



**THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY**

ISSUE 797 APRIL 2019



**COMBAT VEHICLES**

- Stryker Steering Damper Damage Check
- M1A2 Tank CROWS WSCP Switch Damage
- M1-Series Tank Gun Mount Travel Lock Pin
- M1-Series Tank Track Skirts Caution
- Stryker Brake System Check
- M88-Series Fuel Injector Line Chafing
- M88-Series Engine Startup and Shutdown
- M104 Wolverine Bridge Exercise



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- FMTV CTIS Electronic Control Module
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- D7R II Dozer, Idle Engine Before Operation
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**THE  
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MAINTENANCE  
MONTHLY**



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TB 43-PS-797, 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 by 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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By Order of the Secretary of the Army:

**MARK A. MILLEY**  
General, United States Army  
Chief of Staff

Official:

**MARK F. AVERILL**  
Acting Administrative Assistant  
to the Secretary of the Army

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Issue 797

# PS

April  
2019

## THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-797

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IF YOU WANT  
SUCCESS IN  
COMBAT WITH  
YOUR MACHINE  
GUNS...

...TAKE A LOOK AT PAGES  
27-34 FOR ALL THE SECRETS  
TO PROPER GUN PMCS. YOU'LL  
FIND IT ON THE PS APP, OUR  
WEBSITE, OR DVIDS.



# ASK FOR HELP!

## LARs:

<https://www.logsa.army.mil/web2/archive/PS2017/770/770-24-25.pdf>

## COMET Teams:

latroy.d.hubbard.ctr@mail.mil;  
(910) 570-6428; DSN (870) 570-6428

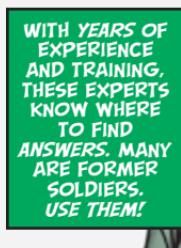
## DLA Customer Service:

<http://www.dla.mil/CustomerSupport/WarfighterSupport.aspx>



NEXT, CONTACT THE EXPERTS:  
AMC'S LOGISTICS ASSISTANCE REPS  
(LARS), FORSCOM'S COMMAND  
MAINTENANCE EVALUATION TRAINING  
(COMET) TEAMS AND DLA'S  
CUSTOMER SERVICE TEAMS.

LARS HELP SOLVE WEAPONS SYSTEM,  
EQUIPMENT, LOGISTICS AND TRAINING ISSUES.  
COMET TEAMS FOCUS ON ACTIVITIES, PRACTICES,  
AND PROCEDURES RELATED TO LOGISTICS  
READINESS. DLA'S CUSTOMER SERVICE REPS  
ADDRESS SMS-CODED SUPPLY QUESTIONS.



Stryker...

# Steer Your Way to Damper PM

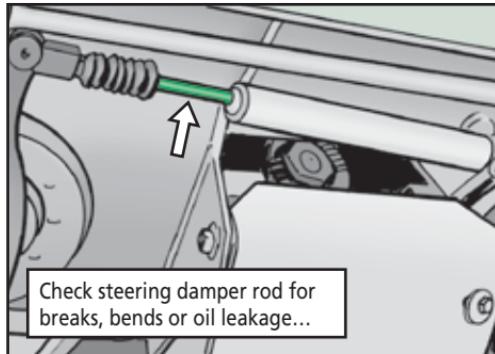


Drivers, have you ever had a rough day behind the wheel of your Stryker? And by rough, we mean a bumpy ride. That can happen without steering damper PM.

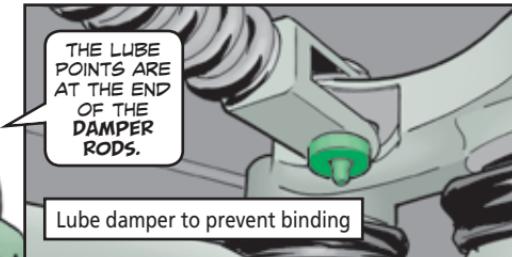
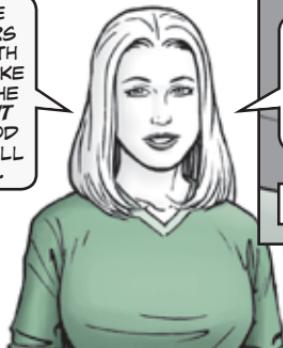
Just like your car has shock absorbers to smooth out the ride, your Stryker has dampers that act as stabilizers for the steering system.

When the going gets rough, things can also get rough for the dampers. Rocks and heavy brush take a toll. That's why you need to crawl under your Stryker for a visual inspection, especially after driving over rough terrain.

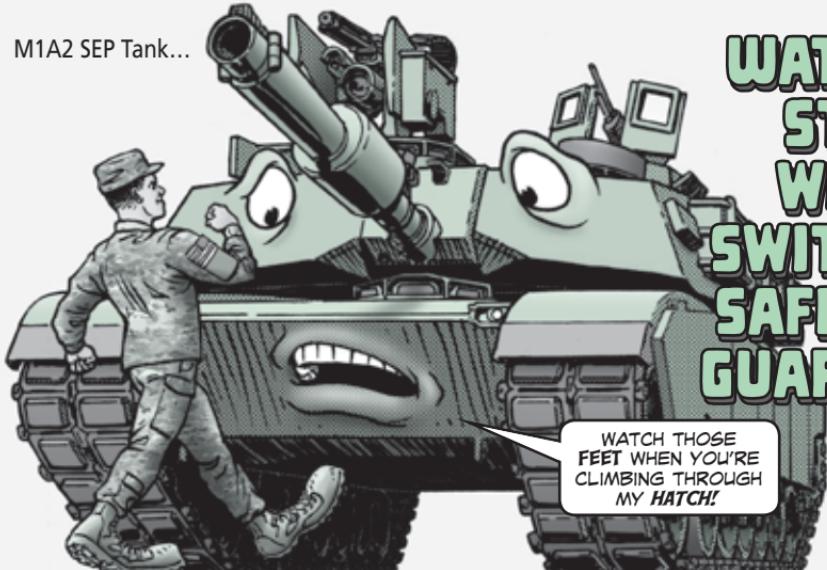
Look for a bent or broken rod or evidence of oil on the cylinder that could indicate a leaking wiper seal. See any problems? Let your mechanic know.



ALSO, LUBE THE DAMPERS MONTHLY WITH GAA, JUST LIKE IT SAYS IN THE -10. WITHOUT LUBE, THE ROD BINDS AND WILL SOON BEND.



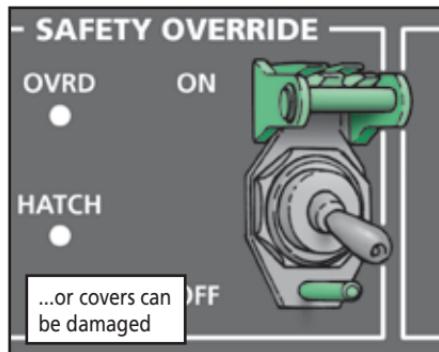
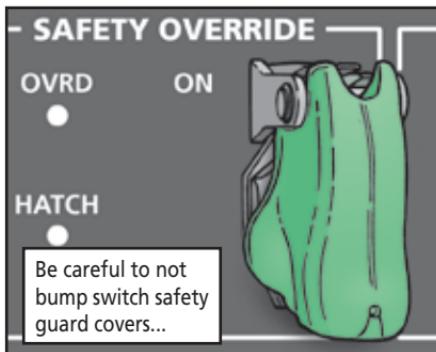
# WATCH STEP WITH SWITCH SAFETY GUARDS



Dear Editor,

Crewmen need to watch their step when entering their M1A2 SEP tank through the commander's hatch. One wrong move and the tank could end up NMC!

That's because it's real easy to damage the switch safety guards on the common remotely operated weapons station's (CROWS) weapon station control panel (WSCP) while squeezing into the tank. I've seen way too many switch safety guards get broken because of one wrong move with a foot or elbow, or a bump with personal gear. If that happens, the CROWS is out of action.

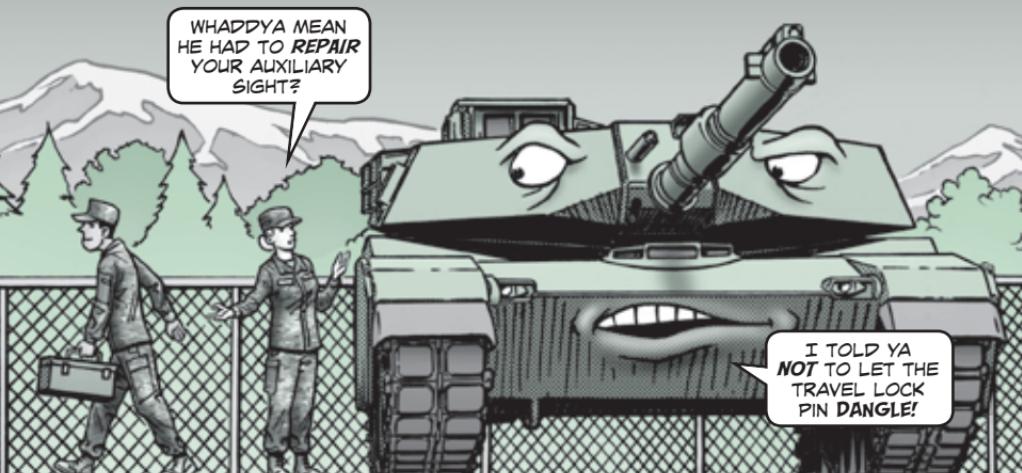


So be sure to take care when climbing in and out of your tank and make sure those switch safety guards are safe from carelessness!

CW2 John Mercado  
Ft Hood, TX

**Editor's note:**  
That's a CROWS safety tip worth crowing about!

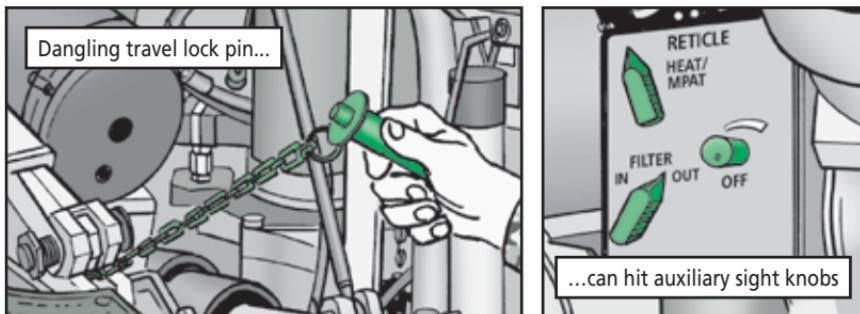
# PIN DOWN TRAVEL LOCK PIN



Dear Editor,

Crewmen need to make sure the gun mount travel lock pin is secure **before** firing their tank's main gun. A pin that's left dangling can get jammed when the main gun recoils. That can cause damage or even keep the gun from fully recoiling into the ready position.

The pin is attached to a length of chain that keeps it from getting lost. If the pin isn't secured, it can hit the gunner's auxiliary sight knobs. It only takes a few hits by the heavy pin to crack or break the knobs.



When not in travel lock, fully insert the pin into the main gun bracket. That keeps the pin out of the way until it's needed again. Check out the -10 TM for more info.

SSG Clarence Porter  
Ft Hood, TX

**Editor's note:** Sergeant, thanks for pinning down these travel lock tips!



## DON'T LET SKIRT DISASTER BEFALL YOU!

Dear Editor,

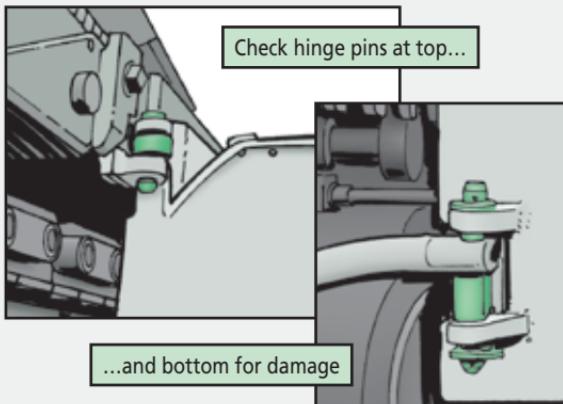
I've seen some M1-series tank crewmen take risks when doing maintenance on the track and suspension. And by risks, I mean they disregard what the -10 TM says and open two skirts on the same hinge point. That's awfully dangerous!

The skirts are very heavy. The hinge points are between skirts 1 and 2, 3 and 4, and 5 and 6. If the hinge breaks while the skirts are open, someone could be seriously injured or even killed when the skirt falls.

Crewmembers should also be sure to check for missing or damaged hinge pins when opening a skirt. A bad or missing pin can also cause a skirt to fall.

SSG Robert Porter  
Ft Hood, TX

**Editor's note:** Crews would be wise to not skirt over these skirt warnings!



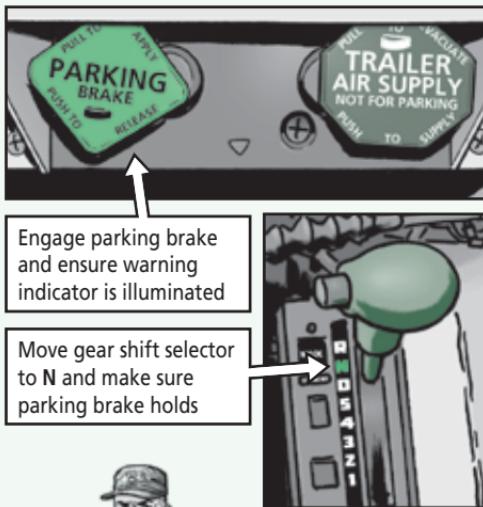
# Check Off Brake Check During PMCS



Drivers, your life could depend on your Stryker stopping when you need it to! That's why checking the brake system is such an important part of Before PMCS.

First, engage the parking brake and make sure the warning indicator is illuminated. Apply the brake pedal and move the gear shift selector to 3. Release the brake and ensure the parking brake holds.

Then move the gear shift selector to N. When the air pressure gauge reaches 120 psi, shut down the engine, press the brake pedal three times and hold it after the third time for one minute. Make sure AUX and AUTO are in the ON position. If the air pressure gauge drops or you hear any air leaks, tell a mechanic right away.



# STOP FUEL LINE CHAFING IN ITS TRACKS!

TIME TO  
PULL YOUR  
POWER-  
PACK, PAL.

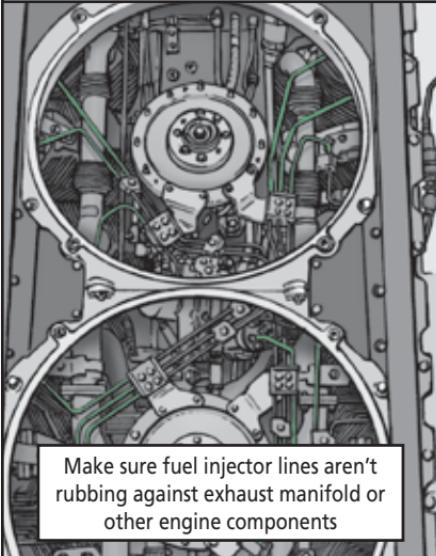
GREAT! YOU CAN GIVE MY  
FUEL INJECTOR LINES A GOOD  
INSPECTION WHILE YOU'RE AT IT!



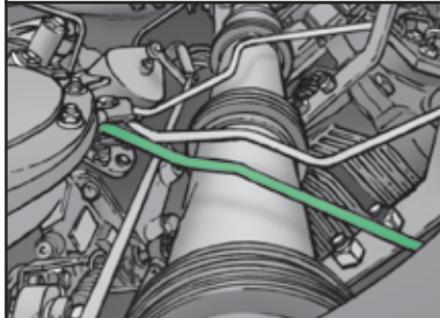
**M**ECHANICS, THE NEXT TIME YOU REMOVE YOUR M88-SERIES RECOVERY VEHICLE'S REAR ARMOR DECK AND ENGINE COOLING FANS, INSPECT THE STEEL FUEL INJECTOR LINES FOR SIGNS OF CHAFING.

A FIRE CAN HAPPEN IF ONE OF THE HIGH-PRESSURE LINES DEVELOPS A LEAK. SO IF A LINE SHOWS SIGNS OF CHAFING, HAVE FIELD MAINTENANCE REPLACE IT.

IF A LINE IS RUBBING AGAINST THE EXHAUST MANIFOLDS OR OTHER ENGINE COMPONENTS BUT SHOWS NO SIGNS OF CHAFING, BEND THE LINE SO THERE'S AT LEAST  $\frac{1}{8}$ -INCH OF CLEARANCE.



Make sure fuel injector lines aren't rubbing against exhaust manifold or other engine components



AFTER THE LINES ARE INSPECTED AND/OR REPLACED, INSTALL THE FANS AND TURN THEM BY HAND TO MAKE SURE THE FANS AREN'T HITTING THE LINES.

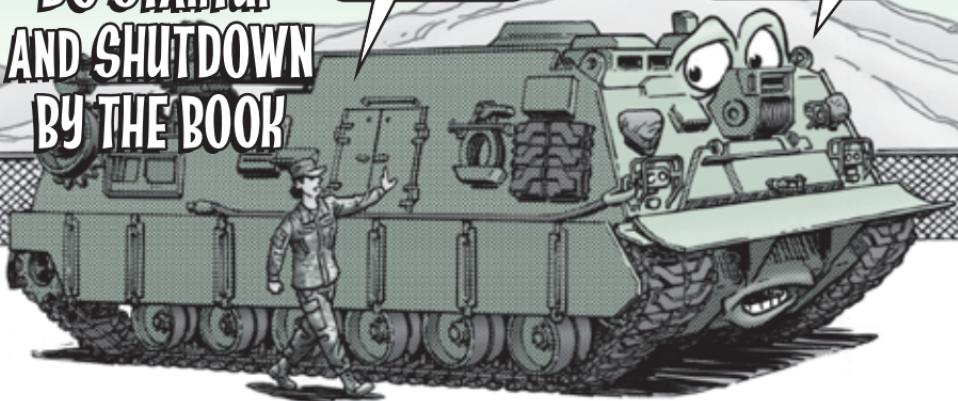
**NOTE:**  
BEFORE INSTALLING ENGINES DRAWN FROM THE SUPPLY SYSTEM, MAKE SURE THEIR FUEL LINES AREN'T RUBBING AGAINST ANY OF THE ENGINE COMPONENTS.

FOR MORE INFO, CHECK OUT TACOM GROUND PRECAUTIONARY MESSAGE 18-010 AT:  
<https://tulsa.tacom.army.mil/Safety/message.cfm?id=GPA18-010.html>

# DO STARTUP AND SHUTDOWN BY THE BOOK

LET'S GET YOU  
STARTED UP SO  
WE CAN GET OUR  
MISSION STARTED!

JUST MAKE  
SURE YOU LET  
MY ENGINE  
WARM UP FIRST!

