

ISSUE 725 APRIL 2013

TB 43-P5-225, 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-Dot hyperiinsk, 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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You are invited to send PS your ideas for improving maintenance procedures, questions on maintenance and supply problems and questions or comments on material published in PS.

Just write to:

MSG Half-Mast

PS, the Preventive Maintenance Monthly USAMC LOGSA (AMXLS-GP)

Bldg. 3303

Redstone Arsenal, AL 35898

Or email to:

half.mast@us.army.mil or

usarmy.redstone.logsa.mbx.psmag@mail.mil Internet address:

https://www.logsa.army.mil/psmag/pshome.cfm

By order of the Secretary of the Army:

RAYMOND T. ODIERNO

General, United States Army Chief of Staff

Official:

Joyce E. Morrow

Administrative Assistant to the Secretary of the Army

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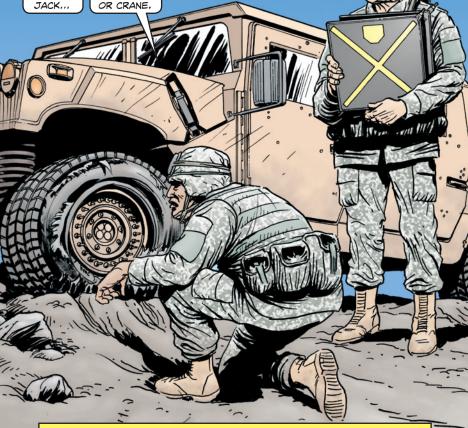
April 2013

# THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-725

Approved for Public Release; Distribution is Unlimited

THERE'S NO ROOM FOR A JACK... ... AND WE PON'T HAVE A WRECKER OR CRANE. NO PROBLEM, SOLDIER! YOU CAN USE AN AIRBAG OR TWO WHEN A JACK WON'T DO!



SEE "AIR BAGS LIFT HEAVY LOADS" PAGES 44-45

# The Invisible Wizard







General Dwight D. Eisenhower said, "You will not find it difficult to prove that battles, campaigns, and even wars have been won or lost primarily because of logistics."

It's easy to take logistics for granted because it doesn't look or sound exciting. Big guns and fighter aircraft are what carry the "wow" factor.

By contrast, logistics is a silent, steady stream of parts materializing in the background—the parts you need to do good PM.

Logistics is an invisible hand waving a supply wand, summoning both fuel to fill your tank and the tool to twist off that stuck connector.

Logistics conjures the beans for your belly and the lube for your weapon. It takes a special kind of magic to simultaneously keep bellies from growling and guns from fouling.





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By order of the Secretary of the Army:

#### RAYMOND T. ODIERNO General, United States Army Chief of Staff

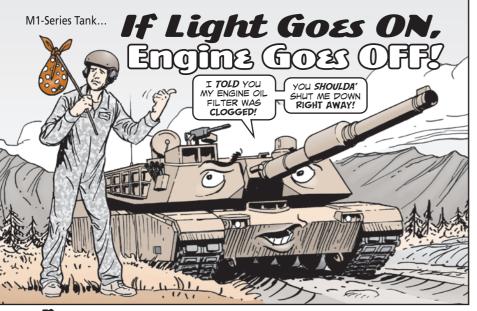
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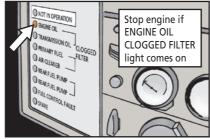
Privers, the tank's ENGINE OIL CLOGGED FILTER warning light is very similar to the check engine light in your POV.

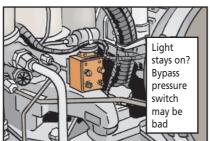
So just like with your car, if you see the light go on, don't hesitate. **Shut down now.** Otherwise, the dirt, sand and other gunk that's in the oil could shut down your tank's enginepermanently.

Dirty oil bypasses a clogged filter, carrying dirt into the engine. The bypass feature is to keep the engine running when you're on the battlefield.

But that dirty oil gets into engine parts. The longer you run with a clogged filter, the more damage grit and dirt cause.

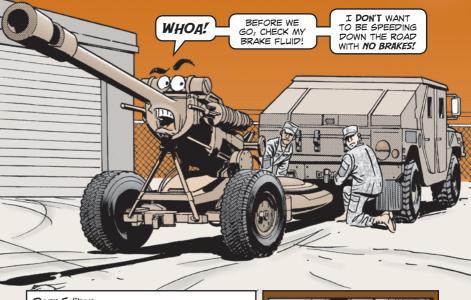
Mechanics, if the light stays on after changing the filter element, the problem is probably a bad by-pass pressure switch on the engine oil pump assembly. Replace the switch with NSN 5930-01-089-9142.





M119A2 Towed Howitzer...

### Add Brake Fluid Check to PMCS



Dear Editor,

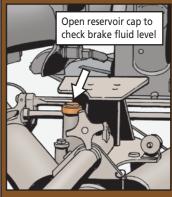
I noticed while conducting PMCS on an M119A2 howitzer that there is nothing mentioned in TM 9-1015-252-10 about checking the fluid level in the brake reservoir. Further investigation showed that the fluid level is mentioned only in the -20&P as a quarterly check.

Any time you are getting ready to move the M119A2 you should first make sure it has enough brake fluid. You don't want the brakes to fail while you're on the road.

It's a pretty simple check. Just unscrew the brake reservoir cap and verify that the reservoir has the proper fluid level—within ½ inch of the top of the reservoir.

Add this check to your BEFORE PMCS.

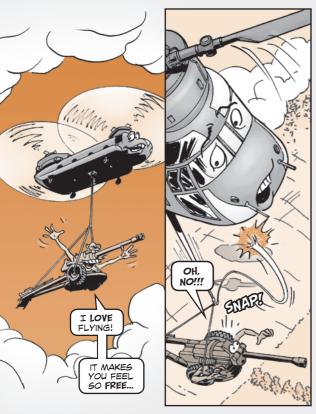
James Palmer
TACOM ARFORGEN Field Integrator
JBLM, WA



### Editor's note:

An excellent way to put the brakes on brake failure.

# BE SAFE WHEN SLING LOADING!





SLING LOADING
AN MI19A2
TOWED HOWITZER
TAKES CAREFUL
PREPARATION AND
PLENTY OF PM.

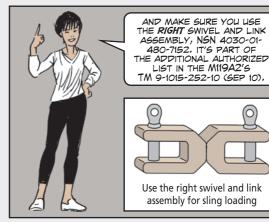
THE LAST THING
YOU WANT IS TO
SEE IT RAINING
2-TON HOWITZERS
OUTSIDE!

SOME OF THE CULPRITS FOR SLING LOAD FAILURE INCLUDE UNSERVICEABLE SLING SETS, LIFTING LEG FAILURES, AND USING THE WRONG SWIVEL AND LINK ASSEMBLY.

SO MAKE SURE YOU VISUALLY INSPECT SLINGS BEFORE AND AFTER EACH USE.

FOLLOW THE GUIDELINES IN TM 10-1670-295-23&P (MAY 91, W/CH 1, AUG OS). IT COVERS THE 10,000- AND 25,000-LB EXTERNAL TRANSPORT SLING ASSEMBLY AND 5,000- AND 10,000-LB EXTERNAL TRANSPORT CARGO NET.

YOU SHOULD ALSO USE THE PAMAGE CRITERIA CHART IN TM 4-48.09 (JUL 12), MULTISERVICE HELICOPTER SLING LOAD: BASIC OPERATIONS AND EQUIPMENT.





- FM 4-20.198,
  - Multiservice Helicopter Sling Load: Single-Point Load Rigging Procedures
- FM 4-20.199,
  - Multiservice Helicopter Sling Load: Dual-Point Load Rigging Procedures
- TM 4-48.09,
  - Multiservice Helicopter Sling Load: Basic Operations and Equipment
- DA Pam 55-21, Lifting and Tiedown Handbook for Helicopter Movements

# **Crush Proof Drip Pan NSNs**

Need some drip pans for use around the motor pool? These drip pans are made of a special collapsible rubber that snaps back to its original shape, even when driven over. Each pan also comes with its own pull-chain.

Size	NSN 4940-
3-gal	01-490-2455
6 <sup>1</sup> /2-gal	01-490-2463
15-gal	01-490-2470

### **Dexron VI NSNs**

Need some Dexron VI for your vehicle's transmission? Use these NSNs:

NSN 9150-	Size
00-698-2382	1 quart
01-353-4799	1 quart (plastic bottle)
00-657-4959	5 gallons
01-114-9968	55 gallons

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# Combat and Tactical Vehicles... The Right Fit: Tow Bars and Adapters

OK, I NEED A LITTLE HELP HERE... I DON'T KNOW WHICH TOW BAR FITS EACH OF YOU... OR WHAT ADAPTERS I NEED SO YOU CAN TOW OTHER RIGS SAFELY.

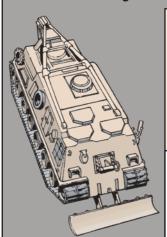
YEAH, IT'S HARD FOR US TO REMEMBER THAT STUFF, BUT I'M SURE HALF-MAST KNOWS! LET'S FIND OUT FROM HIM!





WE KNOW IT CAN BE TOUGH TO FIGURE OUT THE RIGHT TOW BARS AND ADAPTERS TO USE IN VEHICLE RECOVERY OPERATIONS. SO HERE'S SOME HELPFUL INFO ON ARMY-APPROVED TOW BARS AND ADAPTERS.

