

PS**THE
PREVENTIVE
MAINTENANCE
MONTHLY**

TB 43-PS-581, 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.

ISSUE 581 APRIL 2001**WHEELED VEHICLES**

HEMTT Wheel Lock Rings	2
M1074/M1075 PLS Fuel Filters	3
HMMWV Soft-top Cargo Covers	4-5
M939-Series Truck Tires	5
FMTV Convex Mirrors, Camo Covers	6
M35A3 Alternator Bracket	6
M809-Series Truck Tires	7
M1022A1 Dolly Set	8-10
LRT-110 Crane Cable	10
Lead-acid Battery Charging	11

**COMBAT VEHICLES**

M1-Series Tank V-Pack Cleaning, Precleaner	12-13
M1-Series Tank Fuel Caps, Restarting	14-15
M2/M3-Series Bradley Ramp	16
MLRS Roadwheel Hubs, Check Valves	17
M578 Recovery Vehicle Air Cleaner Box	18-19
M578 Recovery Vehicle Cooling System	19
Self-locking Track Pad Nuts	20
M109A2-A5 SP Howitzer Travel Locks	21
M109A2-A5 SP Howitzer Turret Harness	21
M109-Series SP Howitzer Starter	22
M992A2 Ammo Carrier Starter	22
M992A2 Ammo Carrier Support Brackets	22
M119A1 Towed Howitzer Saddle Bearing	23

**COMBAT ENGINEERING**

SEE Trouble Areas, Electrical Chart	24-25
SEE Wheel Nut Marking	26

**AVIATION**

CH-47D Cowling Door Retaining Clips	35
B16-Managed Test Sets	36
UH-60A Troop Seat Storage	37
UH-60 Fire Extinguisher Cautions	38-39
AH-64A/D Engine Access Doors	39

**MISSILES**

Patriot Missile System AN/MPQ-53 Radar	40-41
--	-------

**SMALL ARMS**

M4/M4A1 Carbine Storage Rack	42
M4/M4A1 M203 Mounting	43
Machine Gun Barrel Rotation	44
M2 Machine Gun Spring Rod	45
Improved Mortar Aiming Post Light	45

**NBC**

M157-Series Smoke Generator	46-47
M13 Decon	48-49
M43 Type I Mask Turn-in	49

**COMMUNICATIONS**

Environmental Control Units	50
AN/PVS-14 NVD Lens Care	51
AN/PVS-14 NVD Switch	52
AN/PVS-14 NVD Light Interference Filter	53
SINGGARS Dust Caps	53

**SOLDIER SUPPORT**

Wet Bulb Kit Replacement Parts	54
SKOs on the Internet	54
Gas Cylinder Caps	54

**LOGISTICS MANAGEMENT**

ULLS	55-57
Supply Excellence Award Winners	58-59
ETM Browser Update	60

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
The Preventive Maintenance Monthly
LOGSA, Bldg 5307
Redstone Arsenal, AL 35898-7466

Or e-mail to:

psmag@logsa.army.mil

Internet address:

<http://www.logsa.army.mil/psmag/pshome.html>

By order of the Secretary of the Army:

ERIC K. SHINSEKI

General, United States Army Chief of Staff

Official:

Joel B. Hudson

JOEL B. HUDSON

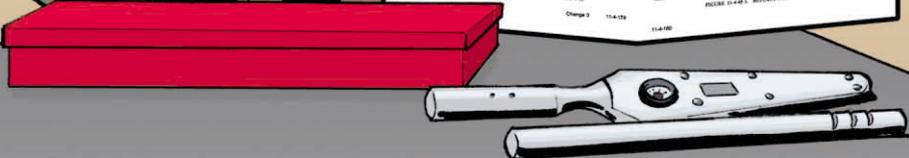
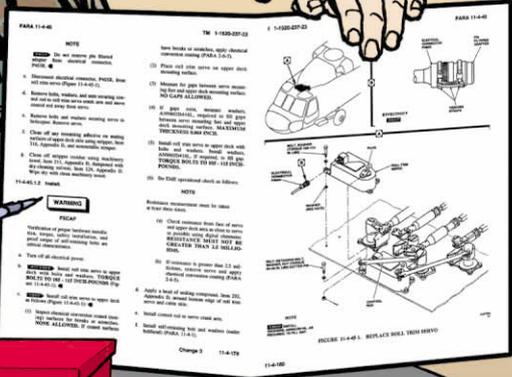
Administrative Assistant to the Secretary of the Army
0104001

PS, The Preventive Maintenance Monthly (ISSN 0475-2953) is published monthly by the Department of the Army, Redstone Arsenal, AL 35898-7466. Periodical Postage is paid at the Huntsville, AL post office and at additional mailing offices.

Postmaster: Send address changes to PS, The Preventive Maintenance Monthly, LOGSA, Redstone Arsenal, AL 35898-7466



TIGHTEN BOLTS
USING TORQUE VALUES
LISTED IN THE *TM!*
NEVER GUESS!!



Lives— and Aircraft— *Shouldn't*
Depend on **YOUR MEMORY!!**

Issue 581

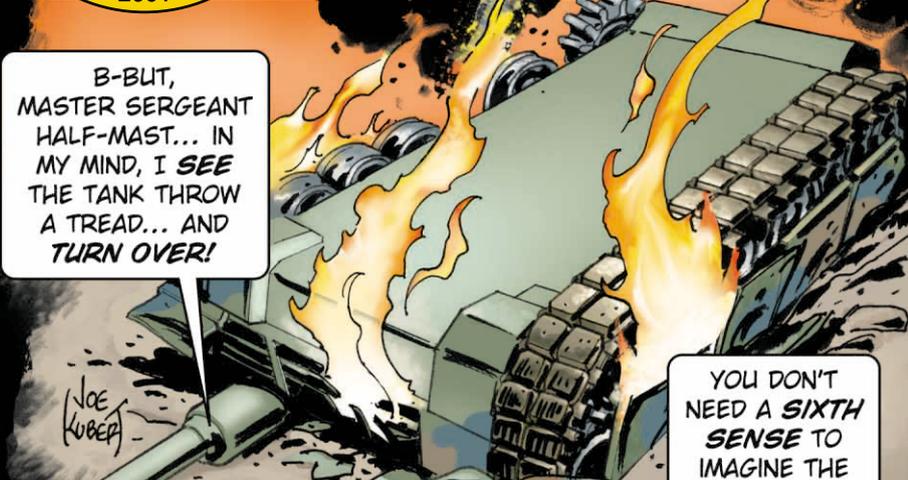


THE
PREVENTIVE
MAINTENANCE
MONTHLY

TB 43-PS-581

Approved for
Public Release;
Distribution is
Unlimited

B-BUT,
MASTER SERGEANT
HALF-MAST... IN
MY MIND, I *SEE*
THE TANK THROW
A TREAD... AND
TURN OVER!



YOU DON'T
NEED A *SIXTH*
SENSE TO
IMAGINE THE
RESULTS OF
POOR PM!



WHO SAYS? PS SAYS!

From aircraft to tanks, uniforms to HAZMAT, yes, even bandages to aid stations—name the subject and you'll find PS Magazine there, using plain language and a unique format to explain a procedure or policy.

PS is the postscript with the information that keeps you going until the TM, FM, regulation, pamphlet or other publication catches up.

PS Magazine has been around since 1951. Its job is to interpret official maintenance and supply policies and procedures in a way that increases the effectiveness of unit-level maintenance and supply.

PS must get approval from the technical experts before an article is printed. So, it can be used to order the NSNs it recommends, to follow the procedures it outlines or to fabricate a tool from plans it gives.

Next time you see a copy of PS, remember: It is your commander's authority for maintenance and supply actions until the TM or other publications catch up.



**THE
PREVENTIVE
MAINTENANCE
MONTHLY**

TB 43-PS-581, 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.

ISSUE 581 APRIL 2001

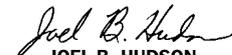
	WHEELED VEHICLES	2		MISSILES	40
	HEMTT Wheel Lock Rings	2		Patriot Missile System AN/MPQ-53 Radar	40-41
	M1074/M1075 PLS Fuel Filters	3		SMALL ARMS	42
	HMMWV Soft-top Cargo Covers	4-5		M4/M4A1 Carbine Storage Rack	42
	M939-Series Truck Tires	5		M4/M4A1 M203 Mounting	43
	FMTV Convex Mirrors, Camo Covers	6		Machine Gun Barrel Rotation	44
	M35A3 Alternator Bracket	6		M2 Machine Gun Spring Rod	45
	M809-Series Truck Tires	7		Improved Mortar Aiming Post Light	45
	M1022A1 Dolly Set	8-10		NBC	46
	LRT-110 Crane Cable	10		M157-Series Smoke Generator	46-47
	Lead-acid Battery Charging	11		M13 Decon	48-49
	COMBAT VEHICLES	12		M43 Type I Mask Turn-in	49
	M1-Series Tank V-Pack Cleaning, Precleaner	12-13		COMMUNICATIONS	50
	M1-Series Tank Fuel Caps, Restarting	14-15		Environmental Control Units	50
	M2/M3-Series Bradley Ramp	16		AN/PVS-14 NVD Lens Care	51
	MLRS Roadwheel Hubs, Check Valves	17		AN/PVS-14 NVD Switch	52
	M578 Recovery Vehicle Air Cleaner Box	18-19		AN/PVS-14 NVD Light Interference Filter	53
	M578 Recovery Vehicle Cooling System	19		SINCGARS Dust Caps	53
	Self-locking Track Pad Nuts	20		SOLDIER SUPPORT	54
	M109A2-A5 SP Howitzer Travel Locks	21		Wet Bulb Kit Replacement Parts	54
	M109A2-A5 SP Howitzer Turret Harness	21		SKOs on the Internet	54
	M109-Series SP Howitzer Starter	22		Gas Cylinder Caps	54
	M992A2 Ammo Carrier Starter	22		LOGISTICS MANAGEMENT	55
	M992A2 Ammo Carrier Support Brackets	22		ULLS	55-57
	M119A1 Towed Howitzer Saddle Bearing	23		Supply Excellence Award Winners	58-59
	COMBAT ENGINEERING	24		ETM Browser Update	60
	SEE Trouble Areas, Electrical Chart	24-25			
	SEE Wheel Nut Marking	26		AVIATION	35
				CH-47D Cowling Door Retaining Clips	35
				B16-Managed Test Sets	36
				UH-60A Troop Seat Storage	37
				UH-60 Fire Extinguisher Cautions	38-39
				AH-64A/D Engine Access Doors	39

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
The Preventive Maintenance Monthly
LOGSA, Bldg 5307
Redstone Arsenal, AL 35898-7466

Or e-mail to:
psmag@logsa.army.mil
Internet address:
<http://www.logsa.army.mil/psmag/pshome.html>

By order of the Secretary of the Army:
ERIC K. SHINSEKI
General, United States Army Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the Secretary of the Army
0104001

PS, The Preventive Maintenance Monthly (ISSN 0475-2953) is published monthly by the Department of the Army, Redstone Arsenal, AL 35898-7466. Periodical Postage is paid at the Huntsville, AL post office and at additional mailing offices. Postmaster: Send address changes to PS, The Preventive Maintenance Monthly, LOGSA, Redstone Arsenal, AL 35898-7466

HEMTT...

