Editor,

Sometimes, when you look hard enough, you can find places to save money where you least expect it. That's what happened to us with the new 924H wheel loader.

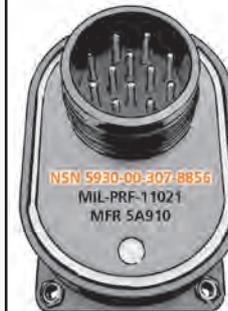
We needed a new light switch for our wheel loader. So we ordered NSN 5895-01-544-5202, which is Item 22 in Fig 46 of TM 5-3805-298-24P (Mar 13). That light switch costs \$605.

When the new switch came in, it was wrapped in Caterpillar packaging. But when I opened it, it looked like the standard light switch we use on lots of other vehicles. Then I noticed that the back had NSN 5930-00-307-8856 stamped on it. That's the NSN for the standard \$80 light switch!

NSN 5895-01-544-5202
brings new light switch...



...that's actually less
expensive light switch,
NSN 5930-00-307-8856



So whenever you need a new light switch for your 924H, don't order what's in the TM. You'll save a bunch of money—and get the same thing—by ordering the standard light switch.

Clayton Nagel
TACOM FMX,
Engineer Support
Ft Leonard Wood, MO

Editor's note:
Thanks for the heads-up, Clayton! The Army will save thousands of dollars following your suggestion.

40 OR 45? THE PRESSURE'S ON!



YOU SHOULD REALLY DO SOMETHING ABOUT ALL THAT STRESS.

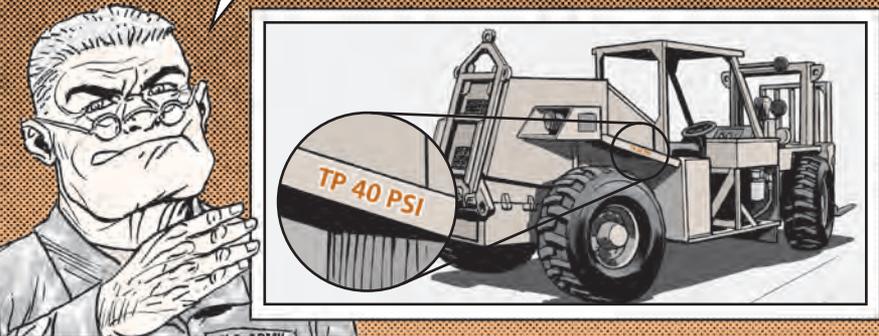
TOO MUCH PRESSURE'S NOT GOOD FOR YOU, Y'KNOW.



BELIEVE ME, I KNOW! JUST LOWERING MY TIRE PRESSURE BY 5 PSI WOULD MAKE ALL THE DIFFERENCE!

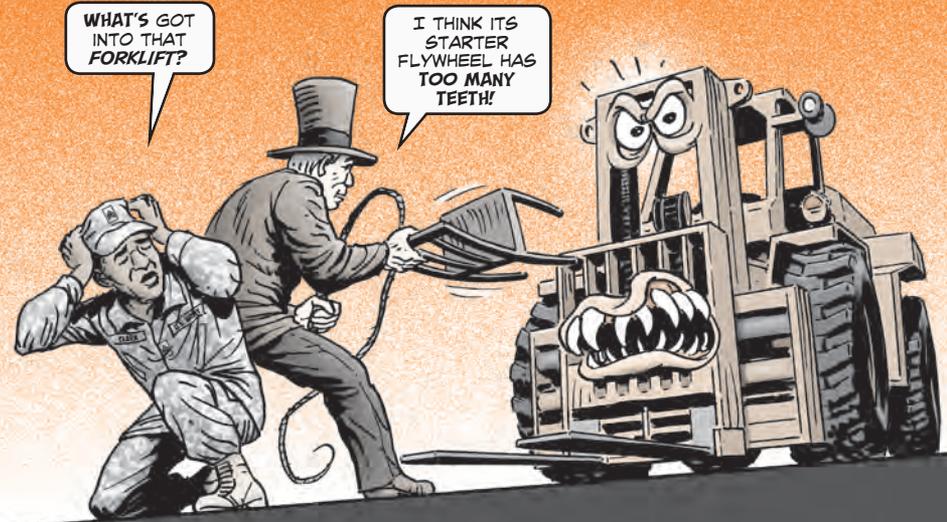
Dear Half-Mast,
We're scratching our heads when it comes to the tire pressure for our MHE-270 4K forklifts.
The sidewall of the forklift's tire, NSN 2610-01-320-0460, says the max pressure is 40 psi. But Item 8 in the before operation PMCS of TM 10-3930-664-10 says the correct pressure is 45 psi. And most of our forklifts have 45 psi stenciled on their fenders.
Can you relieve our pressure with the right pressure?
Mr. J.B.

RELIEF HAS ARRIVED, MR B!
THE 40 PSI THAT'S MARKED ON THE TIRE'S SIDEWALL IS THE RIGHT PRESSURE.
UNTIL THE TMS ARE UPDATED, HAVE THE FENDERS ON YOUR FORKLIFTS RE-STENCILED 40 PSI TO REMIND OPERATORS OF THE CORRECT AIR PRESSURE.



[Click here for a copy of this article to save or email.](#)

CHEW ON THIS GEAR TOOTH MIX UP



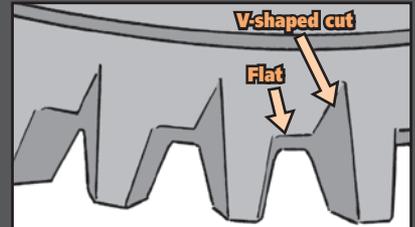
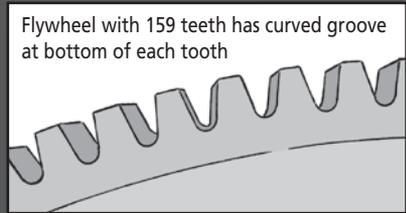
WHAT'S GOT INTO THAT FORKLIFT?

I THINK ITS STARTER FLYWHEEL HAS TOO MANY TEETH!

Operators, the starters on some MHE-270 forklifts may end up biting the hand that feeds 'em. Why? Because their flywheel ring gears have too many teeth!

The flywheel ring gear should only have 127 teeth. But some starters were installed with ring gears that have 159 teeth. Too many teeth means the ring gear will strip off the starter. It could even cause the starter to burn up!

Before that happens to you, get your mechanic to inspect the teeth on the flywheel. Ring gears with 159 teeth will have a curved groove at the bottom of each tooth. Ring gears with 127 teeth have a flat edge beside a V-shaped spur at the bottom of each tooth.

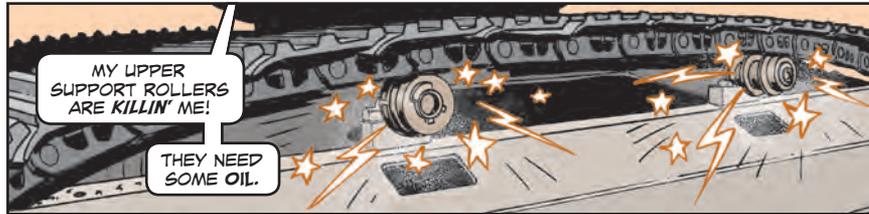
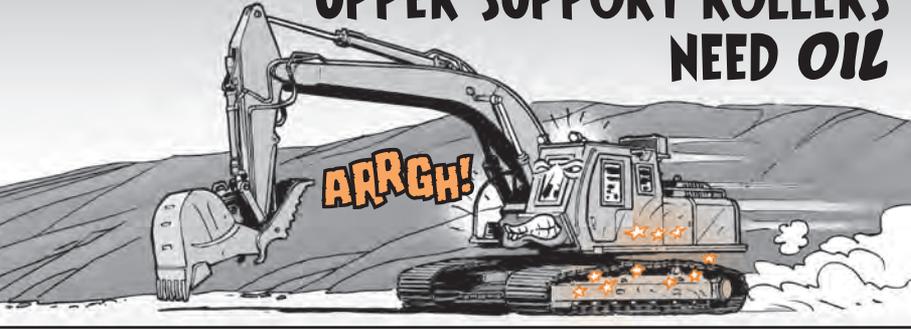


Correct flywheel has flat area and V-shaped cut at bottom of each tooth

If it's the wrong ring gear, your mechanic can replace it with NSN 2815-01-482-4466. If it's too late and the starter's already damaged, get a new starter with NSN 2920-01-407-4857.

[Click here for a copy of this article to save or email.](#)

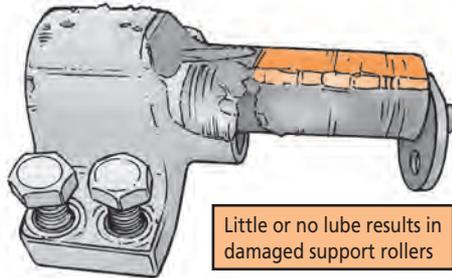
UPPER SUPPORT ROLLERS NEED OIL



Hydraulic excavators are getting full-time workouts in Afghanistan tearing down wooden buildings and removing rubbish.

Working around the clock means these vehicles need daily, weekly and monthly doses of PM.

One particular area of concern is the upper support rollers for the excavator's track. Reports say there's a high rate of burnout with these rollers because of a lack of oil. Low or no oil means the roller won't turn evenly or at all. That damages the roller and causes a lot of wear-and-tear on the vehicle's track system.



The sad news is there's no check for the roller's oil level in TM 5-3805-280-10. No check means no oil, which equals roller burnout!

To keep those rollers rolling smoothly, mechanics need to check out Pages 11-16 through 11-19 in TM 5-3805-280-24-1 (Feb 00). These pages explain how to remove the roller's hex socket plug with a 6mm hex key wrench. Each roller takes about 2.9 ounces of 80/90W gear oil. So not too much or you'll get seal damage. Just fill to the bottom lip of the fill hole.

Get a 1-qt bottle of gear oil with NSN 9150-01-035-5392.



Make a hot landing with these articles...

- OH-58D main rotor blade expandable bolts
- FOD prevention program
- Aircraft transfer procedures

AVOID STUCK EXPANDABLE BOLTS

TIME FOR MY 40 HOUR VISUAL INSPECTION AGAIN!



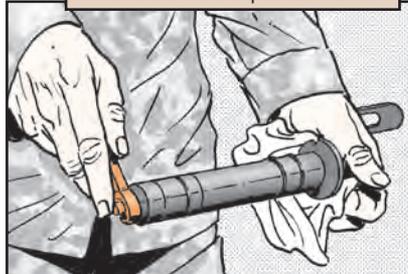
YOU GOT THAT RIGHT! THE LAST THING I WANT TO DEAL WITH IS A STUCK EXPANDABLE BLADE BOLT!

Not doing regular inspections on your Kiowa Warrior's main rotor blade expandable bolts can result in a sticky situation, mechanics.

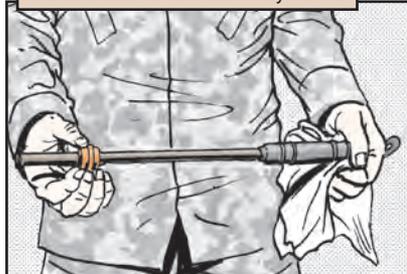
If you don't want the hassle of trying to remove a stuck blade bolt, then do a thorough visual inspection at every 40-hour interval like it says in TM 1-1520-248-PPM, *Progressive Phase Maintenance Manual, Inspection Checklist*. Don't forget any step and leave no task undone.

For example, if you find dirt, excessive corrosion preventive compound (CPC) or other problems with the expandable bolts, you need to remove (WP 171700), clean (WP 172000) and install (WP 172300) them like it says in TM 1-1520-248-23&P. If the bolts exceed damage limits, they must be replaced.

Remove nut from expandable bolt...



...and attach to tool like it says in TM



Pay close attention when using the expandable bolt cleaning tool. Keep in mind that when disassembling the expandable bolt on the cleaning tool, you must keep all the bolt segments in the correct order for proper reinstallation after cleaning.

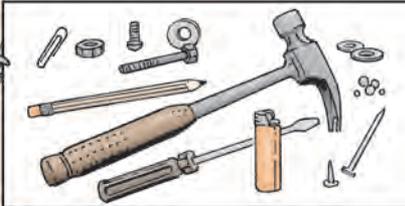
Remember, if you keep periodic inspections on the front burner, you'll avoid stuck expandable bolts in the rotor blade cuff.

Are YOU Thinking About FOD?



THESE ARE QUESTIONS ALL MECHANICS GET ASKED WHEN AN AIRCRAFT EXPERIENCES FOREIGN OBJECT DAMAGE (FOD).

IF YOU'VE HEARD THESE QUESTIONS AFTER THE FACT, THEN YOU'RE MOST LIKELY NOT THINKING ABOUT FOD.



FOREIGN OBJECT DAMAGE CAN ALWAYS BE TRACED TO FOREIGN OBJECT DEBRIS (FOD)...

...WHICH COULD BE ANYTHING FROM A PAPER CLIP TO A HAMMER.

THAT'S WHY YOU SHOULD ESTABLISH A FOD PREVENTION PROGRAM, LIKE IT SAYS IN DA PAM 385-10, FOR ALL AVIATION UNITS.

THE PAMPHLET DOESN'T ADDRESS ALL THE REAL-WORLD CHALLENGES OF FOD, SO INDIVIDUAL UNITS NEED TO THOROUGHLY ANALYZE THEIR SPECIFIC FOD-RELATED HAZARDS TO PREVENT DAMAGE TO AIRCRAFT AND INJURY TO PERSONNEL.

WHEN YOU THINK ABOUT FOD, ALWAYS THINK OUTSIDE THE BOX. NOT ONLY CAN INANIMATE OBJECTS CAUSE PROBLEMS, BUT SO CAN ANIMATE OBJECTS LIKE...



ANY OPENING IN YOUR AIRCRAFT THAT IS NOT COVERED, PLUGGED OR CLOSED OFF IS FAIR GAME FOR BIRDS AND THEIR NESTS. ...BIRDS!