### Towing vehicle: M88A1 recovery vehicle



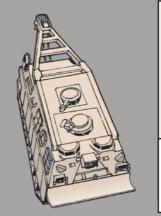
Tow bar: Heavy duty tow bar, NSN 4910-01-267-2912 (capacity 112,000 lbs)



### Adapters:

- 2.5-10-ton light duty, NSN 2540-00-863-3153
- 10-50-ton medium duty, NSN 5340-01-267-2908 (comes with tow bar)
- 50-ton heavy duty, NSN 2450-00-589-6391
- Adapter, tow bar, NSN 2540-01-440-4979

### **Towing vehicle:** M88A2 recovery vehicle. Also part of the HEMTT additional authorization list (AAL).



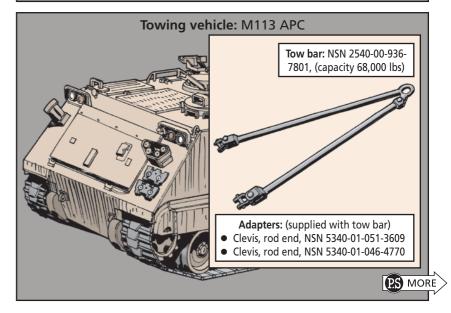
Tow bar: Heavy duty tow bar, NSN 2540-01-434-8595 (capacity 139,000 lbs)



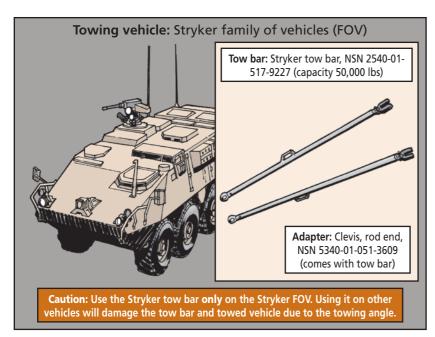
Adapters: (Not supplied with tow bar)

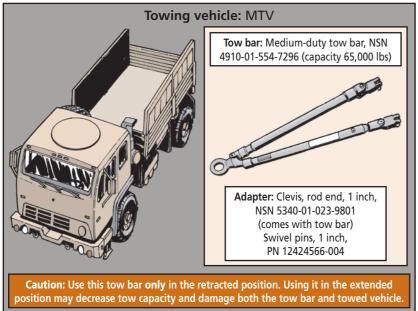
- 2.5-10-ton light duty, NSN 2540-00-863-3153
- 10-50-ton medium duty, NSN 5340-01-267-2908
- 50-ton heavy duty, NSN 2450-00-589-6391
- Adapter, tow bar, NSN 2540-01-440-4979

Note: The M88A1/A2 heavy duty tow bars do not have a working load limit, but do not exceed the weight of the M88A1/A2 (112,000 lbs/139,000 lbs). Any like-vehicle towing must be done by a vehicle of equal or greater weight.



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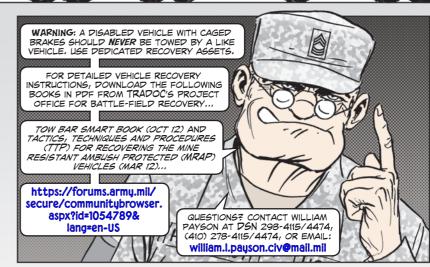
### **MRAP Flat Towing**

MRAPS CAN BE FLAT-TOWED USING ANOTHER MRAP OR LIKE VEHICLE, AS LONG AS THE TOWING VEHICLE IS OF EQUAL OR GREATER WEIGHT.

NOTE: THE ONLY
ARMY-APROVED TOW
BARS FOR USE WITH
MRAPS ARE HEAVY
TOW BARS, NSN
4910-01-267-2912 AND
2540-01-434-8595.
THE FOLLOWING CHART
IDENTIFIES WHICH
APAPTER TO USE WITH
EACH MRAP VARIANT.

MRAP Flat Tow Recovery			
Adapter	NSN 2540-00-863-3153 (2.5-10 ton)		
For MRAP variants:	BAE Systems RG-33L 6x6 BAE TVS Caiman 6x6 Navistar MaxxPro 4x4		
Adapter	NSN 5340-01-267-2908 (10-50 ton)		
For MRAP variants:	Force Protection Cougar 6x6 Force Protection Cougar 4x4 General Dynamics RG-31 4x4 MATV Base/UIK/SOCOM 4x4 Force Protection Buffalo A1/A2		







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**HEMTT A4 and** PLS A1 Trucks...

## STEERING COLUMN WIRING HARNESS CHANGED!







Ever wish your problems could just disappear? Well, one problem with HEMTT A4 trucks that rolled off the line between Mar 10 and 3 Aug 12 and all PLS A1 trucks produced before 3 Aug 12 is about to do just that. Vanish!

A production issue caused a cab wiring harness to rub against a grease fitting on the steering column of these HEMTT A4 and PLS A1 trucks. That contact can lead to a damaged wiring harness, including sparking of exposed wires or shearing of the wires. But the good news is, steering and other safety-related functions aren't affected.

More good news is that Oshkosh Corporation will inspect and modify suspect trucks. In fact, Oshkosh will provide the required parts and labor to correct this problem at no cost to units. The repair work will include removing and disposing of the problem grease fitting, installing a plug to fill the opening, and adding two half-inch wide cable ties.

The trucks that need to be fixed are identified at this link:

https://tulsa.tacom.army.mil/maintenance/ ?t=mam&f=HEMTTA4PLSA1STEERWLxlsx

Units should schedule repairs by contacting Christopher Schweitzer at:

### cschweitzer@defense.oshkoshcorp.com

And you shouldn't see this problem in the future because the steering shaft wiring harness change was added to HEMTT A4 and PLS A1 production on 3 Aug 12.

What about the TMs? The HEMTT A4's TM 9-2320-326-14&P (EM 0288, May 09), and the PLS A1's TM 9-2320-319-13&P (EM 0298, May 09) will be updated in the next revision. The grease fitting will be removed and two half-inch wide cable ties will be added.

Want more details? See TACOM LCMC's maintenance information message 12-051 online:

https://tulsa.tacom.army.mil/SAFETY/message.cfm?id=MI12-051.html

FMTV... MAKE SURE YOUR TIRES MATCH! I - I DON'T UNDERSTAND! I BOUGHT A DIFFERENT I ASSURE BRAND SHOE IN A YOU, SIZE 9 1/2 JUST MADAME LAST WEEK! THIS IS A

Just like a size 10 shoe in one brand can be a size 9 1/2 in another, all tires don't come as a standard size either. Ordering FMTV wheel assembly, NSN 2530-01-500-4619, can bring two different tires. So make sure you take a good look at the manufacturer and the tread. The Goodvear tire is about an inch taller than the Michelin option.

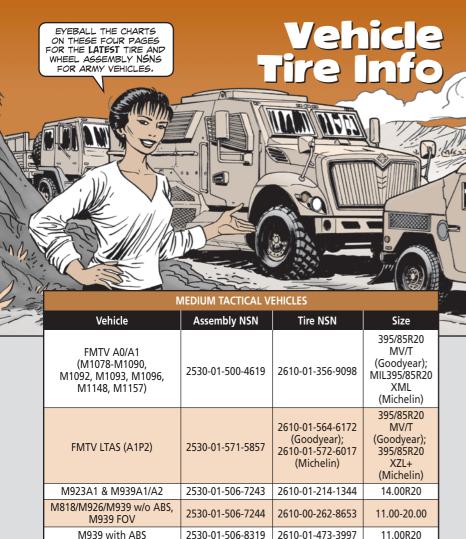


Finally, make sure your spare tire matches the tires on your truck. The spare needs to at least match one of the axles. As a general rule for all Army vehicles, make sure the spare tire matches the tires that are already installed.

### M1117 ASV Seat Switch NSN

If the electric switch for the hydraulic seat on your M1117 armored security vehicle (ASV) goes bad, don't replace it with NSN 6150-01-577-4987 (Item 1 in Fig 69A of TM 9-2320-307-24P). That brings the switch and bracket at a cost of almost \$1,650! Instead, reuse the old bracket and replace just the switch with NSN 5930-00-765-5719. That sets you back only \$51.88.

**APR 13** PS 725 **APR 13** 11 10 PS 725



	MHE AND CONSTRUCTION VEHICLES				
	Vehicle	Assembly NSN	Tire NSN	Size	
	10K ATLAS Forklift - Right	2530-01-446-1035	2610-01-459-0440	17.50-25	
	10K ATLAS Forklift - Left	2530-01-514-8514	2610-01-459-0440	17.50-25	
	4K RTFL (JI CASE M4K)	2530-01-506-6873	2610-01-320-0460	15.00-19.50	
	4K Entwistle Forklift	2530-01-596-0860	2610-01-320-0460	15.00-19.50	
	M10A 10K (right side)	2530-01-506-6884	2610-00-726-5168	20.50-25	
	M10A 10K (left side)	2530-01-527-9583	2610-00-726-5168	20.50-25	
	50K RTCH (Caterpillar)	2530-01-506-6885	2610-01-114-3732	35.00/65R33	
	50K RTCH (Kalmar)	2530-01-484-1419	2610-01-483-5851	29.50-35	
	6KVRRTFL- (Right Side)	2530-01-518-3656	2610-00-726-5164	17.50-25	
	6KVRRTFL - (Left Side)	2530-01-518-3659	2610-00-726-5164	17.50-25	
	IHMEE (Right)	2530-01-543-8303	2610-01-517-5835	14.00R24	
	IHMEE (Left)	2530-01-543-8304	2610-01-517-5835	14.00R24	
\	130G Grader (Right Side)	2530-01-549-6588	2610-01-543-4493	13.00-24	
	130G Grader (Left Side)	2530-01-582-3904	2610-00-543-4493	13.00-24	
	MW24C (Right Side)	2530-01-581-5782	2610-00-726-5165	20.50-25	
	MW24C (Left Side)	2530-01-584-7913	2610-01-726-5165	20.50-25	
1	CS-563D Vib Roller	2530-01-572-7187	2610-01-559-2780	23.1-26	
	SEE	2530-01-527-9584	2610-01-220-6413	12.50R20	