Lock Ring Ends Shouldn't Touch

WE CHECKED FOR A LOCK RING GAP AND THIS WHEEL'S OK TO INSTALL.



Take all the regular precautions to safely inflate and deflate tires and to work on multi-piece HEMTT wheels. Then, note that your TMs have some misleading information concerning the lock rings.

TM 9-2320-279-10's after-operation PMCS, various warnings in TM 9-2320-279-20-1 and -20-2, and maintenance procedures in the -20-2 all say that lock ring ends must not gap more than 3/8 inch. But the width of the gap is not as important as making sure there **IS** a gap.

Look for lock ring gap



If the lock ring ends touch on any HEMTT wheel, including the spare, your truck is NMC until the wheel is repaired.

For the whole story, get copies of TACOM Ground Precautionary Messages (GPM) 99-08 , 00-002 and 00-003 from your local safety office or logistics assistance office. TM changes are scheduled to be made in the next revision or update.

M1074/M1075 PLS...

Fuel Filter Follies

WE WOULDN'T BE IN THIS FIX IF MY FUEL PRIMING PUMP FILTER HAD BEEN CHANGED.

BELIEVE ME... I'M GOING TO HAVE A LONG TALK WITH THAT MECHANIC WHEN I GET BACK!

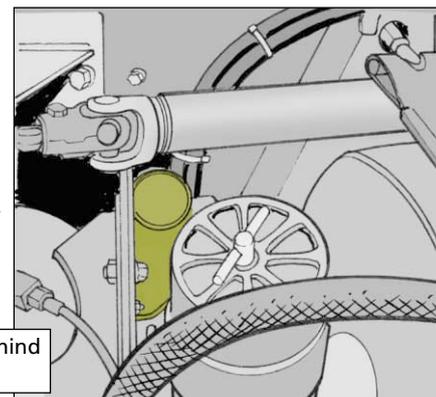


Mechanics, dirty fuel is no laughing matter. Just ask any PLS driver who's been stuck in the boonies with a truck that won't run.

The fuel/water separator filter and the secondary fuel filter usually aren't any trouble. They always seem to get replaced when necessary.

Not so with the electric priming pump, NSN 2910-01-408-1530, that's used for pressurizing the fuel system. Because the pump sits out of sight behind the fuel/ water separator, it's often overlooked when it comes to maintenance.

Priming pump is hidden behind fuel/water separator



If the filter clogs, fuel flow is interrupted and the engine runs rough or not at all. Even worse, a clogged filter can make the pump seize and burn up.

So change the filter, NSN 4310-01-286-4680, annually or every 6,000 miles, whichever comes first. You'll find the replacement procedures on Page 4-6 of TM 9-2320-364-20-4.

HMMWV...

IF THE COVER

Field problems with the vinyl covers for 4-man soft-top HMMWVs include shrinkage from changing weather conditions, to "it won't quite fit" when new.

Most units can't afford to replace cargo covers just because they're a little hard to tie down. Instead, they find a way to make do until the covers are worn out.

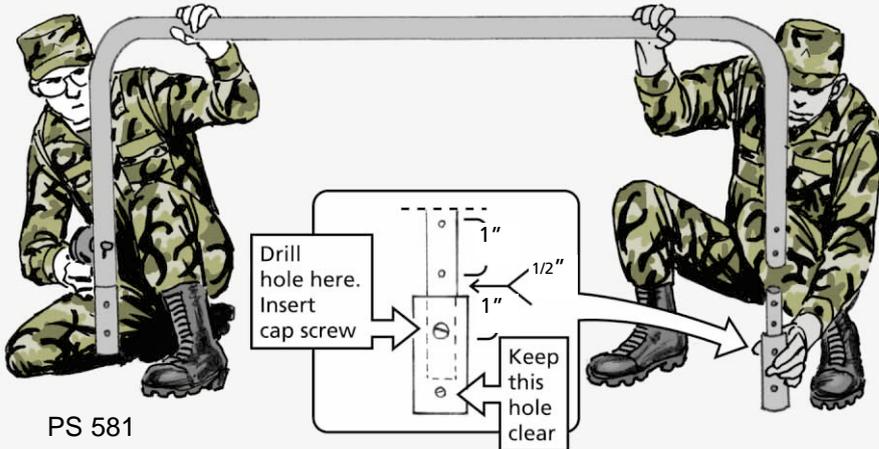
Here's one way to alter the support bows to help make do:

Remove the bows and cut 1 inch off both ends. Then re-drill the 1/4-in bolt holes at the bottom. Shrunk covers should fit fine with this modification.

But what happens when you get a new cargo cover that fits too loosely on your altered bows? You buy new ones, or you make do. Here's how:

1. Cut 6 inches off each end of the bows.
2. Insert a 6 1/2-in or 7-in metal bar into each 6-in piece of bow you just cut off. The diameter of the bar depends on the wall thickness of the bow stock. See the materials chart.
3. Leave the bolt hole at the bottom of each bow piece clear and drill a 1/4-in hole 1 inch down from the top of the 6-in bow piece. Drill through the bow and bar. Secure the bow and metal bar with a cap screw and locknut. See the materials chart.
4. Butt the top portion of the bow up against the 6-in bow piece and bar. Drill a 1/4-in hole through the bow and bar 1/2 inch up from the cut line.
5. Remove the top portion of the bow. Measure 1 inch up from the center of the hole that's 1/2 inch up from the cut line. Drill another 1/4-in hole in the bar.

Now you can adjust the bows to their original height, or move them down to fit shrunken covers.



PS 581

WON'T FIT...

Here are the materials you'll need for this modification:

ITEM	NSN	QTY
Metal bar (for .049-in bow wall thickness)	9150-00-596-2063	6 1/2 to 7 inches
Metal bar (for .095-in bow wall thickness)	9150-00-596-2066	6 1/2 to 7 inches
Metal bar (for .120-in bow wall thickness)	9150-00-596-2067	6 1/2 to 7 inches
Cap screw	5305-00-225-3841	8
Locknut	5310-00-761-6882	8

M939-Series Trucks...

The Right Tire Choices



Until all basic M939-series 5-ton trucks have the anti-lock braking system (ABS) MWO applied, some will use bias tires while others run radials.

Make sure you're using the right tire, tube and flap on your trucks.

For basic models without ABS MWO applied (except M945)

Bias tire, 11.00x20, 12 ply—NSN 2610-00-262-8653

Inner tube—NSN 2610-00-051-9450

Flap—NSN 2640-00-158-5617

For basic models with ABS applied (except M945)

Radial tire, 11.00R20, with flap—NSN 2610-01-473-3997

Inner tube—NSN 2610-00-029-0563

M945 chassis without ABS

Bias tire, 14.00x20, 12 ply with flap—NSN 2610-00-204-2545

Inner tube—NSN 2610-00-051-9464

M945 chassis with ABS, plus all A1-series and A2-series with ABS

Radial tire, 14.00R20—NSN 2610-01-214-1344

Inner tube—NSN 2610-01-412-4635 (if needed)

Flap—NSN 2640-01-416-8178 (if tube is added)

All these tires use valve extension, NSN 2640-00-200-1934, and cap, NSN 2640-01-098-2029.

PS 581

Add Convex Mirrors

GET A BETTER VIEW OF WHAT'S ALONGSIDE YOUR FMTV, DRIVERS, BY HAVING YOUR MECHANIC INSTALL CONVEX MIRRORS ON THE REAR VIEW MIRROR MOUNTS.

NOTE THAT ONE BRACKET MUST BE ORDERED DIFFERENTLY.

TO GET THE DRIVER'S SIDE BRACKET, ORDER BY PART NUMBER 915920 ON A DD FORM 1348-6 USING CAGE 28116 AND RIC 59C.

Bracket, NSN 5340-01-479-0602

Bracket, PN 915920

Mirror, NSN 9340-01-478-3889

Flat Washer, NSN 5310-00-809-4058

Self-locking Nut, NSN 5310-00-877-5796



FMTV Woodland Camo Covers

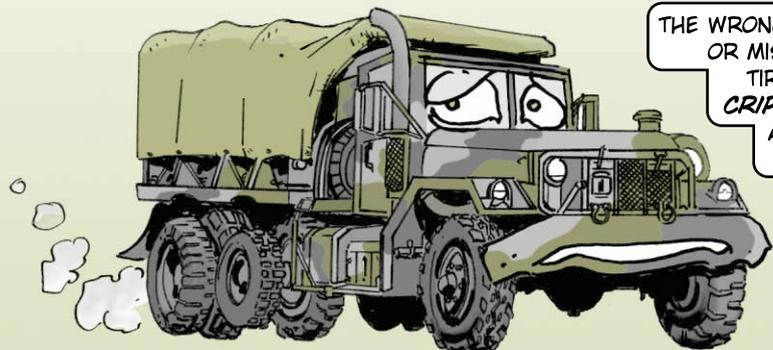
If your FMTVs are getting woodland camouflage paint jobs, you'll be needing one of these woodland camouflage cargo covers:

- 2 ½-ton cargo—NSN 2540-01-385-9462
- 5-ton cargo—NSN 2540-01-386-2952
- 5-ton cargo (long wheelbase)—NSN 2540-01-387-5734
- 5-ton dump—NSN 2540-01-420-5985

M35A3 Alternator Bracket

NSN 5340-01-444-9149 gets the 2 ½-ton truck's alternator bracket. The NSN is missing from Item 12 in Fig 51 of TM 9-2320-386-24P.

PICK THE RIGHT TIRE



Using the right tires on your M809-series 5-ton truck is the only safe way to go. That's because mixing bias and radial tires or using tires of the wrong size can cause loss of driver control, poor handling and possible damage to vehicles.

So be sure your trucks use only the tires noted here:

For all models except the M812 chassis and M821 bridge truck—

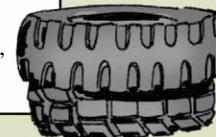
Item	NSN
Bias tire, 11.00 x 20, 12 ply	2610-00-262-8653
with inner tube	2610-00-051-9450
and flap	2640-00-158-5617
Radial tire, 11.00R20, 12 ply (including flap)	2610-01-373-7294
with inner tube	2610-00-029-0563

For the M812 and M821—

Item	NSN
Bias tire with flap, 14.00 x 20, 12 ply	2610-00-204-2545
with inner tube	2610-00-051-9464
Radial tire, 14.00R20, tubeless	2610-01-214-1344



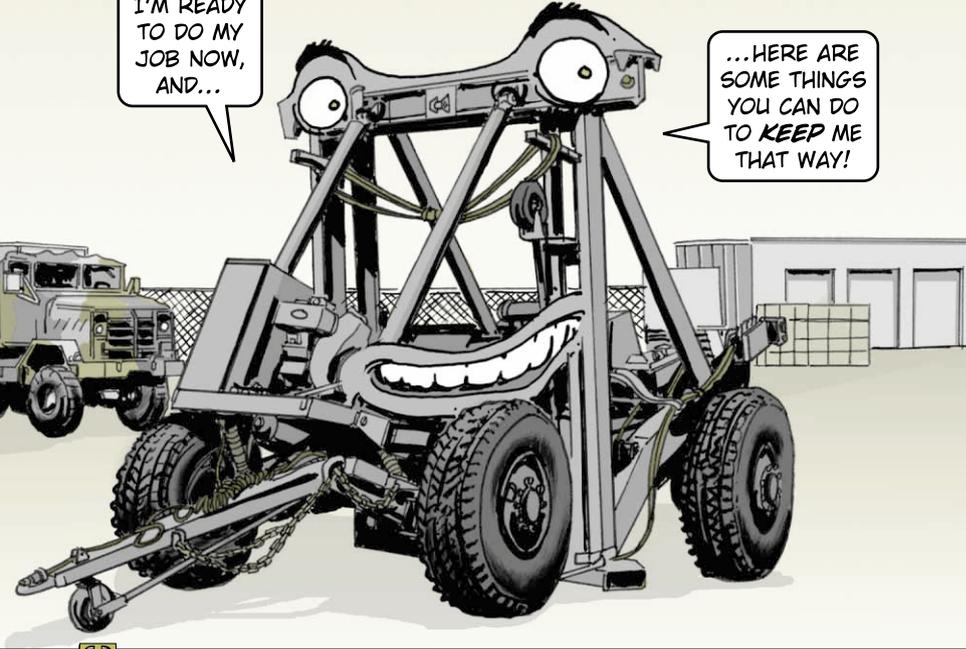
All tires use: valve extension, NSN 2640-00-250-2472, and cap, NSN 2640-01-098-2029.