HAVING A GOOD, FLEXIBLE, ADAPTIVE FOD PREVENTION PROGRAM WITH TRAINED PERSONNEL WILL REDUCE DAMAGE AND INJURY.



YOU CAN PREVENT FOD INCIDENTS BY CONDUCTING A FOD WALK AROUND YOUR AIRCRAFT.

CHECK EVERY NOOK AND CRANNY TO MAKE SURE THOSE PESKY BIRDS AREN'T NESTING TOGETHER SOMEWHERE IN YOUR AIRCRAFT.

DON'T Transfer Aircraft the **WRONG** Way...



THERE'S A **RIGHT WAY** AND A **WRONG WAY** TO TRANSFER AN AIRCRAFT FROM ONE UNIT TO ANOTHER.

THE **RIGHT WAY** IS WITH COMPLETE AND CORRECT DOCUMENTATION.

THE **WRONG WAY** IS WITH MISSING OR INCOMPLETE DOCUMENTATION OR DOCUMENTATION THAT HAS ERRORS. HERE'S THE GIST OF THE SITUATION...

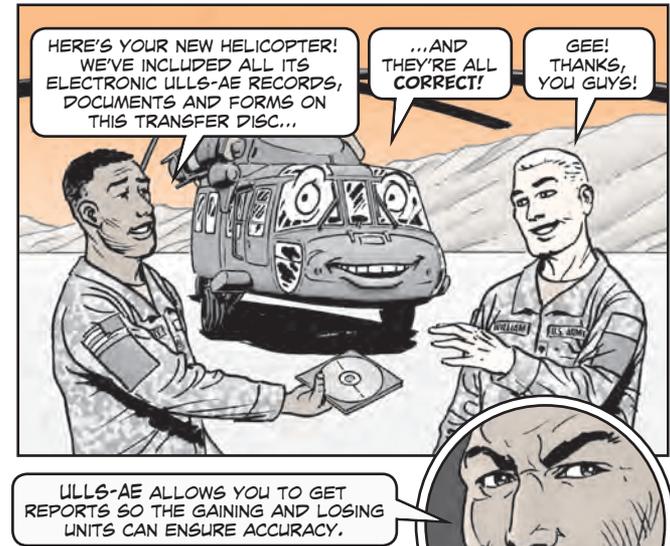


During an aircraft transfer from Unit A (the losing unit) to Unit B (the gaining unit), Unit A gets in a hurry and doesn't give historical records and documents the proper attention they need. Unit B may be overwhelmed with a new mission and all the details involved with that process. They don't usually discover the situation with the aircraft records until **after** the transfer takes place.

When Unit B finally examines the aircraft, they discover that its historical data is either missing or the forms were not filled out correctly. There may be problems with the DA Form 2408-16, *Aircraft Component Historical Record*; DA Form 2408-16-1, *Historical Recorder Component Module Record*; DA Form 2408-16-2, *Auxiliary Power Unit and Component Record*; DA Form 2408-17, *Aircraft Inventory Record*; and incorrect inspection data on the DA Form 2408-18, *Equipment Inspection List*.

The process that Unit B has to go through to correct errors in historical records and paperwork means a lot of work. It sometimes means contacting the AMCOM 2410 Hotline to fix the problems.

...When You Can Do it the **RIGHT** Way!

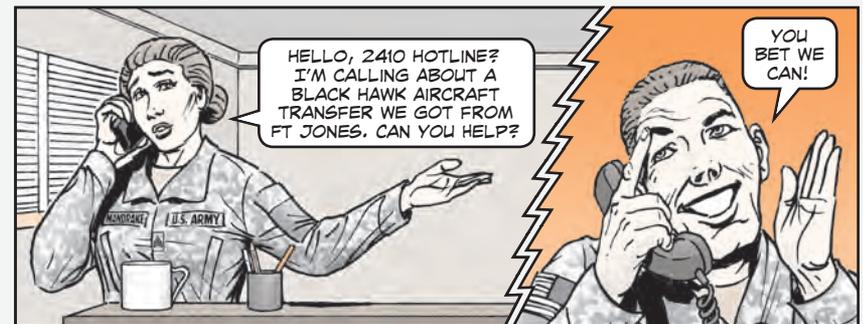


In a worse case scenario, Unit B may have to administratively ground the aircraft to research parts lacking historical data. That can affect their mission support capabilities and readiness.

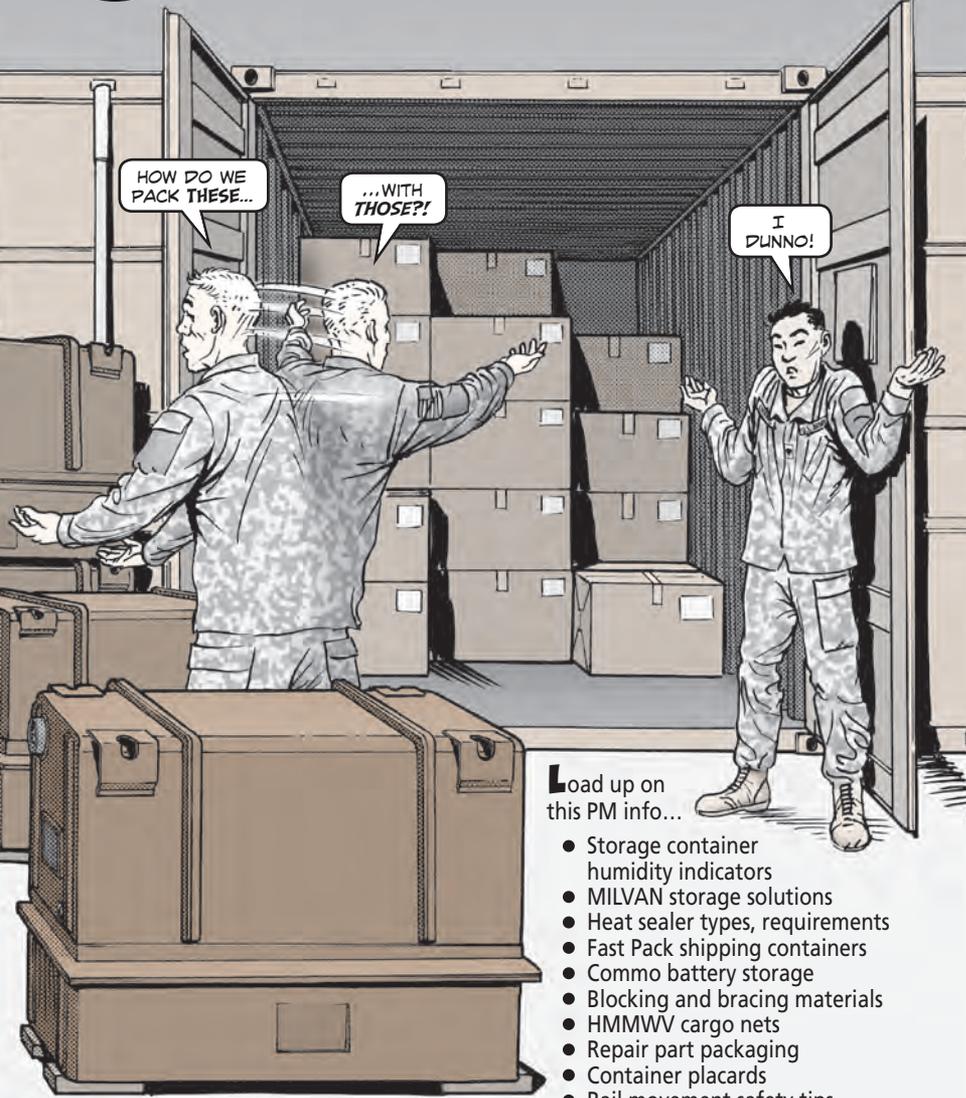
It's very important when preparing an aircraft for transfer that you make sure both units are on the same ULLS-AE software version and all of the aircraft historical and legitimate code file (LCF) data in ULLS-A are up-to-snuff. Just imagine how you'd feel if you were the receiving unit.

Make a note that Change 67 to ULLS-AE included new LCF scrubber scripts to assist the gaining and losing units in identifying parts and inspections that may have been entered incorrectly. Gaining units should request a copy of the report to ensure the losing unit has made the corrections.

If you do need 2410 Hotline assistance, call DSN 897-2410, (256) 313-2410 or toll free (877) 511-8139. Leave your name, UIC and a complete phone number. You can also send an email to: usarmy.redstone.usamc.mbx.immc-data2410@mail.mil



PS CONTAINERIZATION



Load up on this PM info...

- Storage container humidity indicators
- MILVAN storage solutions
- Heat sealer types, requirements
- Fast Pack shipping containers
- Commo battery storage
- Blocking and bracing materials
- HMMVV cargo nets
- Repair part packaging
- Container placards
- Rail movement safety tips

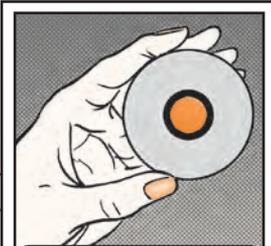
Storage...

CHECK HUMIDITY INDICATORS

THE ARMY ESTIMATES THAT 25 PERCENT OF OVERALL EQUIPMENT MAINTENANCE COSTS ARE CORROSION-RELATED.

MATERIEL THAT'S NOT READY FOR ISSUE ALSO MEANS **REDUCED SUPPORT** TO SOLDIERS, OFTEN AT **CRITICAL TIMES**.

ABOUT ONE-THIRD OF THESE COSTS COULD BE **REDUCED** THROUGH MORE EFFECTIVE CORROSION PREVENTION AND MITIGATION.



THAT'S WHY **CHECKING HUMIDITY INDICATORS** ON LONG-LIFE REUSABLE CONTAINERS (LLRCs) IS **IMPORTANT**.

NOT ONLY SHOULD IT BE A **CORNERSTONE** IN EVERY UNIT'S CORROSION PREVENTION CONTROL PROGRAM...

...IT'S ALSO **REGULATION!** ALARACT 263/2013, CARE OF SUPPLIES IN STORAGE (COSIS) FOR CLASS IX COMPONENTS, REQUIRES UNITS TO MAKE PERIODIC INSPECTIONS OF CONTAINERS AND CHECK THE STATUS OF HUMIDITY INDICATORS.

A HUMIDITY INDICATOR SERVES AS AN ALARM THAT THE HUMIDITY LEVEL INSIDE AN LLRC IS RISING AND ITS CONTENTS MAY BE AT RISK, SO THERE'S A NEED TO TAKE ACTION FAST.



I'VE GOT HUMIDITY HERE! LET'S MOVE IT, PEOPLE!!



UNDERSTANDING THE **DIFFERENT** KINDS OF HUMIDITY INDICATORS AND **WHEN** THEY NEED REPLACEMENT IS THE KEY.

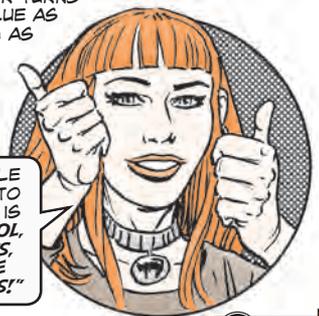
THERE ARE **TWO** TYPES OF HUMIDITY INDICATORS, REVERSIBLE AND **NON-REVERSIBLE**.

Reversible Humidity Indicators

AS HUMIDITY INCREASES, THE DISC INDICATOR'S COLOR TURNS FROM **BLUE** TO **LAVENDER** TO **PINK**. IT TURNS BACK TO BLUE AS HUMIDITY DECREASES. THIS DISC IS REUSABLE AS LONG AS IT HAS **NOT** TURNED WHITE.

- **Blue:** Humidity level less than number indicated on disc/slot = **GOOD**
- **Lavender:** Humidity level equal to number indicated on disc/slot = **CAUTION**
- **Pink:** Humidity level surpassed the number indicated on disc/slot = **BAD**
- **White:** Humidity indicator not working and must be replaced = **BAD**

A BASIC RULE OF THUMB TO REMEMBER IS "BLUE IS COOL, PINK STINKS, AND WHITE REALLY BITES!"



THERE ARE TWO STYLES OF REVERSIBLE HUMIDITY INDICATORS...



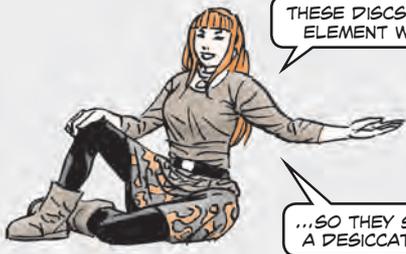
● **Multiple spot/multiple section (pie) disc**

- "Below" number is 10 less than threshold (CAUTION and monitor if pink)
- "Threshold" number is the level of relative humidity (RH) that cannot be exceeded within the container, usually 40 for most assets. Change the desiccant if it turns pink.
- "Exceeded" number is 10 more than the threshold. Check the asset.

For example, on a 30/40/50 disc, with a humidity level not to exceed 30 percent: below = 30, threshold = 40, exceeded = 50.



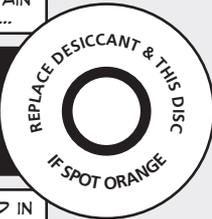
Non-reversible Delayed Response Maximum Humidity Indicator Discs



THESE DISCS CONTAIN A COLOR-STAIN ELEMENT WHICH IS IRREVERSIBLE...

- **White = GOOD**
- **Orange/Brown:** Humidity level exceeded = **BAD**

...SO THEY SHOULD **ONLY** BE USED IN A DESICCATED (DRY) ATMOSPHERE.



WHAT IF THE DISC COLOR CHANGES?

FOLLOW THE INSTRUCTIONS BELOW FOR YOUR LLRC AND INDICATOR TYPE...

Reversible Humidity Indicators

- If any portion of the indicator turns pink, change the desiccant as required. Recheck in 24 hours.
- If the entire indicator turns pink, open the LLRC to check the condition of the asset.

Non-reversible Humidity Indicators

- If the indicator turns orange/brown, open the LLRC to check conditions of the asset.
- Replace indicator.
- Change desiccant as required.