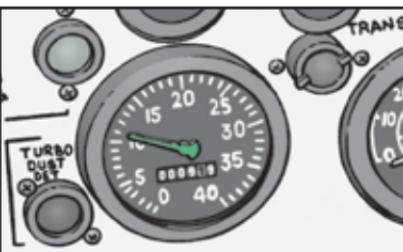


IT'S EASY TO GET IN A HURRY AND RUSH THINGS, ESPECIALLY AT THE BEGINNING OR END OF A MISSION.

BUT YOU DON'T WANT TO RUSH WHEN IT COMES TO STARTING AND SHUTTING DOWN YOUR M88-SERIES RECOVERY VEHICLE'S ENGINE.

**ALWAYS**  
**START AND SHUT DOWN**  
**THE ENGINE EXACTLY**  
**LIKE IT SAYS IN THE -10.**

Idling engine at proper rpms will protect it from damage during warm up and shutdown



IT'S VERY  
IMPORTANT  
TO ALLOW  
TIME FOR  
THE ENGINE  
TO WARM  
UP AFTER  
STARTING AND  
COOL DOWN  
BEFORE  
SHUTDOWN.

## Engine Warm Up

IDLE THE ENGINE AT 1,000 TO 1,200 RPMS AND LET THE ENGINE WARM UP FOR THREE MINUTES.

THEN REDUCE THE IDLE TO 675 TO 725 RPMS FOR THE A1 AND 825 TO 875 TO 875 RPMS FOR THE A2.

## Engine Shutdown

IDLE THE ENGINE FOR THREE TO FIVE MINUTES AT 1,000 TO 1,200 RPMS.

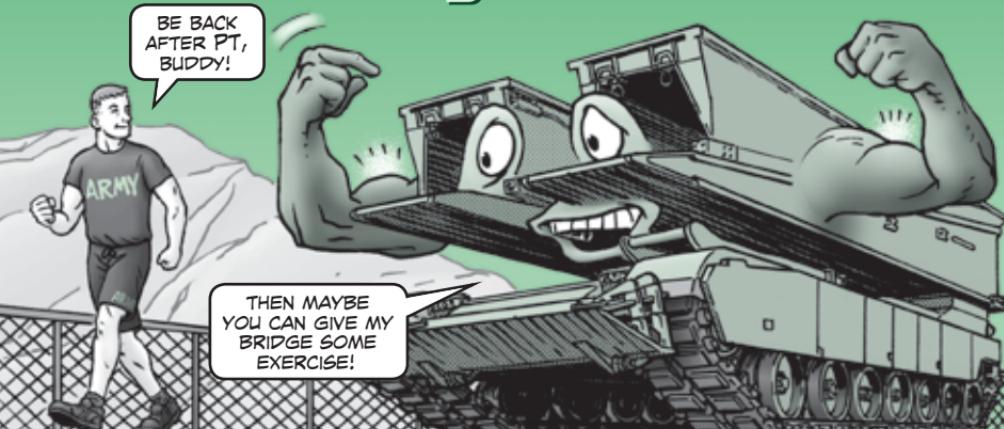
THEN REDUCE THE IDLE TO 675 TO 725 RPMS FOR THE A1 OR 825 TO 875 RPMS FOR THE A2 BEFORE SHUTTING THE ENGINE DOWN.

FOLLOWING THE ENGINE STARTUP AND SHUTDOWN PROCEDURES EXACTLY AS THE TM SAYS WILL HELP PROTECT THE ENGINE FROM DAMAGE...

...AND KEEP YOUR RECOVERY VEHICLE COMBAT READY.

M104 Wolverine...

# Give Bridges a Monthly Workout

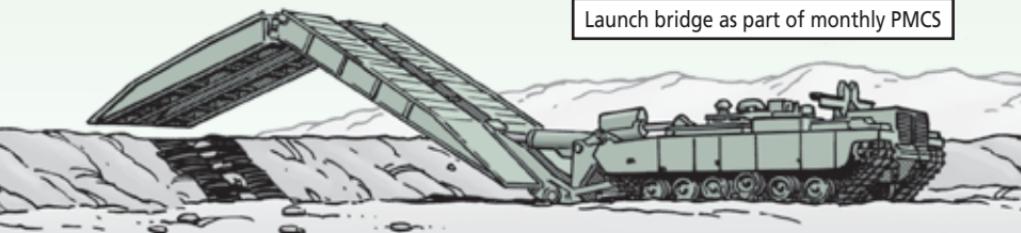


Dear Editor,

Exercise is a great thing in the Army, especially when it comes to the M104 Wolverine's bridge.

Sometimes Wolverine crewmen overlook a very important monthly PMCS check. The bridge should be exercised, in other words launched, once a month.

Launch bridge as part of monthly PMCS



Regular exercise for the bridge is a good way to make sure that it's working the way it should. After all, that's the primary mission of the Wolverine!

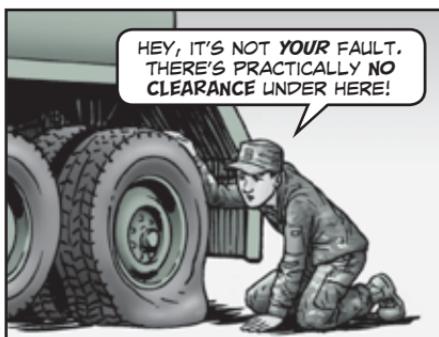
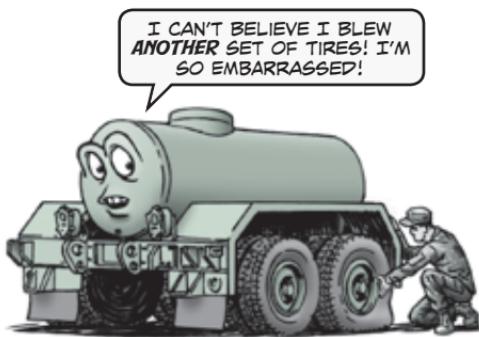
Launching the bridge is also the only way you can do certain PMCS checks. For example, inspecting the bridge drive sprockets, mounting pins and bearings for damage can only be done with the bridge on the ground.

So exercise your right to good preventive maintenance by launching those Wolverine bridges every month, just like it says in the -10 TM.

SGT Scott Means  
Ft Hood, TX

**Editor's note:** Thanks, SGT Means! That's a great reminder for all Wolverine crews.

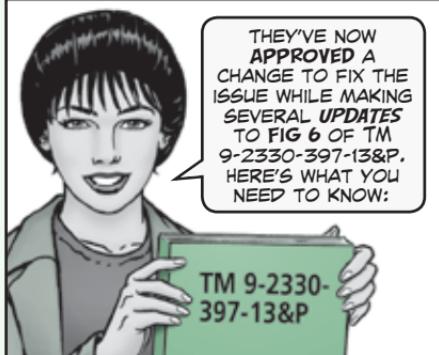
# Premature Wear Triggers TM Change



TIRES WEAR OUT. THAT'S EXPECTED. BUT WHEN MAINTAINERS NOTICED PREMATURE WEAR ON THE INTERIOR SIDEWALLS OF M1112 WATER TRAILER TIRES, THEY KNEW SOMETHING WASN'T RIGHT.

TURNS OUT, THERE WASN'T ENOUGH CLEARANCE BETWEEN THE REAR TIRES AND THE WALKING BEAM ARM. THE TIRES WERE RUBBING AGAINST THE METAL ARM, CAUSING PREMATURE WEAR AND SOMETIMES EVEN BLOWOUTS!

TACOM RULED OUT SEVERAL POTENTIAL CAUSES, INCLUDING A SPINDLE SPACER AND INCORRECTLY SIZED PARTS.

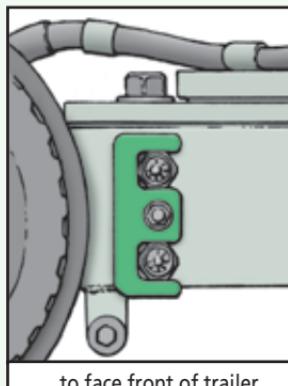
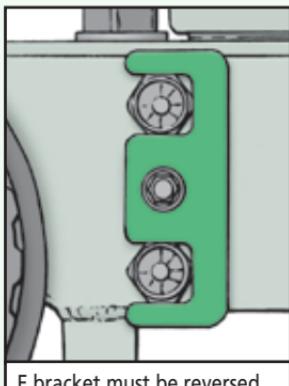


## The Parts

### PACKING RETAINER:

LISTED AS ITEM 3, THE ORIENTATION OF THIS E BRACKET, NSN 5330-01-448-3347, HAS BEEN REVERSED.

WHEN FIELD MAINTENANCE PERFORMS THE WALKING BEAM ALIGNMENT IN WP 0049, THIS BRACKET SHOULD BE ROTATED 180 DEGREES SO THAT THE BOLT OPENINGS ARE FACING THE FRONT OF THE TRAILER.



## MOUNTING PLATE:

LISTED AS ITEM 18, THE WIDTH OF THIS PLATE HAS BEEN REDUCED OVERALL BY 1 1/8 INCHES.

THE PART NUMBER HAS ALSO CHANGED TO 126355589.

FIELD MAINTENANCE SHOULD ORDER A NEW PLATE TO GET THE CORRECT SIZE.

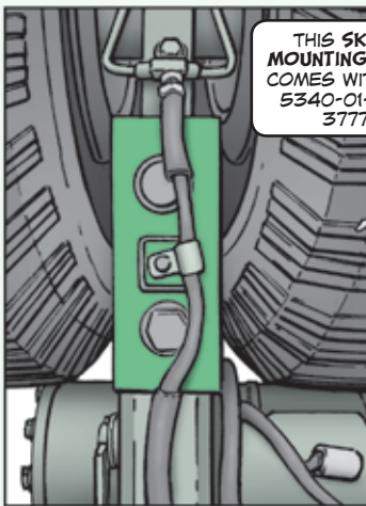
THE PRICE IS A BIT STIFF AT MORE THAN \$2K, BUT WILL BE UPDATED WHEN A NEW CONTRACT IS IN PLACE. MEANWHILE, A PRICE CHALLENGE HAS BEEN SUBMITTED.

THE WALKING BEAM ALIGNMENT PROCEDURE SHOWN IN WP 0049 OF TM 9-2330-397-13&P ISN'T CORRECT.

INSTEAD, FOLLOW THESE STEPS, BEGINNING WITH STEP 10 OF THE CURRENT PROCEDURES.



BE SURE TO USE A NEW PLATE AND CHANGE THE ORIENTATION OF THE PACKING RETAINER, AS DESCRIBED ABOVE.



THIS SKINNY MOUNTING PLATE COMES WITH NSN 5340-01-449-3777.

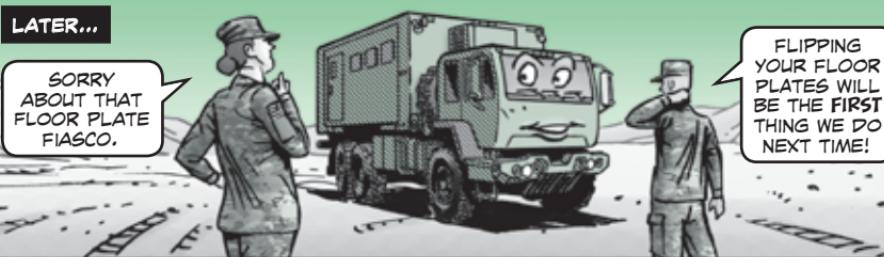


## The Procedures

- Step 10:** Push rear arm assembly toward rear of trailer until fully extended.
- Step 11:** Pull rear arm assembly forward approximately one-half inch. Distance from front to rear spindle, measured from dead center, should be 37 inches.  
*Note: All remaining items are found in Fig 2.*
- Step 12:** Tighten adjusting bolt (Item 13) enough to engage stop. Continue tightening until adjusting bolt flats align with bracket (Item 14).
- Step 13:** Install bracket (Item 14), washer (Item 12), and screw (Item 11).
- Step 14:** Tighten two bolts (Item 7) six full turns. Continue tightening until first flats align with retainer (Item 10). Rear arm should be centered in front frame of the walking beam. Inspect inboard and outboard rear arm spacing to make sure it's centered. If not, it'll cause severe tire wear.
- Step 15:** Reverse retainer bracket (Item 10) so opening is facing front of trailer. Install retainer bracket, washer (Item 9) and screw (Item 8).
- Step 16:** Tighten bolt (Item 15) to secure two washers. Continue tightening until flats align with strapping (Item 18). Slide strapping on bolt.
- Step 17:** Tighten setscrew (Item 16) enough to engage inner walking beam. Tighten setscrew nut (Item 17).
- Step 18:** Torque bolts (Item 1) to 120-130 lb-ft until capscrew aligns with guard (Item 2).
- Step 19:** Install guard (Item 2), clamp (Item 3), washer (Item 5), and bolt (Item 4).

M1087A1P2 Expansible Van...

# FLOOR PLATE FIASCO



Dear Half-Mast,

We have an M1087A1P2 Expansible Van with broken floor plates. One of our Soldiers forgot to flip them up as the sides were retracting, and it cracked the front and rear plates.

Now they have to be replaced, but I can't find an NSN for them. Please help!

SFC J.S.B.



FORGETTING TO FLIP THE FLOOR PLATES IS A COMMON MISTAKE, SERGEANT, BUT A COSTLY ONE.

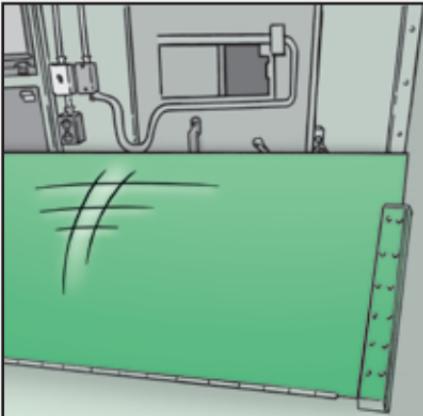
FLIPPING FLOOR PLATES IS ONE OF THE FIRST THINGS YOU DO BEFORE RETRACTING THE SIDES!

YOU'LL FIND IT LISTED AS ITEM 19 IN FIG 1405 OF TM 9-2320-333-13&P IN IETM EM 0294 (JUN 15).

APR 19

Move items to middle, then flip up side floor plates...

...BEFORE retracting sides



## Parts Problems

WHILE WE'RE ON THE SUBJECT OF PARTS FOR THE M1087A1P2 EXPANDABLE VAN, WE SHOULD ALSO MENTION THAT A CHANGE IS IN THE WORKS TO FIX MISPRINTS IN TM 9-2320-333-13&P (JUN 15).

THE INSTALLATION PARTS SHOWN FOR THE SIDE PLATFORM, ITEMS 1-16 OF FIG 1391, ALL HAVE LINES POINTING TO THE **WRONG PARTS**.

ITEMS 1 AND 2 ALSO HAVE THE **WRONG NAMES**.

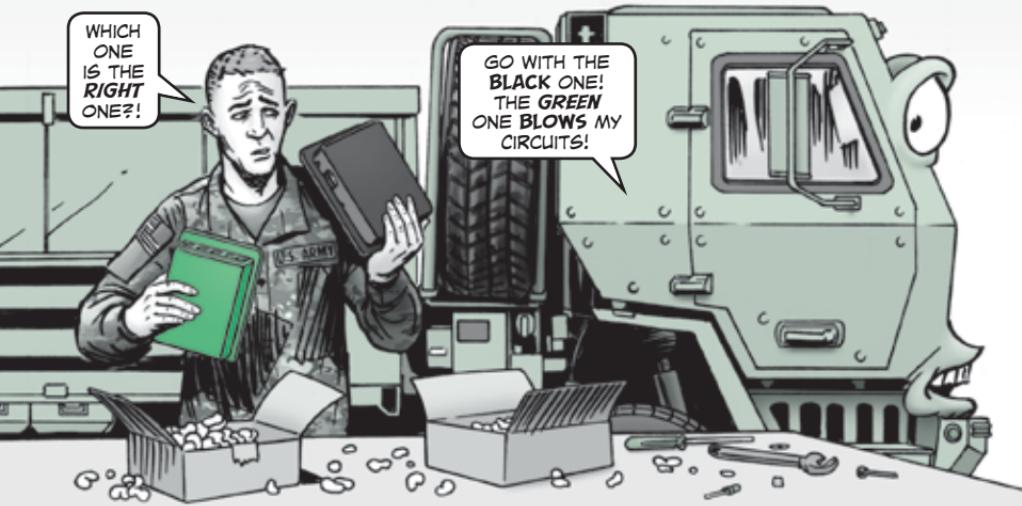
ITEM 1 SHOULD BE THE **SUPPORT SIDE PLATFORM**.  
ITEM 2 SHOULD BE THE **SIDE PLATFORM ASSEMBLY**.

UNTIL THE TM IS UPDATED,  
USE THIS CHART TO ORDER THE  
RIGHT REPLACEMENT PARTS:

Item	Name	Correct NSN
1	Support side platform	2590-01-559-7182
2	Side platform assembly	2590-01-559-7026
3	Plain hexagon nut (4 ea)	5310-00-245-3615
4	Flat washer (8 ea)	5310-00-625-5756
5	Support bracket (2 ea)	5340-01-575-6487
6	Lock washer (4 ea)	5310-00-974-6623
7	Machine bolt (4 ea)	5306-00-226-4828
8	Wire rope assembly, single leg (2 ea)	4010-01-575-5604
9	Quick-release pin (2 ea)	5315-01-300-2640
10	Shoulder screw (2 ea)	5305-00-450-1917
11	Lock washer (2 ea)	5310-00-984-7042
12	Plain hexagon nut (2 ea)	5310-00-477-6768
13	Side kick plate assembly	5340-01-575-8873
14	Quick-release pin (2 ea)	5315-01-426-8858
15	Wire rope lanyard (2 ea)	4010-01-536-8279

FMTV...

# BUYER BEWARE!



Dear Editor,

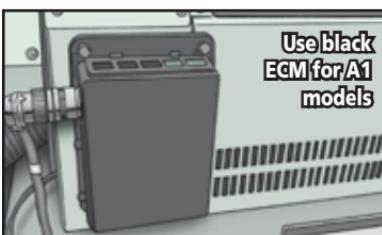
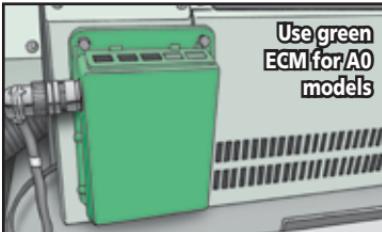
I've noticed a lot of units order the wrong FMTV central tire inflation system (CTIS) electronic control module (ECM) because they're using TM 9-2320-366-24P-1 and -2, which are only for AO models.

When they order CTIS parts from the AO manual, they receive a green ECM, NSN 2530-01-375-1483. Even though that CTIS ECM only works in the AO model, they're installing it on A1 models.