Hello, Dolly PM!

HOLD IT!
I'M READY
TO DO MY
JOB NOW,
AND...

...HERE ARE
SOME THINGS
YOU CAN DO
TO KEEP ME
THAT WAY!



Throw a shelter of PM over a shelter-carrying M1022A1 dolly set! Follow all the info in your TMs, for sure, and then take note of these extra protectors.

Cable Harness Rubbed Raw?

Eyeball the cable harness that attaches to the control valve box on each of the dolly set's four lift cylinders.

Look for rubbed areas where the harness sits next to the tire. When the dolly is folded, the harness can rub against the tire, wearing holes in the harness.



Hello, Dolly PM!

Worn through, the harness shorts out during operation of the dolly set. Then the lift cylinder won't extend or retract.

If you see a rub, use one or more tie straps, NSN 5975-00-570-9598, to wrap the harness's cables together so they stay away from the tire.



Stay Off Tool Box

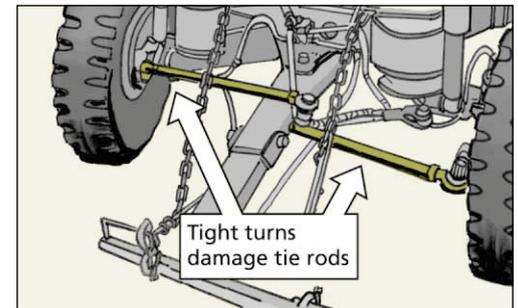


The dolly set's tool box looks like a convenient step to use during checks and services, but forget it.

Your weight will break the mounting brackets that hold the box in place on the dolly set's support frame. A busted or missing tool box means there's no place to keep the dolly set's tools.

Tight Turns Reminder

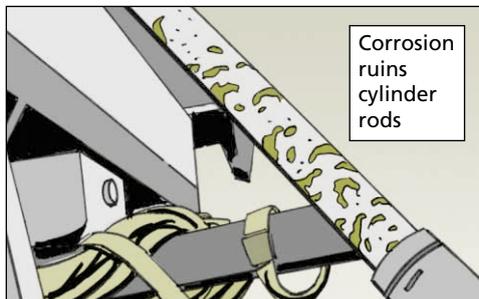
Ease off on sharp turns when you're backing a dolly set with a 5-ton truck. The dolly set turns shorter than the truck when being backed, so while your truck is still turning, the tie rods on the dolly set are bending and breaking. Then you dump whatever the dolly set is carrying.



Protect Hydraulic Cylinders

Corrosion ruins cylinder rods. It pits the rod so badly that seals can't prevent fluid leaks. If the leaks go to Class III, your dolly set is NMC.

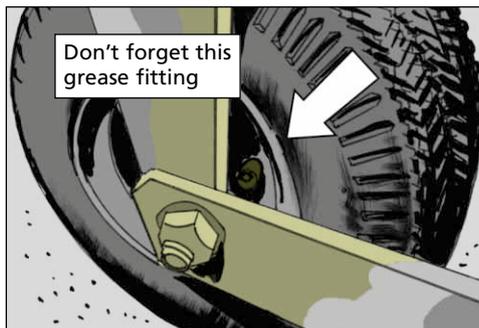
Stop corrosion long before pitting starts by exercising the cylinders each week. That spreads a thin coat of hydraulic oil on the cylinder rods.



Tow Bar Wheel Fitting

The grease fitting that lubes the bearing inside the tow bar's wheel assembly is hard to find. Without lube, the bearing will seize up.

You have to get down on your knees and look behind the assembly's mounting brackets to see the fitting. Give the fitting four to five shots of grease during scheduled services.



PS END

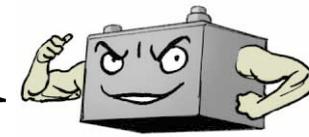
LRT-110 Crane Cable

NSN 4010-00-171-6315 gets the winch cable for the LRT-110, 7 1/2-ton rough terrain crane. Part number 1269-180, currently shown for Item 3 in Fig 13-1 of TM 5-3810-305-24P is wrong.

Lead-acid Batteries...

Charging Needed?

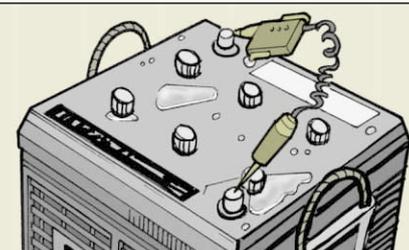
DO YOUR VEHICLE'S BATTERIES NEED CHARGING RIGHT NOW?



THEY MAY IF THEY'VE JUST BEEN INSTALLED FROM STOCK.

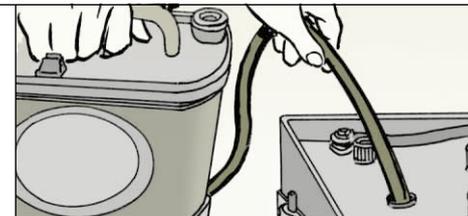
The batteries in these situations need charging to bring them up to full-charge standards. Assuming they're charged could leave you alone without a start.

So make sure a new battery is fully charged before you install it.



THEY DO IF YOU'VE JUST ADDED DISTILLED WATER TO THE CELLS.

Charging is also needed after you've added distilled water to a battery. The vehicle needs to run at 1,000-2,000 rpm for at least 20-30 minutes to get a full charge.



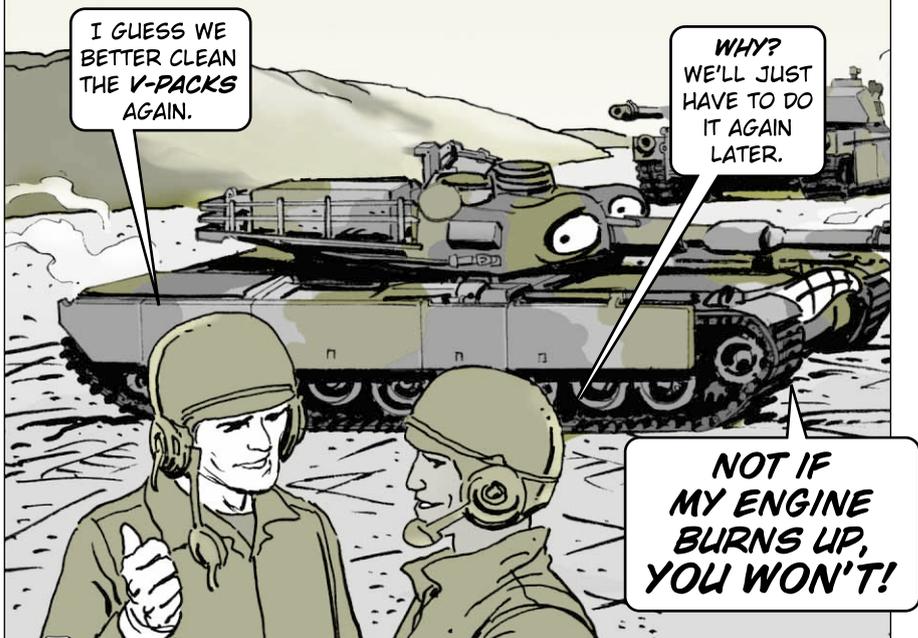
THEY DO IF YOU'VE JUST PULLED PMCS ON YOUR VEHICLE.

PMCS starts and stops can pull down batteries. The effect of starting during a PMCS is a net energy loss, as more energy is removed from the batteries than is put back.

If your vehicle is not used regularly, some charging is needed after a weekly PMCS to maintain a full battery charge. Check your TM for specific info. If it has none, idle your vehicle at 1,000-2,000 rpm for at least 20-30 minutes.



Step Up V-Pack

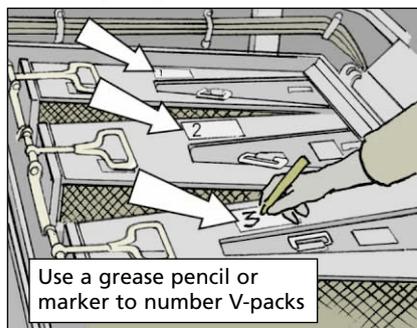


It's a fact of life, tankers. If you operate your tank, the air filters—or V-packs—are going to get dirty. And if you don't clean 'em right, the engine won't get the clean air it needs to operate. Here's how to do the job right:

Step 1: Check to see if your tank is equipped with the pulse jet system (PJS). V-packs on PJS-equipped tanks are self-cleaning. Trying to clean them yourself will ruin the system.

Step 2: Before removing non-PJS V-packs, use a black marker or grease pencil to label the filters 1, 2 and 3.

That's so you can put the V-packs back into the same slots after you clean them.



Cleaning

If the V-packs are put back in a different sequence, they won't line up with the original compression points on the air plenum box seal. That leaves gaps in the seal and allows dirt to get to the engine.

Step 3: After removing the V-packs, get your mechanic to clean the filters with the V-pack cleaning wand.

If a mechanic isn't available, clean the V-packs yourself by shaking them gently.



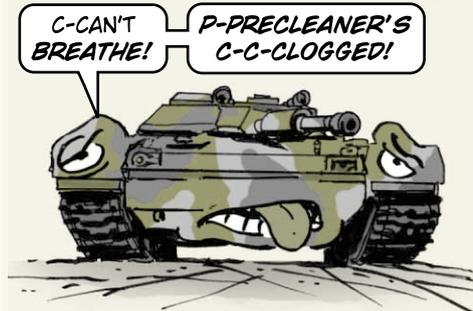
Hand-brush dirt and dust from the elements. Never hit the V-packs against anything harder than your hand. That can dent the V-packs and then they won't seal out dirt.

Notify your maintenance folks as soon as possible that you had to clean the packs. They'll give 'em a proper cleaning.

Step 4: Wipe any loose dirt or sand out of the bottom of the air plenum box. If you let enough stuff collect there, the V-packs won't seat properly.

Step 5: Reinstall the V-packs. Remember to put them back in the same sequence that you removed them.

KEEP TANK BREATHING EASY



You have to store your tank's basic issue items (BII) somewhere, tankers, but don't stick 'em just anywhere!