MRAP VEHICLES			
Vehicle	Assembly NSN	Tire NSN	Size
BAE RG33/RG33 HAGA	2530-01-555-4810	2610-01-552-5577	395/85R20 XZL
BAE RG33/RG33 HAGA PLUS	2530-01-563-0583	2610-01-561-7314	16.00R20 XZL
BAE TVS Caiman	2530-01-555-4749	2610-01-559-2516	395/85R20 XML
BAE TVS Caiman PLUS	2530-01-565-2137	2610-01-564-6172	395/85R20
Navistar MaxxPro & MaxxPro PLUS (Front Axle)	2530-01-555-5456	2610-01-552-5577	395/85R20 XZL
Navistar MaxxPro PLUS (Rear Axle)	2530-01-565-5657	2610-01-561-8321	12.00R20
Navistar DASH	2530-01-570-6352	2610-01-572-6017	395/85R20 XZL+LR J
GDLS RG31 365 w/Steel Rim	2530-01-560-8477	2610-01-388-6679	365/85R20XZL
GDLS RG31A2 365 w/Alum Rim	2530-01-572-5907	2610-01-388-6679	365/85R20 XZL LR J
GDLS RG31A2 395 w/Alum Rim	2530-01-572-5445	2610-01-552-5577	395/85R20 XZL LR J
M-ATV	2530-01-576-5896	2610-01-572-6017	395/85R20 XZL+LR J
M-ATV UIK	2530-01-592-6682	2610-01-561-7314	16.00R20 XZL PS M

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2530-01-478-0593

2530-01-532-5635

2530-01-506-5910

2530-01-506-5915

2610-01-479-4200

2610-01-527-8260

2610-00-262-8677

2610-01-397-6976

14.00R20

325/85R16

9.00-20

14.50R20

M1117 ASV

LAV

M35A2/M200 Trlr/M149A2/ M105A2/M373A2/M332/

> M313/M750 M35A3

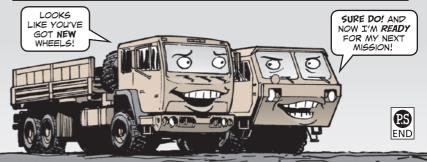
HMMWV AND LIGHT TACTICAL VEHICLES				
Vehicle	Assembly NSN	Tire NSN	Size	
HMMWV/M1101 Trailer L/R D	2530-01-493-5859	2610-01-333-7632	37.0/12.5R16.5	
HMMWV/M1101 Trailer L/R D (24 Bolt Rim w/Michelin Baja/ Goodyear MTR tire)	2530-01-558-2138	2610-01-541-4090	37.0/12.5R16.5	
HMMWV/M1101 Trailer L/R E (24 or 20 Bolt Rim w/ Goodyear MTR tire /Michelin Baja T/A)	2530-01-563-8620	2610-01-563-8328	37.0/12.5R16.5	

ROUTE CLEARANCE VEHICLES				
Vehicle	Assembly NSN	Tire NSN	Size	
Buffalo (Front)	2530-01-535-9462	2610-01-334-2694	16.00R20	
Buffalo (Rear)	2530-01-535-9459	2610-01-334-2694	16.00R20	
Buffalo (Front for Hull #'s 65-current)	2530-01-554-6621	2610-01-334-2694	16.00R20	
RG31 (MK2 and MK3)	2530-01-541-5364	2610-01-537-4093	365/80R20	

LIGHT AND MEDIUM TRAILERS			
Vehicle	Assembly NSN	Tire NSN	Size
M1076 PLS Trailer	2530-01-500-4991	2610-01-357-8333	15.50/80R20
M860A1 Trailer (Patriot)	2530-01-506-7315	2610-01-500-4505	445/65R22.5
M870 Trailer	2530-01-508-6677	2610-01-325-1934	10.00R15
M870A1 Trailer	2530-01-506-7646	2610-01-325-1934	10.00R15
M870A3 Trailer	2530-01-571-7223	2610-01-518-5292	275/70R22.5
M1062 Trailer	2530-01-506-7648	2610-01-045-3688	11.00R22.50
M172A1 Trailer	2530-01-506-7650	2610-01-325-1934	10.00R15
M129A4 Semitrailer	2530-01-514-7903	2610-01-045-3688	11.00R22.50
M1061A1	2530-01-514-7909	2610-01-204-4488	12.00-16.50
M119A2 (Left side)	2530-01-541-7004	2610-01-551-2684	9.00-16
M119A2 (Right side)	2530-01-541-7001	2610-01-551-2684	9.00-16
FMTV Trailer (M1082, M1095)	2530-01-542-7405	2610-01-518-5292	275/70R22.5
M871, M871A1, M871A2	2530-01-506-4129	2640-01-481-5378	11.00R22.50
M871A3	2530-01-508-2786	2610-01-519-0940	255/70R22.5
M872 Trailer Series	2530-01-547-4136	2610-01-506-0388	11.00R22.50
M872A4, M871R,M871A1R, M871A3R & M871A2R	2530-01-584-7914	2610-01-569-2153	11.00R22.50
M200A1, M149A1/A2, M105A2/A3, M103A3	2530-01-528-9461	2610-01-063-7947	10.00R22.5
M967A2/M969A3	2530-01-527-4609	2610-01-045-3688	11.00R22.50
LHS Trailer (M1147)	2530-01-542-7405	2610-01-518-5292	275/70R22.5

LINE HAUL TRACTORS			
Vehicle	Assembly NSN	Tire NSN	Size
M915A2 (Front), M969, M969A1/A2, M871, M129A2C, M129A3	2530-01-506-4125	2610-01-045-3688	11.00R22.50
M915A3	2530-01-506-4128	2610-01-481-5378	11.00R22.50
M915A4/A2 (Rear), M871A1, M871A2, M871	2530-01-506-4129	2610-01-481-5378	11.00R22.50
M917A1 Front	2530-01-506-4131	2610-01-436-3332	385/65R22.50
M917A1 Rear	2530-01-506-4132	2610-01-436-3334	315/80R22.50
M916A1/A2 Rear	2530-01-506-4133	2610-01-436-3334	315/80R22.50
M916A3 (Up Armor Front)	2530-01-557-2625	2610-01-552-6448	425/65R22.50
M916A3 (Up Armor Rear, Right Outer, Left Inner)	2530-01-584-7917	2610-01-514-3999	315/80R22.50
M916A3 (Up Armor Rear, Left Outer, Right Inner)	2530-01-584-7915	2610-01-514-3999	315/80R22.50
M920	2530-01-506-4136	2610-01-332-1564	11.00R24
M915A2 (Up Armor)	2530-01-537-8294	2610-01-465-5823	12.00R22.5
M915A3 (Up Armor)	2530-01-537-8297	2610-01-465-5823	12.00R22.5
M915A4 (Up Armor)	2530-01-537-8299	2610-01-465-5823	12.00R22.5
M878A2	2530-01-514-5105	2610-01-507-3633	11.00R22.50

HEAVY TRUCKS AND TRAILERS			
Vehicle	Assembly NSN	Tire NSN	Size
M977 HEMTT w/o CTIS	2530-01-477-1660	2610-01-334-2694	16.00R20
M1070/74/75 PLS HET Truck w CTIS	2530-01-506-2715	2610-01-334-2694	16.00R20
M1000 HET Trailer	2530-01-506-5762	2610-01-323-4813	215/75R17.50
M989A1 Trailer HEMAT	2530-01-506-7324	2610-01-452-0605	385/65R22.50







IF SO, YOU MAY HAVE NOTICED A PROBLEM WITH THE AUTOMATIC FIRE EXTINGUISHING SYSTEM (AFES) MASTER CONTROLLER'S WIRING HARNESS.

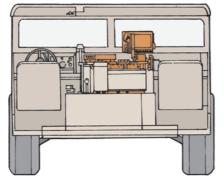
# THAT UNSECURED HARNESS GETS TANGLED WITH THE HMMWV'S TRANSMISSION, TRANSFER AND PARKING BRAKE CONTROL LEVERS.

### **TM Update Needed**

Some of you have seen the wiring harness problem and have even tried to fix it. Problem is, TM 9-2320-387-24-2 (Dec 97) only tells you how to route and secure an AFES wiring harness installed with the **standard** radio rack. There are no specific installation instructions for routing or securing the AFES wiring harness with the **integrated** radio rack.

The BFT/integrated radio rack installation TBs, 11-7010-438-23 and 9-2320-387-35-1, don't help you with this, either. So the way you see the AFES routed in HMMWVs with the integrated radio rack installed could vary.

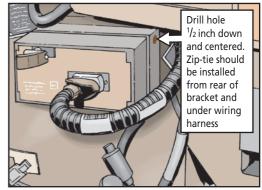
Integrated Rack in an M1151 HMMWV



### **Fixing the Problem**

Here's the recommended field-level repair. It allows you to secure the wiring harness out of the way of vehicle controls. Just follow this procedure:

- 1. Disconnect your HMMWV's batteries.
- 2. Disconnect the wiring harness from the AFES master controller.
- 3. Move all wiring out from behind the AFES master control mounting bracket.
- Drill a <sup>5</sup>/<sub>16</sub>-in hole. The hole should be drilled <sup>1</sup>/<sub>2</sub> inch down from the top of the bracket and centered.
- **5.** Reconnect the wiring harness to the AFES master controller.
- **6.** Form a loop with the excess wiring harness length and secure it with a zip-tie. Place the loop and zip-tie behind the integrated radio rack.