Humidity Indicator Cards and Discs

Nomenclature	Description	NSN 6685-	PN
Card (disc)	20/30/40/50% Spot-Humidity	01-591-2831	TA396-HC-2345S
Card (disc)	20/30/40% Spot-Humidity	00-052-1865	TA356-HC-2345S
Card (disc)	20/30/40/50% Pie-Humidity	01-523-0700	TA356-HC-2345P
Card (disc)	20/30/40/50% Spot-Humidity	00-544-9706	TA346-HC-2345S
Card (disc)	20/30/40% Pie-Humidity	01-370-3699	TA356-HC-234P
Humidity Indicator Plug	20/30/40% Humidity	00-464-4660	MS18013-3
Card (flat)	10/20/30/40/50/60% Humidity	00-526-8526	826004

HERE ARE A FEW TIPS TO MAKE IT EASIER TO INSPECT HUMIDITY INDICATORS...

- Arrange LLRCs for easy visual inspection.
- Orient LLRCs so humidity indicators are visible.
- Store LLRCs in well-lit areas and under cover if possible.

FOR MORE TIPS ON HOW TO PROTECT EQUIPMENT IN STORAGE, SEE PAGES 52-57 IN PS 740...

<https://www.logsa.army.mil/psmag/archives/PS2014/740/740-52-57.pdf>

FOR QUESTIONS OR HELP, CONTACT THE LOGISTICS SUPPORT ACTIVITY'S PACKAGING, STORAGE AND CONTAINERIZATION CENTER AT DSN 795-7257, (570) 615-7257, OR EMAIL:

usarmy.tyad.usamc.mbx.pt@mail.mil



STORAGE SOLUTIONS SHOW SOLDIER SAVVY

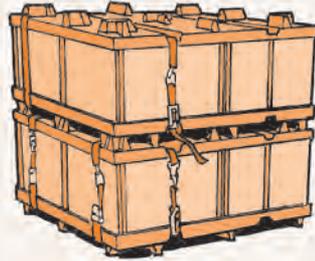
Your mission has ended. That's the good news. But you have a bunch of equipment to recover and load. That doesn't have to be bad news if you're smart about storage solutions.

Here are some products that can improve vehicle recovery, logistical support and transportation of supplies.

Collapsible Container System

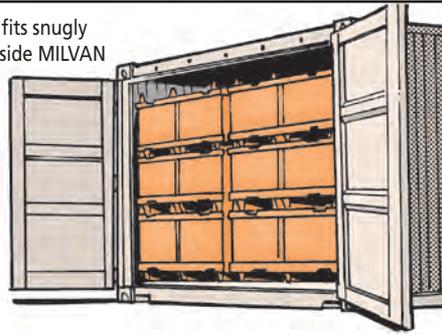
A plastic, weather-resistant collapsible container kit for short- or long-term storage comes with NSN 8145-01-562-9283. The kit has two containers, weighs 115 pounds and measures 48x40x30 inches. It stores conveniently inside a MILVAN.

Collapsible container system...



All it takes is a forklift operator and two ground guides to load an entire MILVAN with 15 kits (30 containers). No blocking or bracing is needed. The kit's containers come with four custom-sized pallets, two collapsible sleeves, and eight ratchet-straps, NSN 8145-01-522-8341. It's designed to carry up to 800 pounds of cargo. The containers will last many years even with daily use.

...fits snugly inside MILVAN

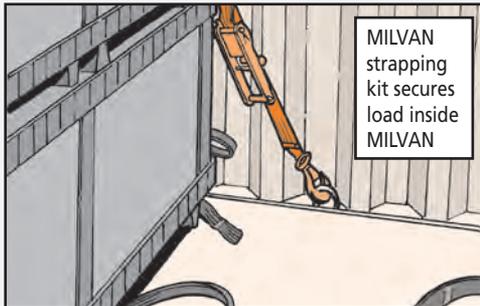


MILVAN Strap Kit

The MILVAN strap kit, NSN 8145-01-524-7267, is designed specifically for the 20-ft MILVAN. One storage bag comes with eight 1-in cargo tie-down straps, and sixteen 1-in x 14-ft ratchet straps.

The kit's second storage bag has eight 1 3/4-in cargo tie-down straps and eight 1 3/4-in x 20-ft ratchet straps.

MILVAN strapping kit secures load inside MILVAN



Cargo Tie-Down Kit

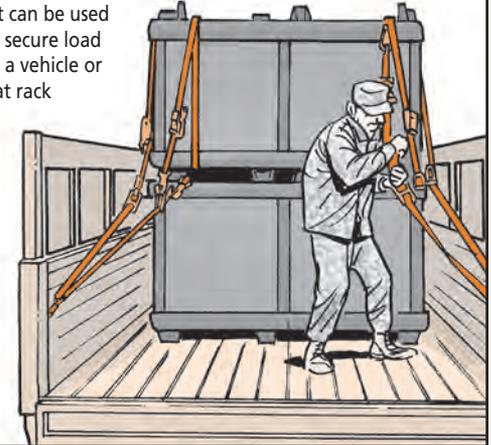
Scattered cargo is the last thing a driver wants to see in his rearview mirror.



To secure a load in place, use a 1-in cargo strap tie-down kit that comes with NSN 8145-01-522-8344. This kit includes a storage bag, four green nylon 1 3/4-in straps with fixed double-bar D rings and a 2-in nylon hook.

Also included with this kit is a 1 3/4-in x 20-ft nylon ratchet strap with a fixed 2-in snap hook. All of these items fit quickly back into the storage bag after each mission.

Cargo tie-down kit can be used to secure load to a vehicle or flat rack

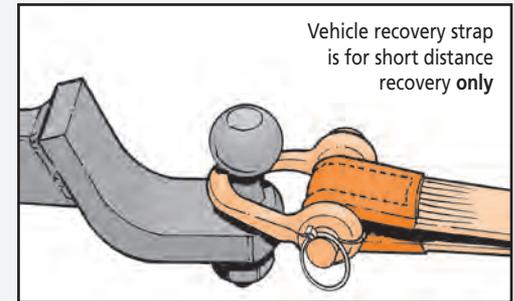


Vehicle Recovery Strap

A 3-in x 27-ft vehicle recovery strap with shackles is now available with NSN 8145-01-533-5613.

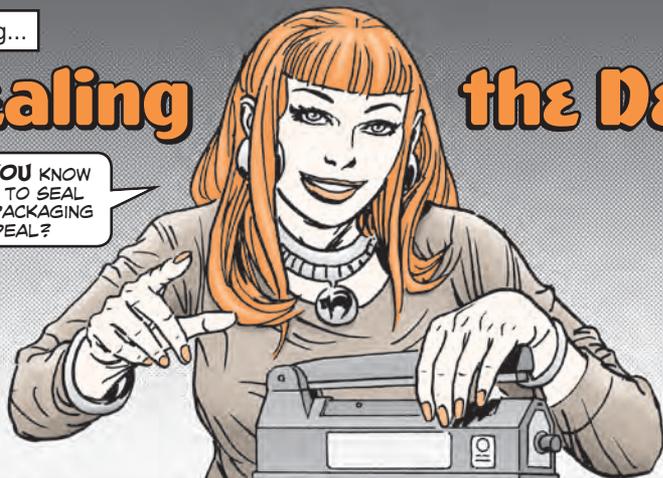
The break strength of the recovery strap is 43,000 pounds. It's designed to be used as a cargo/vehicle recovery strap for short distance recovery operations only—not long distance towing. Also, this strap is not intended as a replacement for the Army's official tow bars.

Vehicle recovery strap is for short distance recovery only



Sealing the Deal

DO YOU KNOW HOW TO SEAL THE PACKAGING DEAL?



SEALING IS AN IMPORTANT STEP IN MANY MILITARY PACKAGING PROCESSES.

SEALED BAGS BETTER PROTECT ITEMS DURING SHIPMENT.



YOUR GOAL IS TO CLOSE HEAT-SEALABLE BAGS WITH SEALS THAT ARE AS STRONG AS THE BARRIER MATERIALS IN THE BAGS THEMSELVES.

HEAT-SEALABLE BARRIER MATERIALS ARE USUALLY CONSTRUCTED OF LAYERS OF DIFFERENT MATERIALS THAT ARE LAMINATED TOGETHER TO FORM A SHEET.

THE THREE LAYERS ARE:

- Heat-sealable face
- Impervious ply
- Backing ply

HEAT-SEALABLE BARRIER MATERIALS PROTECT ITEMS FROM LIQUIDS (WATERPROOF), WATER VAPORS (WATERVAPORPROOF), GREASE (GREASEPROOF) AND ELECTROSTATIC DISCHARGE (ELECTROSTATIC-FREE).

PRESERVATION MATERIAL SHOULD ALSO BE STAMPED WITH A MILITARY SPECIFICATION; FOR EXAMPLE, MIL-PRF-121G. THIS SPEC CONTAINS IMPORTANT INFORMATION FOR MAKING THE BEST SEAL, SUCH AS TEMPERATURE, PRESSURE AND DWELL TIME.

Temperature

"USE WITH THIS SIDE OUT" RECOMMENDED HEATSEALING JAW TYPE - 500°F @ 30 PSI 3 SEC. BAND TYPE - 375°F @ 20 PSI 100 FPM ROTARY TYPE - 375°F @ 40 PSI 100 FPM

Dwell time

Pressure

THESE ARE THE CRITICAL ELEMENTS FOR CREATING A GOOD BAG SEAL.

MIL-PRF-121G TYPE II LUDLOW COATING COLUMBUS, GA POLY KRAFT LOT NUMBER 14636

Find recommended temperature, dwell time and pressure recommendations for heat seals on material



Secrets to a Good Seal

THE THREE BASIC REQUIREMENTS FOR SEALS ARE THAT THEY:

- do not leak.
- have the same waterproof, watervaporproof or greasproof properties as the barrier materials themselves.
- pass a strength test.

BEFORE YOU HEAT SEAL MATERIAL, YOU NEED TO DECIDE WHAT KIND OF HEAT SEALER IS NEEDED. THERE ARE THREE MAIN TYPES: **JAW, IMPULSE, AND ROTARY.**

SOME HEAT SEALERS WORK IN BOTH HANDHELD AND TABLETOP CONFIGURATIONS.

Jaw-type heat sealer

Impulse heat sealer

Rotary heat sealer

DWELL TIME AND TEMPERATURE ARE ADJUSTABLE ON MOST HEAT SEALERS...

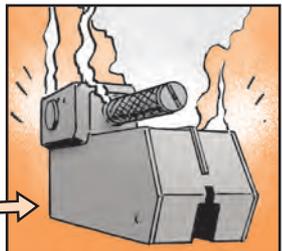
...AND, IF YOU'RE USING A JAW-TYPE HEAT SEALER, YOU CAN ALSO ADJUST THE PRESSURE.



HEAT SEALERS ARE SOLD FOR BOTH "SUPPORTED" AND "NON-SUPPORTED" HEAT-SEALABLE PACKAGING MATERIALS.

WHICHEVER HEAT SEALER YOU CHOOSE, IT SHOULD BE EASY TO USE AND LIGHTWEIGHT. THAT LETS YOU EASILY INSERT ANY HEAT-SEALABLE MATERIAL INTO THE SLOT ON THE BOTTOM EDGE OF THE MACHINE.

GET COMFORTABLE WITH YOUR PRESERVATION MATERIAL AND HEAT SEALER BY TRYING A SAMPLE HEAT SEALING FIRST WITH THE TEMPERATURE SET ABOUT 100 DEGREES LOWER THAN THE MATERIAL REQUIRES.



IF THE TEST SEAL DOESN'T PULL APART AND HAS NO BUBBLES, THEN YOU'RE OK TO PROCEED.

IF NOT, GRADUALLY INCREASE THE TEMPERATURE UNTIL YOU GET A GOOD SEAL.

THAT WAY YOU'LL AVOID BURNING THE MATERIAL AND GUMMING UP THE HEAT SEALER.

IF YOU'RE USING A ROTARY TYPE HEAT SEALER, YOU'LL NEED TO GUIDE THE MATERIAL THROUGH THE MACHINE.



INSIDE THE MACHINE, THE MATERIAL IS HEATED AND THEN COMPRESSED, CREATING A SECURE, AIRTIGHT SEAL. THE SEALED MATERIAL THEN EXITS THE OPPOSITE END OF THE MACHINE.

TEST THE SEAL BY PULLING GENTLY AT THE SEAMS. IF FURTHER SEAL TESTING IS NEEDED, REFER TO MIL-STD-3010C, TEST PROCEDURES FOR PACKAGING MATERIALS AND CONTAINERS.

TO KEEP YOUR HEAT SEALER IN OPTIMAL CONDITION, REMEMBER THAT IT NEEDS PMCS, TOO. FOLLOW THE MANUFACTURER'S RECOMMENDED CLEANING SCHEDULE.



YOU CAN FIND THE PUBLICATIONS REFERENCED IN THIS ARTICLE AT: <http://quicksearch.dla.mil/qsSearch.aspx>

THE QUICKEST WAY TO FIND A PUB IS TO ENTER ANY NUMBERS FROM ITS TITLE (FOR EXAMPLE, MIL-STD-129 IS '129') INTO THE DOCUMENT NUMBER SEARCH BOX AND THEN PRESS THE SUBMIT BUTTON.

FOR MORE PACKAGING TIPS, DOWNLOAD LOGSAP 746-1, PACKAGING-THE BASICS. GO TO: https://www.logsa.army.mil/documents/LOGSAP_746-1.pdf

IF YOU HAVE ANY FURTHER QUESTIONS ON HEAT SEALING OR PACKAGING PRACTICES, CONTACT THE LOGISTICS SUPPORT ACTIVITY'S PACKAGING, STORAGE AND CONTAINERIZATION CENTER (P&CC) AT DSN 795-7105, (510) 615-7105, OR EMAIL: usarmy.tyad.usamc.mbx.pt@mail.mil



Shipping Materials...

Pack it Up Right!

ARE YOU SHIPPING SOMETHING SOON?

REMEMBER THAT SHIPPED REPAIRABLES OFTEN HAVE A LONG ROAD TO TRAVEL.