Some crewmen fill up the empty space on top of the air induction system's precleaner. They figure there's no sense letting that extra room go to waste.

Problem is, that's where your tank gets the fresh air it needs to stay cool. If



the airflow is restricted, the engine overheats and burns up.

So find somewhere else to store those items. When you do, one thing's for certain: Your tank will breathe a big sigh of relief.

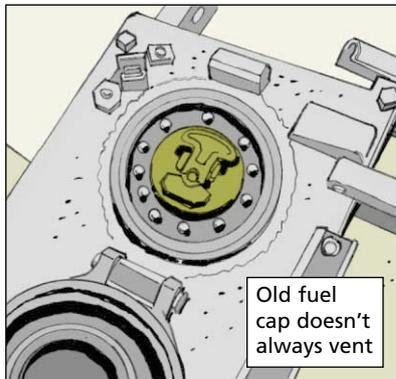
WHAT COLOR



Tankers, if your vehicle has fuel caps, NSN 5340-01-387-4007, you could have some problems transferring fuel.

Those fuel caps have a small, black cartridge filter on top. The check valve on the cartridge filter is supposed to pop open whenever there's a pressure imbalance between air inside and outside the fuel cells—like every time you transfer fuel.

Unfortunately, the check valve doesn't always work. If it doesn't pop up, you get pressure buildup in the



ARE YOUR CAPS?

front fuel cell that could collapse it. Then, your tank has to go to depot for a new fuel cell.

A new, more reliable green cartridge filter is available as part of the semiannual service kit, NSN 2540-01-255-3347. That means your old fuel caps will be automatically converted during your tank's next service.

In the meantime, to be safe, loosen the front two fuel caps before you begin transferring fuel. That lets air in and

keeps the pressure balanced so the fuel cells won't collapse.

You can also order new fuel caps, NSN 5342-01-467-5645, that already have the green cartridge filter installed. Just make sure you change out the caps in pairs: both front caps or both rear caps. Otherwise, the difference in pressure during fuel transfer can collapse a fuel cell.

Make a note of the new fuel cap NSN until it is added to the parts TMs.

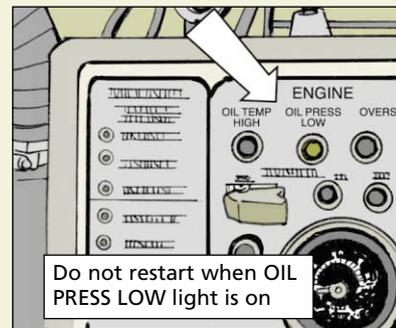
Think Before You Restart

Drivers, if your tank aborts right after start-up, think before you try an immediate restart.

Maybe you'll remember to eyeball the OIL PRESS LOW caution light on the master panel. If it's on, you've just found the reason for the abort. The tank's electronic control unit shut down the vehicle because of low oil pressure in the engine.

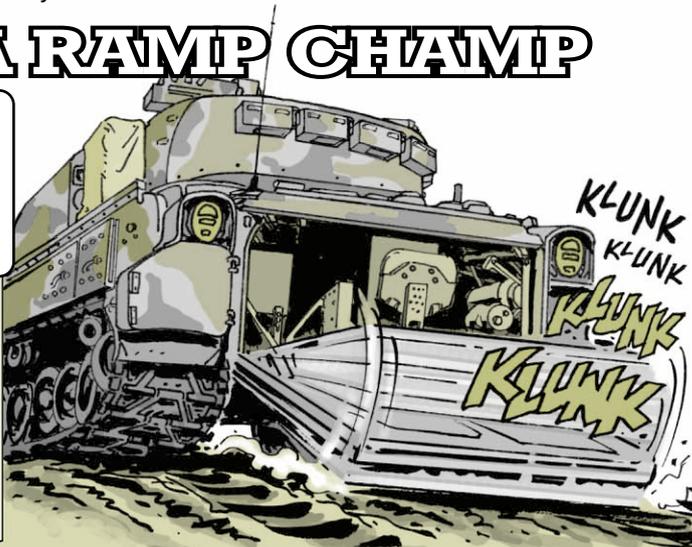
Trying to restart the vehicle will just result in another abort—and can cause heat damage to the combustor can and nozzles in the engine's rear module.

Call in your mechanic. He'll troubleshoot the problem to find out why your tank has low oil pressure.



BE A RAMP CHAMP

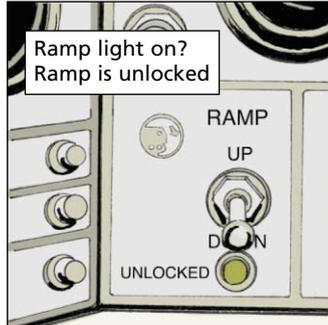
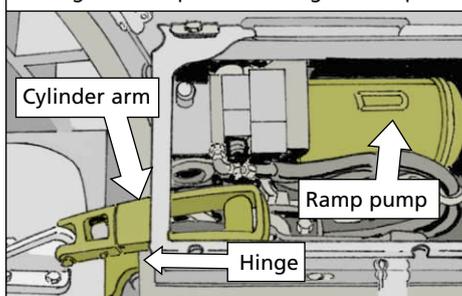
A FEW LESSONS OTHERS LEARNED THE HARD WAY CAN HELP YOU BRADLEY DRIVERS HEAD OFF RAMP DAMAGE.



◆ Don't move out until you're sure your Bradley's ramp is up and locked. An open ramp gets warped by bumps and jars. Locks break, hinges are damaged and the cylinder arm and ramp pump break.

Double-check the ramp before you move out. That means checking the ramp indicator light to see that it's out. Just "thinking" the ramp is up won't cut it.

Driving with ramp down damages these parts:



◆ Never drop the ramp on uneven ground. That puts a big strain on ramp hinges and can cause warping.

Just remember that the ramp also serves as an armored door. If it's messed up and can't do its job in combat, your vehicle—and everybody in it—makes an inviting target.

SMOKE OUT THE PROBLEM

If your MLRS is blowing smoke so bad that you could mistake it for a smoke generator, you must have some major problems, right?

Maybe not.

The problem could be as simple as a defective check valve on the cold start pump. This valve, NSN 4820-01-297-8296, is supposed to prevent fuel flow unless the COLD START switch is on.

If the check valve is bad, fuel flows all the time and your vehicle can't burn it all. Heavy smoke and a damaged cold start pump are the results.

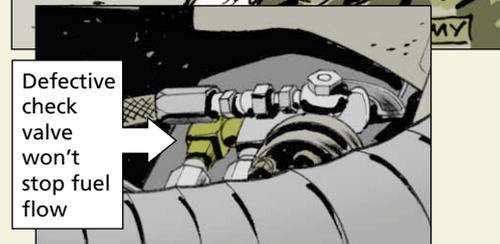
Call in your mechanic to check it out.

OH, MAN! I MUST HAVE SOME BIG PROBLEMS!

IT COULD BE A TINY LITTLE CHECK VALVE.



Defective check valve won't stop fuel flow



Tap Your Way Out of Trouble

Crewmen, when it's time to drain or refill the roadwheel hubs on your MLRS, you may run into a little problem.

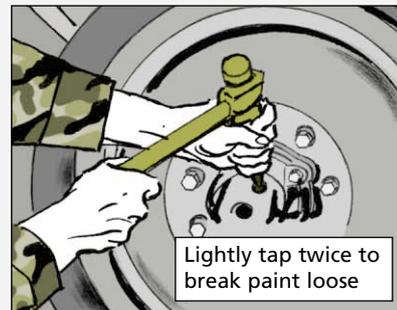
To get each hub off, you must first remove the two retaining screws. Problem is, the screws have often been painted in place with CARC.

If that's the case, those screws are almost impossible to remove. When you try, the heads of the screws get chewed up and your mechanic has to get involved.

Here's a little trick that may solve the problem:

Tap the head of each screw twice with a hammer. Lightly now—you don't want to crack the hub.

Next, put a cross-tip screwdriver on each screw and lightly tap its handle twice.



Lightly tap twice to break paint loose

That may break loose the paint holding the screws in place and let you screw them out easily.

Take Care of Air Cleaner Box

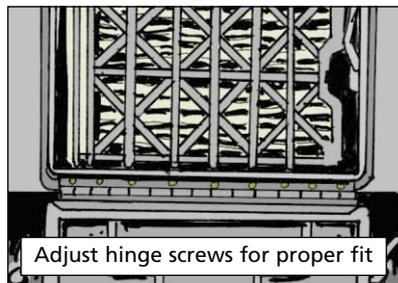
Mechanics, keep an eye peeled for air cleaner box doors that don't close tight or fit right. Leaks let in dirt and sand that can lead to engine failure on an M578 recovery vehicle.

The biggest problem is with the old access door, NSN 5342-00-464-4548. It has a locking bar that doesn't always keep the door sealed firmly against the vehicle. Even when it does, the door doesn't always match up with the opening in the hull.



Test the door for a good fit before you mount it. If the door fits before mounting, but not after, it may be a matter of adjusting the hinge screws.

Loosening all nine screws will allow you to shift the door approximately 1/16 to 1/8 inch to the left or right.



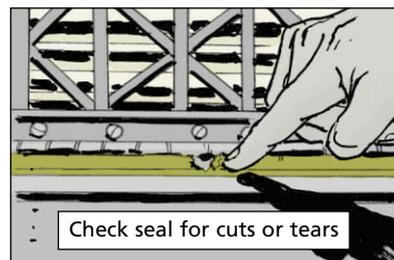
If you still can't get the door to fit, resist the temptation to beat it into place with a big hammer. Instead, order a new access door, NSN 5342-01-270-3688.

This door has a new lock that gives a better seal. It also costs about \$60 less than the old access door.

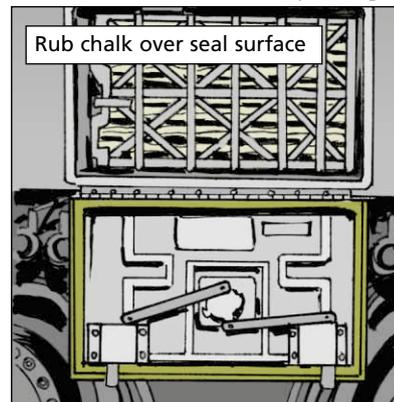
Regardless of which door you use, you still need to make sure you've got a good seal. Do that with the chalk test.

Clean around the outside edge of the air cleaner box and the door seal.

Eyeball the seal for any cuts or tears.



Next, rub chalk all over the seal's surface and close the door. when you reopen



the door, look for a solid chalk mark all around the outside of the box.

Gaps in the chalk mean you probably need a new seal, NSN 5330-00-745-7781. Use adhesive, NSN 8040-00-152-0063, to stick the seal in place.

LISTEN TO THE LIGHT

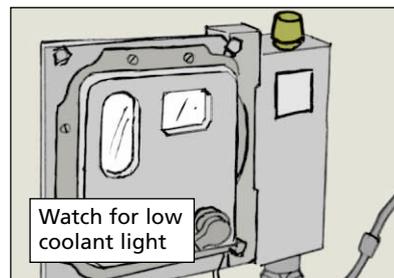
The cooling system on your M578 recovery vehicle is more likely to over-heat than that on almost any other vehicle. That's why you should pay attention to the low coolant level indicator light.