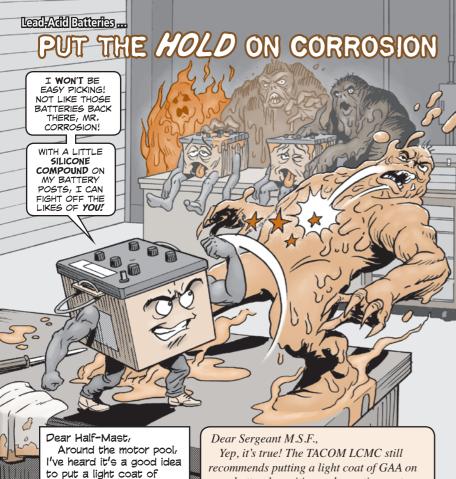
- 7. Position the wiring harness and secure it to the drilled hole with a zip-tie. The zip-tie should be fed through the back of the bracket and the wiring harness should be positioned toward the top of the bracket.
- **8.** Make sure you can use all vehicle controls without touching the harness.
- 9. Reconnect your HMMWV's batteries.

CAN ACCIDENTALLY
DISCHARGE THE AFES
DURING VEHICLE
OPERATION.

THAT PUTS TOO

MUCH STRESS ON THE WIRING HARNESS AND

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Around the motor pool, I've heard it's a good idea to put a light coat of grease on the terminals of our vehicle's lead-acid batteries. Supposedly, this helps prevent corrosion and makes the clamps easier to remove.

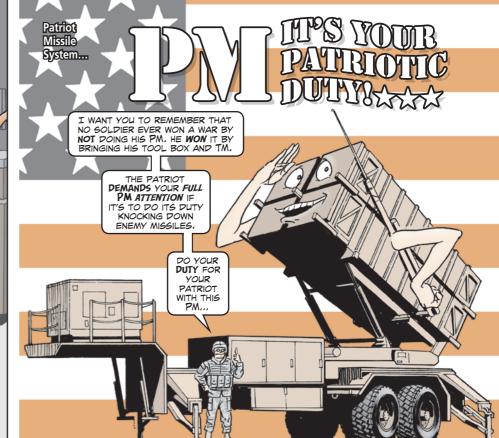
Is this true? And if so, what kind of grease is best to use?

SGT M.S.F.

Yep, it's true! The TACOM LCMC still recommends putting a light coat of GAA on your battery's positive and negative posts. However, there is a silicone compound that works even better than grease.

When applied, the silicone runs down around the battery post and terminal to completely seal out moisture. Get a 3-oz tube with NSN 8040-01-331-7133 or a 1-pint can with NSN 8040-01-331-7134.

Half-Mast



### Ladder Lookout

The AMG ladder is prone to cracking at the welds that secure it to the trailer. Eventually, a ladder can break off if the cracks get bad enough. You could end up hurtling through space if you're the unlucky one on the ladder when that happens. At least monthly, eyeball the ladder welds for cracks. Report any you find.



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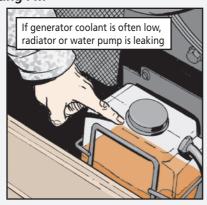
KEEP READING FOR MORE WAYS TO HELP YOUR PATRIOT!



### **Generating PM**

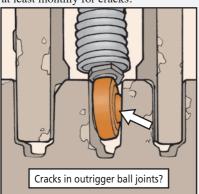
Adjust the voltage, hertz and governor knobs like WP 0044 00 in TM 9-1440-600-10 says. You're not going to help the generator run better by randomly adjusting voltage, hertz or the governor. If you get the generator's settings wrong, you'll start getting voltage faults.

Check the oil and coolant before operating. The generator is bad on oil consumption. It will often need more oil if it's been operating for a while. If the coolant is often low, the radiator or the water pump is leaking. Tell your repairman.

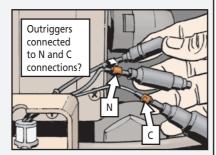


### **Check Out Outriggers**

Look for cracks in ball joints. Hairline cracks regularly develop in the ball joints. Eventually they can become so bad that the ball joint splits. Then the outrigger has trouble going up and down. Check all the outrigger ball joints at least monthly for cracks.



Make sure the limit switches limit. If a limit switch has stopped working or is adjusted wrong, the outrigger or its motor could be damaged during operations. The easiest way to check them is to just raise and lower the outrigger while watching the limit switches. Also make sure they are connected to the N and C connections, not the 0. Never bypass the interlock circuitry for the outriggers.



#### **Radar Reminders**

Make sure the AN/MPQ-65's shroud is secured completely for storage and for operation. First, properly fold the shroud for storage. If it's bunched up, it will be damaged. Then ensure all the shroud straps are tight and buckled. If the shroud is not secured completely before lowering the antenna, its frame can punch holes in the top of the radar. Water can then get in the radar and cause expensive damage.

Also make sure the shroud straps are securely buckled for operations. If the shroud flips back down while the radar is radiating, it could catch fire from the transmitted radio frequency.



**Don't rush the manual drive for the main array.** Some Soldiers attach a power tool to the manual drive to try to make it move faster. All that does is destroy the manual drive's gears. Crank the drive with a wrench like you're supposed to.

Easy does it when adding oil to the electrical power plant (EPP). If you overfill the EPP, a gasket will be blown and you've got a major oil leak. Check the dipstick to see if the EPP needs oil and how much. Then use an oil dispenser to add just the right amount. If you use a funnel and a 5-gal jug, you will have trouble getting it right.

Add fuel just to the bottom of the fill neck. If you push fuel past the bottom of the neck, it can leak from heat expansion and that's a fire hazard.

Check the rubber hinges on the generator access doors for dry rot. If the hinges start to fall apart, the doors won't shut correctly and then rain can get in the generator.

FPP



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# GET THE WORD ON GREEN CLEANERS

Mechanics, as the Army goes green, you'll hear lots about environmentally-safe cleaning compounds for use on Army aircraft.

For instance, if you come across a green cleaner called NAVSOLVE®, put out by the DLA headshed as an approved cleaner, you need to hold your horses before using it on aircraft. The definitive word for NAVSOLVE® use on aircraft, including UAVs, is NO-GO for now!

Consider the cleaner off limits until you either get an aviation maintenance information message (AMIM) or TM updates that add the NSNs.

Don't confuse Army green products with commercial products like Simple Green®. Simple Green has never been approved by the Army and should never be used to clean aircraft.

Cleaners for aircraft are those listed in TM 1-1500-344-23, *Cleaning And Corrosion Control*, the -23 maintenance manuals and cleaners otherwise approved by the Army specifically for aviation.

If you have questions about the DLA-approved cleaner NAVSOLVE® for Army Aircraft, contact your local logistics engineer. Also, if you have questions or concerns about this or any other environmentally friendly alternative, you can contact the AMCOM G-4 Environmental Hotline at usarmy.amcom-environmental@mail.mil or call (256) 313-1711.

UH/HH-60M...

# AVOID BUSTED KNUCKLES AND COMPONENT DAMAGE!



Dear Editor,

When we remove or install the Black Hawk's tail rotor drive shaft, gear box flange or the seal, our knuckles and components take a beating.

The TM procedure Tail Gear Box Input Seal, Plug Seal and Flange requires us to use a torque reactor and a special socket. That's it! The problem is, it doesn't work very well. When performing the task, we end up damaging multiple components and busting our knuckles. That's because the socket slips off the nut and damages the gear box and drive shaft. This procedure applies along the entire tail rotor driveline, including the oil cooler, the intermediate gearbox and the tail rotor drive shaft.

THAT WILL SAVE YOUR KNUCKLES

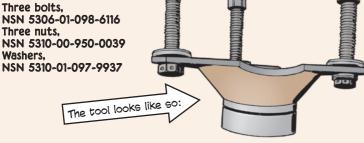
AND AIRCRAFT

COMPONENTS FROM DAMAGE

We've come up with a smart new procedure using a tool that doesn't require special fabrication or unusual parts. It also saves our knuckles and prevents damage to drive shafts, gear boxes and flanges. It's primarily an on-aircraft task, but can be done off the aircraft, too.

The tool consists of the following:

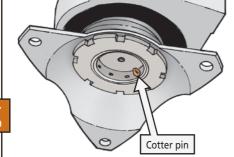
- 1. An old flange, NSN 1615-01-078-5710
- 2. Three bolts. NSN 5306-01-098-6116
- 3. Three nuts. NSN 5310-00-950-0039
- 4. Washers.



Make sure you paint all the parts red so they don't get confused as good parts.

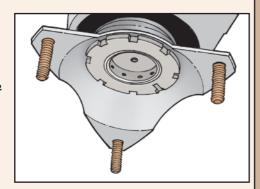
We follow the procedures all the way through to Step 5 of the removal portion for the cotter pin in IETM WP 0648 00 of TM 1 1520-280-23&P.

> Start procedure after removal of cotter pin

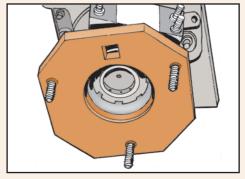


Then we add these steps:

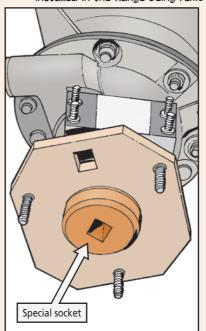
7. Install the bolts one at a time into the flange being removed. The bolt head must point towards the gear box and you may have to rotate the flange a little to get them in.

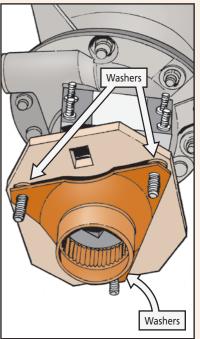


2. Install the torque reactor plate, NSN 1680-01-105-1496, PN 70700-20688-041, by slipping it over the three bolts installed on the flange in Step 1.