The green CTIS ECM doesn't have the circuitry to support the A1 model, so it causes electrical damage to the wiring and many of the vehicle's control units, including critical systems like the engine and transmission. It trips circuit breakers, over-exerts resistors, and may even block the network altogether.

Units should order the black CTIS ECM, NSN 2530-01-521-8242, for the FMTV A1. However, you'll only find the correct NSN in TM 9-2320-391-23&P in IETM EM 0369 (OCT 17) using the Electronic Maintenance System-Next Generation (EMS-NG). Many FMTV equipment failures have occurred simply due to this error.

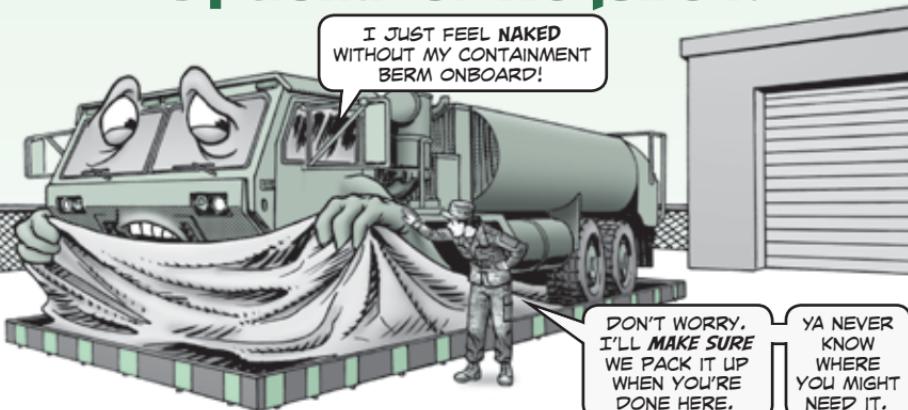
CW4 (Ret) Brook Turner  
Schofield Barracks, HI



**Editor's note:** Good catch, Chief! Mechanics, always make sure you're using the right TM for the vehicle model.

HEMTT...

# Containment Berms: Optional or Required?



Dear Half-Mast,

Is there a requirement for HEMTT tankers to carry fuel containment berms onboard? If so, what's the NSN? I can't find it listed in the IETM.

CPT S.A.V.

THERE'S NOT AN ACTUAL REQUIREMENT FOR A HEMTT FUEL BERM, CAPTAIN. BUT...

...INDIVIDUAL STATES MAY REQUIRE BERMS OR OTHER HAZMAT GEAR THAT ISN'T LISTED IN A VEHICLE'S TM.

CHECK WITH YOUR JAG OR LEGAL ADVISORS TO DETERMINE THE STATE AND/ OR LOCAL REQUIREMENTS IN YOUR AREA.

THE M978 HEMTT TANKER'S FUEL BERM IS NSN 4235-01-621-7288. IT'S NOT LISTED IN THE IETM SINCE IT'S NOT REQUIRED FOR HEMTT TANKERS.



Containment berms come in all sizes and styles

CONTAINMENT BERMS ARE AVAILABLE FOR MULTIPLE VEHICLES, BUT THERE ARE TOO MANY TO LIST HERE. EMAIL US IF YOU'D LIKE A LIST OF BERMS AVAILABLE FOR ALL ARMY VEHICLES:

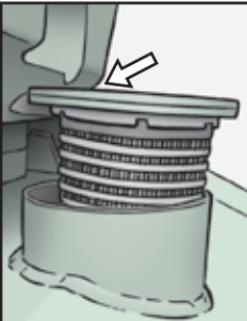
[usarmy.redstone.asc.mbx.psmag@mail.mil](mailto:usarmy.redstone.asc.mbx.psmag@mail.mil)

# Rear Hydraulic Filter Gets a Mod

YOU CAN'T REMOVE THE REAR HYDRAULIC FILTER WITHOUT SOME DAMAGE.

BUT THAT'S TAKEN CARE OF WITH THIS NEW MOD!

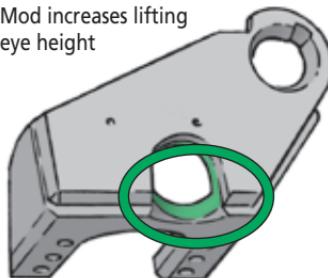
YOU MECHANICS KNOW IT'S A TIGHT SPOT TO REMOVE OR INSTALL THE DOZER'S REAR HYDRAULIC FILTER. THAT'S BECAUSE THERE'S NOT ENOUGH CLEARANCE BETWEEN THE FILTER'S CAP AND DOZER'S LIFTING EYE. THAT MEANS SOME FORCE IS NEEDED TO REMOVE THE FILTER. END RESULT: DAMAGE!



Lack of clearance means a busted filter during removal

THE GOOD NEWS IS CATERPILLAR WILL MODIFY THE BOTTOM OPEN CIRCLE IN THE REAR LIFTING EYE SO THERE'S ENOUGH ROOM FOR THE FILTER TO GO IN AND OUT WITHOUT THE DAMAGE.

Mod increases lifting eye height



THE LOCAL CATERPILLAR DEALER WILL COME TO YOUR SITE TO MAKE THE MODIFICATION. CONTACT THE SERVICE ENGINEER, GREG COSTLEY, AT CATERPILLAR TO MAKE ARRANGEMENTS BY EMAILING: [costley\\_gregory\\_e@cat.com](mailto:costley_gregory_e@cat.com)

**REMEMBER**

CC THE TACOM DOZER TEAM WHEN REQUESTING THE MODIFICATION:  
[usarmy.detroit.tacom.mbx.ilsc-dozers@mail.mil](mailto:usarmy.detroit.tacom.mbx.ilsc-dozers@mail.mil)

*COUGH... COUGH!  
MY ENGINE IS... READY  
TO STALL OUT... NEED  
MORE RPMS...*

A LITTLE  
IDLE TALK

**I**DLING THE D7R II DOZER'S ENGINE FOR FOUR TO FIVE MINUTES AT  $\frac{1}{4}$  THROTTLE—ABOUT 700-800 RPMS—AFTER START UP IS A MUST.

THAT GIVES THE ENGINE'S OIL TIME TO LUBRICATE PARTS. IT ALSO LETS THE ENGINE WARM UP ENOUGH TO BOIL OFF CONDENSATION CAUSED BY NORMAL ENGINE BREATHING.

**BUT LISTEN UP!** YOU'LL NEED TO INCREASE RPMS TO 2200-2500 BEFORE ACTUAL CONSTRUCTION OPERATIONS. NEW OPERATORS ARE KNOWN TO FORGET TO INCREASE THOSE RPMS. THEN THEY WONDER WHY THE ENGINE KEEPS STALLING.

CAT Construction Equipment...

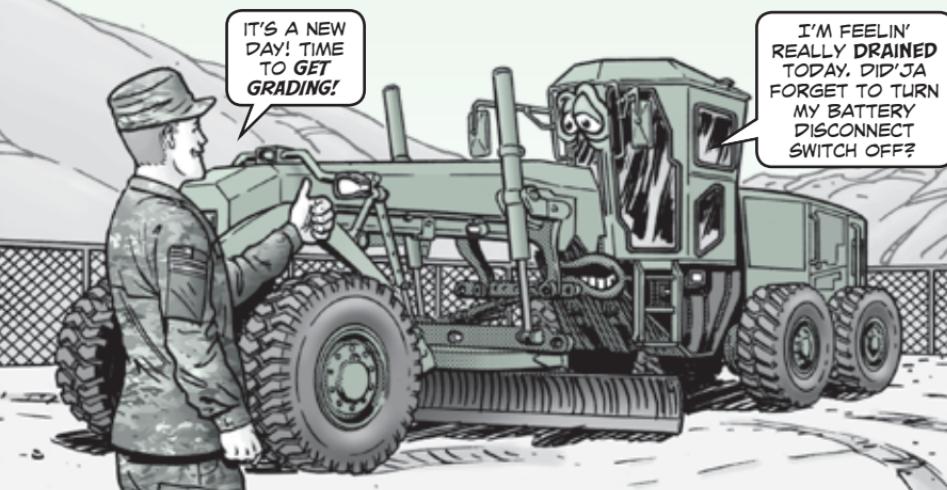
## 500-hr Service Kits Available

MECHANICS, THIS LIST OF 500-HR SERVICE KITS WILL COME IN HANDY WHEN YOU NEED TO PERFORM CHECKS AND SERVICES ON THE ARMY'S CATERPILLAR CONSTRUCTION EQUIPMENT...

Vehicle	NSN
D6K Dozer	2450-01-659-6411
D7R II Dozer	4910-01-659-7085
120M Grader	2540-01-660-6080
621G Scraper	2540-01-660-6081
966H Loader	4910-01-660-8146
924H Loader	4910-01-660-8161

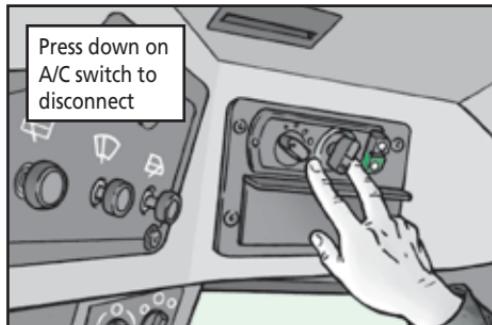
500-hr service kits now available

# END BATTERY DRAIN PAIN

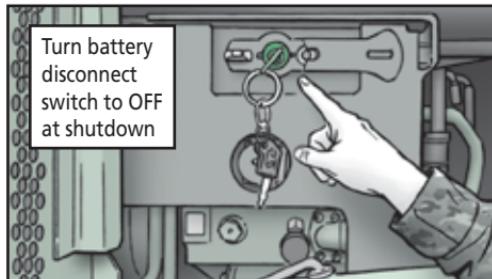


**O**PERATORS, DRAINED BATTERIES ON YOUR 120M ROAD GRADER ARE A **BAD WAY** TO START THE WORK DAY! BUT THAT'S EXACTLY WHAT HAPPENS IF YOU **DON'T** TAKE A FEW STEPS DURING SHUTDOWN THE NIGHT BEFORE.

**STEP 1:** AFTER YOU'VE BEEN WORKING IN THE HEAT ALL DAY, MAKE SURE YOU FLIP OFF THE AIR CONDITIONING (A/C) SWITCH AT SHUTDOWN. OTHERWISE, THE A/C'S ELECTRONIC COMPONENTS WILL CONTINUE TO DRAW POWER EVEN WHEN THE ENGINE IS OFF.



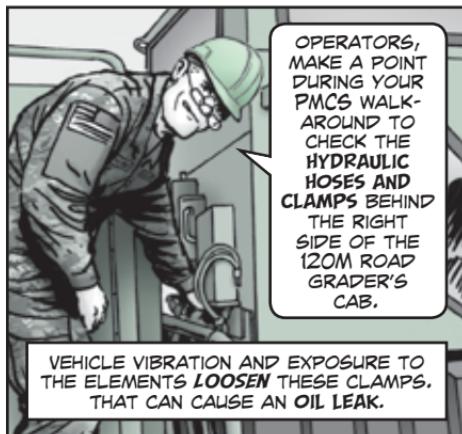
**STEP 2:** IF THE GRADER IS GOING TO BE SITTING A WHILE, MAKE SURE YOU TURN THE BATTERY DISCONNECT SWITCH COUNTERCLOCKWISE TO THE OFF POSITION AFTER SHUTDOWN. THAT KEEPS THE DASHBOARD'S ELECTRICAL SYSTEM FROM CONTINUING TO DRAW POWER FROM THE BATTERIES. IT'S ESPECIALLY IMPORTANT WHEN THE GRADER IS IDLE FOR A DAY OR MORE, LIKE OVER THE WEEKEND.



THE BATTERY DISCONNECT SWITCH IS LOCATED BEHIND THE ENGINE ACCESS PANEL ON THE LEFT SIDE OF THE VEHICLE.

120M Road Grader...

# STOP HYDRAULIC HOSE LEAKS!

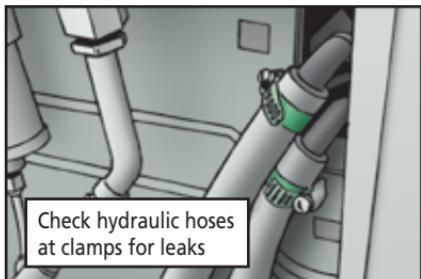


OPERATORS,  
MAKE A POINT  
DURING YOUR  
PMCS WALK-  
AROUND TO  
CHECK THE  
HYDRAULIC  
HOSES AND  
CLAMPS BEHIND  
THE RIGHT  
SIDE OF THE  
120M ROAD  
GRADER'S  
CAB.

VEHICLE VIBRATION AND EXPOSURE TO  
THE ELEMENTS **LOOSEN** THESE CLAMPS.  
THAT CAN CAUSE AN OIL LEAK.

PAY SPECIAL  
ATTENTION TO THE  
CLAMP POINTS.  
LOOK AND FEEL  
FOR ANY RED  
HYDRAULIC FLUID.

IF YOU FIND A  
PROBLEM, YOUR  
MECHANIC CAN  
TIGHTEN THE  
CLAMPS TO STOP  
ANY LEAKAGE.



Check hydraulic hoses  
at clamps for leaks

RCV Buffalo A2...

# AVOID EMERGENCY DOOR MISHAPS



ALWAYS  
KEEP THE  
EMERGENCY  
DOOR  
CLOSED  
WHENEVER  
THE  
BUFFALO IS  
**MOVING.**

SOME  
CREWMEN ARE  
LEAVING THE  
DOOR OPEN  
TO LET AIR  
CIRCULATE  
THROUGH THE  
HULL.

**BAD IDEA!**

LEFT OPEN,  
THAT DOOR  
CAN COME  
CRASHING  
DOWN ON YOUR  
HEAD. TALK  
ABOUT A BAD  
HAIR DAY!



LEAVING THE DOOR  
OPEN ALSO MAKES YOU  
AN **OPEN TARGET**. ONE  
ENEMY GRENADE AND  
IT'S END OF STORY.



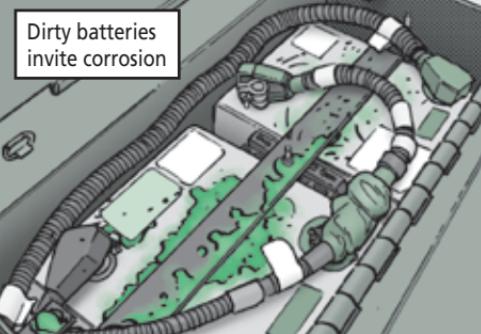


## Battery PM: Do it Again

**O**PERATORS, CHECK YOUR BACKHOE LOADER (BHL)'S BATTERIES DURING PMCS FOR ANY GUNK, CRUD AND CORROSION. ANY OF THAT CRUD THAT SITS ON THE BATTERY CAUSES CORROSION.

SO KEEP A CLOSE EYE ON THE BATTERY HOLD-DOWNS. IF YOU SEE ANY RUST, IT'S NOT GOOD!

CORROSION EATS AWAY AT THE CABLES AND BRACKETS AND GNAWS HOLES IN THE BATTERY BOX. YOUR MECHANIC CAN WASH AWAY CORROSION WITH A SOLUTION OF BAKING SODA AND WATER.



### Battery Clamp Lowdown

ALL THE BOUNCING AROUND THE WORKSITE CAN ALSO LOSEN BATTERY CLAMPS. A LOOSE CONNECTION KEEPS YOUR LOADER'S BATTERY FROM STARTING OR RUNNING AT IDLE.

PLAY IT SAFE AND CHECK THE TIGHTNESS OF THE CLAMPS ON THE TERMINAL USING YOUR THUMB AND ONE FINGER.

IF ANY TERMINAL IS LOOSE, TELL YOUR MECHANIC. HE'S THE ONE TO TIGHTEN IT.

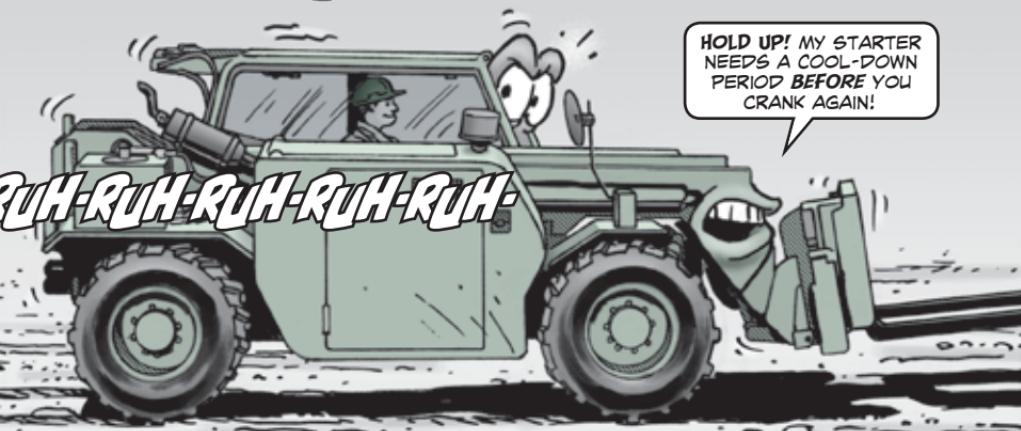
### Twice a Year

MECHANICS, IT'S A GOOD IDEA TO PULL THE BATTERIES DURING SEMIANNUAL SERVICES. THAT'S THE ONLY WAY TO FIND HIDDEN RUST SPOTS AND PINHOLES IN THE BATTERY BOX.

THOSE SPOTS NEED TO BE SANDED AND PAINTED. HOLES NEED PATCHING AND PATCHES NEED PAINTING BEFORE THE BATTERIES ARE REINSTALLED.

WHILE YOU'RE AT IT, CHECK THE BATTERY BOX VENT HOLE TO MAKE SURE IT'S CLEAR. REMOVE ANY DIRT, RUST OR MUD.

# Give it a Rest!



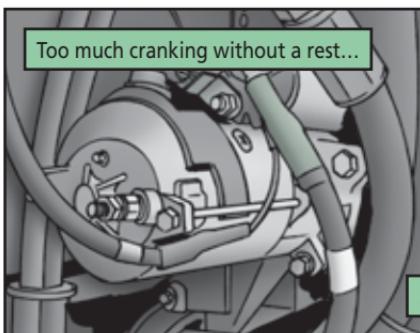
**Y**OU OPERATORS AND MAINTAINERS NEED TO KNOW THAT THE NEW 5K LIGHT CAPABILITY ROUGH TERRAIN FORKLIFT (LCRTF) HAS A STARTER MOTOR WITH A **REAL TEMPER!**

TM 10-3930-680-10 (DEC 13)  
WARNS USERS

**NOT TO**

"crank the engine continuously for more than 30 seconds. Also, the starter needs to cool for two minutes before cranking the engine again."