The low coolant light tells you when the coolant level falls below a safe level. An aeration detector in the radiators turns on the light.

Then you stop where it's safe and shut down. Let the engine cool off for 10 minutes or so before refilling the radiators.

The light may have something to say before operation, too. The light will glow when the master switch is turned on if the coolant level is low.

The light is the cheapest protection you have against engine overheating. So listen up when the light "talks."



Once Is Quite Enough



No matter how good they look and no matter how much money your unit will save, self-locking track pad nuts are good for one time and one time only.

Those nuts won't hold the second time around. Some have nylon inserts that tear up when used a second time.

Others have metal threads that stretch slightly once torque is applied.

Bottom line is, if you reuse 'em, they'll come loose and you'll wind up with a whole bunch of thrown pads.

So if you remove a pad for any reason, put on a new nut—every time. Here are the nuts to order:

VEHICLE	TRACK SHOE	NUT NSN 5310-
M109-series howitzers, M992A2 ammo carrier	T136	00-868-8062
M109-series howitzers, M992A2 ammo carrier	T154	01-341-4122
M113-series FOV	T130E1	00-982-6809
M1-series tanks	T158	01-102-2711
M2/M3-series Bradleys, MLRS	T157	01-108-3772
M2/M3-series Bradleys, MLRS	T157I	00-241-6664
M60 AVLB	T142	01-102-2711
M578 recovery vehicle	T132	00-854-6481

PROTECT LOCK WITH LININGS

OH, MY ACHIN' SCHNOZZOLA! I NEED NEW TRAVEL LOCK LININGS!



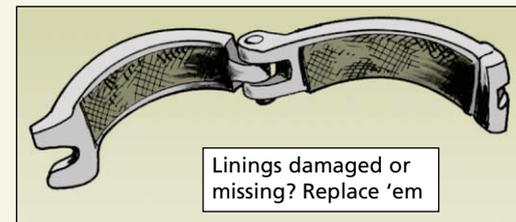
Mechanics, missing or worn-out travel lock friction linings will do a lot of damage to the M109 howitzer's cannon tube. Linings are easier and cheaper to replace than cannon tubes.

The linings cushion the tube when it's in travel lock, keeping metal from banging and scraping on metal.

Prevent tube damage by replacing worn or missing linings. You'll need two linings, NSN 2530-01-060-7229, for each travel lock.

Remove the old linings and adhesive residue with a putty knife and dry cleaning solvent. After the surface dries, apply new adhesive, NSN 8040-00-926-9133, to the replacement linings and install them. Order the adhesive on a DD form 1348-6 and put "NSN not on AMDF" in the REMARKS block.

Leave the travel lock open for one hour until the adhesive dries.

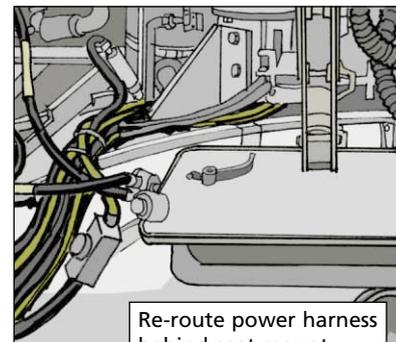


Stop Seat Shorts

Got a short in the turret power harness of your M109 howitzer? Chances are the commander's seat is to blame.

When the seat is folded down, the wiring harness can get pinched between the seat mount and the turret wall. If the insulation gets cut, your howitzer can end up with a short—and you end up with no power to the turret.

So eyeball the harness to make sure it's out of the way and won't get pinched. If it's in harm's way, let your mechanic know so he can re-route the harness to clear the seat mount.



M992A2 Ammo Carriers...

...presenting Water vs. Steel

TWO SHALL ENTER ONE SHALL LEAVE

"Kid Hydro"

M992A2 "Ammo" Carrier

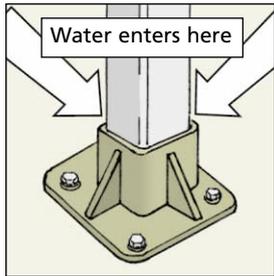
NOT WHEN I
HAVE **TWO** HOLES
DRILLED IN MY
SUPPORT BRACKETS!



STEEL
SHMEEL!
I'M THE
STRONGEST!



The steel canister support brackets in your M992A2 ammo carrier may look strong, crewmen. But add a little water and they get weak fast. Moisture from condensation and washing collects in the bottom of the support brackets. You know what moisture does to steel—rust. Eventually, rust weakens the support brackets enough that they have to be replaced.



A couple of ¼-in drain holes puts a stop to the rust problem. Drill two holes as close to the bottom of the bracket as possible to let water run out. No water, no rust.



M109-Series SP Howitzers, M992A2 Ammo Carriers...

Order the Right Starter

Chances are, mechanics, that the starters on your unit's M109-series howitzers and M992A2 ammo carriers were ordered with NSN 2920-00-304-3493.

But that one NSN could bring either a Leece Neville or a Prestolite starter. As you may have already discovered, the Prestolite starter is used mostly on tactical vehicles and won't fit M109s and M992A2s. For that reason, the generic NSN has been deleted and separate NSNs assigned to each starter.

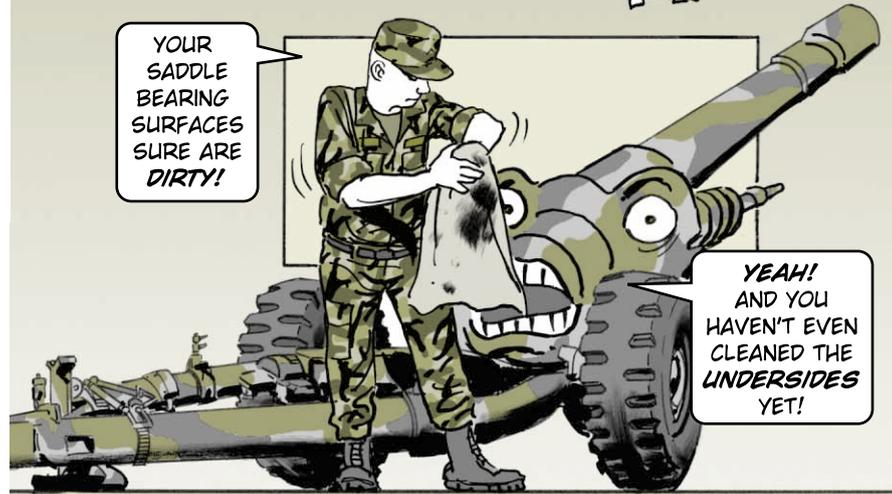
The Prestolite starter now comes with NSN 2920-01-075-2813. The Leece Neville starter is NSN 2920-01-069-6997.

When it's time for a new starter for your howitzer or ammo carrier, order the Leece Neville for the M109 and M992A2. Then, don't use the generic NSN to turn in the old starter. Instead, use the NSN for whichever brand of starter you're turning in.

M119A1 Towed Howitzer...

CATCH IT ON THE **FLIP** SIDE

YOUR
SADDLE
BEARING
SURFACES
SURE ARE
DIRTY!



YEAH!
AND YOU
HAVEN'T EVEN
CLEANED THE
UNDERSIDES
YET!

Lubing your howitzer's three saddle bearing surfaces is wasted effort if you don't clean them properly first, operators.

It's easy to remember to clean the top sides of the surfaces. They're in plain sight. It's the undersides of the saddle that are usually forgotten.

Dirt, sand and oil collect there, too. If you don't clean them off, this combination acts like sandpaper. Soon, those smooth metal surfaces are scratched, pitted and covered with corrosion. Your howitzer is NMC.

Use a clean cloth to wipe **all** of the surfaces. You'll have to get down on your hands and knees to make sure the underside is clean.

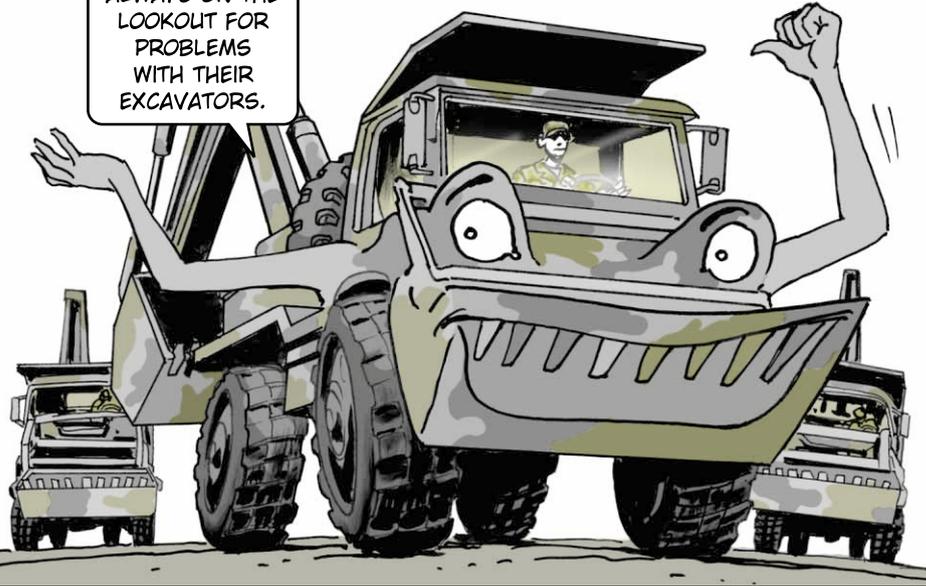


WHEN ALL THE
GUNK IS GONE,
COVER THE
SURFACES—TOP
AND BOTTOM—
WITH A LIGHT
COAT OF CLP.

SEE...

SEE These

GOOD SEE OPERATORS ARE ALWAYS ON THE LOOKOUT FOR PROBLEMS WITH THEIR EXCAVATORS.



If you want to be a good operator, here are three places to check daily:

Access Cover

The access cover for the SEE's rear hydraulic oil tank holds water. Over time, water rusts and deteriorates the cover.

In some cases, the cover has been known to spring a leak like a geyser when the engine is working hard during backhoe operations. Those operations come to a halt when the hydraulic system loses fluid.

So eyeball the cover. If it's in bad shape with lots of rust, report it.

Your mechanic can replace a cover with NSN 5340-01-235-2151 or sand away the rust and use CARC paint, NSN 8010-01-229-7546, for touch-up.



Eyeball the access cover for rust

Trouble Areas?

Windshield Washer Hose

The rubber hose that attaches to the washer fluid reservoir can crack or split from temperature changes (engine heat and cold weather) and vibration.

Then the windshield washer pump sucks air instead of fluid and you can't clean the windshield.

Mechanics can fix the problem like so:

Eyeball the hose where it attaches to the nipple on the windshield washer jar. That's where the hose usually splits. Snip off a half inch or so of hose and push it back in place.

If you still don't get washer fluid,



Look for split in washer hose end

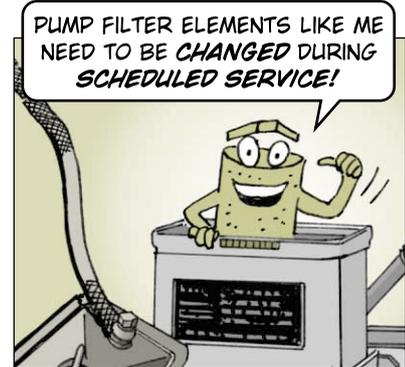
have your mechanic check out the pump or replace the rubber hose with NSN 4720-01-242-4535.