3. Install the special socket from the power train tool kit with the teeth on the nut. Then place the red-painted flange over the three bolts installed in the flange being removed.

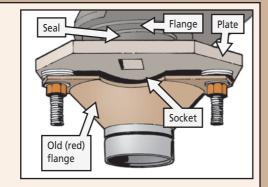




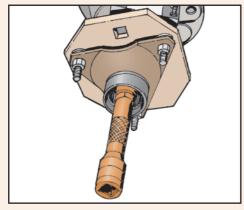
You'll need to place washers between the red flange and the torque reactor to ensure there is enough space between the red flange and the special socket.

RS MORI PS 725 PS 725 25 24 **APR 13** 

4. Install the nuts and tighten. As you tighten the nuts, watch the old flange. When it contacts the special socket, stop tightening.



5. Insert your socket wrench extension through the opening in the red flarge and then continue with the TM procedure. As you loosen the nut, the flarge will pull off with it. Presto!



By following these simple steps, the red flange traps the socket in place so it will not pop off and cause damage to the aircraft or your knuckles. When we install a new flange, we just follow the procedure in reverse

order and we're good to go.

SGT Andrew Smith Ft. Campbell, KY

### Editor's note:

Thanks for the great idea. I'm sure mechanics will appreciate this tool that helps them avoid knuckle and aircraft damage.



































































Two great modifications for the M249 machine gun have been around for some time. But unfortunately some armorers have never gotten around to getting the MWOs done. Stop putting it off! The time is now for improving your M249s.

MWO 9-1005-201-50-1 added an accessory mounting rail to the feed tray cover. The rail lets Soldiers mount the AN/PEQ-2A and AN/PAQ-4B/C laser pointer/illuminators, AN/PAS-13 thermal weapon sight, AN/PVS-4 night vision sight, M145 machine gun optic, and combat identification system for dismounted Soldiers (CISDS).

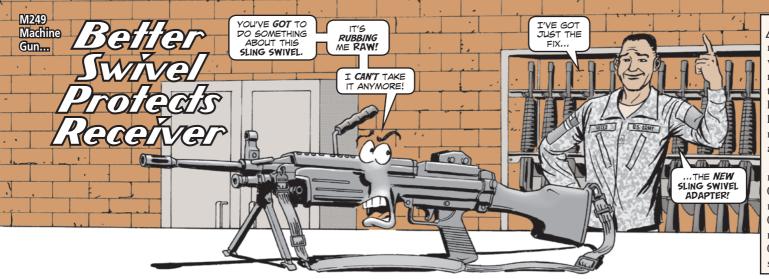
MWO 9-1005-201-30-6 replaced the hand guard with a forward rail assembly, which provides a second rail for mounting optical and electronic devices.

These MWOs have long passed their completion dates, so you won't get MWO funding or assets for them. If your M249s haven't been modified, you must order the MWO parts through normal supply channels. Order the top cover using NSN 1005-01-547-2614. For the forward rails, order right accessory rail, NSN 1005-01-559-1947; left accessory rail, NSN 1005-01-559-1948; and socket head cap screw, NSN 5305-01-101-9426.

Armorers, if any of your M249s have received these modifications, TACOM wants to know about it so they can update the serial numbers in the Maintenance Management Information System (MMIS). Go to: https://www.mmis.army.mil

If your M249s have been modified, make sure their serial numbers have been reported through your local PBO and MWO coordinators, too.

Questions? Contact TACOM's Andre Pilgrim at DSN 786-1256, (586) 282-1256, or email: andre.v.pilgrim.civ@mail.mil



The snap hooks on the M249 machine gun's sling tend to wear and even crack the upper receiver hole where they attach to the receiver. If the receiver hole is cracked, the receiver has to be coded out. Good news! The new sling swivel adapter will stop that wear.

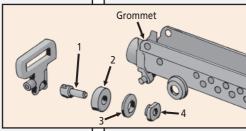
Order the front sling mounting kit with NSN 1005-01-529-8406, the rear sling mounting kit with NSN 1005-01-529-8408, and the quick-release swivel with NSN 1005-01-529-9309. You'll need two swivels for each M249.

If the M249 receiver still has the grommet assembly, install the front mounting sling assembly like this:

- 1. Place the stud (1) into the thick spacer (2).
- Place and hold the lug (4) in the inside of the grommet, lip end first.
- 3. Add one drop of blue Loctite® 246, NSN 8030-01-499-3589, to the threads of the lug.
- **4.** Screw the stud with spacer into the lug and snug down the stud.

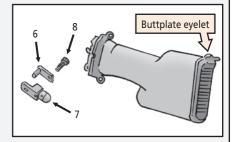
If the receiver is missing the grommet assembly, install the sling like this:

- 1. Place the stud (1) into the thick spacer (2).
- Place replacement grommet (3), lip end first, into the inside of the receiver where the missing grommet would normally be found.
- Place and hold the lug (4), lip end first, in the inside of the receiver and into the spacer (2). The spacer can be on either the inside or outside of the receiver.
- **4.** Add one drop of blue Locktite<sup>®</sup> 246 to the threads of the stud (1). Screw the stud with spacer (2) into the lug (4) and snug down the stud.



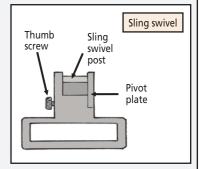
To install the rear mounting sling assembly:

- 1. Place the lug (6) through the hole in the buttplate eyelet.
- **2.** Install the stud lug (7) on the opposite side of the buttplate eyelet.
- **3.** Apply one drop of Locktite<sup>®</sup> to the threads of the cap screw (8).
- Attach the lug to the stud lug by screwing the cap screw through the lug and into the stud lug. Snug down the cap screw.



To attach the quick-release swivel to the stud lugs:

- 1. Turn the thumb screw counterclockwise all the way out.
- **2.** Push in on the thumb screw and turn the pivot plate to expose the sling swivel post.
- **3.** Attach the sling swivel post to the lug or stud lug.
- 4. Push in on the thumb screw and turn the pivot plate up and onto the sling swivel post. The thumb screw will spin on the shaft and won't lock down.
- **5.** Screw the thumb screw clockwise all the way down to hold the sling swivel in place.



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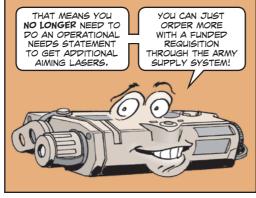
Aiming Lasers...

# Order Through CTA, Turn in Unserviceables



AMING LASERS WITH LINE ITEM NUMBERS (LIN) J03261, J68403 AND A44066 ARE NOW AUTHORIZED BY TABLE 63 OF CTA 50-909.





Here's what is available:		
LIN	Model	NSN
J03261	AN/PEQ-15 (tan)	5855-01-577-7174
J03261	AN/PEQ-15A (black)	5855-01-535-6166
J03261	AN/PEQ-15A (green)	5855-01-579-0062
J68403	AN/PEQ-14 (black)	5855-01-538-0191
J68403	AN/PEQ-14 (tan)	5855-01-571-1258
A44066	LA-8/P (right-handed)	5860-01-558-4706
A44066	LA-8/P (left-handed)	5860-01-564-8167

### **Turning in Aiming Lasers**

If you have unserviceable aiming lasers, you need to turn them in so they can be fixed and returned to the field. Your property book officer should report them to the National Inventory Control Point (NICP) B14, using an FTE (report of excess) and following the instructions in Chap 7 of AR 725-50, *Requisition and Issue of Supplies and Equipment*.

The NICP will respond with final disposition instructions through an FTR (reply to report of excess) with exception data. The exception data require the unit to provide a copy of the DD Form 1348 that documents the demilitarization of the aiming light and is signed by the DOL or DLA Disposition Services. The serial number must be included on the 1348.

Order a replacement by submitting a funded requisition through the standard Army supply system.

If you have questions about any aiming lasers, contact Jeffrey York at DSN 312-781-1344, (586) 282-1344, or email:

jeffrey.l.york2.civ@mail.mil

M120A1 Mortar...

# REMOVE CLAMP FOR INSPECTION

TM 9-1000-202-14, EVALUATION OF CANNON TUBES, SAYS MORTAR REPAIRMEN NEED TO CHECK THE M120A1'S CANNON FOR VISIBLE DENTS, OUT-OF-ROUNDNESS AND EXTERNAL GOUGING.



Unfortunately, you can't do that without removing the barrel clamp assembly. And the 120mm mortar's TM 9-1015-256-13&P mentions nothing about that.

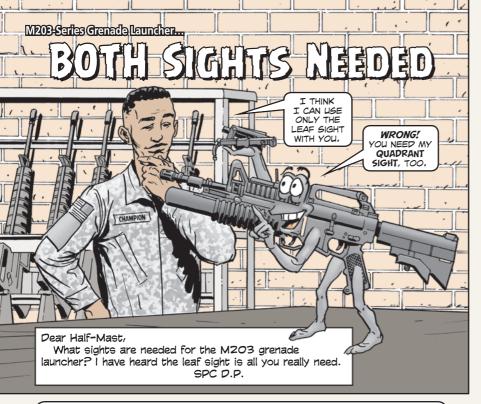
So, this TM will be changed to specify that the clamp must first be removed before the cannon is checked. But, in the meantime, note that in your -13&P, repairmen. Barrel clamp instructions can be found in TM 9-1230-205-13&P

Questions? Contact TACOM's Erik Jensen at (586) 282-1220, DSN 786-1220, or email:

erik.s.jensen4.civ@mail.mil

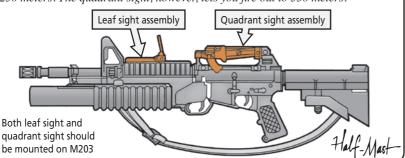
Remove barrel clamp before inspecting cannon

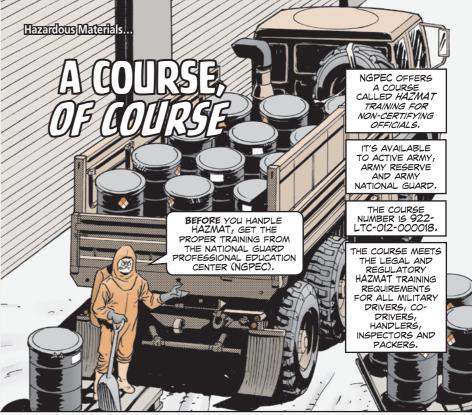
PS 725 38 APR 13



Dear Specialist D.P.,

All of the M203 grenade launchers (M203, M203A1, and M203A2) should be equipped with both the leaf and quadrant sights. The leaf sight is generally what's used most during firing because it's the easiest to use. But it's only effective up to 250 meters. The quadrant sight, however, lets you fire out to 350 meters.