Too much cranking without a rest...



...burns out starter motor



TO PUT IT PLAIN AND SIMPLE:

IF YOU DON'T FOLLOW THIS PROCEDURE,  
YOU'LL FRY YOUR FORKLIFT'S STARTER MOTOR.

**UGH!**

**NOW LISTEN UP.**  
WHAT THE TM DOESN'T SAY IS THAT THE 30 SECONDS OF CRANKING TIME IS **CUMULATIVE**.

**THAT MEANS IF YOU CRANK THE STARTER FOR 15 SECONDS, STOP, AND THEN CRANK FOR 15 MORE SECONDS, YOU'LL HAVE TO WAIT TWO MINUTES BEFORE TRYING TO START THE ENGINE AGAIN.**



BY THE WAY,  
THERE'S BEEN A **HUGE STACK** OF PDRS SUBMITTED ON THIS STARTER. AND A LOT OF 'EM CAME FROM CRANKING TOO LONG.

SO, GIVE THAT STARTER MOTOR A BREAK AND LET IT COOL DOWN IF THE ENGINE DOESN'T START RIGHT AWAY.

HH-60M...

# Don't Service ECS System Without Certification

LET'S GET TO WORK ON THE ECS SYSTEM!

OK, LEMME GET THE TOOLS FOR THE JOB.

NOT SO FAST, SOLDIERS.

UNLESS YOU'VE BEEN EPA CERTIFIED, YOU CAN'T GO NEAR THE ECS SYSTEM.

IF YOU NEED THE TRAINING, CHECK OUT THE DETAILS IN PS MAGAZINE.



**M**echanics, although you may think you know how to service your HH-60M aircraft's environmental control system (ECS), it's hands off until you're certified by the Environmental Protection Agency (EPA).

Without that EPA certification, you could face some stiff fines!

Certification is available from L AR U niversity at F t H ood (LARUFH), T X. Units that want to schedule the training should contact Arturo Gamboa or Romulo Ordóñez by email at: [arturo.o.gamboa.civ@mail.mil](mailto:arturo.o.gamboa.civ@mail.mil) or [romulo.i.ordonez.civ@mail.mil](mailto:romulo.i.ordonez.civ@mail.mil)

The training is free, but units should expect to pay TDY costs for Soldiers traveling to Ft Hood or the TDY costs for the instructors to come to the unit.

These classes are in high demand, so it may be possible to send Soldiers to a unit already scheduled for training. Be sure to coordinate with that unit first.

The training prepares you to take the certification exam to become a Universal Technician as required by 40 CFR Part 82, Subpart F under Section 608 of the Federal Clean Air Act. After passing the test, you'll receive a DD Form 2695 certificate issued by the US Army Aviation Schoolhouse, B CO 1-210th AVN BN, Fort Eustis, VA.

LARUFH offers lessons on the basic and advance theories of operation of the ECS system for the HH-60M aircraft.

**The course provides students understanding in:**

- ECS heating and cooling
- System interface
- Vapor cycle cooling system (VCCS)
- BIT system
- Fault isolation

The university also offers the Department of Defense (DoD)-sponsored EPA Section 608 Training and Certification Program for proper handling and processing of refrigerants, including:

- ChloroFluoroCarbon (CFC)
- HydroChloroFluoroCarbon (HCFC)
- HydroFluoroCarbon (HFC)

Got questions about certification or training? Contact Dave Dapkus by email at:

[david.d.dapkus.ctr@mail.mil](mailto:david.d.dapkus.ctr@mail.mil)

AGSE...

## For Want of a Light Bulb



Dear Sergeant Blade,

I have the newly fielded **Aviation Light Utility Mobile Maintenance Cart (ALUMMC)**, NSN 1740-01-632-9476. I'm looking for an NSN for the **headlight bulb** shown as Item 4 in Fig 16 of TM 1-1740-213-13&P (Feb 16). The TM lists the bulb part number as AM144882.

However, the part number doesn't cross to an NSN in FED LOG. I already have one ALUMMC with a blown light bulb and would like to order some bulbs to build an initial stock. Can you help?

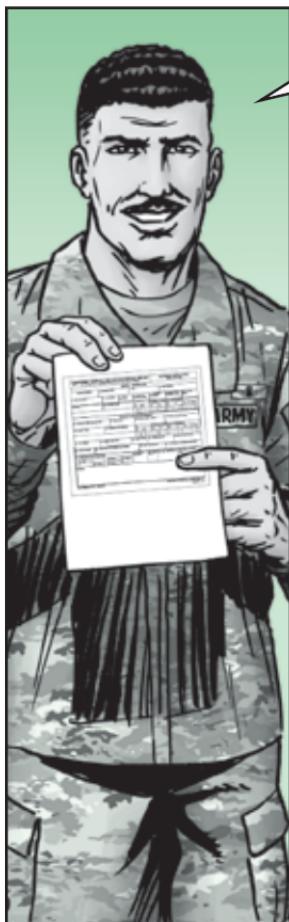
SGT M.B.

Dear Sergeant,

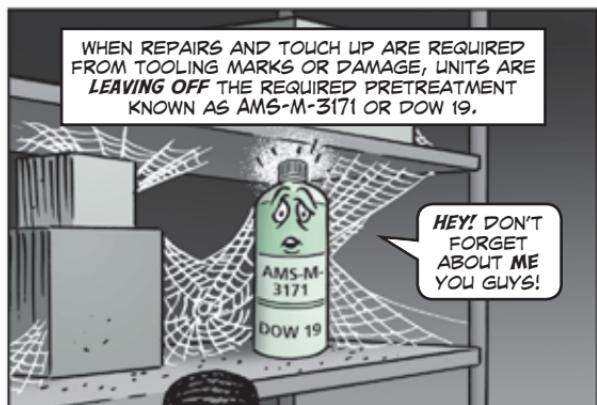
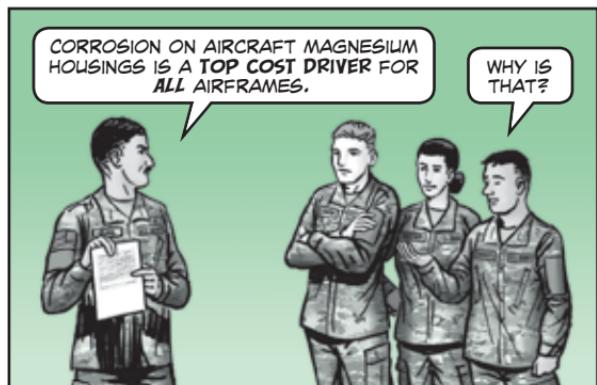
No problem. We can certainly help you out. Order NSN 6220-01-653-9428 to get the **new headlight assembly**. The assembly actually costs less than the light bulb.

SFC "Rotor Blade"

# EASIER CORROSION TREATMENT



MECHANICS, DATA COLLECTED FROM DA FORM 2410, COMPONENT REMOVAL/REPAIR/INSTALL/GAIN/LOSS RECORD, INDICATES THAT VARIOUS MAGNESIUM HOUSINGS ON AIRCRAFT SUFFER FROM CORROSION.



THE CORROSION PROBLEM HAPPENS IN AREAS LIKE:

- the main transmission housing
- input modules
- accessory modules
- intermediate gearboxes
- tail rotor gear boxes



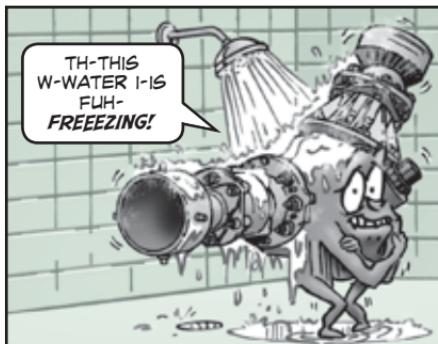
PREVENTING CORROSION ON MAGNESIUM REQUIRES PROPER PRETREATMENT AND A FINISHING COAT TO PROTECT THE AIRFRAME AGAINST CORROSION.

HELP AND GUIDANCE CAN BE FOUND IN YOUR SPECIFIC AIRCRAFT IETM OR CHAPTER 5-6 OF TM 1-1500-344-23, CLEANING AND CORROSION CONTROL.

NSN 8030-01-512-2416 (PN AMS-M-317) BRINGS A SMALL PREPACKAGED KIT. USING IT GENERATES LESS WASTE. IT'S EASY TO USE AND HAS A ONE YEAR SHELF LIFE.



THE ITEMS IN THE KIT ARE HIGHLY CAUSTIC AND FLAMMABLE SO USE IT ONLY IN WELL-VENTILATED AREAS. MAKE SURE THE AREA BEING TREATED IS CLEANED PROPERLY AND THE TREATED COMPONENT IS RINSED THOROUGHLY WITH WATER WHEN FINISHED.



TH-THIS  
W-WATER I-IS  
FUH-  
FREEZING!

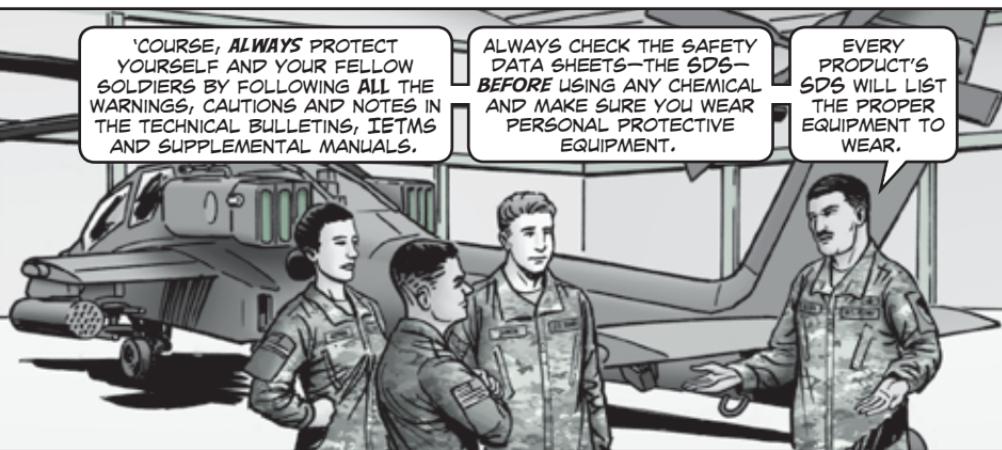
USED RIGHT,  
THE TREATMENT  
**INCREASES** YOUR  
AIRCRAFT'S  
CORROSION  
PROTECTION,  
PRIMER  
ADHESION, AND  
**EXTENDS** THE  
COMPONENT'S  
SERVICE LIFE.



'COURSE, **ALWAYS** PROTECT  
YOURSELF AND YOUR FELLOW  
SOLDIERS BY FOLLOWING ALL THE  
WARNINGS, CAUTIONS AND NOTES IN  
THE TECHNICAL BULLETINS, IETMS  
AND SUPPLEMENTAL MANUALS.

ALWAYS CHECK THE SAFETY  
DATA SHEETS—THE SDS—  
BEFORE USING ANY CHEMICAL  
AND MAKE SURE YOU WEAR  
PERSONAL PROTECTIVE  
EQUIPMENT.

EVERY  
PRODUCT'S  
SDS WILL LIST  
THE PROPER  
EQUIPMENT TO  
WEAR.



FOR UP-TO-DATE CORROSION INFORMATION OR ASSISTANCE,  
VISIT THE AMCOM CORROSION PROGRAM OFFICE WEBSITE AT:

<https://amcomcorrosion.army.mil>

CHECK OUT CHAPTER 8-5 OF TM 1-1500-328-23 FOR MORE CORROSION INFORMATION  
AND IF YOU HAVE QUESTIONS, CALL THE CORROSION OFFICE HOTLINE AT  
DSN 897-0209 OR (256) 313-0209.

# Can You Identify and Account For Your Raven?

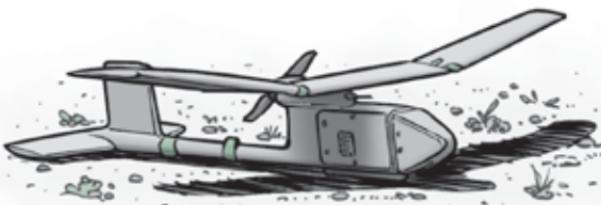


...SO IT'S IMPORTANT TO CHECK TO MAKE SURE YOU LIST IT CORRECTLY ON THE ACCOUNTABLE PROPERTY SYSTEM OF RECORD.

THE RQ-11B RAVEN SMALL UNMANNED AIRCRAFT SYSTEM (SUAS), NSN 1550-01-538-9256 (LIN 583835), HAD TWO MODIFICATION WORK ORDERS (MWOS) APPLIED SINCE 2008. AS A RESULT, THREE DIFFERENT NSNS WERE ASSIGNED.

MWO 1-1550-1695-50-2 (OCT 08), MODIFIED THE RAVEN WITH A DIGITAL DATA LINK (DDL). MWO 1-1550-1695-50-1 (FEB 12) ADDED A GIMBAL PAYLOAD UPGRADE.

BECAUSE OF THESE CHANGES, UNITS NEED TO INSPECT THEIR RAVENS TO ENSURE THE VERSION THEY HAVE ON-HAND IS CORRECTLY LISTED IN THEIR ACCOUNTABLE PROPERTY SYSTEM OF RECORD.



## HERE ARE THE THREE VERSIONS AND THEIR NSNS:

- Raven Analog System, NSN 1550-01-538-9256 (PN 54429-004/007)
- Raven DDL Fuselage, NSN 1550-01-587-2765 (PN 60163)
- Raven DDL fuselage with gimbal payload upgrade, NSN 1550-01-621-5533 (PN 60163G)

THE MAIN DIFFERENCE BETWEEN THE TWO MODIFICATIONS IS THE ADDITION OF THE GIMBAL PAYLOAD TO THE SYSTEM.

NEED HELP IN IDENTIFYING THE DIFFERENT VERSIONS OF THE RAVEN?

DOWNLOAD THE RQ-11B SYSTEM IDENTIFICATION INSTRUCTIONS DOCUMENT AT:

<https://www.ako1.us.army.mil/suite/doc/50252680>

GOT QUESTIONS?

CONTACT ADAM MAURO, (256) 313-3798, OR EMAIL:  
[adam.e.mauro2.civ@mail.mil](mailto:adam.e.mauro2.civ@mail.mil)

# M240, M249 Machine Guns: The Secrets for Success

BECAUSE OF THEIR LIGHT WEIGHT AND DURABILITY, THE M240 AND M249 MACHINE GUNS ARE CRITICAL TO UNITS' SUCCESS IN COMBAT.



HERE ARE THE SECRETS FOR SUCCESSFUL M240 AND M249 FIRING...



## Gas System

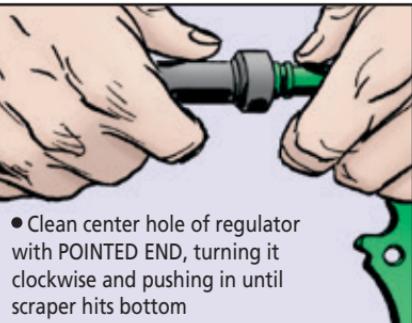
THE KEY TO GAS SYSTEM CARBON RELIEF IS THE SCRAPER.



EACH SCRAPER PART IS DESIGNED TO SCRAPE AWAY CARBON FROM DIFFERENT PARTS OF THE GAS SYSTEM. AND THE SOONER YOU USE THE SCRAPER, THE EASIER THE JOB IS.

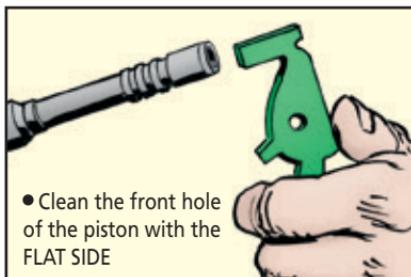
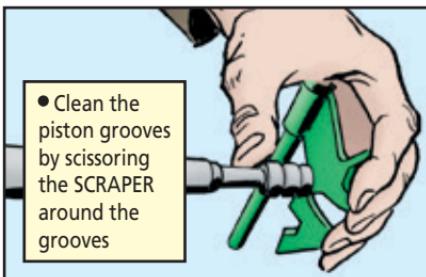
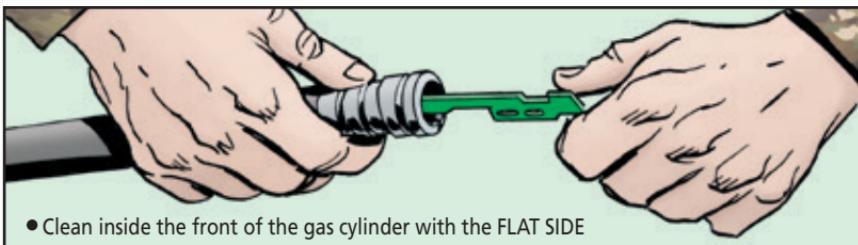
THE LONGER CARBON SITS, THE HARDER IT GETS. EVENTUALLY IT BECOMES LIKE ENAMEL.

SO GRAB YOUR SCRAPER ASAP AFTER FIRING AND CLEAN LIKE THIS...



- Clean two grooves on regulator with PROTRUDING TIPS





FOR THE CHAMBER, USE THE CHAMBER BRUSH AND CLP. IF YOUR M249 OR M240 HAS TROUBLE EXTRACTING, A QUICK CLEANING OF THE CHAMBER USUALLY FIXES THE PROBLEM.

CLP DOES A GOOD JOB OF CLEANING OFF CARBON, BUT IT ALSO DOES A GOOD JOB OF COLLECTING CARBON.

SO NEVER USE CLP OR ANY OTHER LUBES ON THE BARREL'S GAS REGULATOR HOLE, THE GAS REGULATOR, THE GAS CYLINDER OR THE OP ROD'S PISTON END.

CLEAN CARBON OFF THOSE PARTS WITH THE SCRAPER ONLY.

**NO CLP.**



IT'S OK TO USE CLP TO CLEAN THE BARREL, THE CHAMBER, THE REST OF THE OP ROD AND THE BOLT FACE, BUT WIPE THEM DRY BEFORE FIRING.



ANOTHER EXCELLENT WAY TO FIGHT CARBON IN THE GAS SYSTEM IS TO CHANGE THE BARREL ON BOTH THE M249 AND M240 WHEN YOU'RE SUPPOSED TO.



FOR THE M249, DURING BOTH SUSTAINED FIRE (40 ROUNDS PER MINUTE) AND RAPID FIRE (100 ROUNDS PER MINUTE), CHANGE THE BARREL EVERY 200 ROUNDS.

FOR THE M240, CHANGE BARRELS EVERY 10 MINUTES DURING SUSTAINED FIRE (100 ROUNDS PER MINUTE) AND EVERY TWO MINUTES DURING RAPID FIRE (200 ROUNDS PER MINUTE).