Power Steering Pump

Hard or erratic steering means either the power steering fluid is low or the steering pump's filter is clogged.

So, eyeball the fluid level on the dipstick. Make sure the fluid level is between the ADD and FULL marks.

Normal operation at the construction site causes the pump's filter element to clog up. A clogged filter starves the pump for oil. No oil means tough steering. So make sure your mechanic replaces the pump's filter element during scheduled service.



PUMP FILTER ELEMENTS LIKE ME NEED TO BE CHANGED DURING SCHEDULED SERVICE!

SEE Electrical Chart

Tracking down an electrical short or other problem on your excavator is simpler with an easy-to-read laminated wall chart that details the SEE's electrical harnesses. Order it with NSN 7610-01-475-7996.

SEE . . .

WHEEL MARKS SAVE DOWNTIME



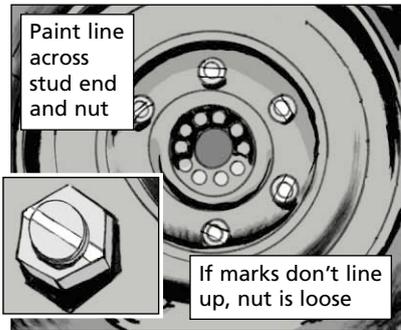
It's the domino effect.

One loose nut on an excavator's wheel can loosen the other nuts. Then the wheel begins to wobble, wallowing out the stud holes and ruining the wheel. Enough of that and the wheel can break off.

So eyeball the nuts for tightness weekly. Look for two things: shiny spots on the nut's washer and corrosion around the nuts. Have your mechanic tighten any loose nuts to 255-265 lb-ft.

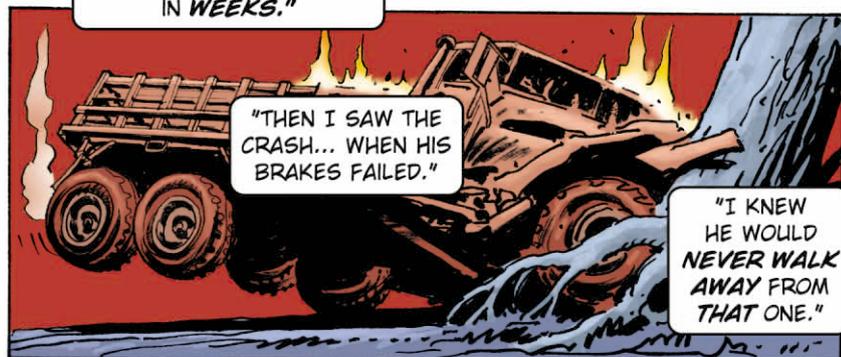
Once they're torqued, make your mark so you can quickly check the nuts for movement. For instance, use a white marker pen or torque seal, NSN 8030-00-408-1137, and mark a line across the bolt end and nut.

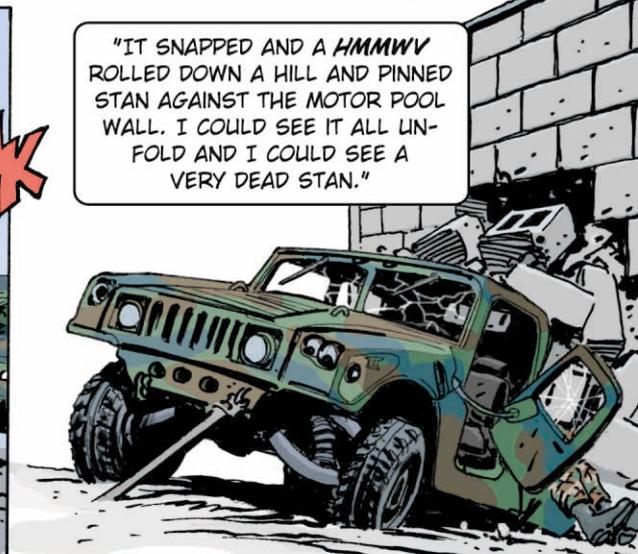
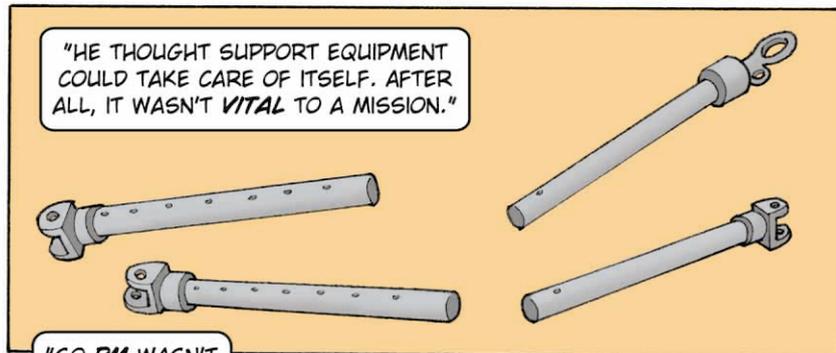
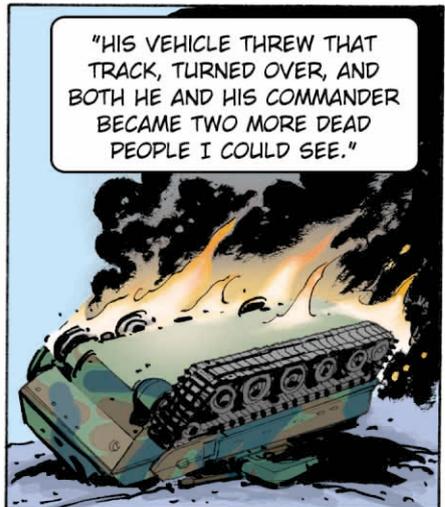
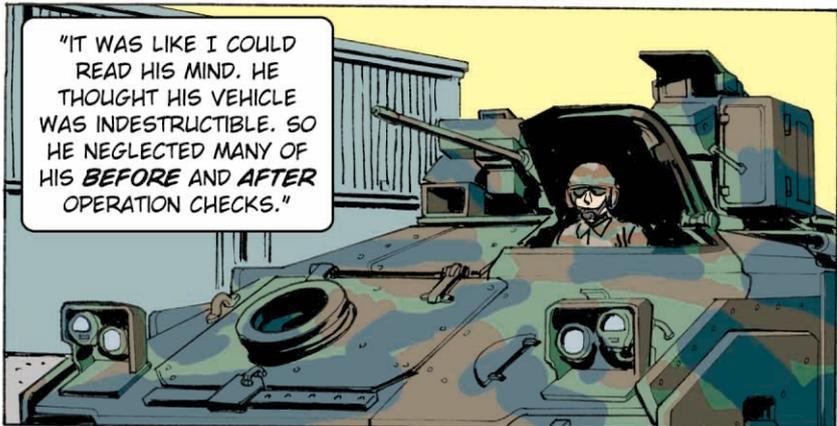
A mark that later doesn't line up means the nut has moved.



THE SIXTH AND A HALF SENSE

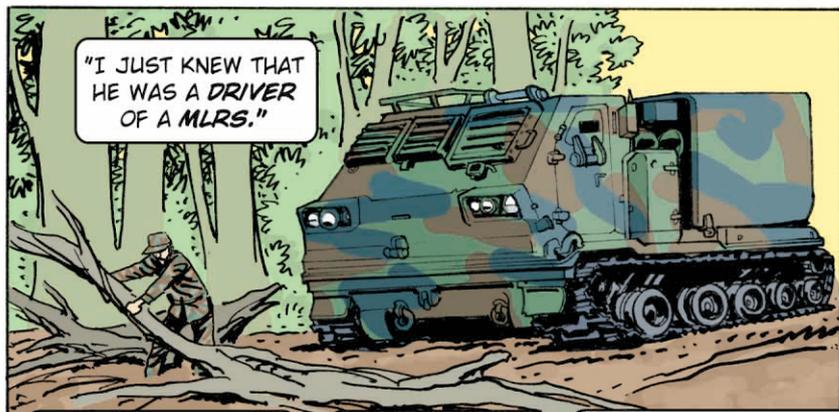








MASTER SERGEANT HALF-MAST. THE **LAST** VISION BROUGHT ME RUNNING TO **YOU**. I COULDN'T SEE THE FACE OF THE DEAD GUY.



"I JUST KNEW THAT HE WAS A **DRIVER** OF A **MLRS**."



"AN **MLRS** THAT HAD LOOSE SCREWS HOLDING THE PARKING BRAKE IN PLACE."



"LOOSE SCREWS THAT GOOD PM WOULD HAVE DISCOVERED AND TIGHTENED."



THE PARKING BRAKE DIDN'T HOLD... THE **MLRS** ROLLED FORWARD. THE SOLDIER GOT CAUGHT.



SEEMS TO ME, SPECIALIST SEAR, THAT YOU HAVE A **GIFT**. ONE THAT COULD BE PUT TO **GOOD USE!**



THANKS, MASTER SERGEANT, I JUST **HAD** TO TALK TO SOMEONE ABOUT THIS



THAT'S OKAY. NOW GO GET SOME REST.



I-I JUST DON'T UNDERSTAND IT. GIVES ME A FUNNY FEELING...

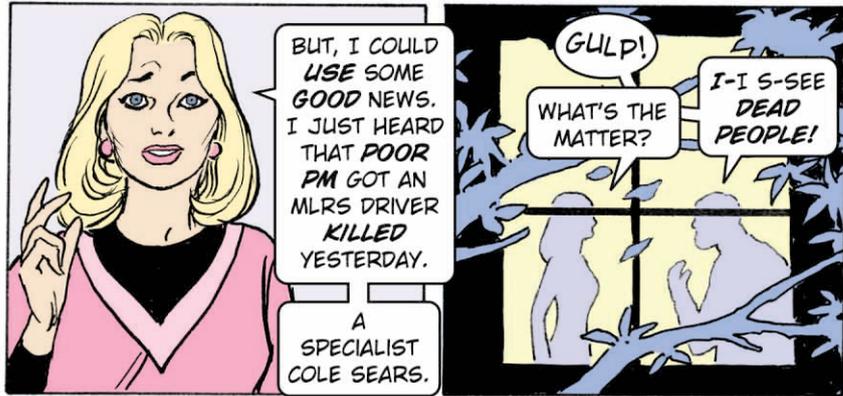


...LIKE I CAN SEE THINGS THAT NO ONE **ELSE** CAN.



YEAH... I THINK A REST IS JUST WHAT I NEED.

SEE YA, MASTER SERGEANT.