IT DRAWS
ITS MATERIAL
FROM SEVERAL
SOURCES...

THE COURSE ADDRESSES DOT, OSHA AND EPA HAZMAT TRAINING REQUIREMENTS.

- Department of Transportation (DoT)
- Environmental Protection Agency (EPA)
- Occupational Safety and Health Administration (OSHA)
- Department of Defense (DoD)
- US Army Forces Command (FORSCOM)
- Army regulations

IT'S FREE FROM THE GUARDU TRAINING WEBSITE: https://guardu.elic.learn.army.mil

THE COURSE POES NOT MEET THE AMMUNITION HANDLER TRAINING REQUIREMENTS SET FORTH IN CHAP 4 OF NATIONAL GUARD REGULATION 385-G4, ARMY NATIONAL GUARD AMMUNITION AND EXPLOSIVES SAFETY STANDARDS (DEC 07).



PS 725 40 APR 13 PS 725 41 APR 13

Suitable Tips for JSLIST



Dear Editor,

I have a few suggestions for how Soldiers can keep JSLIST (joint service lightweight integrated suit technology) suitable for wear and protection:

Keep track of how long USLIST is out of its bag and how many times you wash it. Once you remove JSLIST from its sealed bag, it's good for 120 days max. The limit for wearing JSLIST is 45 days and the limit for washing it is six times (mark each wash on the JSLIST care label). After any of those limits are reached, the suit can no longer protect you and should be used for training only. To make sure it's used only for training, stencil FOR TRAINING ONLY on the suit. If it's contaminated, the limit is 24 hours and then it must be disposed of properly.

HOW TIME HAS FLOWN! 120 DAYS
HAVE GONE BY AND NOW YOUR
PROTECTION DAYS ARE OVER!

WELL, I CAN
STILL TRAIN
YOU FOR THE
REAL THING!

Soldiers need to train with JSLIST because that will be what protects them in a chemical environment. I see units still training with the old battle dress overgament MOPP gear. That training won't do them much good when they need to use JSLIST in an emergency.

Don't open JSLIST bags with a knife.

Even a slight nick to the suit can compromise your protection. The bags have a tear notch for opening. Use it.

Put the pants on first.

Most people want to put the top on first out of habit. But the pants should go on first because you will need to adjust the suspenders before you put on the top. Once you've got the suspenders right, put on the top, then the boots, then the mask and finally the gloves. Be sure to attach the strap that holds the top down over the pants.

### Make at least one friend.

You'll need a friend to check your suit for gaps, especially between the mask and top. When he's finished checking you for gaps, return the favor.

SFC Peter Carona 110th Chemical Bn JBLM, WA





Editor's note: Your suggestions are suitable for framing on a CBRN room's wall, Sergeant. Thanks. By the way, you can get free JSLIST for training by emailing: icemp.support@us.army.mil Shipping is free, too.

M20A1 Simplified Collective Protection System...

# LEAVE CANISTER IN CRATE

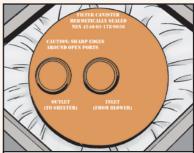
The hermetically sealed filter canister (HSFC) for the M20A1 simplified collective

protection system is one item that should always remain in its shipping container... even when being used.

The HSFC is packed inside a wooden crate with insulation that protects it. Once you pull the HSFC out of the crate, it loses that protection and stuff like hose openings can be damaged.

The crate also contains the HSFC lot and contract info. No crate means that information is lost.

So leave the HSFC in its shipping crate at all times.



Leaving canister in shipping crate protects it and saves lot and contract info

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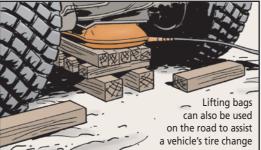
bid you know that airlifting bags that can lift heavy loads are available in the Forward Repair System (FRS)?

The Army often uses them during maintenance operations to lift vehicles for services or in emergency situations, such as removing personnel from underneath vehicles or collapsed structures.

Lifting bags can also be used on the road to assist a vehicle's tire change. Their large area of ground contact makes them helpful on unstable ground and low clearance areas that conventional bottle jacks can't get underneath.

Lifting bags, KPI-44 and KPI-74, come with the FRS. The KPI-32 is part of SATS (Standard Automotive Tool Set).









Lifting bags are inflated using compressed air from an air compressor or a vehicle's air system that provides at least 118 psi. Although the lift rating decreases as the lift height increases, you can stack up to two bags to increase the total lift height.

Storage length and width dimensions differ for each bag, depending on a particular bag's lift rating. The deflated thickness for each bag is one inch or less. For example, the KPI-74 (70.2 tons) bag's storage dimensions are 37" x 37" x 1".

To use the lifting bags, you need a controller kit that includes a pressure regulator, air hoses and inflation controller, as well as shutoff adapters to operate the bag from your vehicle's air system. These items are available separately as part of the FRS and SATS. However, the additional components are required if you purchased air bags and don't have an FRS or SATS.

By the way, if your FRS never came with a KPI-74 air lifting bag, go to this website: https://pmskot.army.mil/wcstart.cfm

There you'll get a **free** bag and accessories. But the equipment is free only if it hasn't already been retrofitted under your unit's FRS's serial number.

If you have any questions about the FRS and air lifting bags, email the FRS system acquisition manager, Larry Rigsby: <a href="larry.e.rigsby2.civ@mail.mil">larry.e.rigsby2.civ@mail.mil</a>

If you have any questions about recovery techniques, write to TARDEC's Towing and Recovery team: emily.a.neville2.civ@mail.mil



The MK 19 is not like other machine guns. The **best** thing you can use on weapons like the M2 or M240 is good ol' CLP. But for the MK 19, CLP is the **worst** lube you can use. CLP is not strong enough to handle all the heat the MK 19 generates. An MK 19 lubed with CLP will soon be an MK 19 that won't fire.

Good lubing for your MK 19 begins with these:

**LSAT** should be your first choice. NSN 9150-00-949-0323 brings an 8-oz tube and NSN 9150-01-109-7793 a 1-lb can.

Unfortunately, LSAT isn't always available. The next best choice is **GMD**.

NSN 9150-00-935-4018 brings a 14-oz can, NSN 9150-00-223-4004 a 6.5-lb can, and NSN 9150-00-965-2003 a 35-lb can.

**LSA** is another choice. NSN 9150-00-935-6597 brings a 2-oz bottle, NSN 9150-00-889-3522 a 4-oz bottle, and NSN 9150-00-753-4686 a 1 gal-can.

But if the temperatures drop below -10°F, use only **LAW**. That's the only stuff strong enough for that extreme cold. NSN 9150-00-292-9689 brings a 1-qt bottle.

HALF-MAST US ARMY

IF YOU EVER HAVE
MK 19 LUBING QUESTIONS, SEE
EITHER WP 0010 00-1 IN TM
9-1010-230-10 OR WP 0039
00-1 IN TM 9-1010-230-23&P.

Tools...



# MARKING RUINS PROTRACTORS!

#### Dear Editor,

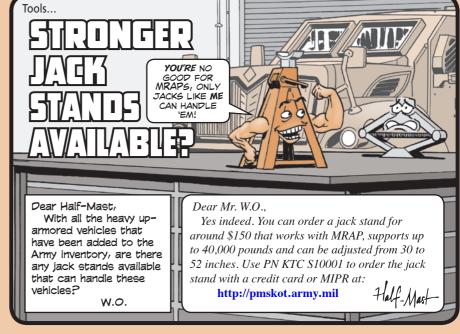
I work at the Army's TMDE Activity Europe. We have had problems with units marking or engraving the PRO 360 and PRO 3600 digital protractors (NSN 5210-01-494-0899 and NSN 5210-01-418-0671).

They turn in the protractors to us for calibration, but we can't calibrate them because they've either engraved their unit ID or serial number on the protractor's measuring surface or applied a bar code with a thick protective covering. Doing either ruins the protractor. And at around \$400 and \$600, the two protractors aren't cheap.

If you must mark your ID on the protractors, do it only on the back of the protractor. Keep markings away from measuring areas.

Gilbert Atwood TMDE Activity Europe

Editor's note: Marking the measuring surface of a protractor is like plugging up your M16's barrel. Don't do it.



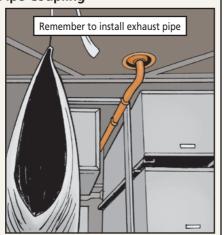
PS 725 46 00-1 IN TM 9-1010-230-23&P. PS 725 47 APR 13



# FOOD FOR THOUGHT

### **Exhaust Pipe Coupling**

Make sure you have an exhaust pipe coupling, NSN 4730-01-486-4366, when you take your kitchen to the field. If the coupling is missing or damaged, you won't be able to attach the exhaust elbow pipe to the generator exhaust outlet in the mechanical room. The pipe directs generator exhaust away from the kitchen. Without the pipe, exhaust gets sucked into the air intake and heads straight to the cooks' station. Keep in mind, that exhaust is carbon monoxide (CO), a deadly gas. You can't see, smell or taste it. But breathing CO can cause nausea, dizziness, headaches or fatigue. And breathing a heavy dose of it can kill you.