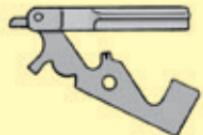
FOR GOSH SAKE,  
CHANGE MY BARREL.  
THAT'S WHY I HAVE  
A SPARE BARREL!



IF YOUR SCRAPER AND ELBOW GREASE JUST WON'T CLEAN OUT ALL THE CARBON, YOUR SMALL ARMS REPAIRMAN CAN DO THE JOB WITH SOLVENT.



OF COURSE,  
TO DO  
ALL THIS  
SCRAPING  
YOU NEED A  
**SCRAPER!**



IF YOU'RE USING AN **OUTDATED** VERSION OF TM 9-1005-201-10, YOU'LL FIND A **BAD** NSN FOR THE M249 SCRAPER. THE CORRECT NSN IS NSN 5120-01-598-4301 AND IT'S IN THE NEWEST TM VERSION. THE M240 SCRAPER COMES WITH NSN 4933-01-033-1504.

**OR** YOU CAN ORDER THE NEW M240/M249 SCRAPER. THE TOOL, WHICH FOLDS UP LIKE A SWISS ARMY KNIFE, HAS **EIGHT DIFFERENT SCRAPERS!**

**M240/M249**  
Crew Served  
**Weapons Tool, NSN**  
**5110-01-641-4777**

M240 Gas block outer groove scraper; M249 Gas block inner and outer groove scraper. Gas tube inner groove scraper

M249 Gas block shoulder scraper

M240 Gas block shoulder scraper

M249 Gas block barrel scraper

M240 Gas block barrel scraper

M240 Piston scraper;  
M249 Gas block remover.  
Piston inner cup scraper.  
Piston outer groove scraper

Gas block port punches

Gas block port punches

## Use the Right BFA

IF YOU DON'T USE THE CORRECT BLANK FIRING ATTACHMENT (BFA) WHEN TRAINING WITH YOUR M249 OR M240, YOU NOT ONLY WILL HAVE TROUBLE FIRING, BUT YOU COULD DAMAGE YOUR WEAPON.

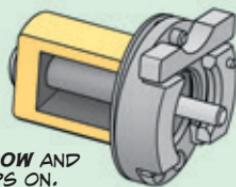


WITH THE M249, IF YOU FIRE WITH THE **STANDARD BARREL**, YOU MUST USE THE STANDARD BARREL BFA, NSN 1005-21-912-8997.



IT'S RED AND SCREWS IN THE BARREL.

IF YOU FIRE THE M249 WITH THE **SHORT BARREL**, YOU MUST USE THE SHORT BARREL BFA, NSN 1005-01-537-0491.



WHAT HAPPENS IF YOU USE THE **WRONG BFA**? FIRING WITH THE SHORT BARREL AND THE STANDARD BARREL BFA INCREASES THE UNLOCKING VELOCITY OF THE BOLT WHEN IT LEAVES THE BARREL SOCKET.

THIS INCREASED VELOCITY CAN DAMAGE THE RECEIVER'S INNER RAIL, WHICH MEANS YOUR M249 IS FINISHED.



WHAT HAPPENED TO YOU?

THEY FIRED ME WITH THE **WRONG BFA**. I'M FINISHED.



THINGS ARE A BIT MORE COMPLICATED WITH THE M240.

THE M240, M240C AND M240E USE THE M21 BFA.

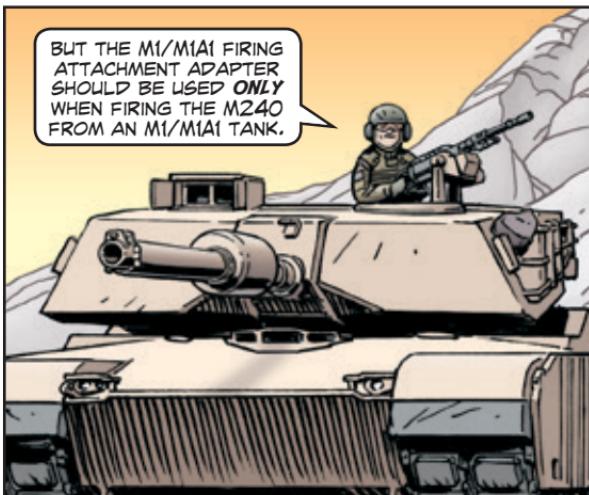


THE M21 BFA DOESN'T HAVE AN OVERALL NSN, BUT INSTEAD HAS THREE SEPARATE COMPONENTS:

- **chamber and discriminator assembly**, NSN 1005-01-142-2841
- **weapon spare parts ordnance bag**, NSN 8105-01-147-9841
- **M1/MA1 tank firing attachment adapter**, NSN 1005-01-218-0693



BUT THE M1/M1A1 FIRING ATTACHMENT ADAPTER SHOULD BE USED ONLY WHEN FIRING THE M240 FROM AN M1/M1A1 TANK.



THE M24 BFA, NSN 1005-01-480-0289, IS THE ONLY AUTHORIZED BFA FOR THE M240B, M240D, M240H AND THE M240L.



AND THE M24 DOESN'T NEED A DISCRIMINATOR - IT'S A STAND-ALONE ITEM.



THE M24 HAS TWO REPAIR PARTS:



THE PULL RING, NSN 5325-01-480-6849

THE SHAFT, NSN 5340-01-481-8127



## M240 Only

THE FOLLOWING  
TIPS ARE ONLY  
FOR THE M240.

• BECAUSE THERE ARE SO MANY M240 MODELS, IT'S IMPORTANT TO PAY ATTENTION TO THE USABLE ON CODE (UOC) WHEN YOU ORDER PARTS.

OTHERWISE, YOU COULD END UP ORDERING A PART FOR YOUR M240H THAT WORKS ONLY ON THE M240B.

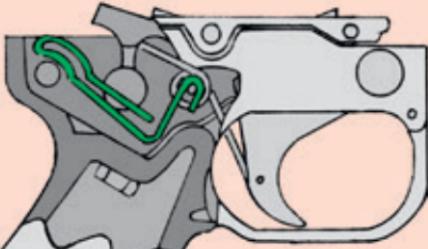
LOOB WHUD HABBENET DO BE!



• REMEMBER, YOU MUST REPLACE THE M240L SAFETY SPRING, NSN 5340-01-550-1620, WHENEVER IT'S REMOVED.

MAKE A NOTE OF THAT IN WP 0017 01 IN THE -23&P.

REMOVE THE SPRING ONLY WHEN ABSOLUTELY NECESSARY.



HERE  
ARE THE  
M240  
UOCs...

M240: G69  
M240B: BB2  
M240C: L04  
M240D: BC2  
M240H: BN4

THE UOCs ARE ALSO LISTED IN TM 9-1005-313-23&P.

• WHICH GAS REGULATOR YOU USE FOR YOUR M240 MACHINE GUN DEPENDS ON WHICH BARREL YOU'RE USING. THE SAME GOES FOR THE REGULATOR CLEANING TOOL.



THE M240B STANDARD BARREL AND M240L LONG BARREL USE GAS REGULATOR, NSN 1005-01-512-6424, AND CLEANING TOOL, NSN 1005-01-512-9284.



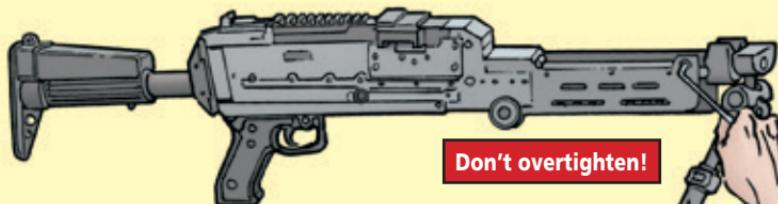
I USE A DIFFERENT GAS REGULATOR AND A DIFFERENT CLEANING TOOL FROM MY SHORT BARREL BROTHER!

THE M240L SHORT BARREL USES GAS REGULATOR, NSN 1005-01-564-6020, AND CLEANING TOOL, NSN 1005-01-564-6768.



EASY DOES IT INSTALLING THE RAIL KIT ON THE M240B. IF YOU APPLY TOO MUCH TORQUE, THE OP ROD CAN BIND IN THE GAS TUBE.

DO IT LIKE THIS: INSTALL THE TWO LONG SCREWS FOR THE RAIL BODY AND TIGHTEN THEM WITH YOUR FINGERS.



Don't overtighten!

THEN USE A 3/32-IN HEX WRENCH TO TIGHTEN THE FRONT SCREW NO MORE THAN THREE COMPLETE TURNS. TIGHTEN THE REAR SCREW 1/4 TURN.



THEN FUNCTION TEST THE WEAPON. IF THE OP ROD BINDS IN THE GAS TUBE, BACK OFF BOTH SCREWS 1/4 TURN.

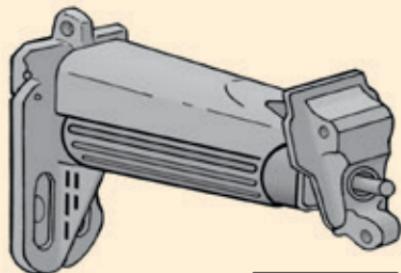
FUNCTION TEST AGAIN AND CONTINUE TO BACK OFF THE SCREWS 1/4 TURN UNTIL THE OP ROD MOVES FREELY IN THE GAS TUBE.

## M249 Only

THE FOLLOWING TIPS ARE ONLY FOR THE M249.

• MWO 9-1005-201-23-1 REPLACED THE M249'S BUTTSTOCK WITH A LIGHTWEIGHT COLLAPSIBLE BUTTSTOCK.

THE COLLAPSIBLE BUTTSTOCK IS NOW THE STANDARD BUTTSTOCK.



THE OLD BUTTSTOCK SHOULD BE TURNED IN.

USE THE RIGHT TOOL FOR THE RIGHT JOB.

• THERE'S ONLY ONE TOOL FOR ADJUSTING THE FRONT SIGHT POST, AND GUNNERS DON'T HAVE IT. ONLY YOUR SMALL ARMS REPAIRMAN CAN ADJUST THE FRONT SIGHT WITH THE FRONT SIGHT POST SPANNER WRENCH, NSN 5120-01-141-3839.

Armorer adjusts post with spanner wrench

IF YOU ADJUST THE POST WITH THE USUAL TOOL-A NAIL-YOU DAMAGE THE POST, THEN YOU CAN FORGET ABOUT ACCURATE SIGHTING.



REMEMBER, THE M240 AND M249 ARE GREAT WEAPONS.



BUT THEY'RE ONLY AS STRONG AS THE PM YOU GIVE THEM!

HIMARS, MLRS, M1068  
Command Post Carrier...

UH-OH! WE'RE  
HEADED INTO  
TREES!

YEP! GET READY  
T'LOSE YOUR LOOP  
ANTENNA AGAIN!

## THE SCOOP ON PROTECTING LOOP ANTENNA

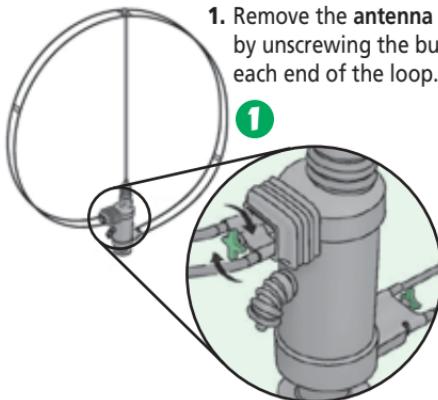
UNITS WITH HIMARS, MLRS AND M1068-SERIES COMMAND POST CARRIER CAN TESTIFY IT'S PRACTICALLY IMPOSSIBLE TO GO TO THE FIELD AND NOT LOSE AT LEAST ONE AS-4701/VRC LOOP ANTENNA.

ALL IT TAKES IS A LOW-HANGING TREE LIMB.

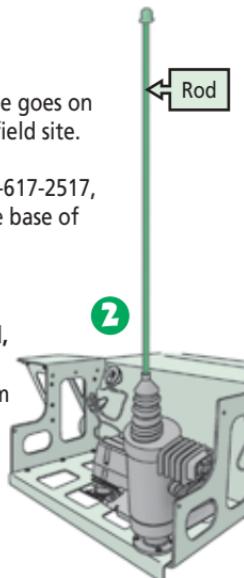
AT MORE THAN \$3,000 A POP, THE ANTENNAS AREN'T CHEAP TO REPLACE. IF YOU DAMAGE THE WHOLE ANTENNA UNIT, YOU'RE TALKING \$19,000.

FORTUNATELY, HELP IS AT HAND. THERE ARE TWO DIFFERENT METHODS FOR PROTECTING LOOP ANTENNAS:

**Method 1:** Remove and stow the antenna before your vehicle goes on the move. Then reinstall the antenna once you've reached the field site. Here's how:



1. Remove the antenna loop, NSN 5985-01-617-2517, by unscrewing the butterfly screw at the base of each end of the loop.
2. Unscrew the stabilizing rod, NSN 5985-01-617-2480, from the antenna's base, NSN 5985-01-617-2515.

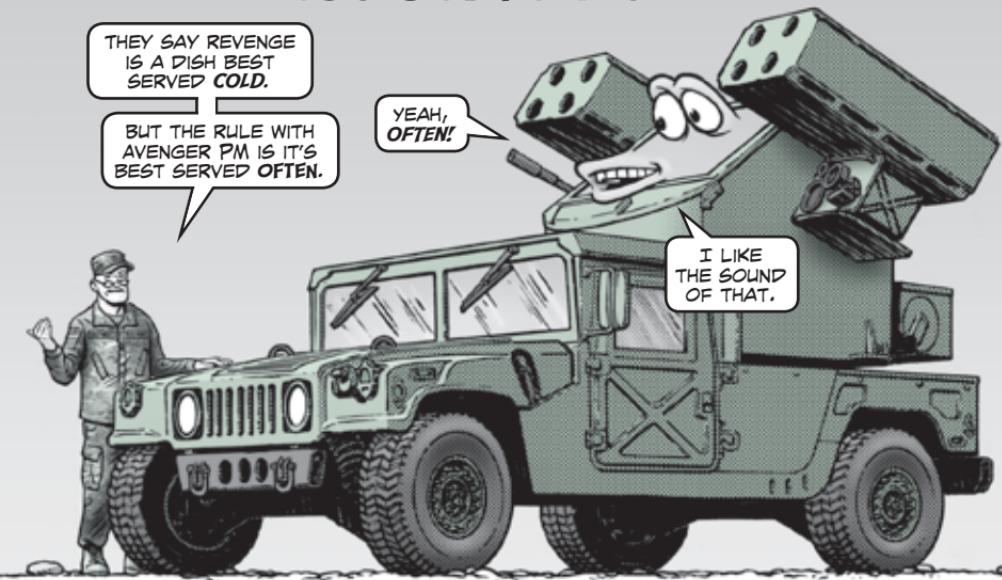


**Method 2:** Remove and stow the stabilizing rod, then use a piece of cord to tie back the antenna. That keeps the antenna out of the way of low-lying objects. Reinstall the stabilizing rod once you reach the site.



EITHER METHOD TAKES ONLY FIVE MINUTES AND REINSTALLATION IS JUST AS FAST. OBVIOUSLY, IT'S TIME WELL SPENT!

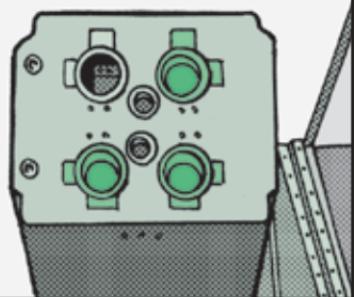
# Avenger PM Best Served OFTEN



## Get Caps and Covers

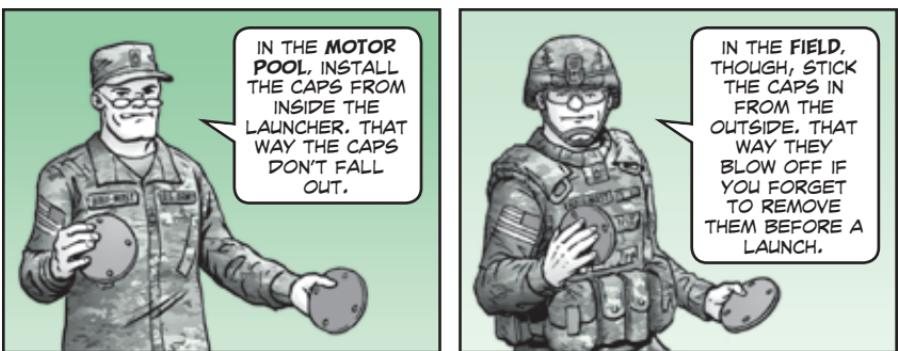
In most Avenger units, Avengers sit for long periods. That's why it's critical you use the Avenger's caps and covers. If sand or water gets in the launchers, they can do big-time damage to the cryogenics and electronics. Sand and wind-propelled pebbles can scar the FLIR and range finder lenses. One Avenger unit even found birds nesting inside a launcher.

Use all protective caps and order extras in case you lose them

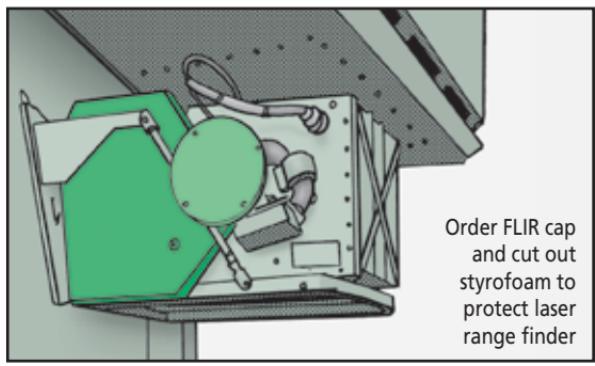


For the launcher, order the **rear launcher caps** with NSN 5340-00-855-7993 and the **front caps** with NSN 5340-00-157-5624. **Caps for the pressure gauge holes** come with NSN 5340-01-348-6514.

Order caps for the cryogenic ports in the launcher with NSN 5340-01-466-1897. There is no NSN for electrical port caps, but they can be ordered on a DD Form 1348-6 using PN 495-500005 and CAGE 15090.



Order the **FLIR protective cap** with NSN 5855-01-441-3189. The range finder doesn't have a cover, but you can make one from styrofoam. Cut a piece 12x18 inches and punch a hole in it for the boresight guide pin cover. Stick it in front of the range finder lenses so the support bracket holds it in place.