THE ROAD GETS LONGER IF YOU DON'T USE THE RIGHT PACKING MATERIALS.

WHAT WAS ONCE REPAIRABLE CAN BECOME DOWNRIGHT UNREPAIRABLE!

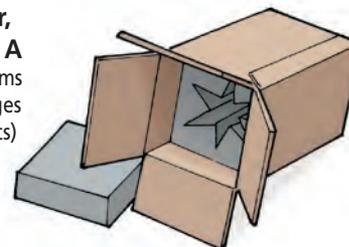


THAT'S WHERE FAST PACK CONTAINERS AND OTHER SHIPPING MATERIALS COME IN. THEY KEEP YOUR REPAIRABLES FROM PICKING UP EXTRA DAMAGE ON THE TRIP.

FAST PACK CONTAINERS

(Conforming to PPP-B-1672)

Vertical star, Type I, Style A (for delicate items like meter gauges and instruments)

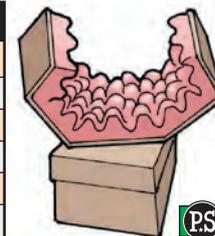


Size (inches)	NSN 8115-
6x6x10	00-192-1603
8x8x12	00-192-1604
10x10x12	00-192-1605
12x12x14	00-134-3655
12x12x18	00-050-5237
14x14x16	00-134-3656

Folding convoluted, Type II, Style D

(protects flat items like circuit boards, modules and tubes)

Size (inches)	NSN 8115-	Size (inches)	NSN 8115-
6x5x2 1/2	00-787-2142	12x8x3 1/2	00-787-2148
6x5x3 1/2	00-787-2147	13x13x3 1/2	01-057-1243
9x6x2 1/2	00-101-7647	16x16x3 1/2	01-057-1245
9x6x3 1/2	00-101-7638	18x12x2 1/2	01-019-4085
10x10x3 1/2	01-057-1244	18x12x3 1/2	01-019-4084
12x8x2 1/2	00-787-2146	24x16x3 1/2	01-093-3730

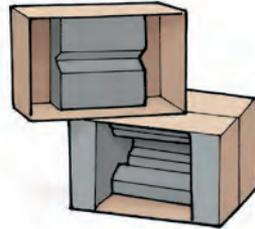


Telescoping encapsulated, Type III, Style G
(for bigger items like receiver-transmitters, amplifiers, power supplies, and electronic indicators)



Size (inches)	NSN 8115-
20x14x9	00-516-0251
24x14x14	00-550-3558
24x18x16	01-015-1312
25x14x14	00-550-3574
26x9x9	01-015-1313
30x16x14	00-516-0242
30x27x14	01-094-6520
32x12x14	00-519-1825
32x18x16	01-015-1315
34x24x18	01-015-1314

Horizontal star, Type IV, Style B
(for shipping electronic items with a small cross-section relative to length, such as control generators, transmitters and amplifiers)



A 20x14x14-in FAST PACK comes with NSN 8115-01-010-8956. Get a 22x16x16-in FAST PACK with NSN 8115-01-006-7257.

OPEN ALL FAST PACKS WITH CARE. THEY'RE REUSABLE.

INSTEAD OF TEARING THE TAPE OFF, CUT ALONG THE TAPED SEAMS WITH A THIN-BLADED KNIFE.



WHEN YOU'RE READY TO RE-SHIP, JUST TAPE OVER THE OLD TAPE WITH TWO STRIPS OF 2-IN WIDE, PRESSURE-SENSITIVE TAPE, NSN 7510-00-266-6715.

OVERLAP THE TAPE, TOP AND BOTTOM.

BE CAREFUL NOT TO TAPE OVER PRINTING OR MAILING INSTRUCTIONS.

APPENDIX B OF CTA 50-970 IS YOUR AUTHORITY FOR ORDERING FAST PACK ITEMS.

FOR A COMPLETE LIST OF FAST PACK TYPES AND STYLES, SEE PPP-B-1672, AVAILABLE AT THE DEFENSE LOGISTICS AGENCY'S (DLA) QUICK SEARCH: <http://quicksearch.dla.mil/qsSearch.aspx>

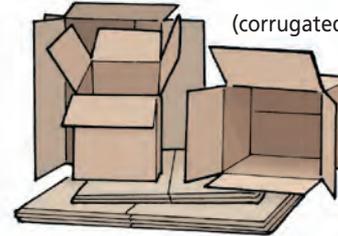
PACKING MATERIALS

HERE ARE SOME OTHER PACKING MATERIALS YOU'LL FIND HANDY...



Fiberboard boxes

(corrugated fiberboard with four flaps on top and bottom)



FOR A COMPLETE LIST OF FIBERBOARD BOX SIZES, SEE PAGES 83-84 IN MIL-STD-2073-1E, AVAILABLE AT DLA'S QUICK SEARCH: <http://quicksearch.dla.mil/qsSearch.aspx>

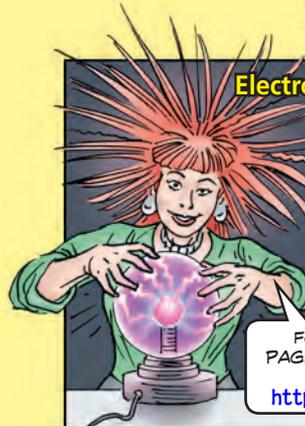
Size (inches)	NSN 8115-	Qty
8x8x10	00-183-9499	25
10x8x6	00-183-9497	25
12x8x8	00-183-9493	25
16x12x8	00-183-9487	25
24x24x10	00-428-4124	10
26x21x21	01-015-4994	10
58x43x35 1/4	00-935-6510	1

Shipping bags
(padded with bubble film liner for small items)



Size (inches)	NSN 8105-	Qty
5 3/4x8 1/4	00-117-9860	250
7 1/4x12	00-117-9866	100
8 1/2x12	00-117-9869	100
8 1/2x14 1/2	00-117-9870	100
9 1/2x14 1/4	00-117-9872	100
10 1/2x16	00-117-9879	100
12 1/2x19	00-117-9881	50
14 1/2x20	00-117-9886	50

Electrostatic-free flexible cushion pouches (for circuit cards)



Pouch Size (inches)	NSN 8105-
8x8	01-215-0462
10x10	01-197-2966
12x12	01-197-2965

FOR A COMPLETE LIST OF SIZES, SEE PAGE 32 IN MIL-HDBK-773, AVAILABLE AT DLA'S QUICK SEARCH... <http://quicksearch.dla.mil/qsSearch.aspx>



PS MORE

Hardware bags
(for shipping small, unbreakable items such as nuts, bolts and screws)

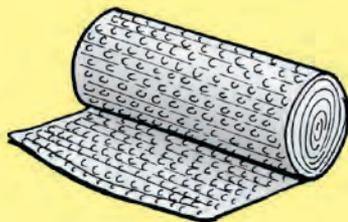
THE BAGS ARE MADE OF COTTON SHEETING AND CLOSE AT ONE END WITH A DRAWSTRING.



Size (inches)	NSN 8105-	Qty
3x4	00-183-6981	100
3x5	00-281-3924	100
4x9	00-183-6982	100
4 1/2x8	00-179-0089	100
5 1/2x14	00-183-6985	50
6x4	00-586-5630	100
6x9	00-271-1511	100
6 1/2x10	00-174-0836	50
7 1/2x18	00-183-6989	50
8x10	00-290-3360	50
8 1/2x16 1/2	00-543-7837	1

Bubble pack material
(for wrapping, cushioning, shipping and immobilizing)

A 3/16-in x 24-in x 500-ft roll comes with NSN 8135-00-142-9016. Get a 1/2-in x 24-in x 250-ft roll with NSN 8135-00-926-8991.



Shrouding material, plastic
(for skid-mounted and palletized items)



Size (in x in x ft)	Color	NSN 8135-
100 x .002 x 200	Opaque	00-584-0619
96 x .004 x 100	Opaque	00-584-0610
120 x .006 x 100	Black	00-579-6491
144 x .006 x 100	Opaque	00-579-6489
192 x .006 x 100	Opaque	00-618-1783
240 x .006 x 100	Black	00-579-6487
576 x .004 x 50	Clear	00-282-5635
648 x .020 x 50	Clear	00-050-7698

Barrier material, grease/waterproof
(for wrapping items covered by corrosion preventive compound)

GET A 36-IN X 200-YD ROLL WITH NSN 8135-00-233-3871.

FOR ITEMS REQUIRING WATERVAPORPROOF PROTECTION, ORDER A 36-IN X 200-YD ROLL (SILVER) WITH NSN 8135-01-015-2810.

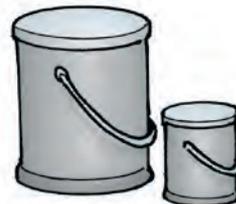


Wrapping paper
(for wrapping items in a chemically neutral, non-corrosive wrap or cushioning material)

You can get a 36-in x 600-ft roll with NSN 8135-00-558-1245.



Corrosion preventive compounds (CPCs)
(for protecting machined metal surfaces)



Common CPC spec materials include:

- **MIL-C-16173, Grade 4.** This resilient coating provides long-term protection of metal surfaces. The residual film after solvent evaporation is highly resistant to salt water and salt spray. Get a 1-gal can with NSN 8030-00-244-1297 or a 5-gal can with NSN 8030-00-244-1298.
- **MIL-DTL-85054.** This CPC can be used on any metal surfaces. It's best for non-moving parts that don't require a lubricated surface, such as fasteners, seams, access panels, points, unpainted metal or places where paint is cracked or damaged. Type "MIL-DTL-85054" in part number field in FED LOG to find products.
- **MIL-PRF-81309, Type II and Type III.** Can be used on any metal surface both for initial protection during shipment and storage and for in-service treatment. Intended for indoor or short-term outdoor protection. Not intended as a substitute for other CPCs or for protecting surfaces for more than one month. Type "MIL-PRF-81309" in part number field in FED LOG to find products.

For packaging support, contact the Logistics Support Activity's Packaging, Storage and Containerization Center at DSN 795-7257, (570) 615-7257, or email: usarmy.tyad.usamc.mbx.pt@mail.mil



PRACTICE POWER PRESERVATION



WITHOUT THE RIGHT TYPE OF **NOURISHMENT**, YOU CAN SOON RUN OUT OF ENERGY. AND WITHOUT THE RIGHT TYPE OF TLC FOR COMMO BATTERIES, YOUR RADIOS AND ELECTRONICS CAN BECOME LIFELESS HEAPS OF METAL, PLASTIC AND WIRE.

DON'T LET THAT HAPPEN. BE BATTERY SMART BY HEEDING THESE POINTERS...



- **Don't hoard batteries.** If you usually stockpile supplies, change your ways: Set a limit to the number of batteries you order. Have enough on hand to fill your unit's battery needs—no more, no less. Batteries need to be used in equipment. Left lying around too long, they begin to lose their power. So rotate your stock. First in, first out.
- **Determine your unit's battery needs.** Use CECOM-LCMC's Power Optimizer for the Warfighter's Energy Requirements (POWER). It's a Microsoft® Excel-based application that helps you manage battery supplies. Here's what POWER can do:
 - ✓ present battery options for your equipment
 - ✓ figure out a battery's run time based on surrounding temperature
 - ✓ estimate how many batteries you need to support your mission
 Get POWER by emailing Ari Herman at CECOM-LCMC:

ari.c.herman.civ@mail.mil

- **Stay out of the heat.** High temperatures drain the life out of batteries, reducing capacity. Capacity is the amount of energy a battery can deliver in a single discharge (normally expressed in ampere hours).

Most commo batteries can withstand 110°F for a few days. But when temperatures reach 130°F for more than a few days, any battery can be seriously degraded, even in storage.

So keep batteries cool during storage to preserve their shelf-life.

Never store them in direct sunlight during hot weather. Never store them in a closed, unventilated shelter, CONEX or MILVAN in the summer. That's when temperatures soar inside these containers.

For ideas on how to keep batteries cool, read SB 11-6, *Communications-Electronics Batteries Supply and Management Data* (Feb 10). You'll find it on the USAMC Logistics Support Activity (LOGSA) Electronic Technical Manuals Online website:

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



KEEP BATTERIES IN THEIR ORIGINAL PACKAGING WHILE IN STORAGE. THE PACKAGING...

- ✓ identifies batteries by stock number, lot number, manufacturer and type
- ✓ helps prevent damage from high humidity or dryness
- ✓ protects against crushing, puncturing and shorting
- ✓ contains battery leaks

Take rechargeable batteries out of their original packaging and charge them. Return them to their original packaging for long-term storage. Charge the batteries at least once a year from then on.

REPORT BATTERY FAILURES—CRACKS, STAINS, BULGES, ODORS OR LEAKS—ON A STANDARD FORM 368, PRODUCT QUALITY DEFICIENCY REPORT.



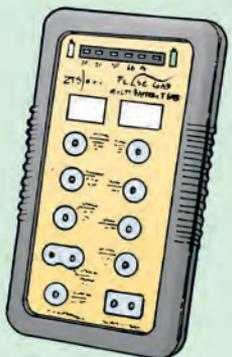
- Before you go on mission, make sure your batteries work. Test them with a simple tester. Or run a radio or equipment check like your TM says. If you have large quantities of the same battery with the same date codes, test a small sample to make sure your batteries have power.

The MBT-MIL Multi-Battery Tester™, NSN 6625-01-494-9163, works great for testing Army batteries.

HERE'S WHAT IT TESTS...



Make sure batteries work



Use a battery tester

1.5V button cell—S76, A76, A625, A640, LR44, 357, 303

1.2V nickel-metal hydride/nickel-cadmium (NiMH/NiCd) rechargeable—AA, AAA, C, D

1.5V lithium—AA L91, AAA L92

3V lithium coin—CR1616, CR1620, CR2016, CR2025, CR2320, CR2032, CR2430, CR2450, 58L, 1/3N

6V lithium—BA-5372/U

3V lithium cylindrical—CR123, CR2, CRV3

12V alkaline—A23

1.5V alkaline—AA, AAA, C, D, N

9V alkaline & carbon zinc

Shipping... **BLOCK AND BRACE FOR BEST RESULTS**

WHOA, GET A LOAD OF THIS MESS!