### **Foldout Awning**

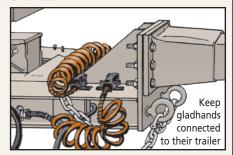
Set up the foldout awning across the top of the mechanical room's open doors. WP 0006 00-12 of TM 10-7360-226-13&P (Aug 01 w/Ch 4, Mar 07) shows you how. The awning protects the room from rain, dust and sand.

When you install the exhaust elbow pipe, route it down through the opening in the awning. The awning acts as a barrier to stop generator exhaust from drifting toward the air intake.

You can order a green foldout awning with NSN 7230-01-503-0230. Order a tan one with NSN 7230-01-515-2978.

### **Gladhands**

The gladhands are the couplings for the air supply between the towing vehicle and the containerized kitchen's trailer. Without them, the trailer has no air brakes. So, when you set up your kitchen, don't remove the gladhands. Better to keep them right where they are—connected to the trailer. That way you don't risk damaging the threads during removal. You also don't risk misplacing the gladhands altogether.



Tools...

# Got Grommets?

Dear Half-Mast,

We do a variety of maintenance work and often need different size grommets. Is there an NSN that brings a whole assortment of grommets?

SSG R.F.

Dear Sergeant R.F.,

GSA Advantage is your best source for finding different assortments of grommets.

Go to: https://www.gsaadvantage.gov/

Enter "grommet assortment" in the Search box. That gets you a list of several grommet assortments, including a set of 125 grommets of varying sizes for around \$12.

One caution: If your TM calls for a specific grommet, that's what you should use.



GSA has a number of grommet assortments

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# **SAFETY** IN THE DESERT SANDS





A GOOD GROUND IS
A MUST TO PREVENT
ELECTRICAL SHOCK TO
YOU AND DAMAGE TO
YOUR EQUIPMENT.



### **Before You Drive a Ground Rod**

Give your ground rod a thorough cleaning. Grease, oil, tar, paint and corrosion on the rod make it a poor conductor.

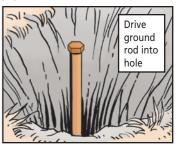
Often a sledgehammer is used to drive in the rod. The hammer striking the rod creates flying metal fragments. So, wear safety gloves and goggles to protect your hands and eyes.



#### Rods In a Hole

Before you drive, dig a hole at least 12 inches deep and 36 inches across. Then drive the rod into the hole until the rod's top is below ground level. Far too many ground rods are left sticking above the ground, where they can be a safety hazard.

Drive the rod in the center of the hole. Drive it straight. If the soil won't permit the rod to go in straight, drive it in at an angle, but no more than 45 degrees from vertical.

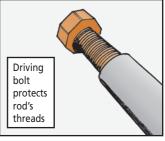


It's good practice to drive the ground rod down into the water table. The soil there has less resistance to electrical current. That's how to get a dependable earth ground. If you can, locate your equipment near an oasis or subterranean water.

Use a sectional ground rod. Add extensions to reach deeper into the soil until you can no longer drive the rod. When adding extensions, make sure each section is tightly connected to the next one. If they're not tight when you drive in the rod, you'll damage the coupling sleeve threads.

Don't hit the threaded end of the rod with the hammer. That damages the threads, too. Instead, screw a driving bolt on the top section. Make sure it's tight. A loose bolt will break off, or damage the threads.

If you have a slide hammer, NSN 5120-01-013-1676, use it when installing a sectional ground rod. A slide hammer makes it easier to drive rods, and easier to get them out, too.



Try to reach the water table with a single ground rod or one with extensions. If you can't, use multiple grounds. Also, use a salt-and-water mixture. The salt and water make the soil more conductive. See "Soil Preparation" on page 52 for details.

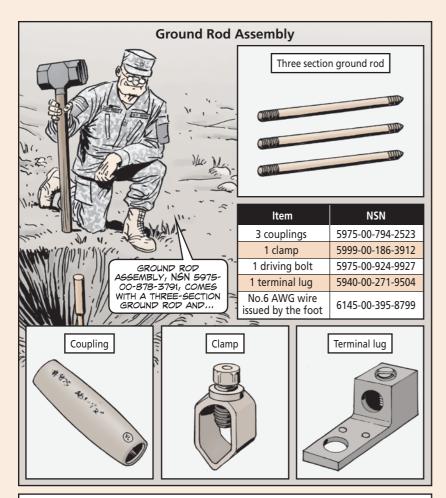
### **Ground Rods: How Far Apart?**

If you drive in multiple ground rods, give them lots of space to get a good earth ground. Separate the rods by a distance of at least two times the depth of the rod. In other words, if you're using 8-ft rods, space them at least 16 feet apart. Space 10-ft rods at least 20 feet apart.

If three rods are used, drive them in a triangular pattern. If four or more rods are used, put them in a straight line or a star pattern. When using multiple rods, always connect all the rods together with ground wires or cables. Connect the final rod to the equipment to be grounded.

If you can't drive a ground rod more than 4 feet deep, bury the rod horizontally  $1^{1/2}$  feet deep. Then add a salt-and-water mixture before backfilling the hole.

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### **Soil Preparation**

One way to get a good ground in the desert is by preparing the soil. You can make the soil more conductive by keeping it moist and by adding a salt-and-water mixture to the area around the ground rod.

Mix a pound of salt with each gallon of water. NSN 6810-00-227-0439 brings an 80-lb bag of salt. Start with 5 gallons of the mixture.

Slowly pour the mixture into the hole you dug for the ground rod so it soaks in. Use the salt-and-water mixture often. It may take a daily 5-gal mix and several pours.

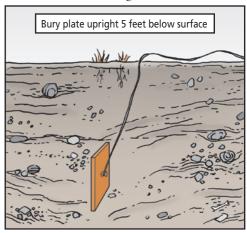
#### **Ground Plates**

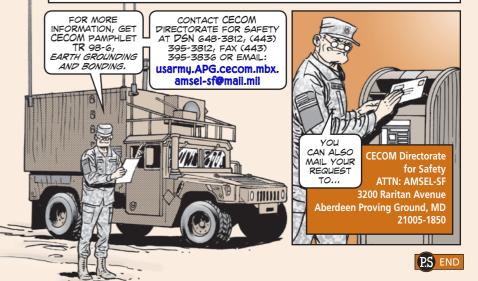
Because sand is easy to move, ground plates are well-suited for use in the desert. They give you a large, metallic area in contact with the soil. Use two to four ground plates and space them at least 10 feet apart.

To make a ground plate, start with a clean, bare steel plate or sheet that's  $^{1}/_{4}$  inch thick. Cut the plate so that it measures at least  $1^{3}/_{4}$  feet x  $1^{3}/_{4}$  feet. **Do not use aluminum.** It quickly oxidizes, corrodes and increases resistance to earth. The plate should have at least 3 square feet of surface contact with the ground. The larger the plate, the lower the resistance and the better the ground.

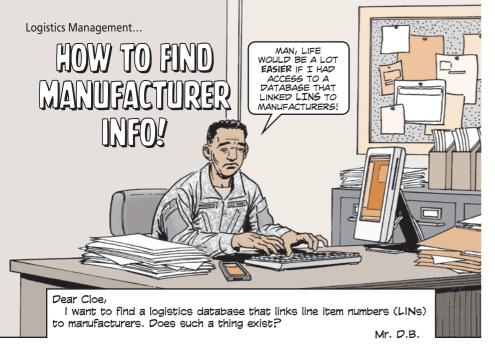
Along with the plate, you'll need a metal bolt, nut and lock washer to attach the ground wire. Drill a hole in the center of the plate just large enough for the bolt.

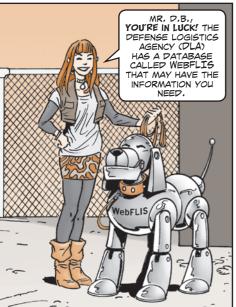
Bury the plate standing upright with the top edge about 5 feet below the sand's surface. Burying the plate upright ensures good soil contact on both sides of the plate. Pour your mixture of water and salt into the soil around the plate to make the soil more conductive.



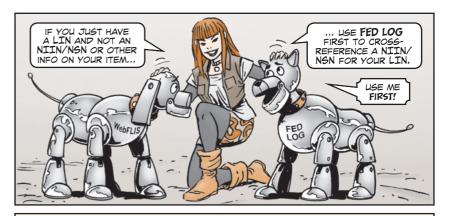


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You can access FED LOG through the Logistics Information Warehouse (LIW). Go to: https://liw.logsa.army.mil/

If it's your first visit to LIW, you'll need to submit a system access request. Click on <u>System Access Request</u> at the top right of the page. Once logged into LIW, add the FED LOG button to your portal from the App Warehouse at the bottom of the page with "Create Shortcut" or just "Go to Application."

Enter your LIN under the "Army" tab in FED LOG. If you find a CAGE code in FED LOG, you may be able to pull up data on the item manufacturer there. Look under the "Reference" tab. But if there's no CAGE code in FED LOG, get the NIIN/NSN for your LIN and visit:

### http://www.logisticsinformationservice.dla.mil/webflis/

Enter your NIIN/NSN and search. On the results screen in WebFLIS, under the "Reference/Parts Number" tab, look for a column titled "CAGE CD." Click on the number there and it should list the manufacturer and their contact info.