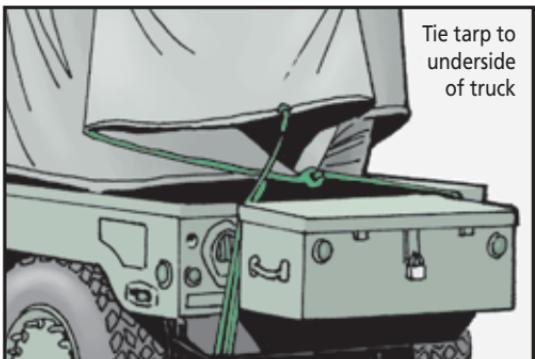
Order FLIR cap  
and cut out  
styrofoam to  
protect laser  
range finder

The new CMC FLIR comes with a protective cap that can't be ordered. The old FLIR cap won't fit on the new FLIR. So hang onto that cap!

One thing you can count on is that some of these different caps will disappear. Order extras of the ones available! Caps are cheap and launcher damage is expensive. Check for the caps during PMCS.

### Keep It Covered

If your Avenger is going to sit for weeks, which is often the case, the best protection is to cover the entire system. A **Bradley tarp**, NSN 2540-00-587-2532 (**OD green**) or NSN 2540-01-330-8062 (**tan**), works well. But don't tie off the tarp inside the truck. That ruins door seals. Attach bungee cords to the tarp's rope and tie them off underneath the truck.

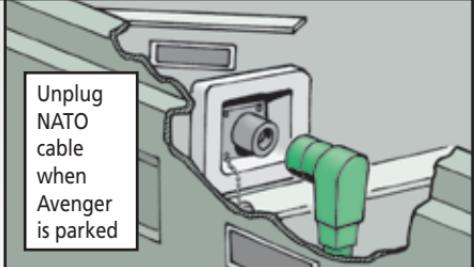


Tie tarp to  
underside  
of truck

## Don't Leave the NATO Cable Connected When the Avenger is Parked



THAT DRAINS THE TRUCK BATTERIES AND THEN YOU CAN'T START THE TRUCK OR THE AVENGER.



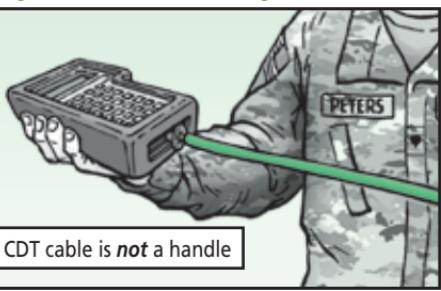
Unplug NATO cable when Avenger is parked

## Don't Pick Up the Control Display Terminal (CDT) By Its Cable

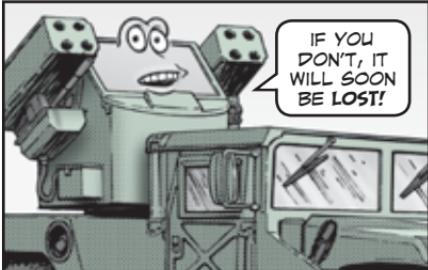
THAT EVENTUALLY TEARS THE CABLE'S WIRING LOOSE AND THE CDT STOPS WORKING.



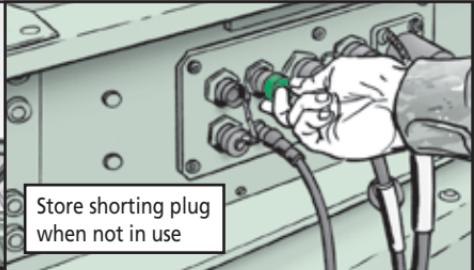
CDT cable is *not* a handle



## When You're Not Operating, Store the Shorting Plug Someplace Safe Like the Bustle Box



IF YOU DON'T, IT WILL SOON BE LOST!



Store shorting plug when not in use

## Don't Store Anything in the Turret

THAT'S HOW THINGS LIKE THE HAND STATION AND OPTICAL DISPLAY UNIT END UP BROKEN.



THERE'S JUST ENOUGH ROOM IN THE TURRET FOR THE OPERATOR... AND THAT'S ALL!

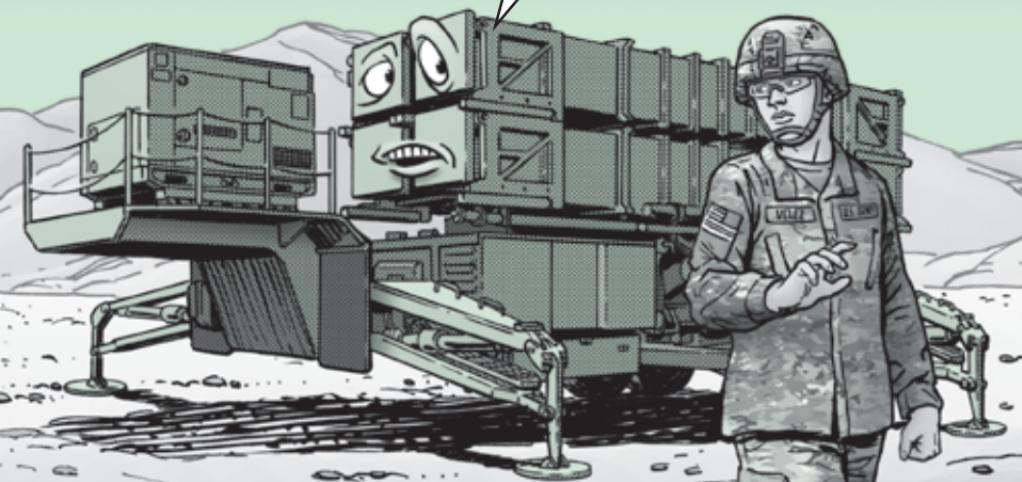
PS END

# CAP OFF CABLE PROBLEMS

YOU DISCONNECTED MY CABLES LIKE YOU'RE S'POSED TO...

...BUT YOU FORGOT TO CAP 'EM!

IF YOU WANT ME TO WORK NEXT TIME, YOU BETTER SCREW ON THOSE CAPS!



Dear Editor,

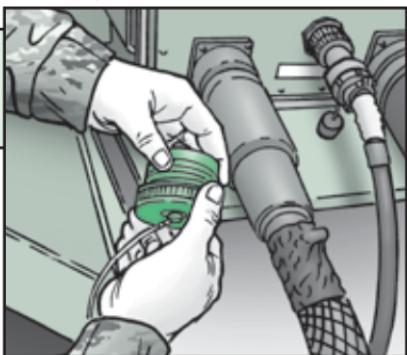
One of the easiest and simplest things Patriot crews can do to prevent electrical problems and system faults is keep cables and their connectors capped.

That seals out moisture and sand that can prevent a good connection and sometimes damage cables. Since some of the Patriot's huge cables can't be repaired and cost thousands to replace, you want to protect them as much as possible.

**When cables are connected, screw the cable caps and connector caps together. That makes it impossible for them to disappear.**

During PMCS, check for every cable and connector cap and make sure that each cap's lanyard is secure. If a cap or lanyard is missing, report it ASAP. See the parts manuals for the different Patriot systems for cap and lanyard NSNs.

SFC Joseph Evans  
Ft Bragg, NC



**Editor's note:** A tip of the cap to your cap suggestion, Sergeant Evans.

M9 Pistol...

NOW, Y'DON'T HAVE  
TO BE A COWBOY  
TO BENEFIT FROM  
THESE...

# ...Pistol Packin' Tips from Ft Bragg

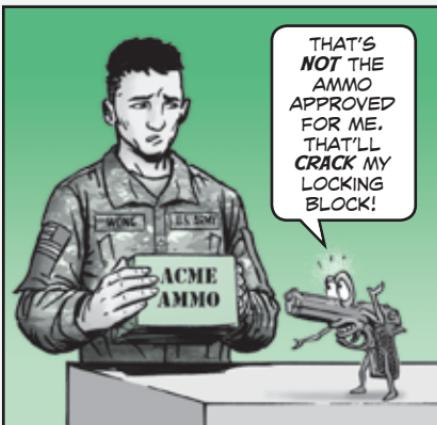


Dear Editor,

While repairing M9 pistols here at the Logistics Readiness Center (LRC), we've run into a few problems that need Soldiers' attention:

**Using non-approved ammo.** We are seeing numerous damaged locking blocks. We think the main cause comes from Soldiers using commercial ammo that's more powerful than standard Army ammo. The recoil spring can't handle the extra force and the locking block cracks. Even if Soldiers are firing the correct ammo, they should make a point to check the locking blocks for cracks before they go to the field.

**Easy does it holstering and unholstering the M9.** We're seeing too many broken safety levers. We think it's from Soldiers jamming the pistol in the holster. There's no need to be rough with the pistol when you pull it out or put it in the holster. Of course, a broken safety lever makes the pistol NMC. So easy does it. And check for a cracked or bent lever during PMCS.



**Make sure safety mechanism works.** Eventually the safety wears out and stops working. If you don't realize the safety isn't safe, tragedy could follow. You can check in seconds. Put the safety lever in the safe (down position) and gently squeeze the trigger. If the hammer moves to the rear, the safety isn't working. Then cock the hammer with the safety on. If the hammer stays cocked, the safety is shot.

Mauricio Green  
Ft Bragg, NC

Put safety lever in down position to test



**Editor's note:** You're right on target with these tips, Mauricio. Thanks.

M2A1 Machine Gun...

## Does Flash Suppressor Need Anti-seize Compound?



Dear Half-Mast,

The M2A1 machine gun's TM 9-1005-347-23&P says to apply a high-temperature anti-seize compound when installing the flash suppressor. But nowhere in the TMs does it list an NSN for the compound.

Do you really need to use the anti-seize compound?

CW4 J.B.

NO, CHIEF,  
THE ANTI-SEIZE  
COMPOUND  
REFERENCE  
WAS A MISTAKE  
AND IT WILL  
BE REMOVED  
WHEN THE TM  
IS UPDATED.



# No ARD? No Go!

HEY, CAN YOU  
**CUT DOWN** ON THE  
REFLECTION?

IT'S LIKE A 'PLEASE  
SHOOT HERE' SIGN  
FOR THE ENEMY!

NOT MY  
FAULT,  
DUDE!

YOU'RE THE ONE  
WHO TOOK OFF MY  
ANTI-REFLECTIVE  
CAP. BAD MOVE!

Dear Half-Mast,

Is there anywhere in writing that states if the M68 reflective sight's anti-reflective device (ARD) is missing or damaged the M68 is NMC? Soldiers often remove the ARD because they think they can sight better without it. Then, of course, the ARD goes missing.

CW2 G.M.

YES CHIEF, STEP  
10 IN THE PMCS IN  
TM 9-1240-413-13&P  
(MAY 13) SAYS IF  
THE ARD IS MISSING  
OR DAMAGED, THE  
M68 IS NMC.

Leave ARD  
on at all  
times

LEAVE THE ARD ON FOR TWO VERY GOOD REASONS:

1

THE ARD PREVENTS A  
REFLECTION FROM SIGNALING  
YOUR POSITION TO THE ENEMY.  
THAT COULD MEAN THE  
DIFFERENCE BETWEEN LIFE AND  
DEATH ON THE BATTLEFIELD.

2

THE ARD PROTECTS THE  
M68'S LENS FROM SCRATCHES.  
IF THE LENS BECOMES TOO  
SCRATCHED, YOU CAN'T SEE  
THROUGH IT AND THE SIGHT  
DOES YOU NO GOOD.

UNITS SHOULD EMPHASIZE  
TO SOLDIERS THEY SHOULDN'T  
REMOVE THE ARD.

ARMORERS CAN ORDER REPLACEMENT ARDS  
WITH NSN 6650-01-479-5386. THEY COST A  
LITTLE MORE THAN \$40.

# Should New Weapons Be Gaged?



Dear Half-Mast,

We recently were Fielded brand new M4A1 carbines. The Fielding team told us the M4A1s had already been gaged, but they had no paperwork to validate that. Do new weapons need to be gaged by units before they're fired?

SGT H.B.

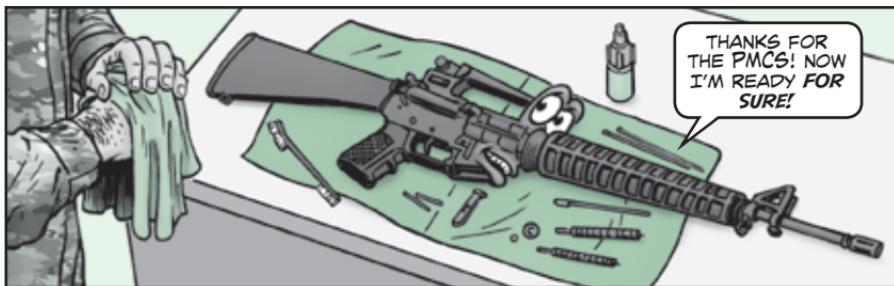
Dear Sergeant,

There is no requirement to gage new weapons. There is, however, in each small arms -23&P TM, a service upon receipt inspection to ensure weapons weren't damaged during shipment. The M16 rifle TM, for example, says that when a new or reconditioned weapon is first received, it's the responsibility of the officer-in-charge to determine whether the weapon had been properly prepared for service by the supplying organization and whether it's mission ready.

But gaging is not required until one year after receipt of the new weapon.

Of course, if you ever have doubts about a weapon's condition, you should have it gaged.

Half-Mast





## A STRAPPING SOLUTION



**W**HENEVER YOU SHIP OR TRANSPORT CARGO, YOU MIGHT NEED TO STRAP AND SEAL IT FOR PROTECTION.

THAT'S WHEN YOU'LL DISCOVER THAT STRAPPING AND SEALING KITS COME IN HANDY.

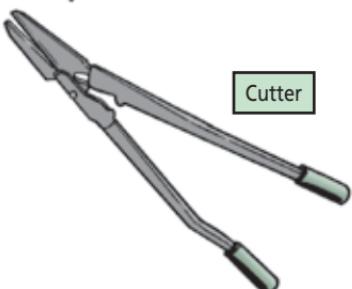
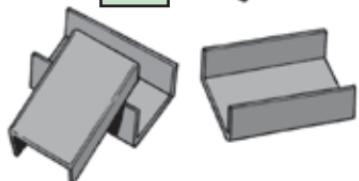
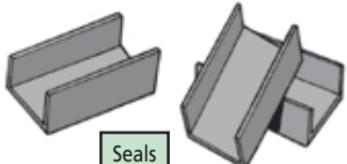
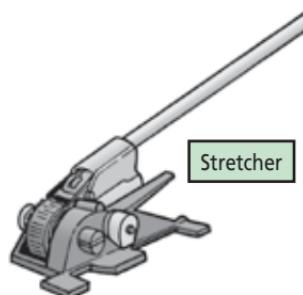
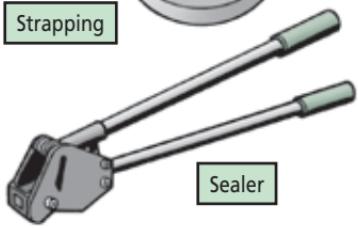
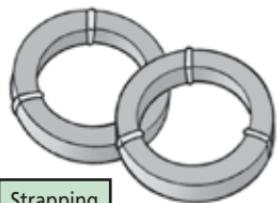
IF YOU DON'T NEED A WHOLE KIT, YOU CAN ORDER INDIVIDUAL COMPONENTS.

WE HAVE SOME OPTIONS ON THE NEXT PAGE!

YOU CAN GET STRAPPING KITS AND COMPONENTS FROM THE GENERAL SERVICES ADMINISTRATION (GSA). TO ORDER KITS OR COMPONENTS, VISIT:

<https://www.gsaadvantage.gov/advantage/main/home.do>

ENTER AN NSN IN THE "PRODUCTS" SEARCH BOX TO GET THE PRICE AND ESTIMATED SHIPPING TIME.



### Kit, NSN 3540-00-565-6240

Item	NSN	Qty
Sealer	3540-00-223-8855	1
Stretcher	3540-00-278-1250	1
Case	3540-00-897-5516	1
Seals, 3/8-in	8135-00-239-5285	5,000
Strapping, 3/8-in	8135-00-283-0664	100-lb coil

### Kit, NSN 3540-00-565-6241

Item	NSN	Qty
Sealer	3540-00-234-6741	1
Stretcher	3540-00-278-1250	1
Case	3540-00-897-5516	1
Seals, 1/2-in	8135-00-239-5308	5,000
Strapping, 1/2-in	8135-00-283-0666	100-lb coil

### Kit, NSN 3540-00-565-6242

Item	NSN	Qty
Sealer	3540-00-234-6742	1
Stretcher	3540-00-278-1250	1
Case	3540-00-897-5516	1
Seals, 5/8-in	8135-00-290-1086	5,000
Strapping, 5/8-in	8135-00-283-0667	100-lb coil

### Kit, NSN 3540-00-565-6243

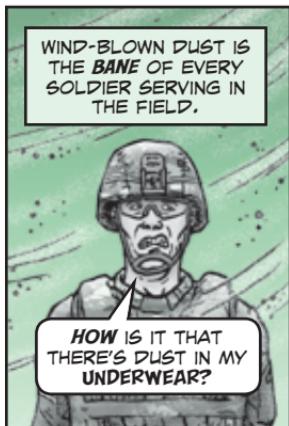
Item	NSN	Qty
Sealer	3540-00-234-6743	1
Stretcher	3540-00-278-1250	1
Case	3540-00-897-5516	1
Seals, 3/4-in	8135-00-239-5288	5,000
Strapping, 3/4-in	8135-00-283-0668	100-lb coil

### Kit, NSN 3540-00-565-6244

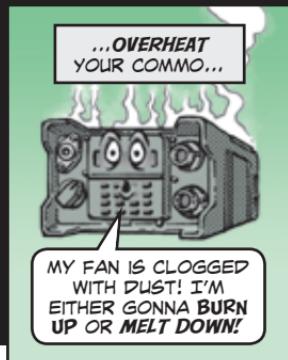
Item	NSN	Qty
Sealer	3540-00-223-8592	1
Stretcher	3540-00-278-1251	1
Cutter	5110-00-223-6281	1
Case	3540-00-897-8117	1
Seals, 1 1/4-in	8135-00-239-5294	1,000
Strapping, 1 1/4-in	8135-00-283-0671	100-lb coil

Modern Burner Unit...

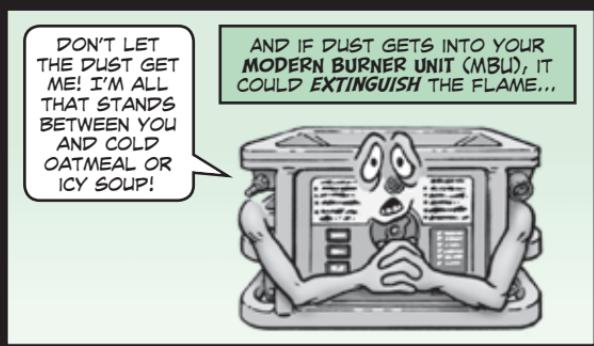
# Cold Grub Wins No Ovation!



NO MATTER WHERE YOU'RE STATIONED, DUST WILL...



...AND EVEN RUIN YOUR MEAL!