OH MAN, THE SUPPLIES WE ORDERED ARE TRASHED.

LOOKS LIKE YOU WERE RIGHT, MASTER SERGEANT. BUT HOW'D YOU KNOW THIS TRAILER'S CONTENTS WERE JACKED UP?

MY BUDDY ACE HERE GAVE THE ALERT... HE'S GOT A DOGGONE SIXTH SENSE 'BOUT BAD BLOCKING AND BRACING!

WHAT HAPPENED!?

Ruff Ruff

NO MATTER WHICH TRANSPORTATION METHOD YOU CHOOSE FOR SHIPPING CARGO OR EQUIPMENT...

...IT'S CRITICAL TO USE THE CORRECT BLOCKING AND BRACING TECHNIQUES FOR SECURING CARGO INSIDE SHIPPING CONTAINERS.

BECAUSE CONTAINERIZED CARGO/EQUIPMENT MAY TRAVEL BY LAND, SEA AND AIR, IT **MUST BE SECURED** TO WITHSTAND EVEN THE MOST DEMANDING CONDITIONS.

IF YOU BLOCK, BRACE AND LOAD CARGO RIGHT, YOU HELP ENSURE IT ARRIVES IN THE SAME CONDITION AS WHEN IT WAS PACKED. THAT **MINIMIZES** DELAYS AND COSTS FROM DAMAGE IN TRANSIT.

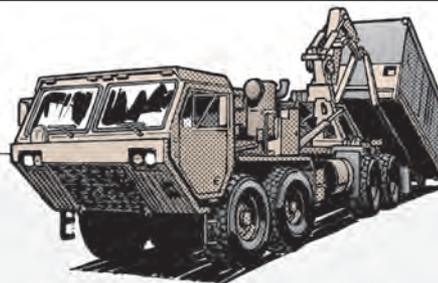
PS MORE



WHEN BLOCKING AND BRACING CARGO, YOU CAN USE WOOD, PLYWOOD OR MECHANICAL DEVICES TO PREVENT MOVEMENT.

NO MATTER WHAT MATERIALS YOU CHOOSE, HERE ARE SOME IMPORTANT POINTS TO REMEMBER...

- Containers loaded on rail cars must be able to withstand an impact of up to 8 mph caused by coupling rail cars in the rail yard.
- 20-ft containers picked up by palletized loading system (PLS) trucks tilt to approximately 35-degree angles during the loading process.



- All containers are subject to varying g-forces during transit.
- Ocean voyages encounter a variety of weather conditions. That means containers will be subjected to pitching, rolling, heaving, surging, yawing, swaying or a combination of these forces.

Where to Start

BEFORE YOU CAN BLOCK AND BRACE CARGO, YOU MUST HAVE THE RIGHT MATERIALS. HERE ARE SOME COMMON OPTIONS...

- **Lumber.** Use as filler for decking, blocking, bracing and constructing partitions. It should be kiln-dried, heat-treated and stamped per the Army's Wood Packaging Material Program. Select lumber specifically made for blocking and bracing cargo in containers. Common lumber sizes used in containers are 1x4, 1x6, 2x4, 2x6 and 4x4 inches.



- **Plywood.** Use for container partitions, dividers and secondary decking. It should be clean and dry. Plywood is not easily affected by changes in moisture content, so it's a good choice when high moisture levels are present.
- **Fiberboard.** Available in sheets, rolls and pre-scored structural shapes for light-duty bracing applications. Use it for dividers, decks or partitions. If you choose fiberboard or similar materials, make sure the strength and moisture resistance stays intact. Temperature changes are common when loaded containers are transported over long distances, especially in winter. This can cause condensation to form. When that happens, fiberboard delaminates, losing its structural stability.

- **Dunnage.** Normally a by-product or scrap material. Use to fill voids, block and brace, and protect and secure container contents.

- **Inflatable air bags (IABs).** Available in paper or rubber and may be reusable or disposable. IABs are suitable for light- and medium-duty bracing. Note that IABs cannot prevent cargo from moving when subjected to impacts, such as those from rail car couplings. Use them to fill voids and add protection to containerized cargo.

- **Strapping.** Heavy-duty steel strapping (banding), tempered for maximum tensile strength and ductility, can absorb impact shocks without breaking. It's one of the most versatile tools for securing cargo in dry-cargo containers.

- **Nails/Nailing.** Use in wood blocking/bracing or securing anchor plates. When nailing into a container floor, nails should penetrate a minimum of two-thirds of the floor's thickness. Nails must not be too long or too thick. Nail in a staggered pattern to avoid splitting lumber.



Three Keys to Cargo Success

FACTORS TO CONSIDER WHEN LOADING CONTAINERS INCLUDE **WEIGHT DISTRIBUTION, USE OF SPACE, AND CARGO VARIATION/COMPATIBILITY.**

HERE ARE **MORE TIPS** FOR SHIPPING SUCCESS...

- Place cushioning material between items.
- Use dunnage to fill voids and prevent movement and chafing damage.
- Avoid loading containers holding liquids above dry cargo.
- If dry and liquid cargos must be loaded on the same level, use dunnage or pallets to raise the dry cargo off the ground to prevent damage in the event of a leak.

- Proper placement of packaged items is important. Even dense cargo like crates can be damaged if loaded improperly. To reduce crushing risk, avoid placing heavy loads next to lighter ones. Likewise, don't stack heavier items above lighter ones.

HALP! YOU'RE CRUSHING MY CONTENTS.



MUHAHA! IN CARGO SPACE, NO ONE CAN HEAR YOU SCREAM!

BOTTOM LINE—IT'S THE SHIPPER'S RESPONSIBILITY TO ENSURE THAT CARGO IS SECURED TO WITHSTAND ANY COMBINATION OF SITUATIONS.

THERE ARE ALSO STATE, FEDERAL, INTERNATIONAL AND MARITIME LAWS AND GUIDELINES THAT **MUST** BE FOLLOWED WHEN SHIPPING CARGO.



FOR **MORE SHIPPING GUIDANCE**, CONTACT THE LOGISTICS SUPPORT ACTIVITY'S PACKAGING, STORAGE AND CONTAINERIZATION CENTER AT DSN 795-7257; (570) 615-7257; OR EMAIL:

usarmy.tjad.usamc.mbx.pt@mail.mil



HMMWVs...

THE CARGO BOX ON YOUR UNIT'S HMMWVs CAN PACK A LOT OF THE STUFF YOU NEED ON MISSIONS.

BUT YOU MIGHT WANT **EXTRA SUPPORT** TO KEEP THOSE ITEMS **IN PLACE.**

CARGO BOX CONTAINMENT NETS OFFER PROTECTION

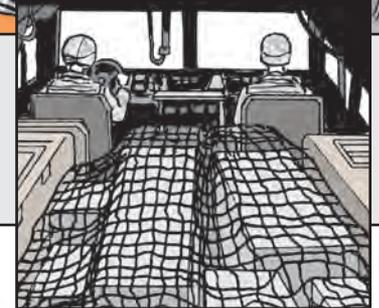


NSN 3940-01-509-9096 BRINGS AN **INTERIOR CONTAINMENT NET** (48 INCHES X 54 INCHES) THAT WORKS ON 4-DOOR HARD SHELL HMMWVs SUCH AS THE M1025, M1114, AND M1151.

NSN 3940-01-449-2379 BRINGS A **CARGO NET** (80 INCHES X 84 INCHES) THAT'S USED ON OPEN-BED HMMWV MODELS SUCH AS THE M998, M1152 AND M1097.

THE NETS KEEP CARGO FROM BOUNCING AROUND THE INSIDE OF YOUR TRUCK.

PLUS, THEY CAN KEEP FLYING CARGO FROM HITTING THE DRIVER AND PASSENGERS IF THE VEHICLE ROLLS OVER.



YOU CAN ALSO PUT A NET ON THE HMMWV'S TRUNK LID TO CONTAIN CARGO. JUST ORDER A NET FOR **EACH USE—INTERIOR, LID, OR OPEN BED** CONTAINMENT.



A THREE-POSITION MOLDED NYLON CLAMP LOCKS THE CLINCHING ROPE THAT GOES AROUND THE ENTIRE NET.

EACH NET COMES WITH A STORAGE BAG AND ATTACHMENT INSTRUCTIONS.



Packaging Protects Repair Parts



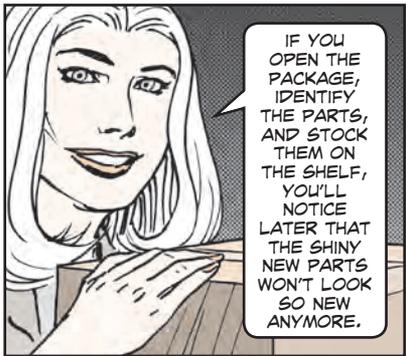
LOOK AT ALL THESE BOXES! AND IT'S NOT EVEN DECEMBER YET!

WHENEVER YOU RECEIVE A PACKAGE IN THE MAIL, DOESN'T IT FEEL LIKE CHRISTMAS? YOU WANT TO RIP OPEN THE BOX AND EYEBALL ITS CONTENTS.

IN FACT, YOU PROBABLY DO! BUT WHEN IT COMES TO THE BOX OF REPAIR PARTS THAT YOUR UNIT ORDERED...



...PRACTICE RESTRAINT.

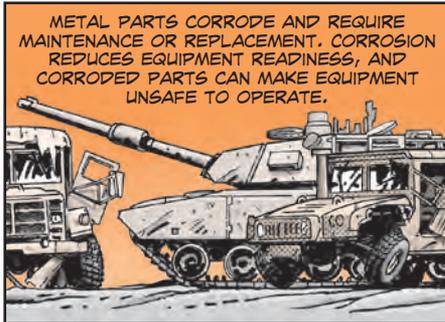


IF YOU OPEN THE PACKAGE, IDENTIFY THE PARTS, AND STOCK THEM ON THE SHELF, YOU'LL NOTICE LATER THAT THE SHINY NEW PARTS WON'T LOOK SO NEW ANYMORE.

THEY MAY BECOME RUSTED AND UNUSABLE.

THAT'S BECAUSE CORROSION STARTS AS SOON AS METAL IS EXPOSED TO AIR.

THINK OXYGEN AND WATER, IN EITHER THEIR LIQUID OR VAPOR FORMS.



IT COSTS THE ARMY BIG BUCKS EVERY YEAR.



YOUR REPAIR PARTS COME IN PROTECTIVE PACKAGING.

PACKAGING IS THE FIRST LINE OF DEFENSE AGAINST DETERIORATION AND CORROSION AND IS DESIGNED BY PACKAGING SPECIALISTS TO PRESERVE AND PROTECT YOUR PARTS.

EACH PART GETS **UNIQUE PACKAGING** BASED ON THE PART'S PHYSICAL AND CHEMICAL CHARACTERISTICS, ITS SUSCEPTIBILITY TO ELECTROSTATIC DISCHARGE (ESD), AND ITS SIZE, WEIGHT, OR FRAGILITY.

MILITARY PACKAGING TAKES MANY FORMS:

- A long-life reusable container (LLRC) housing your HMMVV engine
- ESD protective barrier bags and fast packs on circuit card assemblies
- Fiberboard boxes
- Wood boxes and crates

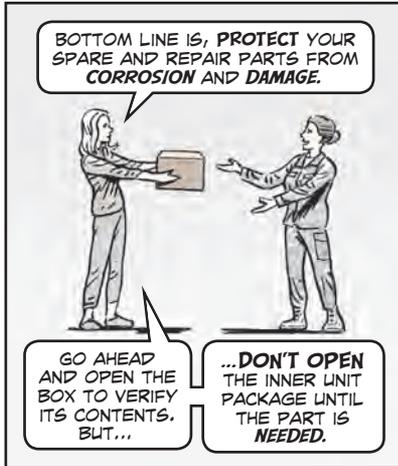
PARTS CAN BE FURTHER PROTECTED BY:

- Preservatives and corrosion inhibitors
- Desiccant and humidity indicators

BY THE WAY, **DON'T** OPEN LLRCs AND ANY PACKAGES CONTAINING DESICCANT UNLESS YOU'RE INSPECTING THEM OR USING THEM.



AND TAKE **EXTRA PRECAUTION** WITH ESD SENSITIVE ITEMS. EYEBALL MIL-HDBK 773A FOR GUIDANCE ON PROPER HANDLING.



BOTTOM LINE IS, **PROTECT YOUR SPARE AND REPAIR PARTS FROM CORROSION AND DAMAGE.**

GO AHEAD AND OPEN THE BOX TO VERIFY ITS CONTENTS. BUT...

...**DON'T** OPEN THE INNER UNIT PACKAGE UNTIL THE PART IS **NEEDED.**

Keep Containers Placard Free!



WHEN IT COMES TO HAZARDOUS MATERIALS (HAZMAT) AND ISO SHIPPING (FREIGHT) CONTAINERS, SHORTCUTS ALWAYS CAUSE TROUBLE.

AND THAT'S THE CASE WITH ISO CONTAINER PLACARDS, TOO!

SOME SOLDIERS PAINT OVER THE PLACARDS BEFORE THEIR UNITS RESHIP EMPTY ISO CONTAINERS.

SLAPPING PAINT OVER CONTAINER PLACARDS SLATED FOR SHIPMENT IS PROHIBITED BY THE TRANSPORTATION REGULATIONS.



WHY IS THIS QUICK FIX A PROBLEM?

COVERING UP PLACARDS WITH PAINT CAN LEAD TO RISKY CONFUSION OVER CONTAINER CONTENTS. EVENTUALLY, MARRED PLACARDS MUST BE COMPLETELY REMOVED BY SOMEONE DOWN THE LINE.

PASSING THE BUCK IS NOT ONLY INCONSIDERATE, BUT MAY BE COSTLY TO THE UNIT OR INSTALLATION THAT SHIPPED OR RETURNED THE CONTAINER.

IT'S ALSO ILLEGAL!
THERE ARE HEFTY FINES FOR NONCOMPLIANCE.