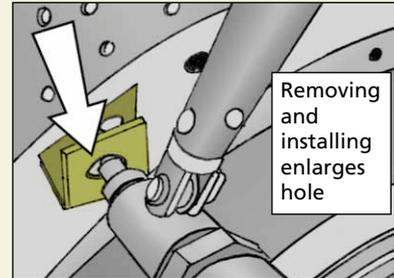
Close the Door on Cowling Headaches

Dear Editor,

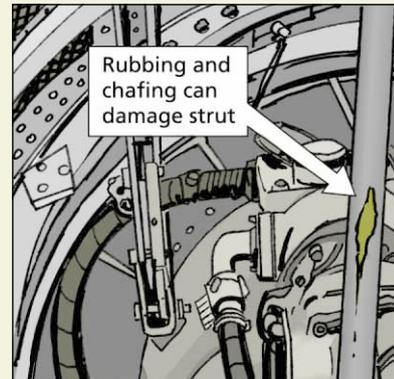
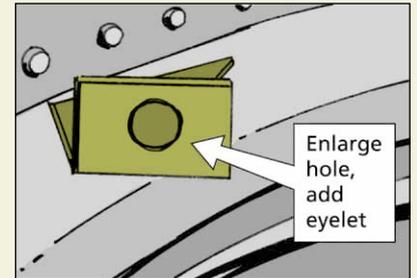
We've had a constant problem with the Chinook engine cowling door retaining clip. Aircraft vibration and constant storage and removal of the strut enlarges the clip's hole to the point that the strut just falls out of the clip on its own.

But a 10-minute fix by our sheet metal repairer helped us solve the clip problem and prolong the life of the strut assembly. Here's how it's done:

1. With a drill index, mark a 31/64-in diameter hole around the existing hole. Enlarge the hole with a rotary file to the marks.
2. Drill a 25/64-in hole in an eyelet, NSN 5325-00-282-2047, using a vise and drill press.
3. Insert the eyelet into the retaining clip and add a retaining ring, NSN 5325-00-598-1474. That holds the strut in place.



When the strut falls out, it rubs against the top of the engine, the main fuel filter housing and the fuel line. Over time, that could cause a fuel leak and fire. The strut can also bend until it won't hold the cowling door open.



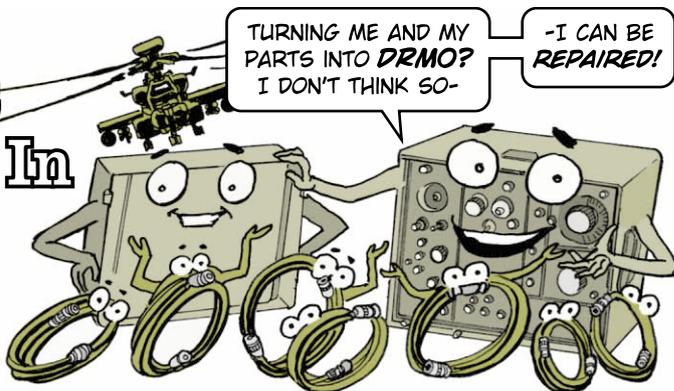
Gary Grubbs
Dallas Army Aviation
Support Facility
Grand Prairie, TX

From the desk
of the *Editor*

Good idea! That clips the retaining clip problem.

All Aircraft...

Don't Turn In Test Sets



Aircraft mechanics and supply types, don't turn in your B16-managed avionics test equipment to the Defense Reutilization and Marketing Office (DRMO) before checking with the item manager.

The Army is critically short of test sets, and when DRMO gets them, the shortage gets worse.

Many of the test sets have repair programs and can be repaired and put back into service right away. Here's a sampling of test sets that are in short supply and the list of item managers to call:

Signal Generator (VOR/ILS) Test Sets

Item	NSN 6625-
AN/ARM-186	00-557-1168
AN/ARM-180	01-041-4161

Item Manager: Mary Parady
e-mail address:
mary.pardy@mail1.monmouth.army.mil
(732) 532-1747, DSN 992-1747

If you have questions about other B16-managed avionics test equipment, contact CECOM's Vicky Stanley at DSN 992-2784, (732) 532-2784, e-mail vicky.stanley@mail1.monmouth.army.mil or Gretta White at DSN 992-3222, (732) 532-3222, e-mail gretta.white@mail1.monmouth.army.mil.

Transponder Test Sets

Item	NSN 6625-
AN/APM-424(V)2	01-152-6705
AN/APM-378	00-134-1533
AN/APM-305	00-179-1532
AN/APM-305A	01-052-3881
AN/APM-421	01-078-0271

Item Manager: Roslynn Patterson,
e-mail address: roslyn.patterson@mail1.monmouth.army.mil
(732) 532-9680, DSN 992-9680

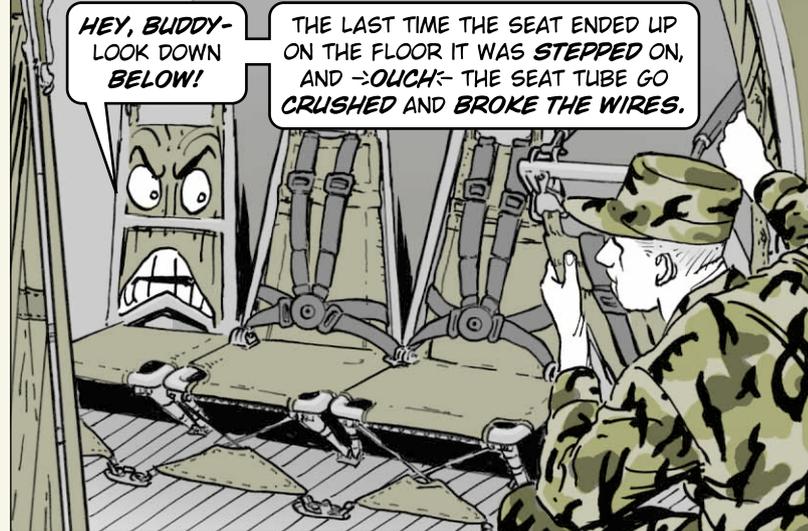
Facilities Test Kits

Item	NSN 6625-
MK-994A/AR	00-189-7882
MK-994/AR	00-802-7191

Item Manager: V. Swain-Hardison
e-mail address: vanester.swain-hardison@mail1.monmouth.army.mil
(732) 532-5373, DSN 992-5373

UH-60...

TROOP SEATS CRUSH WIRES



Crew chiefs, there's only one right way to get to the supplies and equipment stored in the transition area of your Black Hawk.

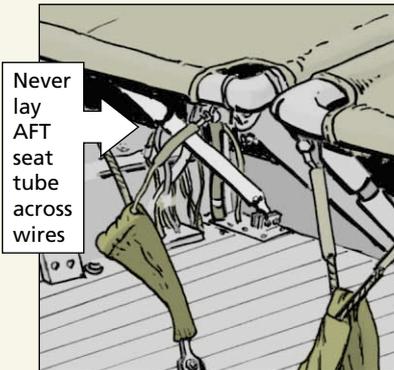
Disconnecting the top latches of the aft outboard troop seats and lowering them onto the cabin floor is **not** it.

When the outboard seats are on the floor, the aluminum seat tubes rest on delicate wires. Then when you step on the seats to reach the transition area you'll crush the seat tube and possibly break the wires.

Those wires feed the AN/ASN-43 gyro magnetic compass, the communication coaxials, and the AN/APR-39 radar signal detecting set. You won't be computing headings or picking up signals from search radar stations if the

wires are broken. Plus, you'll end up with a repair bill if the seat is damaged.

So never use the seat as a step. Handle and store seats like it says in Para 2-4-46 of TM 1-1520-237-23-2 if you want access to stored supplies and equipment.



DON'T SET

THAT'S DONE!
NOW LET'S GO
BEHIND THE MAIN
ROTOR AND CHECK
OUT THE FIRE
EXTINGUISHER
SYSTEM.

WE'LL DO IT
JUST LIKE THE
TM SAYS... WE
DON'T WANT TO
SET OFF THE
CARTRIDGES.

Black Hawk electricians and mechanics, easy does it when you troubleshoot a bird's engine fire extinguisher system, or replace expired containers or cartridges. Otherwise, you could discharge the whole system.

If that happens, you'll not only have a mess to clean up, you could injure yourself and damage the extinguisher system.

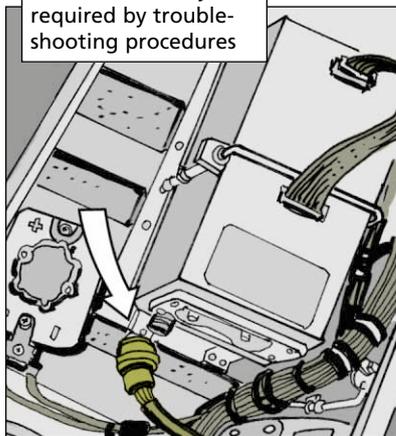
When you change the containers or cartridges, don't skip any steps and follow **all** of the **WARNINGS** and **CAUTIONS** in Paras 12-4-1 and 12-4-2 of TM 1-1520-237-23-7. You must:

- ➔ Turn off aircraft electrical power to lessen the possibility of accidentally discharging the cartridge.
- ➔ Always connect the shorting jumper to the container cartridge terminals before removing the container's wires or you could detonate the system or injure yourself.

When you do the continuity checks in Para 12-2-2 of TM 1-1520-237-23, make sure you:

- ➔ Disconnect the battery behind the pilot seat before you test or troubleshoot. Even with aircraft power turned off, the battery has enough residual power to detonate the system.

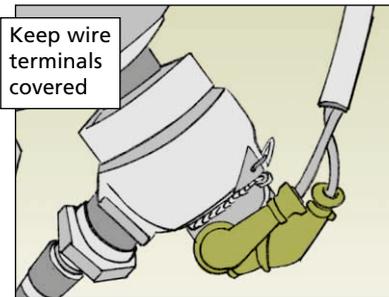
Always disconnect and reconnect battery as required by troubleshooting procedures



IT OFF

- ➔ Keep the multimeter leads away from the fire extinguisher cartridge terminals. Even the small amount of multimeter voltage can set off the cartridges.
- ➔ Keep the cartridges' eight wire terminals inside their rubber boots. If the wires hit the airframe, static electricity could ignite the cartridges.
- ➔ Always ground the containers or the cartridges when you change them.

Keep wire terminals covered



AH-64A/D...

BATTEN DOWN THE HATCHES

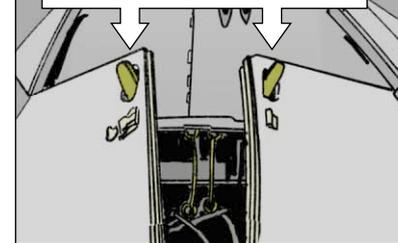
Crew chiefs and mechanics, if you forget the quick release pins after you close your topside engine access doors, your Apache could sprout wings during flight.

Sure, the doors have latches, but the pins secure them.