Another handy shortcut to use if you already know a company's name or CAGE code is to enter it in DLA's Business Identification Number Cross-Reference System (BINCS):

 $https://www.logisticsinformationservice.dla.mil/bincs/begin\_search.aspx$ 



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IN THIS PACKAGING SERIES, WE'VE BEEN TALKING ABOUT A "MAZE OF CONFUSION"
THAT'S CAUSED BY A FAILURE TO UNDERSTAND THE DIFFERENT KINDS OF MILITARY PACKAGING PRESERVATION METHODS.

WE'VE ALREADY COVERED METHODS 10 AND 20. THIS MONTH WE'LL DISCUSS THE THIRD PACKAGING PRESERVATION OPTION,

### METHOD 30.

THIS METHOD IS A BIT TRICKIER THAN THE FIRST TWO, SO YOU'LL NEED A TRUSTY MAP TO "EXIT THE MAZE" OF PACKAGING PRESERVATION OPTIONS USING METHOD 30.

PS 725

THE BEST GLIIDE
TO USE IS MILSTD-2073-1,
STANDARD
PRACTICE
FOR MILITARY
PACKAGING.

APR 13

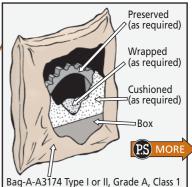
METHOD 30
PRESERVATION REQUIRES
USING WATERPROOF OR
WATERPROOF-GREASEPROOF PROTECTION
(WITH PRESERVATIVE, AS
REQUIRED).

PACKS ARE APPROPRIATE ALMOST ANYTIME THE ITEM WILL FIT INTO A BAG, A RIGIP CONTAINER OTHER THAN ALL METAL, OR AS LONG AS ONLY WATERPROOF OR WATERPROOF-GREASE-PROF PROTECTION IS NEEPEP.

HOWEVER, METHOP 30 ISN'T THE RIGHT CHOICE FOR PACKAGING IF WATER-VAPORPROOF PROTECTION IS ALSO REQUIRED—IN THAT CASE, YOU MUST CHOOSE METHOP 40 OR 50. TO USE METHOD 30, PLACE AN ITEM
THAT IS PRESERVED, WRAPPED
AND CUSHIONED AS NEEDED INTO A
CLOSE-FITTING BOX OR CARTON.

MIL-PRF-22191 Type III

MIL-B-22020 as limted by MIL-I-8574



PS 725

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**ENCLOSE** 

THAT

BOX, IN

TURN, IN

A SEALED

WATER-

PROOF

BAG.

AND FOLLOW

THE

STEPS ON

THE NEXT

PAGE...

- Clean and dry the item.
- Select and apply a preservative coating to the item or parts of it.
- Apply a greaseproof wrap conforming to MIL-PRF-121, Type I or II.
- Select a close-fitting inner container from MIL-STD-2073-1 or the container specified by the contract or order. See Page 53 of Container Selection.
- Insert the item into the container along with cushioning and dunnage. This will protect the item from any projections or sharp edges and restrict its movement within the container.
- Blunt the sharp edges and corners of the box to protect the bag selected in Step 7.
- Enclose the box in a bag conforming to MIL-DTL-117, Type I, Class B. The following are examples of barrier (bag) materials meeting the MIL-DTL-117 requirement: A-A-3174, Type I or II, Grade A, Class 1 (see note below) and MIL-PRF-22191, Type III.
   Note: When specified, a protective wrap of heavy-duty kraft paper or equivalent (tape sealed) should be used to protect the barrier material.
- Heat-seal the bag. Keep the trapped air between the box and the bag to a minimum by compressing the bag or by using mechanical means, such as a vacuum cleaner attachment. Be careful not to rupture the bag.
- Apply markings according to MIL-STD-129.

IF YOU GET LOST, CALL THE LOGISTICS SUPPORT ACTIVITY'S PACKAGING, STORAGE AND CONTAINERIZATION CENTER AT DON 795-7105, (570) 615-7105, OR EMAIL: toby.pt@us.army.mil IN THE NEXT ISSUE, WE'LL LOOK AT METHOD 40.



You can find the publications referenced in this series at: http://quicksearch.dla.mil/

The quickest way to find a pub is to enter any numbers from its title (for example, MIL-STD-129 would be '129') into the Document Number search box and then press the Submit button.



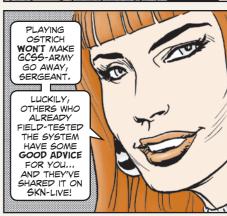
Logistics Management...

### SKN-Live Shares GCSS-Army Lessons Learned









he Combined Arms Support Command (CASCOM) Directorate of Lessons Learned hosted a Reverse Collection and Analysis Team (R-CAAT) recording on Sustainment Knowledge-Live (SKN-Live).

In this broadcast, leaders from the 47th BSB at Ft Bliss, TX, offered observations, insights and lessons learned from their yearlong fielding of the Global Combat Support System-Army (GCSS-Army).

Topics covered GCSS-Army conversion, network requirements, training, maintenance, retail supply and property book pointers. They also gave helpful advice on how other units might minimize future GCSS-Army conversion problems.

The full presentation is available on AKO. View or download the recording and slides at the following link: https://www.us.army.mil/suite/page/673889

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### MUST-USE EMAIL FOR PS MAGAZINE!

Heads up! PS no longer gets email sent to our old CONUS email (logsa.psmag@conus.army.mil). For a while, it was forwarded to our new Enterprise email (EE) account. No more. If you send email to our old CONUS account, it will bounce back to you. We know old habits die hard, but from now on use either our AKO email or EE address to reach us. Email PS at:

half.mast@us.army.mil or usarmy.redstone.logsa.mbx.psmag@mail.mil

### **LOGSA Updates Readiness Mailboxes**

The Logistics Support Activity (LOGSA) has two new email addresses for readiness-related questions. For help with ground issues, email: usarmy.redstone.logsa.mbx.readiness@mail.mil For aviation readiness assistance, email: usarmy.redstone.logsa.mbx.airdata@mail.mil

### HMMWV Windshield Story Corrections

There were a few misprints in our HMMWV windshield story on Page 17 of PS 722 (Jan 13). SGT Adrian Isquierdo of the TXARNG noticed that we listed the wrong NSNs for the M1152A1's right-hand windshield and right-hand heated windshield. Get the right-hand windshield with NSN 2510-01-535-6000 and the right-hand heated windshield with NSN 2510-01-561-2540. And where you see M115A1 under HMMWV model, it should be M1151A1.

### EMS NG Help Desk Info

If you need help with the Electronic Maintenance System—Next Generation (EMS NG), the EMS Program Office invites you to use an online program called "Service Now" to open, view and track EMS NG incidents. Visit: https://oneil.service-now.com/ems/main.do

You can also call the EMS NG help desk at 1-877-445-1780 or email:

Support@EMS-HelpDesk.com

The help desk is staffed Monday to Friday from 7:30 a.m. to 4 p.m. EST.

### Download EMS NG Viewer and ADM

The Electronic Maintenance System—Next Generation (EMS NG) Viewer and Autonomous Diagnostic Manager (ADM) software are no longer distributed with interactive electronic technical manuals (IETMs). Download the most current versions of the EMS NG Viewer and ADM at: https://www.us.army.mil/suite/files/26121198

If you are unable to download the Viewer and/or ADM from AKO, email the EMS team at: tacom-lcmc.ilsc\_electronicmaintenancesystem@mail.mil

Units can also request a copy of the Viewer and ADM software on DVD by writing:

Commander, US Army TACOM

AMSTA-LCL-MP 6501 E. 11 Mile Rd.

Warren, MI 48397-5000

Please include your mailing address when you email or write.

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### ARMY FORUMS MOVE: BRACE FOR BAD LINKS

We told you in PS 722 that the Army Professional Forums were moving to milSuite. One downside is that many of the old forum's links or downloads will no longer work. Some URLs we gave in the past or even a few future articles may have bad links. If you hit a dead URL, let us know and we will try to track down a new one or find another source for the information. Fmail:

half.mast@us.army.mil or

usarmy.redstone.logsa.mbx.psmag@mail.mi

### SUBMIT TACOM-RELATED PQDRS USING NEW ENTERPRISE EMAIL

The process for working TACOM-related product quality deficiency reports (PQDRs) hasn't changed, but the email address for submitting them has. So make a note that PQDRs must now be submitted through a new enterprise email address:

usarmy.detroit.rdecom.mbx.tardec-product-qual-deficiency@mail.mil

The old AKO address no longer forwards emails.

### Revised TM for Simple Key Loader

TM 11-5810-410-13&P, Operators and Field Maintenance Manual Including Repair Parts and Special Tools List for Transfer Unit, Cryptographic Key ANIPYQ-10(C) Simple Key Loader (SKL) has been revised. The revision features SKL user application software (UAS) versions 7.0 and 7.2. The 7.0 and 7.2 software include new menu options, detail buttons, procedures and figures. You'll find the TM on the LOGSA ETM website:

https://www.logsa.armv.mil/etms/online.cfm

### NSN for M66 Cover

Need a canvas cover for the M66 ring mount? Order one with NSN 1005-00-707-0725. It costs around \$275. You can also now order a plastic "shower cap" cover with NSN 1005-01-610-9108 for around \$300.

### ARMY SAFETY PUB HITS STREETS

A new publication, DA Pam 385-26, *The Army Electrical Safety Program*, went into effect 1 February 2013. It offers guidelines for protecting Army personnel, facilities and equipment from electrical hazards. Download the publication at:

http://www.apd.army.mil/pdffiles/p385\_26.pdf

For more safety-related information, visit the US Army Combat Readiness/Safety website at: https://safety.army.mil/

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

Would You Stake Your Life on the Condition of Your Equipment?