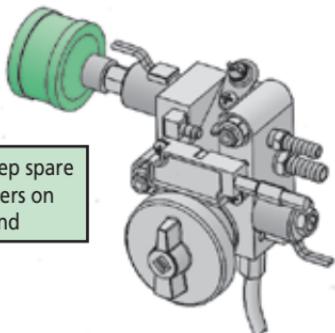


**FOR THE SAKE OF FINE DINING, TAKE A STAND AGAINST DUST.  
HEED THESE TIPS FOR KEEPING YOUR MBU CLEAN:**

- Place the MBU with the control panel facing into the wind. The panel helps to block wind-blown dust from getting inside.



- After using the MBU, inspect the air filter, NSN 7310-01-462-4913, on the fuel delivery block. Replace the filter if it's dirty. Keep spare filters on hand. Clean the fuel nozzle whenever you change the filter.



- Tightly cap fuel cans to keep dust from contaminating fuel.



- Keep the MBU under cover or indoors when not in use.

- Check for clogged air vents on the fuel regulator...



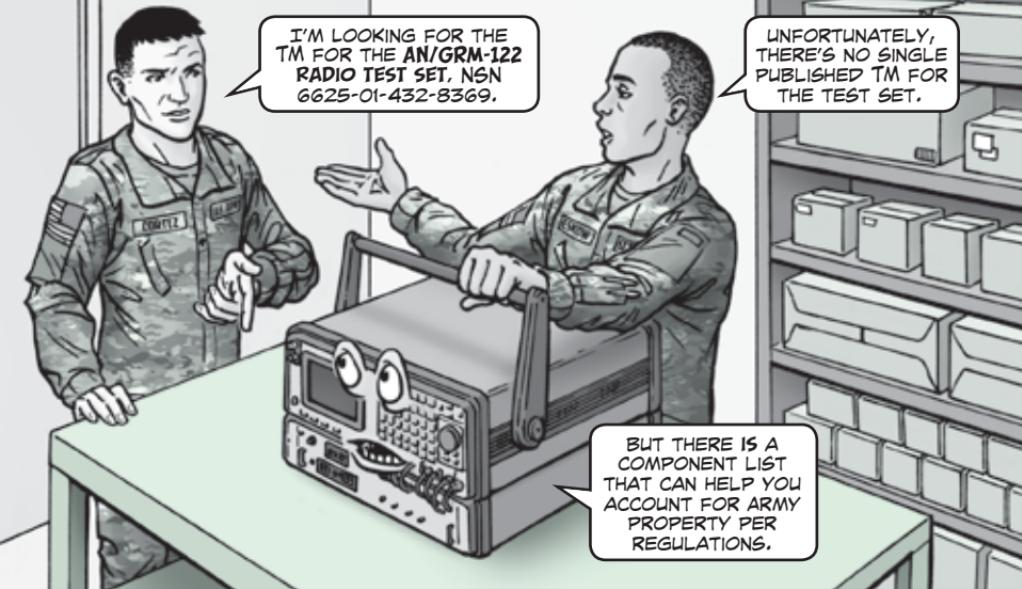
...and vent valve assembly. Clean them if needed

- Wipe down the MBU often with a damp cloth.



FOR MORE ON CLEANING AND MAINTAINING YOUR MBU,  
READ TM 10-7310-281-13&P (MAY 10). DOWNLOAD IT AT THE LDAC ETM WEBSITE:  
<https://idmng.armyerp.mil/>

# All About AN/GRM-122 Components

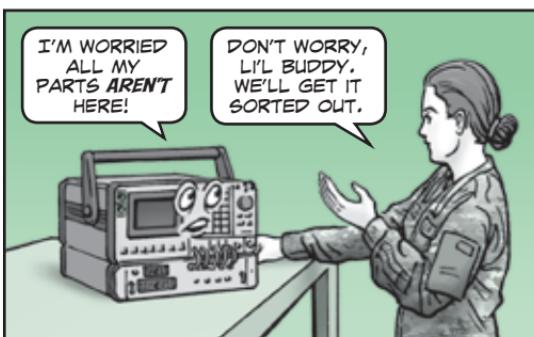


THE GOOD NEWS IS THAT THERE ARE TMS FOR THE AN/GRM-122'S MAJOR COMPONENT PART, THE TS-4317/GRM. THEY INCLUDE...

- TM 11-6625-3244-12 (Mar 06)
- TM 9-6625-3244-24P (Mar 06)
- TM 11-6625-3244-40 (Nov 06).

YOU CAN GET ALL THREE FROM THE LOGISTICS SUPPORT ACTIVITY (LOGSA) ELECTRONIC TECHNICAL MANUALS ONLINE WEBSITE.

TM DISTRIBUTION IS RESTRICTED, SO YOU'LL NEED TO LOG IN WITH YOUR CAC FIRST AT:  
<https://idmng.armyerp.mil/>



CHOOSE THE "ETM/IETM" ICON AND SEARCH FOR THE TMS.

GOT MORE QUESTIONS ABOUT THE AN/GRM-122?  
CONTACT CECOM'S DAVID YANOSIK AT DSN 648-6232, (443) 395-6232, OR EMAIL: [david.w.yanosik.civ@mail.mil](mailto:david.w.yanosik.civ@mail.mil)

THE FOLLOWING TABLES CAN HELP YOU SORT THINGS OUT WHEN IT COMES TO ARMY PROPERTY ACCOUNTABILITY:

## AN/GRM-122 Component List

Table I		Components of Radio Test Set TS-4317/GRM, NSN 6625-01-309-2825			
Description		NSN	PN	CAGE Code	Qty
Front cover		6625-01-611-5414	2503-7862-200	51190	1
Carrying pouch		8105-01-419-1132	1412-7883-700	51190	1
Connector, adapter, M-F BNC, right angle		5935-01-032-5404	UG-306/U	81349	1
Antenna, flex		5985-01-281-5177	1201-7616-500	51190	1
Cable assembly, AC power		6150-01-252-9297	6041-0001-001	51190	1
Cable assembly, DC power		5995-01-428-9119	6041-7884-500	51190	1
Attenuator, 10 dB, 1 W, BNC, 2.0 GHz		5985-01-414-6405	50F-010-BNC	61162	1
Attenuator, 20 dB		5985-01-414-6413	50F-020-BNC	61162	1
Fuse, 1.25, GL, slow, 250V, 2.0A		5920-00-228-7882	F02B250V2A	81349	1
Fuse, 1.25, GL, fast, 250V, 4.0A		5920-00-557-2647	F02A250V4A	81349	1
Fuse, 1.25, GL, slow, 32V, 15A		5920-00-581-6126	F02B32V15A	81349	1
Current shunt, 10A,100mV		6625-01-414-3779	7113-7801-100	51190	1
Probe set, DMM (1 black probe, 1 red probe)		6625-01-414-3780	21078	51190	1
Kit, probe, oscilloscope, X1/REF/X10		6625-01-414-3778	7112-0100-101	51190	1
Microphone		5965-01-414-6414	7001-8645-900	51190	1

Table II		Components of Test Adapter J-4843A/GRM, NSN 6625-01-432-8368			
Description		NSN	PN	CAGE Code	Qty
Test set subassembly, J-4843A/GRM		N/A	7003-1543-400	51190	1
Front cover		5340-01-502-2966	7005-1540-200	51190	1
Cable assembly, special purpose (SCSI)		5995-01-413-1849	6041-8380-600	51190	1
Cable assembly, special purpose (DC power)		6150-01-413-0578	6041-8380-700	51190	1
Shield, elec. cable		N/A	2289-7867-600	51190	1
Shield, elec. cable		N/A	2289-7867-300	51190	1
Shield, elec. cable		N/A	2289-7867-400	51190	1

**Table III****Components of Test Set Subassembly PL-1536/GRM,  
NSN 6625-01-432-3819**

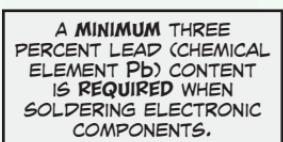
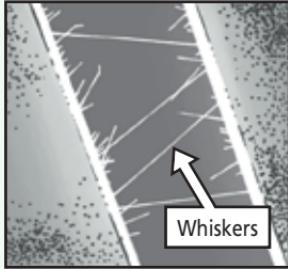
Description	NSN	PN	CAGE Code	Qty
Test set subassembly, PL-1536/GRM	6625-01-502-3407	7003-1542-500	51190	1
RF cable assembly (short BNC)	5995-01-413-0576	6052-0700-580	51190	5
Antenna matching network	6625-01-413-7331	7005-8340-700	51190	1
Adapter, connector (part of antenna matching network)	5935-01-037-3476	M55339/ 16-00914	81349	1
RF cable assembly (long BNC)	5995-01-413-0580	6052-0701-060	51190	1
Cable assy, special purpose, elec.	5995-01-413-1853	6046-0782-400	51190	1
Nut, plain, hex	N/A	517-4	19505	2
Washer, flat	N/A	1414-1565-700	51190	1
Terminal, lug	N/A	2850-1565-800	51190	1
Cover	5999-01-611-5289	1414-2954-000	51190	1
Cable assy, special purpose, elec.	5995-01-413-1852	6041-7885-200	51190	1
Cable assy, radio frequency	5995-01-413-0851	0021-83J0-100	51190	1
Maintenance kit, electronic equip.	6625-01-436-0420	7001-1542-400	51190	1
Test set subassembly	N/A	0021-DKE0-100	51190	1

PS  
END**GET THE LEAD OUT...NOT!**



THE REASON IS THAT LEAD-FREE SOLDER IS HIGHER IN **TIN CONTENT**. THAT INCREASES THE GROWTH OF TIN WHISKERS, WHICH ARE SMALL, HAIR-LIKE FILAMENTS THAT POP UP ON ELECTRONIC COMPONENTS.

TIN WHISKERS CAN CAUSE SHORT CIRCUITS, LEADING TO WIDER SYSTEM FAILURE.



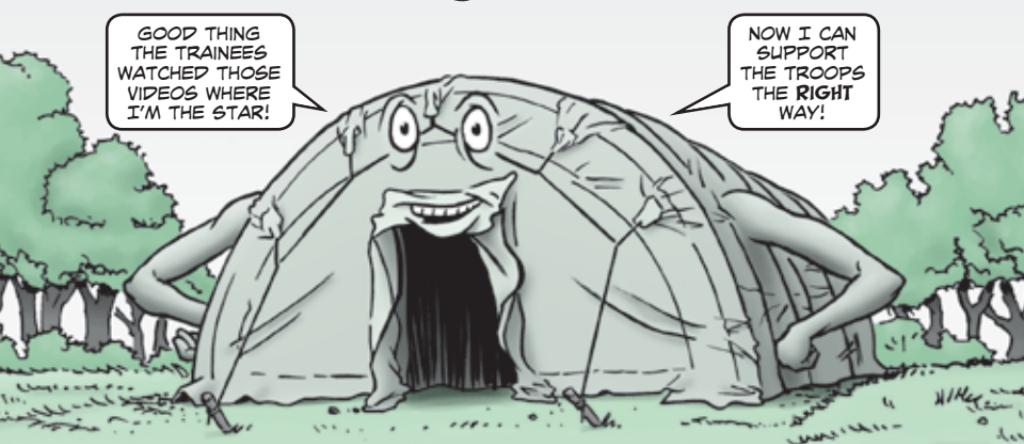
THIS LEAD REQUIREMENT IS MAKING ITS WAY INTO PERFORMANCE SPECIFICATIONS FOR ELECTRONIC COMPONENTS, LIKE THE GENERAL SPECIFICATION FOR INTEGRATED CIRCUITS (MICROCIRCUITS) MANUFACTURING (MIL-PRF-38535K) AND THE GENERAL SPECIFICATION FOR SEMICONDUCTOR DEVICES (MIL-PRF-19500P).



FOR MORE BACKGROUND INFO, VISIT THE DEFENSE ACQUISITION UNIVERSITY:  
<https://www.dau.mil/cop/log/Pages/Topics/Lead-Free%20Electronics%20-%20Solder.aspx>

FOR TECHNICAL QUESTIONS, CONTACT MICHAEL ORAVITZ AT DSN 795-9055, (570) 615-9055, OR EMAIL: [michael.j.oravitz.civ@mail.mil](mailto:michael.j.oravitz.civ@mail.mil)

# Online Training Offered for TAS



**W**henever an Army hospital deploys, surgical shelters are used as medical-surgical tents in field hospitals. That's why setting up and taking them down correctly is critical.

The TEMPER Air Supported Shelters (TAS) go up twice as fast and are half the weight of legacy models. But it's still a labor-intensive process and they're costly to repair or replace if damaged.

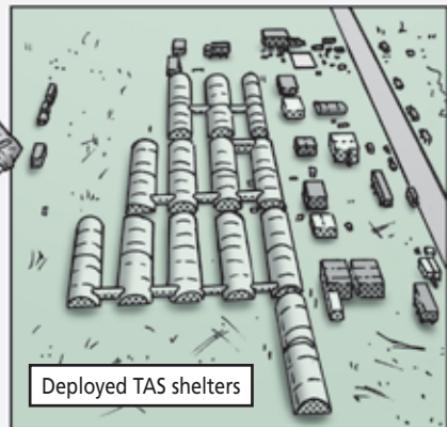
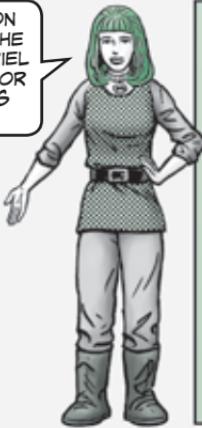
Since TAS is lighter in order to be more mobile, it also means more advance planning is needed. This includes properly preparing the site before deploying the shelters and using heavy material handling equipment. One 64-foot section takes about 15 minutes to inflate.



Item	NSN 8340-	LIN
32-ft tan surgical	016054416	T47813
32-ft green surgical	016548148	T47813
32-ft tan medical	016054416	T47745
32-ft green medical	016548148	T47745
16x20-ft tan central materiel service	016552677	T71755
16x20-ft green central materiel service	016552662	T71755
19.5-ft tan medical	016553249	T71619
19.5-ft green medical	016552667	T71619
64-ft tan medical	016645256	T47745
64-ft green medical	016645266	T47745
64-ft tan surgical	016645221	T47813
64-ft green surgical	016645242	T47813

TO SUPPORT TRAINING ON SHELTER ASSEMBLIES, THE US ARMY MEDICAL MATERIEL DEVELOPMENT ACTIVITY, OR USAMMDA, OFFERS TAS ONLINE TRAINING.

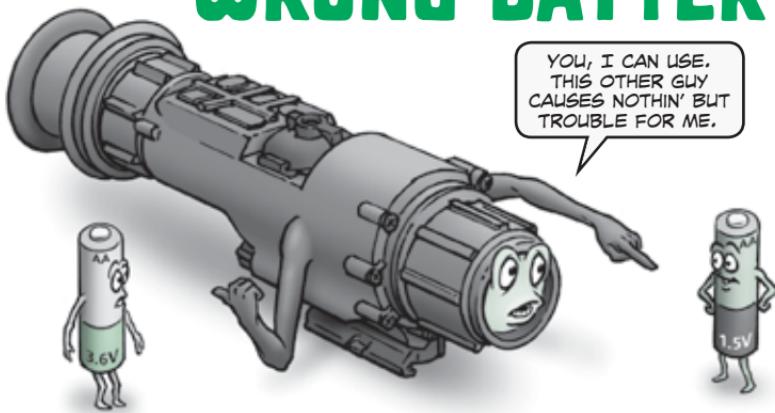
STEP-BY-STEP TRAINING VIDEOS GUIDE YOU THROUGH PUTTING UP AND TAKING DOWN THE SHELTERS. THE VIDEOS ARE CAC-ACCESSIBLE AND ALSO INCLUDE INSTRUCTION MANUALS.



To access the resources, click the Temper Air Supported Training Site link on:

[https://www.usammda.army.mil/index.cfm/  
project\\_management/mss/csh\\_infrastructure](https://www.usammda.army.mil/index.cfm/project_management/mss/csh_infrastructure)

## DON'T GET BURNED BY WRONG BATTERY!



Dear Editor,

One of our Soldiers recently loaded six 3.6V AA lithium batteries in an AN/PAS-13C(V)2 MWTS thermal weapon sight instead of the standard 1.5V AA lithium battery. The sight exploded, burning the Soldier's hands and causing temporary hearing loss.

Please emphasize to Soldiers that they should always use 1.5V AA lithium batteries in their sights, night vision devices and other equipment unless the item's -10 TM says otherwise.

John Gilbert  
Milwaukee, WI



EXCELLENT POINT, JOHN.



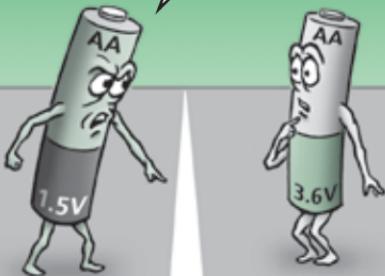
SINCE ALL AA BATTERIES ARE THE SAME SIZE, IT'S CRITICAL THAT SOLDIERS ACTUALLY CHECK THE VOLTAGE LISTED ON THE LITHIUM BATTERY.

THAT'S THE ONLY WAY YOU KNOW FOR SURE YOU'RE USING A 1.5V AA.

YOU CAN'T GO BY COLOR BECAUSE BOTH BATTERIES COME IN SEVERAL COLORS.

UNITS MUST MAKE A POINT TO KEEP 1.5V BATTERIES SEGREGATED FROM 3.6V BATTERIES USED WITH OTHER DEVICES SO THEY AREN'T MIXED UP.

YOU STAY ON YOUR SIDE AND I'LL STAY ON MINE!



IF SOLDIERS ARE USING EQUIPMENT THAT DOES USE THE 3.6V BATTERY, THEY SHOULD MAKE SURE TO KEEP THE 3.6V BATTERIES SEPARATE IN THEIR PACKS SO THEY DON'T ACCIDENTALLY USE THE WRONG BATTERY.

A WARNING WILL BE ADDED TO THE VARIOUS -10 AND -23&P TMs THAT SAYS:

Using AA batteries other than 1.5V will cause damage to this equipment and may explode, causing serious injury to the user.

DO NOT USE AA BATTERIES OTHER THAN 1.5V.

#### HERE'S A PARTIAL LIST OF SIGHTS AND NVDS THAT USE 1.5V LITHIUM BATTERIES:

- AN/PAS-13C/D/E/G thermal weapon sights
- AN/PAS-35 night vision viewer
- AN/PAS-36 night vision viewer
- AN/PSQ-20A/B enhanced night vision goggles
- AN/PSQ-39 enhanced night vision goggles III
- AN/PSQ-40 enhanced night vision goggles III
- AN/PVS-7B/D night vision goggles
- AN/PVS-14 monocular night vision device
- AN/PVS-6(V)1/1A/1B/2/3 aviator's night vision imaging systems

OF COURSE, MANY HAND-HELD DEVICES ALSO USE 1.5V LITHIUM BATTERIES.