TITLE 49, CODE OF FEDERAL REGULATIONS, CHAP 1, SECTION 172.502, SUBPART F, PLACARDING, PROHIBITS ANY MARKINGS ON CONTAINERS THAT MIGHT BE CONFUSED WITH PLACARDS REQUIRED FOR HAZMAT. ANY SIGN, ADVERTISEMENT OR SLOGAN (SUCH AS "DRIVE SAFELY") THAT MAY CAUSE CONFUSION OVER CONTAINER CONTENTS IS ALSO PROHIBITED.

TO COMPLY WITH TITLE 49, ALL PLACARDS AND PLACARD DECALS MUST BE COMPLETELY REMOVED FROM EMPTY AND NONHAZARDOUS ISO SHIPPING CONTAINERS PRIOR TO RESHIPMENT.

Removing Placard Decals

Materials needed:

- WD-40®
- Dry, clean cloth
- Dish soap
- Mineral oil
- Hair dryer
- Goo Gone®

REMEMBER TO WEAR PERSONAL PROTECTIVE EQUIPMENT AND FOLLOW ANY PRESCRIBED MATERIAL SAFETY DATA SHEETS (MSDS), IF NEEDED.



Try any or all of the following five suggestions for removing stubborn placard decals...

- Peel away as much of the placard decal as possible with your fingernail. Apply dish soap to the placard decal with a clean cloth and allow it to sit for at least 5 minutes before scrubbing away the residue with a clean cloth.
- Lift a corner of the placard decal and use a hair dryer to heat it underneath to soften the adhesive. Keep peeling the placard decal back while holding the heat on the area until the placard decal is removed.
- Spray the placard decal with WD-40® and let it soak for 5 to 10 minutes before removing the decal.
- Apply mineral oil to the placard decal and allow it to soak for several minutes. Once the placard decal is soft, it should scrub away easily.
- Peel away as much of the placard decal as possible and spray what remains with a product such as Goo Gone®. Allow the placard decal to soak for 2 to 3 minutes, then scrub the area with a dry, clean cloth.

FOR MORE INFORMATION, CONTACT THE LOGISTICS SUPPORT ACTIVITY'S PACKAGING, STORAGE AND CONTAINERIZATION CENTER AT DSN 795-7257, (570) 615-7257, OR EMAIL: usarmy.tjad.usamc.mbx.pt@mail.mil

Where to Get MSDS

Need the MSDS for a product or item you're shipping? The Defense Logistics Agency's (DLA) Hazardous Materials Information Resource System keeps all of DOD's MSDS on file. You'll also find transportation, logistics, disposal and safety and health data. Go to:

<http://www.dlis.dla.mil/hmirs/>

Safety... Shut, Latch and Strap Vehicle Doors

THE ARMY MOVES MILITARY EQUIPMENT BY RAIL TO TRAINING LOCATIONS AND INSTALLATIONS AROUND THE WORLD. THIS USUALLY GOES SMOOTHLY.

BUT TWO DIFFERENT TIMES RECENTLY, VEHICLE DOORS CAME OPEN DURING RAIL SHIPMENTS. BAD NEWS! BOTH THE VEHICLES AND RAILROAD EQUIPMENT WERE DAMAGED.



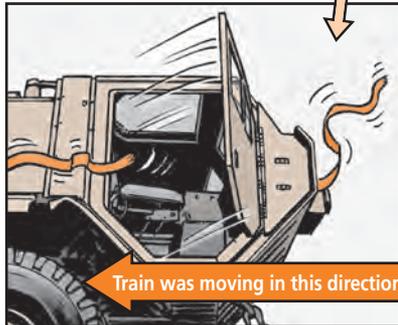
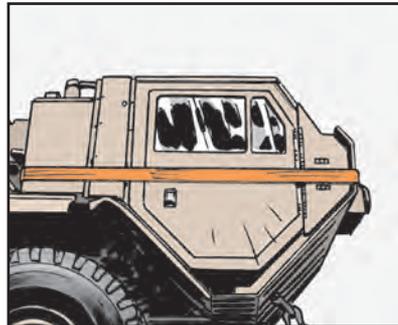
This is a serious safety issue. Not only can an open door damage Army equipment, but it could strike a passing passenger rail car. That could hurt or even kill someone.

So whenever you ship vehicles by rail, make sure all doors are properly shut, latched and strapped or banded. Make sure door latches are holding. Broken latches **must** be secured by using wire, banding or some other method.

CSX railway already requires that all vehicle doors, armored and unarmored, be secured by wire, banding or other means before rail transport, whether the latches are working or not.

Load team supervisors and inspectors should also double-check that all vehicle doors are secured before rail transit.

Even a strapped door can open, though. In one incident, the train's motion caused the strap to rub against a sharp edge on the vehicle until it broke.



Strap over door was cut by edge of truck, allowing door to fly open

Normal vibration/swaying of flatcar slowly cut strap with saw-like action on vehicle edge. Strap broke and door opened, striking railroad's side signal.

So the Army's Transportation Regimental Safety Office recommends these additional steps when strapping vehicle doors:

- Use rubber or plastic corner/edge protectors when running web straps over vehicle edges.
- Check that protectors are securely connected to web straps so they don't vibrate loose.

Proper tie-down procedures for rail shipping many types of equipment are covered in the Transportation Engineering Agency's (TEA) pamphlet 55-19, *Tie-down Handbook for Rail Movements* (Jul 2009). Go to:

<http://www.tea.army.mil/pubs/Deploy.asp>

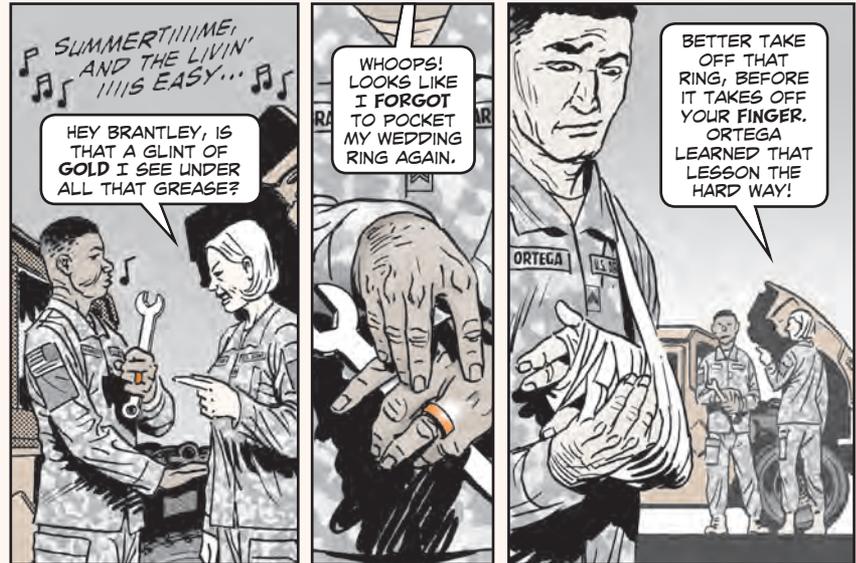
Click [Field Guidance Pamphlets](#) to get TEA PAM 55-19 and related pubs.

Questions? Contact Howard Mayhew, DSN 687-7467, (804) 765-7467, or email:

howard.j.mayhew.civ@mail.mil

Safety...

Don't Snag the Ring Fish



Summertime means fishing for a lot of folks. But one thing you don't want to hook is a ring fish when you're working on or around Army equipment.

Too many Soldiers have lost fingers (or parts of 'em) by snagging rings when doing maintenance or climbing on or off equipment.

Fact is, jewelry is **risky business** in the motor pool. If you're working on or around electrical devices, it can even pose an electrocution hazard.

So remember—stash the bling and take off the ring!

MISSILES PS

MISSILES

Have a blast with these PM articles...

- Sentinel corrosion prevention
- HIMARS blast shield cleaning
- HIMARS/MLRS SKL tips
- AN/TPQ-36 V10 radar PM
- MLRS blast door link assembly
- AN/TPQ-37 radar tips

ALSO FEATURING SMALL ARMS

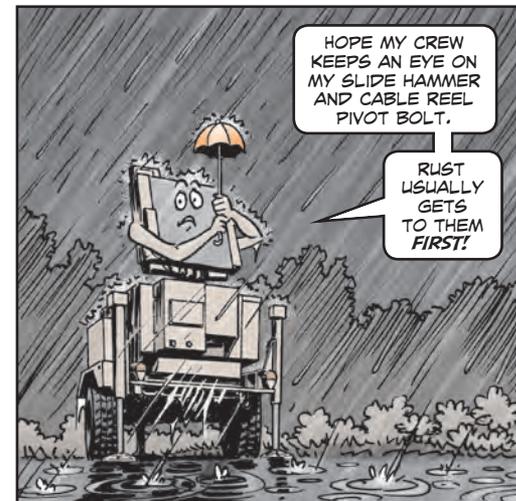
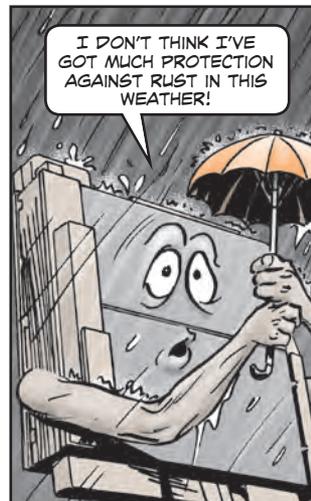
Aim straight for this info...

- AN/PED-5 LTM battery installation
- Mortar baseplate
- Machine gun mount accounting



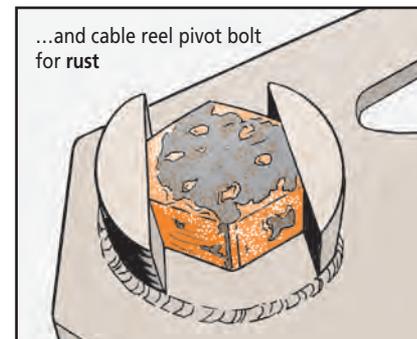
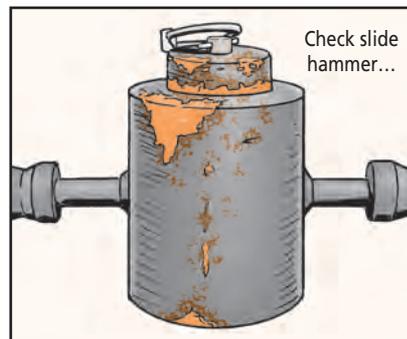
Sentinel Radar System...

DON'T LET RUST HAMMER YOUR SLIDE HAMMER



Rust can do a real number on the Sentinel's slide hammer and cable reel pivot bolt. If they're left unprotected from the elements, rust starts eating them up.

Prevent that by stopping rust early. Look for rust on the slide hammer and cable reel pivot bolts during PMCS. If you spot any, rub it off with sandpaper. Then spot paint the bare spots with lusterless black paint, NSN 8010-00-066-5937.

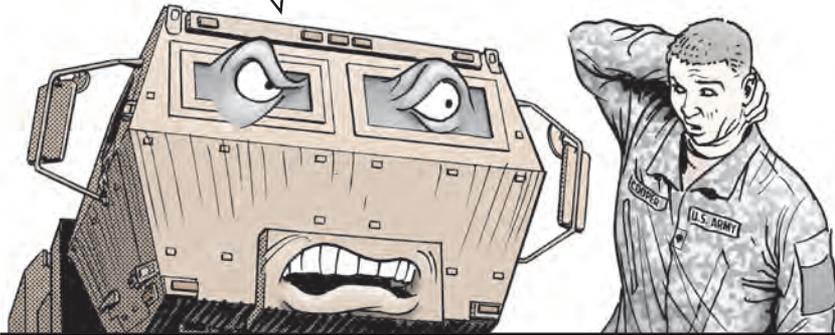


Give the slide hammer even more protection by storing it in the truck's stowage box when you don't need it.

HIMARS...

YOU'VE LET THAT ROCKET DUST TURN HARD ON MY BLAST SHIELDS. NOW YOU'LL NEVER GET IT OFF!

Clean Blast Shields and Tie Down Cover



Dear Editor,

Here are two tips that can save HIMARS crews time and money:

Clean blast shields as soon as possible after firing. The longer rocket dust sits after firing, the harder it is to remove. Eventually, it becomes like concrete. Rocket dust is extremely corrosive and can lead to warped shields. Plus, corrosion can freeze the nuts and screws for the shields.

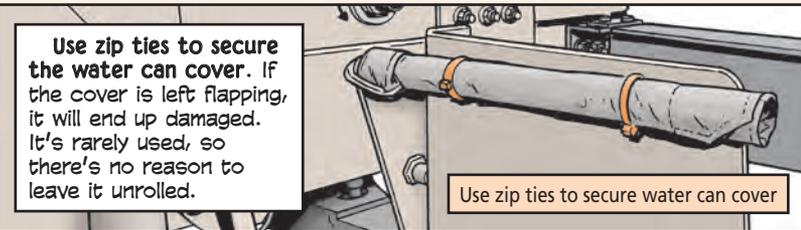
Unfortunately, there's no easy way to clean off rocket dust. Use a wire brush, CLP and lots of elbow grease. If there are any bare spots when you're done, touch them up with paint.

Clean blast shields with wire brush and CLP



Use zip ties to secure the water can cover. If the cover is left flapping, it will end up damaged. It's rarely used, so there's no reason to leave it unrolled.

Use zip ties to secure water can cover

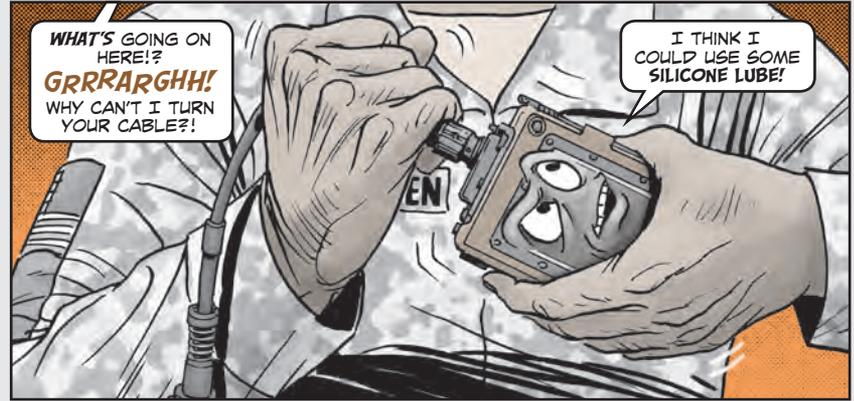


Brian Stewart
TACOM FMX Track Shop
Ft Sill, OK

Editor's note: Thanks for the good advice, Brian.