WHEN IN DOUBT ABOUT WHAT BATTERY TO USE, ALWAYS CHECK THE -10 TM.

Packaging...

# CAN I UNBOX THE BAGS?



Dear Half-Mast,

Our unit just received some parts we need in the motor pool. Thing is, the parts are individually sealed in bags inside the container they arrived in. Is it OK to remove the bags and store the parts separately or should we leave them in the container?

SGT C.Z.



BAGS ARE EASILY DAMAGED AND CAN QUICKLY RACK UP TEARS OR PINHOLES.

DAMAGED BAGS ALLOW WATER VAPOR TO SEEP IN AND CAUSE CORROSION.



## TB 55-46-1 Updated

Technical Bulletin (TB) 55-46-1, *Standard Characteristics (Dimensions, Weight, and Cube) for Transportability of Military Vehicles and Other Outsize/Overweight Equipment*, has been revised. The Feb 18 update gives dimensions, weights and other specs for military vehicles, vehicle-mounted equipment and other outsize/overweight equipment. The TB is a standard reference for developing and reporting movement requirements. Get it at the LDAC ETM website:

<https://idmng.armyerp.army.mil/>

Supply...

THIS IS  
THE PART  
WE NEED TO  
ORDER.

NO NSN?  
GOOD LUCK  
WITH THAT,  
HAYES!



## Does No NSN Mean No Part?

Dear Half-Mast,

I'm trying to order parts for installing commo equipment in our unit's vehicles. Many parts don't have NSNs, just part numbers (PNs). But when I try to order by PNs, the supply shop keeps telling me I've got to have NSNs or I won't get what I need.

Stumped Sergeant

HAVING AN NSN  
ASSIGNED TO EVERY ARMY  
ITEM ON EARTH WOULD BE  
GREAT, BUT IT'S JUST NOT  
POSSIBLE, SERGEANT.

FACT IS, IF AN NSN WAS MANDATORY FOR EVERY MILITARY  
PART, NONE OF OUR EQUIPMENT WOULD BE RUNNING. THE  
COST IS JUST TOO HIGH. ALTHOUGH THERE ARE LOTS OF  
NSNS, AND THEY'RE HANDY WHEN REORDERING PARTS,  
THERE ARE PLENTY OF PARTS WITHOUT 'EM.



1. First, make sure there is no NSN. There are several sources to identify NSNs by CAGE and PN. Try the following:

- a. NATO Master Cross Reference List (NMCRRL):

[https://www.nato.int/structure/AC/135/nmcrl/nmcrll\\_e/index.html](https://www.nato.int/structure/AC/135/nmcrl/nmcrll_e/index.html)

- b. WebFLIS: <https://fp.logisticsinformationservice.dla.mil/webflis>

or <https://www.webflis.info/>

- c. FedMall: <https://www.fedmall.mil/index.html>

- d. FED LOG: Download from FedMall in the FED LOG corridor.

Questions? Email: [FEDLOG@dla.mil](mailto:FEDLOG@dla.mil)

- e. If your Internet connection is limited or you don't have an account for the above databases, contact the DLA Customer Interaction Center toll free at 1-877-352-2255, or email: [dlacontactcenter@dla.mil](mailto:dlacontactcenter@dla.mil)

2. If Step 1 yields no NSN, then prepare a DD Form 1348-6, *DOD Single Line Item Requisition System Document*. This form gives you a workaround to order what you need, even when an NSN doesn't exist. First, download it at:

<http://www.esd.whs.mil/Portals/54/Documents/DD/forms/dd/dd1348-6.pdf>

DOCUMENT IDENTIFIER	ROUTING IDENTIFIER	M&S	ITEM IDENTIFICATION <sup>1</sup> (NSN, FSCM/Part No., Other)																				UNIT OF ISSUE	QUANTITY										DOCUMENT NUMBER										
			FSCM										PART NUMBER											QTY					REQUISITIONER															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35										
DOCUMENT NO. (Card 2)			DATE		SERIAL		SUPPLEMENTARY ADDRESS		CAGE		FUND CODE		DISTRIB. CODE		PROJECT CODE		PRIORITY		REQUIRED DELIVERY DAY OF YEAR		ADVICE CODE		BLANK																					
36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69											
REJECT CODE (FOR USE BY SUPPLY SOURCE ONLY)			IDENTIFICATION DATA																																									
70			71		72		73		74		75		76		77		78		79		80		81		82		83		84		85		86		*1. MANUFACTURER'S CODE AND PART NO. (When they exceed card columns 8 thru 20)									
8. DESCRIPTION OF ITEM REQUESTED			2. MANUFACTURER'S NAME																																									
9. END ITEM APPLICATION			3. MANUFACTURER'S CATALOG IDENTIFICATION																				4. DATE (YYMMDD)		5. TECHNICAL ORDER NUMBER																			
10. REQUISITIONER (Other first name and address)			6. TECHNICAL MANUAL NUMBER																				7. NAME OF ITEM REQUESTED																					
11. REMARKS			8a. COLOR																																									
12. MAKE			8b. MODEL NUMBER																				8c. SERIES		8d. SERIAL NUMBER																			
13. SOURCE OF SUPPLY																																												
14. SIZE																																												
15. REMARKS																																												

DD Form 1348-6, FEB 85

Edition of Apr 77 may be used until exhausted.

DOD SINGLE LINE ITEM REQUISITION SYSTEM DOCUMENT (MANUAL - LONG FORM)

FILL OUT AS MANY OF THE IDENTIFYING DATA BLOCKS (BLOCKS 1 TO 10) AS YOU CAN ABOUT THE PART YOU WANT. THE MORE DETAILS, THE BETTER. THERE'S A GUIDE TO COMPLETING THE DATA BLOCKS ON THE NEXT PAGE.



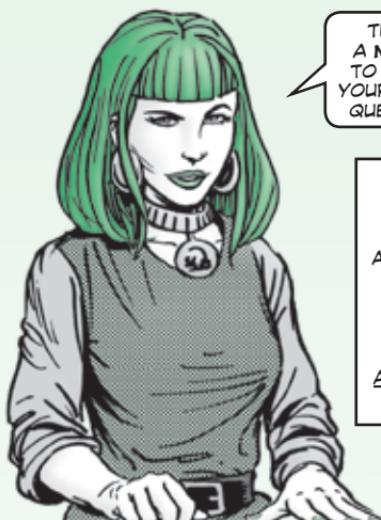
Block Number	Legend	Instructions
1	Manufacturer's code and part number (PN)	Enter the item's Commercial and Government Entity (CAGE) code when available, followed by the complete PN.
2	Manufacturer's name	Enter the manufacturer's name and address (including zip code, if known) when the CAGE is not available.
3	Manufacturer's catalog identification	Enter the manufacturer's catalog identification number when available.
4	Date	Enter the date of the publication in calendar date format (YYMMDD).
5	Technical order number	Enter the applicable order number in which the requested item may be defined.
6	Technical manual number	Enter the applicable TM number in which the requested item may be defined.
7	Name of item requested	Enter the appropriate name of item requested.
8	Description of item requested	Enter the description of item requested and, if necessary, attach exhibits or pictures.
8a	Color	Enter the color of item requested, if applicable.
8b	Size	Enter the size of item requested, if applicable.
9	End item applicable	Enter the name of the applicable end item for which the requested item applies. Entry should cite NSN and/or nomenclature. If application is unknown, enter "unknown".
9a	Supply source	Enter the supply source of the applicable end item, if known.
9b	Make	Enter the manufacturer's make of the applicable end item, if known.
9c	Model number	Enter the manufacturer's model number of the applicable end item, if known.
9d	Series	Enter the manufacturer's series number of the applicable end item, if known.
9e	Serial number	Enter the serial number of the end item, if known. If a unique item identifier (UII) is available, enter in Block 11 (prefixed with "UII").
10	Requisitioner	Enter your name, commercial or DSN number and address, including ZIP code.
11	Remarks	Enter any additional information which will assist the supply source to get the correct item. If there's no NSN for the item, write "No NSN available."

YOU MAY NOT BE ABLE TO COMPLETE ALL OF THE BLOCKS ON THE FORM, BUT THE MORE INFO YOU CAN GIVE THE SUPPLY FOLKS, THE BETTER THE ODDS OF GETTING THE PART YOU NEED.

Half-Mast



# WEBSITE HELPS WITH HAZMAT



THERE'S  
A NEW SITE  
TO ANSWER  
YOUR HAZMAT  
QUESTIONS.

THE DEFENSE ACQUISITION UNIVERSITY  
HAZMAT PACKING AND TRANSPORTATION  
HELP WEBSITE OFFERS THE LATEST  
REGULATIONS, HAZMAT SHIPPING ADVICE,  
TRAINING LINKS AND MORE.

TO ACCESS THE SITE,  
YOU'LL NEED A DAU  
ACCOUNT. SUBMIT A  
SYSTEM AUTHORIZATION  
ACCESS REQUEST (SAAR):

<https://saar.dau.mil>

ONCE YOU'RE THERE,  
CLICK THE DROP DOWN  
MENU UNDER SYSTEM  
ASSOCIATION AND SELECT  
DAU HOMEPAGE.

MAKE SURE TO DOUBLE  
CHECK YOUR EMAIL  
ADDRESS. THAT'S WHERE  
DAU WILL SEND YOUR  
LOGIN CREDENTIALS.

AFTER YOU'VE RECEIVED  
YOUR CREDENTIALS, GO TO  
THE DAU COMMUNITY HUB  
AND LOOK UP HAZARDOUS  
MATERIALS PACKAGING  
AND TRANSPORTATION.

QUESTIONS? EMAIL LOGSA PSCC:  
[usarmy.tyad.usamc.mbx.pt@mail.mil](mailto:usarmy.tyad.usamc.mbx.pt@mail.mil)

GCSS-Army...

## My Kingdom for a Help Desk

SO, WE GOT  
THIS LETTER THE  
OTHER DAY...



Dear Half-Mast,  
Since GCSS-Army  
was rolled out to  
units at different  
intervals, logistician's  
levels of knowledge  
about the system are  
all over the place. Is  
there a centralized  
location that logistics  
professionals can go  
to ask questions  
about GCSS-Army?

SSG M.Z.

SOUNDS LIKE YOU NEED  
THE GCSS-ARMY HELP DESK,  
SERGEANT. HERE'S THE LINK:

[https://gcss.army.mil/  
help\\_desk/help\\_desk](https://gcss.army.mil/help_desk/help_desk)

ONCE YOU'RE THERE, FOLLOW THE INSTRUCTIONS  
ON THE PAGE. YOU'LL HAVE TO REGISTER WITH  
YOUR CAC SINCE YOU'RE A FIRST TIME USER.

# Connie's POST SCRIPTS

## New Army Crypto Support Portal

Check out the new main software download portal for Army cryptographic products software updates, documentation, management software or licenses. Go to:

<https://spcs.kc.army.mil/sites/cryptomodportal/default.aspx>

### Many FSTs No Longer Mandatory

On Page 53 of PS 794, the article referenced AR 40-5's requirement for field sanitation teams (FSTs). That requirement was superseded by Army Directive 2018-07-11, *Prioritizing Efforts—Readiness and Lethality (Update 11)*. The new directive eliminates the requirement for units to have primary and alternate FSTs, unless deployment activities require them. Many thanks to our alert reader, SSG Lowell Barber of CAARNG, for pointing this out!

### 621G SCRAPER PUSH LOADING

Operators, wondering if "push loading" is allowed for your 621G scraper?

It is!

Just make sure you do it right. Pages 10-13 of WP 0005 in TM 5-3805-296-10 (Sep 12) has the complete scoop.

### HMMWV High Seat Kit

To modify your HMMWV driver's and commander's seats into high backs, order the green seat kit with NSN 2540-01-393-3796 or the tan seat kit with NSN 2540-01-408-7049. The kits are limited, however, because the contract wasn't renewed due to testing requirements. When they're gone, you'll have to order the individual parts in TACOM drawings 57K0290 (green) and 57K0291 (tan). Request a copy by email at:

[usarmy.redstone.asc.mbx.psmag@mail.mil](mailto:usarmy.redstone.asc.mbx.psmag@mail.mil)

### POCs For MHE Help

For logistics support of material handling equipment (MHE) such as forklifts, container handlers and cranes, contact the MHE team mailbox at:

[usarmy.detroit.tacom.mbx.ilsc-mhe@mail.mil](mailto:usarmy.detroit.tacom.mbx.ilsc-mhe@mail.mil)

For maintenance issues, contact the MHE maintenance team leader, Matthew Hinton, at:

[matthew.e.hinton.civ@mail.mil](mailto:matthew.e.hinton.civ@mail.mil)

For MHE supply issues, contact the MHE supply team leader, Amy Gilley at:

[amy.l.gilley4.civ@mail.mil](mailto:amy.l.gilley4.civ@mail.mil)

### NSNs for FMTV Door Handles

Previous TMs didn't list separate NSNs for the left and right FMTV door handles. But Fig 1234.5 of TM 9-2320-391-23&P in IETM EM 0369 (Oct 17) now includes this full list of left and right handles, plus necessary hardware:

Item	Left side NSN	Right side NSN
Door handle	2540-01-376-3998	2540-01-376-3999
Door latch	2540-01-375-7995	2540-01-375-7994
Actuator	3010-01-377-6805	3010-01-375-7323
Connecting rig link (pkg of 1)	3040-01-505-9348	3040-01-505-9359
Connecting rig link (pkg of 2)	3040-01-505-9352	3040-01-505-9354

## **M1095 Trailer ABS Light Cap**

Replace missing ABS light caps on M1095 flatbed trailers with NSN 5340-00-200-5904. This replaces NSN 5340-01-512-9064, which is shown as Item 22 in Fig 10 of TM 9-2330-394-13&P-2 (Sep 15). They're inexpensive at \$0.18 each, so order some extras to keep on hand.

## **M1089A1P2 FMTV BII KIT**

Don't be surprised to find a 20-ton hydraulic jack, NSN 5120-01-627-2079, and an amber warning light, NSN 6220-01-645-5767, in the BII kit for the M1089A1P2. They're supposed to be there, even though they're not listed in TM 9-2320-333-13&P (Jun 15). A 12-ton hydraulic jack, NSN 5120-01-573-5935, and another amber warning light, NSN 6220-01-433-5828, are also part of the kit. They're already listed in the TM. The other two items will be included in the next revision.

## **A1P2 FMTV EPHU Cap NSN**

Get a replacement protective cap for your A1P2 FMTV electric hydraulic power unit (EPHU) with NSN 5340-01-646-6963. The old NSN 5340-01-590-0054, listed as Item 15 in Fig 220 for the 2.5-ton model and Fig 1220 for the 5-ton and 10-ton models, of TM 9-2320-333-13&P in IETM 0294 (Jun 15), is a terminal item.

## **POWER GEN TRAINING PUB RELEASED**

Soldier Training Publication No. 9-91D13-SM-TG, *Soldier's Manual and Training Guide, Tactical Power Generation Specialist MOS 91D Skill Levels 1, 2, and 3* (Oct 18), is out. Trainers and first-line supervisors should make sure 91Ds get it. It's at the Army Publishing Directorate:

<https://armypubs.army.mil>

Or the Central Army Registry:

<https://atiam.train.army.mil/catalog/dashboard>

## **Here's the Dish on New DSCS TM**

TM 11-5895-1829-13&P (Oct 18) covers operator maintenance and RSPTL for the AN/FYQ-110C, defense satellite communications system (DSCS) operational support system, NSN 5895-01-538-5774. TM distribution is restricted, so you'll need to log in with your CAC to:

<https://idmng.armyerp.army.mil/>

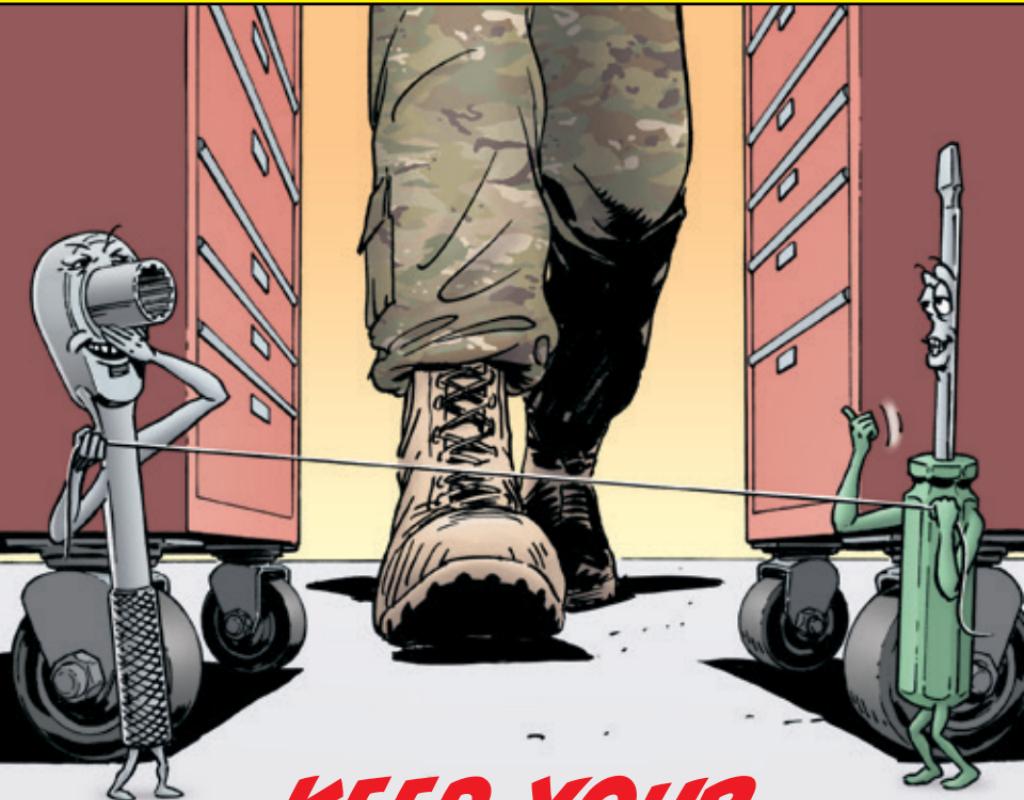
Choose the "ETM/IETM" icon and search for the TM.

## **LMTV/FMTV Power Steering Gasket**

The LMTV power steering gasket, NSN 5330-01-387-2165, shown as Item 3 in Fig 202 of TM 9-2320-391-23&P (IETM EM 0369, Oct 17), will not be replaced once stock is depleted. Instead, order the next higher assembly, the power steering reservoir, NSN 2530-01-399-4207. It's shown as Item 1 in Fig 202 of the IETM.

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

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## **KEEP YOUR MAINTENANCE AREA CLEAN!**