HIMARS,
MLRS...

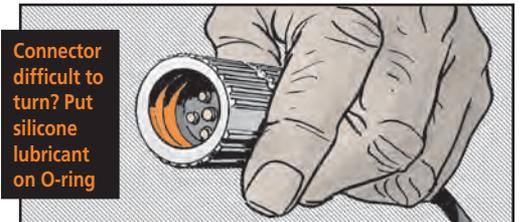
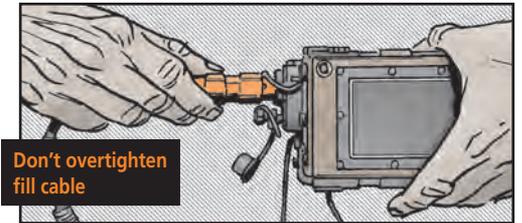
The Key to SKL Solutions



Dear Editor,

Here are a few quick tips to help you with the MLRS and HIMARS' simplified key loader (SKL):

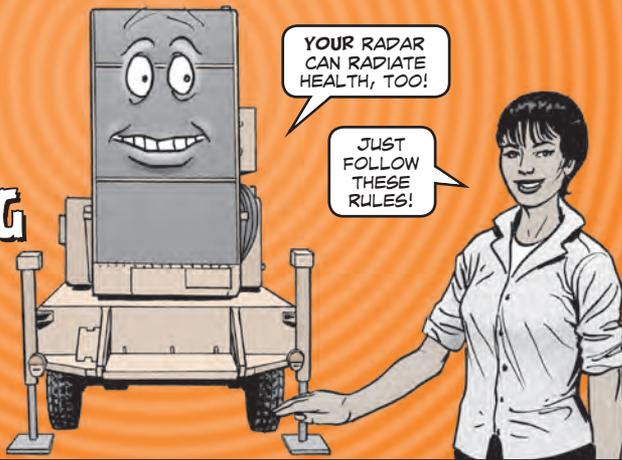
- **Don't overtighten the SKL's fill cable.** If you muscle up on the cable, you can damage the cable connector. If the fill cable is damaged, it's impossible to transfer data information and keys to a receiving or transmitting device.
- **Cable connector difficult to turn?** Try putting a silicone lubricant around the connector's O-ring so that the connector can lock on the fill port. See the SKL IETM's expendable supplies and materials list for silicone lubricants.
- **Easy does it with the inductive stylus.** The stylus' position can be detected even when it's above the surface of the panel. You don't need to bang the stylus to make the SKL work. That just damages the stylus.



SSG James Reddick
AIT School
Ft Sill, OK

Editor's note: Thanks for the SKL help, Sergeant.

KEEP RADAR RADIATING HEALTH



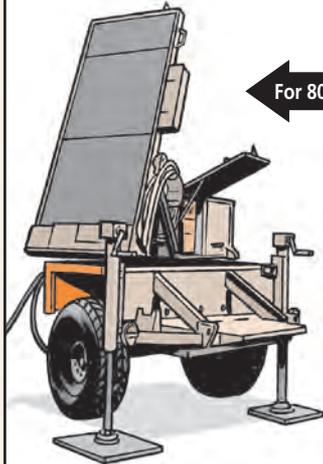
Dear Editor,

Here at the Ft Sill Ordnance Detachment, we've come up with a few ways to keep the AN/TPQ-36 V10 radar radiating good health.

Before operation, look for cracks and holes in the flexible wave guide, especially at the connection points. Any damage can let radiation leak, which isn't good for your health. Report any problems.



For 801 test, antenna should be over roadside fender

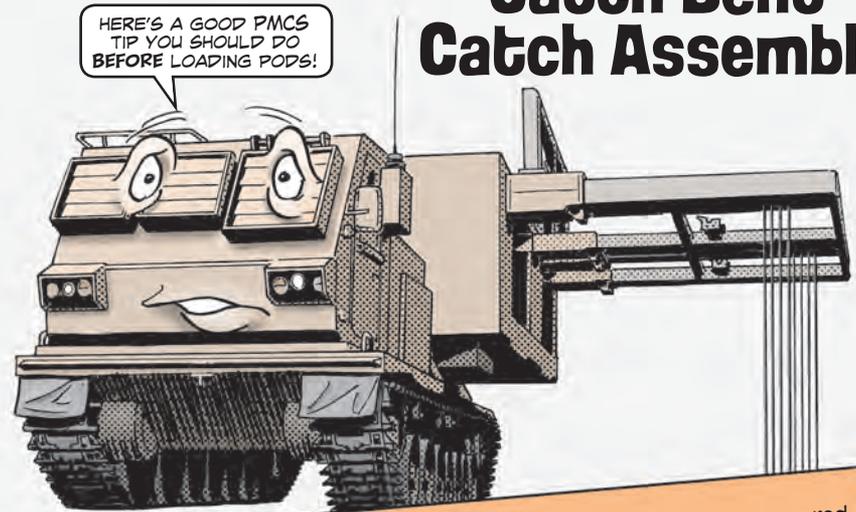


Before doing the 801 test for antenna movement, make sure the antenna is positioned over the roadside fender. If you put the antenna over the curbside fender and there's a fault associated with antenna movement in azimuth, the software will ONLY display an 801/030 azimuth drive fault. And the fault may be wrong. This isn't mentioned in the radar's TM.

Eric Armstrong
Ft Sill, OK

Editor's note: Healthy tips indeed! Thanks, Eric.

Catch Bent Catch Assembly



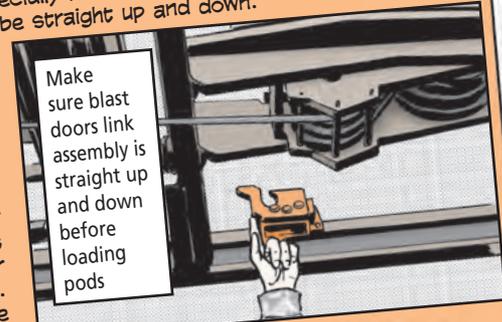
Dear Editor,

Before loading pods in the MLRS, do PMCS on the link assembly door rod link and track roller to make sure the blast door opens and closes properly. One good thing to check especially is the position of the blast door link assembly. The assembly should be straight up and down.

Another good check is the clearance between the door close cam and the center of the door hinge. The clearance should be between 1 and 3mm. If the blast door link assembly is out of alignment or the clearance between the door close cam and door hinge is wrong, the blast door's roller assembly can be damaged. Then you can't open or close the blast door.

If you spot problems, tell your repairman.

SSG Carlos Rivera
2/18 FA
Ft Sill, OK



GOOD CATCH, SERGEANT. THANKS!



HERE'S MORE GOOD STUFF! THESE FT SILL GUYS REALLY KNOW WHAT THEY'RE DOING!

Expert Help For Your AN/TPQ-37 Radar

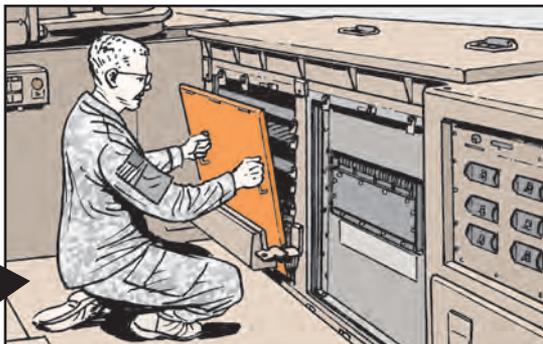
YOU GOT THAT RIGHT!

Dear Editor,

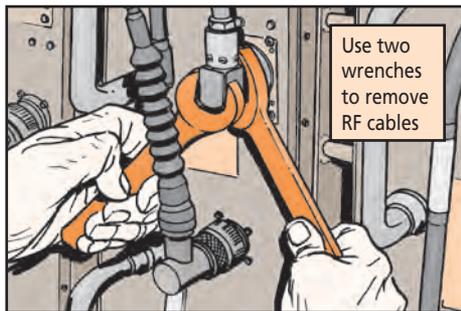
The Ft Sill Ordnance Detachment offers these tips for getting the most out of your AN/TPQ-37 radar:

On the V10, keep the covers on the receiver cabinet completely closed and latched during operation. If you don't, you'll get lots of faults. This was not necessary on the previous versions.

Keep receiver cabinet doors closed and latched



Use two wrenches, NSN 5120-01-430-2961 and NSN 5120-00-604-5021, to remove RF cables. Use one wrench to hold the cable stationary while you use the other to loosen the nut. Otherwise, you can kink the cable and it may leak radiation. When you re-install the W704 and W706 cables, make sure to torque them to 21 ft-lbs. If they're too loose or tight, they can leak radiation.



Use two wrenches to remove RF cables

Clean all 11 filters. The radar overheats if the filters clog up. Blow out the filters with low-pressure air. In sandy areas, you'll need to clean filters daily. Otherwise, weekly is good enough.

Clean all 11 filters weekly or daily in desert

Careful opening the door to the receiver excitor. It's very easy to pinch your right hand if you use it for leverage.



Receiver excitor door can pinch

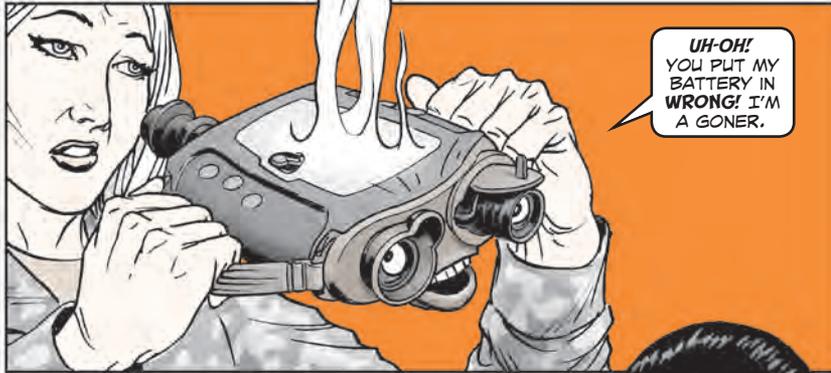
94M Radar Repair Training Branch Ft Sill, OK

Editor's note:
Good advice from the experts!
Thanks.

OK, READING TIME'S OVER!

YOU SAID IT!

TIME TO PUT WHAT I LEARNED INTO PRACTICE.



GET BATTERY RIGHT OR EVERYTHING GOES **SMORW**

IF YOU DON'T **CORRECTLY** INSTALL THE MAIN BATTERY CASSETTE IN THE AN/PED-5 LASER TARGET LOCATOR MODULE (LTLM), EVERYTHING GOES WRONG IN A **BIG** WAY.



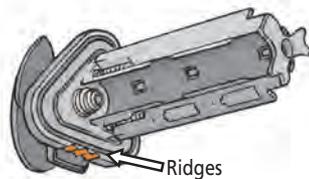
Putting the battery cassette in the wrong way can severely damage the internal battery contacts. It can also cause a reverse polarity effect that puts the AN/PED-5 out of business permanently.

It's easy to install the battery cassette right by using the cassette's tactile orientation ridges to guide the cassette in. The ridges should face the bottom of the LTLM when you install the cassette.

When inserting battery cassette...

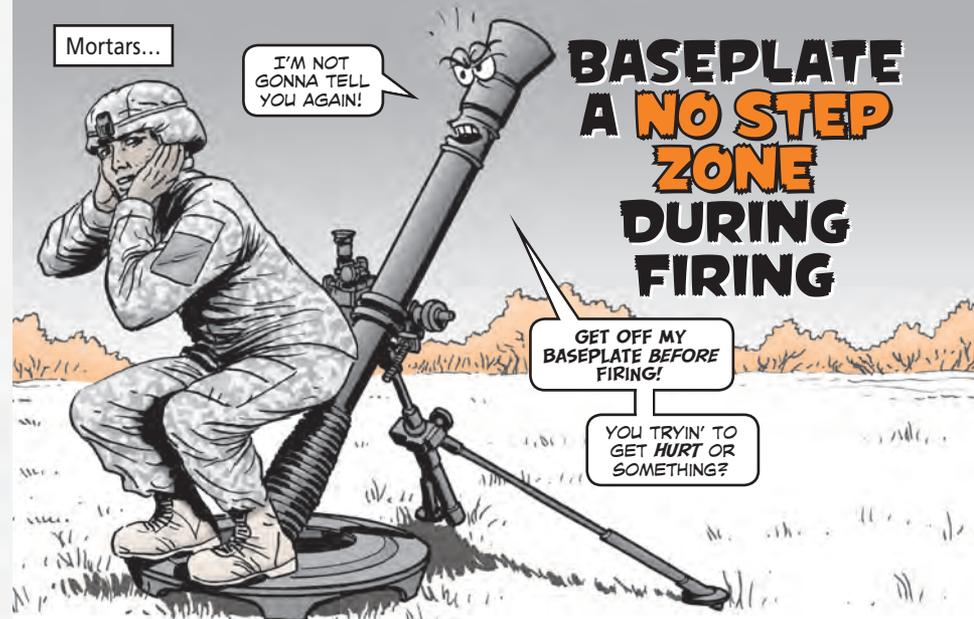


...ridges should face bottom of LTLM



If you have any AN/PED-5 questions, contact TACOM's Dennis Timmons at DSN 786-1643, (586) 282-1643, or email: dennis.c.timmons.civ@mail.mil

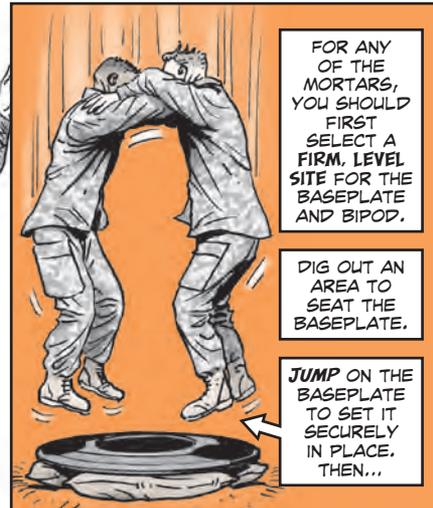
Mortars...



ONE PLACE YOU **DON'T** WANT YOUR FEET WHILE FIRING YOUR MORTAR IS ON THE **BASEPLATE**.

THAT'S BOTH **DANGEROUS AND PROHIBITED**. THE BASEPLATE CAN KICK OUT FROM UNDER YOU.

ONE SOLDIER SUFFERED A **BROKEN LEG** WHEN THAT HAPPENED.



FOR ANY OF THE MORTARS, YOU SHOULD FIRST SELECT A **FIRM, LEVEL SITE** FOR THE BASEPLATE AND BIPOD.

DIG OUT AN AREA TO SEAT THE BASEPLATE.

JUMP ON THE BASEPLATE TO SET IT SECURELY IN PLACE. THEN...



...KEEP YOUR FEET AWAY FROM THE BASEPLATE DURING FIRING.

HOW TO ACCOUNT FOR MOUNTS

HEY! I DON'T HAVE A SERIAL NUMBER.

HOW IN THE HECK ARE YOU GOING TO KEEP TRACK OF ME?

WE DON'T HAVE TO KEEP TRACK OF YOU UNLESS WE WANT TO.

THEN WE CREATE A SERIAL NUMBER FOR YOU.

Dear Half-Mast,
We are getting machine gun mounts that don't have serial numbers. Soldiers have been etching made-up numbers on the mount and then putting the numbers in the property book. But then when we run our monthly reports, we get this message:
"NOTE: ON-HAND BALANCE EQUALS 25. 0 SERIAL NUMBERS ARE RECORDED. RECONCILE DIFFERENCE." How should we handle this?

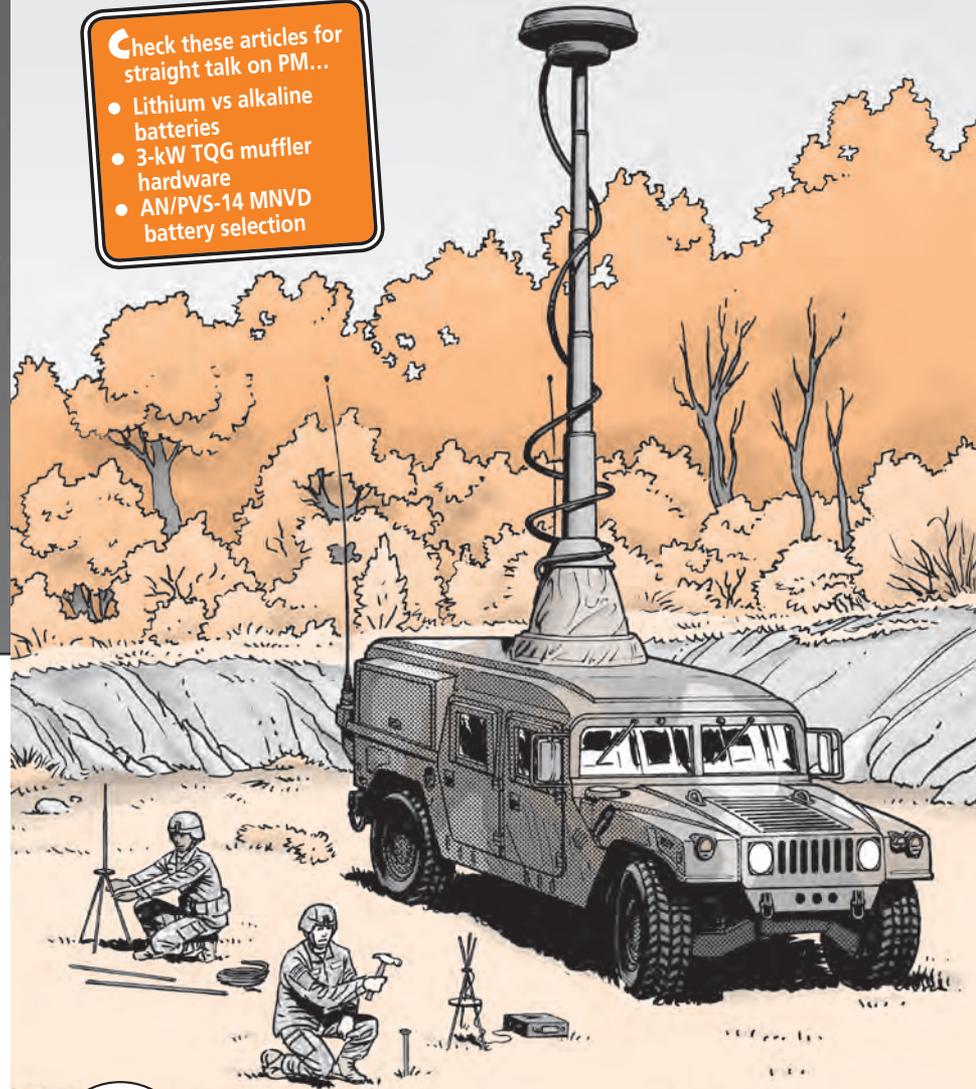
CW2 M.A.

Dear Chief,
The Army hasn't assigned serial numbers to machine gun mounts since 2000. Mounts older than that have serial numbers, but only because back then mounts were unnecessarily considered sensitive items. There is no need for units to create serial numbers for mounts to be entered into PBUSE.
If you have older mounts with serial numbers entered in your property book, simply change their serial/registration number requirement code (SRRC) from "S" to "N". That will prevent the mounts from showing up in the monthly reports.
If units decide to track mounts, they can create serial numbers for each mount according to their local SOP. But there is no requirement to track machine gun mounts.

Half Mast

Check these articles for straight talk on PM...

- Lithium vs alkaline batteries
- 3-kW TQG muffler hardware
- AN/PVS-14 MNVD battery selection



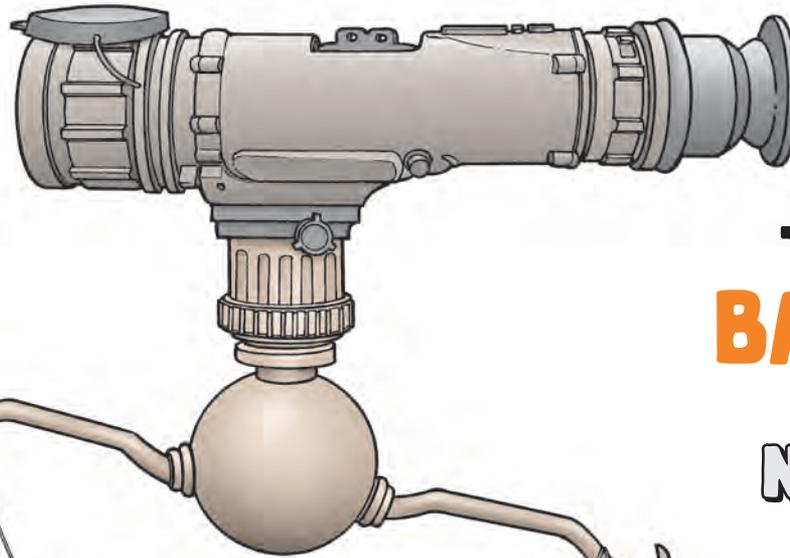
PS COMMUNICATIONS

LITHIUM ALKALINE



LITHIUM BATTERIES

- 30 PERCENT LIGHTER : LIGHTER LOAD FOR SOLDIERS
- MUCH LONGER LASTING
- BEST FOR HIGH-DRAIN DEVICES, SUCH AS ENHANCED NIGHT VISION GOGGLES, THERMAL WEAPON SIGHTS AND LASER TARGET LOCATORS
- PERFORM BETTER IN EXTREME TEMPERATURES
- LONGER SHELF LIFE

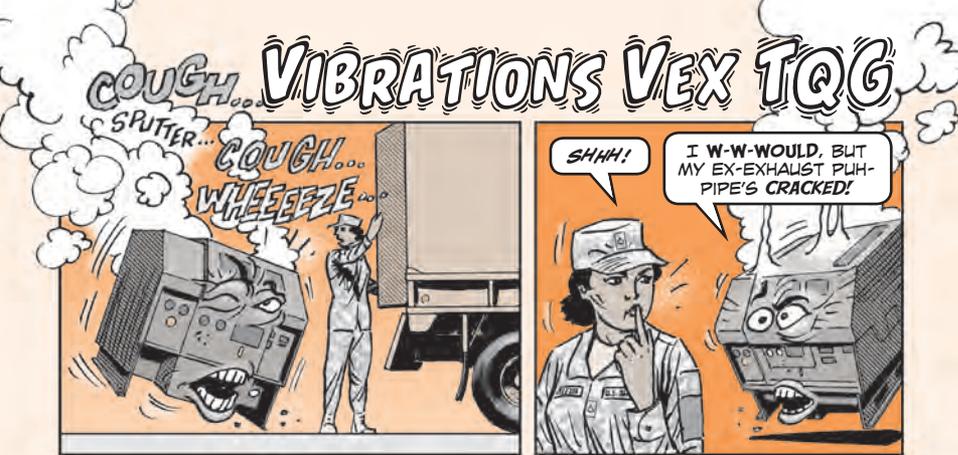


**SOLDIERS,
CHOOSE
THE RIGHT
BATTERIES
FOR YOUR
NIGHT VISION
EQUIPMENT,
SENSORS,
LASERS AND
TARGETING
DEVICES**



ALKALINE BATTERIES

- HEAVIER SOLDIER LOAD, WHICH MEANS ADDITIONAL EQUIPMENT CAN'T BE CARRIED
- POOR PERFORMANCE IN EXTREME TEMPERATURES
- SHORTER SHELF LIFE



It's old news that constant vibration leads to trouble for the 3-kW tactical quiet generator (TQG). The muffler takes quite a shaking while the generator is running.

Then muffler bolts can break. And those vibrations loosen the muffler mounting hardware. With loose mounting hardware, the vibrations can crack the exhaust pipe.

A crack in the pipe or muffler could lead to an exhaust system failure.

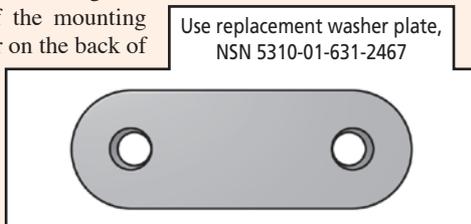
And more smoke and louder noise is not what you want out of your generator when you're out on a mission.

The solution has always been to keep a trained eye on the muffler's mounting hardware. If it's loose, tighten it. If the mounting bolts have suffered thread damage, replace them. Do this check every time you run up your generator, because the last time it ran could have loosened the mounting hardware.

And don't forget that some of the mounting hardware is underneath the muffler on the back of the engine and is hard to see.

There's also a new fix. The current flat washers, NSN 5310-01-478-9081, are being replaced with a washer plate, NSN 5310-01-631-2467.

Plus, changes have been made to procedures in TM 9-6115-639-13&P to improve the new washer plate. Note that Step 6 in WP 0075 now tells you to add a thin coat of locking compound, NSN 8030-01-104-5392, to the bolt threads and to torque the nuts on the cylinder head to 18 lb-ft. Don't forget to check the muffler mounting bolts to ensure they're tightened and torqued to 9 lb-ft.



AN/PVS-14 MNVD...

MILES Batteries Means Miles of Darkness



Dear Editor,

I repair night vision equipment. I'm running into too many cases of Soldiers taking batteries from their MILES equipment and putting them into their AN/PVS-14 monocular night vision devices (MNVDs).

The MILES battery is an AA 3.6V lithium battery. The AN/PVS-14 uses an AA 1.5V L91 lithium battery, NSN 6135-01-333-6101. The MILES battery puts too much voltage in the -14 and can damage it. That leaves Soldiers in the dark and us with expensive repairs.

Please stress that Soldiers should use only the correct batteries in their night vision equipment.

Todd Smock
AMSA 28(G)
Cedar Falls, IA

Editor's note: Sure thing, Todd.

On another note, don't forget the dual battery housing for the AN/PVS-14 is being done away with through attrition. When the dual battery housing wears out, order the single battery housing, NSN 5855-01-523-4058.



Single battery housing

GCSS-Army Reminder

Remember to check the GCSS-Army website for alerts, updated fielding and training schedules and other important info. Visit: <https://gcss.army.mil/>

Or sign up to get automatic notifications at: <https://gcss.army.mil/Support/register.aspx>

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

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

PACKAGING GUIDE POINTS THE WAY

THE LOGISTICS SUPPORT ACTIVITY (LOGSA) PACKAGING, STORAGE, AND CONTAINERIZATION CENTER OFFERS A QUICK GUIDE TO MILITARY PACKAGING, PACKING AND PRESERVATION.



**Download LOGSAP 746-1,
Packaging-the Basics, from LOGSA's website:
<https://www.logsa.army.mil/index.cfm>**

The screenshot displays the LOGSA website interface. At the top, there are navigation links for "Connect with LOGSA", "Workforce Directory", "Facebook", "Training", "Help Desk", and "System Access". Below this is a search bar and a "Mission Area" dropdown. A green callout box with an arrow points to the "Publications" link in the top navigation menu, containing the text: "FROM THE TOP MENU, CLICK ON PUBLICATIONS." Below the menu, a "Publications" dropdown menu is open, listing various resources. A second green callout box with an arrow points to the "Packaging - The Basics" option in this dropdown, containing the text: "FROM THE DROP-DOWN CHOICES, CLICK ON PACKAGING-THE BASICS." The main content area shows a "Click on each of" section with several document thumbnails, including "A Soldier's Guide" and "Packaging - The Basics".

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