Always use quick release pins when you close doors



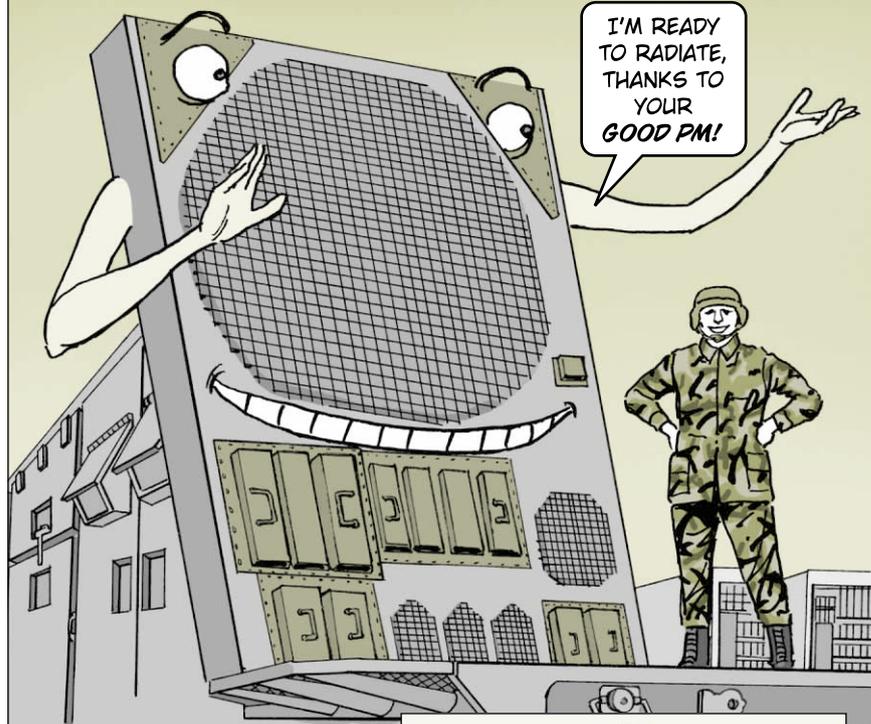
Latches hold the doors, but quick release pins secure them



Flying an aircraft with loose doors can break hinges, mounting hardware, latches and shims. That damage could work the latches loose and let the doors open. That could cause major structural and engine damage.

So, when you're on the catwalk and finish an inspection or doing other maintenance on your bird, put the pins back where they belong and secure the doors.

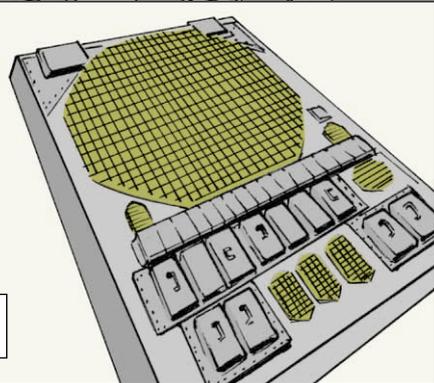
RADIATING



I'M READY TO RADIATE, THANKS TO YOUR GOOD PM!

Kkeep your Patriot's AN/MPQ-53 radar radiating good health by being careful and doing PM.

Keep your feet away from the identification friend or foe (IFF) system elements and the main array elements. Damage to these elements can cause the radar to fail.



Keep feet away from elements

WITH PM

Pay attention to vents. If the radar doesn't get enough cooling air, it overheats and produces lots of test faults. So, before powering up the radar, make sure all eight vents are open. Monthly, eyeball all the vent screens for dirt. Check the screens more often in dusty areas. If you can't vacuum the screens clean, get 'em replaced.

Make sure all eight vents are open. Vacuum dirty ones



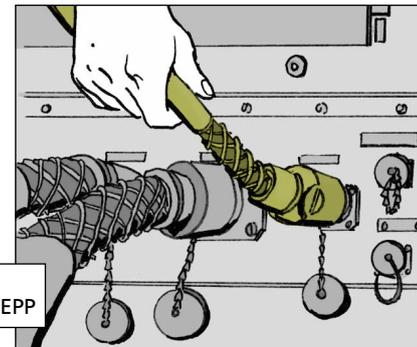
Careful with the J1, J2, J3 and J6 cables. If you screw the cables on or off one-handed, you rip their wiring and ruin expensive cables. Support each cable with one hand while you twist the cable connector sleeve with the other hand. Don't let the cable turn—only the connector sleeve should turn.

Support cable while turning connector sleeve



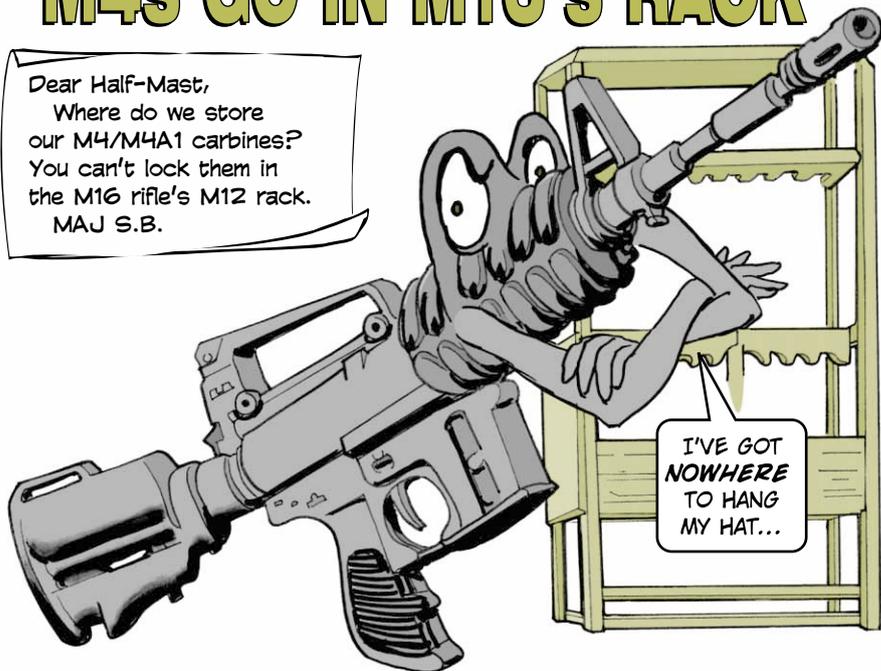
No power? Check the J5 control cable on the electric power plant (EPP) III. If the cable is cross-threaded, no power gets to the radar. A quick check of the cable can save troubleshooting. Of course, if the cable covering is torn or cracked, get the cable replaced

No power? Check J5 at EPP



M4s GO IN M16's RACK

Dear Half-Mast,
Where do we store our M4/M4A1 carbines? You can't lock them in the M16 rifle's M12 rack.
MAJ S.B.

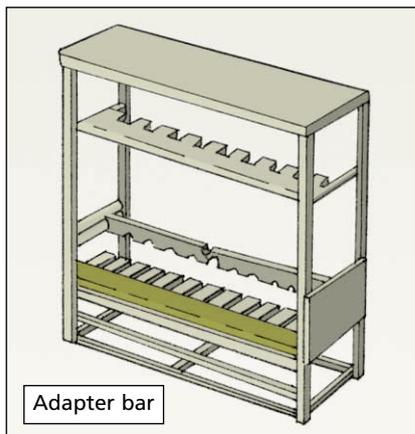


I'VE GOT NOWHERE TO HANG MY HAT...

Dear Major S.B.,

You **can** lock M4/M4A1s in the M12 rack—after you add an adapter bar. Your support can make the bar, following the instructions on Page 2-70 in Change 4 to TM 9-1005-319-23&P, or order it with NSN 5340-01-230-3181.

Any M12 racks that are modified must be certified as secure. Contact your local TACOM-Rock Island logistics assistance representative or TACOM's James Rollins at (309) 782-1797, DSN 793-1797, or e-mail rollinsj@ria.army.mil for details.



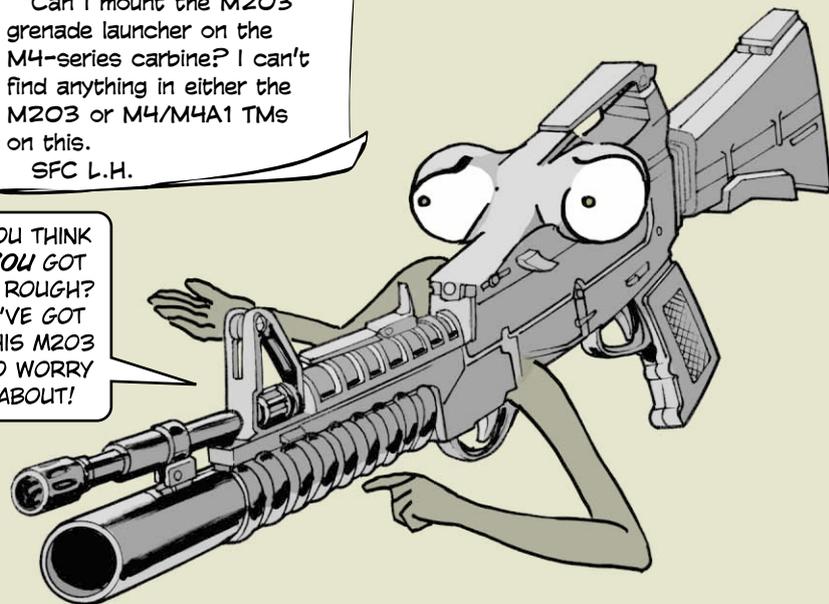
Adapter bar

Half-Mast

Mounting the M203 on the M4

Dear Half-Mast,
Can I mount the M203 grenade launcher on the M4-series carbine? I can't find anything in either the M203 or M4/M4A1 TMs on this.
SFC L.H.

YOU THINK YOU GOT IT ROUGH? I'VE GOT THIS M203 TO WORRY ABOUT!



Dear Sergeant L.H.,

The M203 **can** be mounted on the M4/M4A1, but **you** can't do it. Modification Work Order (MWO) 9-1010-221-30-1, which began in 1998, mounts the M203 on the M4/M4A1 and reclassifies the launcher as an M203A1. But the MWO is not being fielded to all units. The Army chose the units based on the units' MTOE.

In addition, the Army began fielding the modular weapon system (MWS) in 1999, which makes it possible to mount the M203 on the M4/M4A1, as well as on the M16A4 rifle. But, again, the MWS is being fielded to only certain units based on their MTOE, not Army-wide.

If you want to find out if your unit is scheduled to receive either the MWO or MWS, contact TACOM-Rock Island's Barbara Keleher, (309) 782-1896, DSN 793-1896, or e-mail keleherb@ria.army.mil.

Half-Mast



Firing and firing your M2s, M60, M240, or M249 machine gun without switching barrels when you're supposed to gets the barrel VERY HOT. When that happens, these bad things happen:

- ★ a cookoff
- ★ a warped barrel
- ★ a worn-out bolt and barrel
- ★ ruined headspacing, which can cause the machine gun to explode during firing

A spare barrel comes with your machine gun to prevent these things from happening. Wherever you take your machine gun, take the spare barrel too, and:

- ★ keep track of rounds fired and the rate they were fired
- ★ change the barrel when you reach the rounds limit for your gun

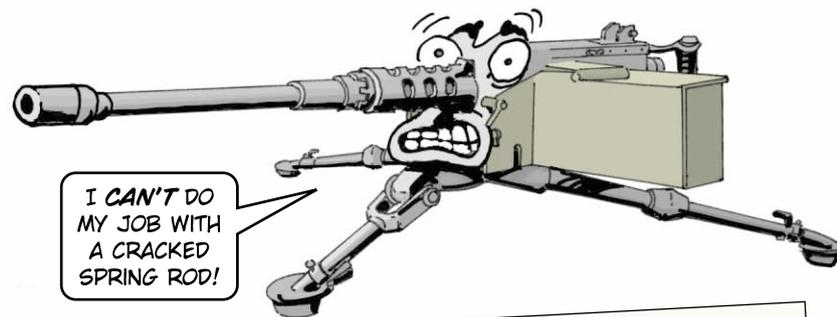
For the M60 and M240, change the barrel every 10 minutes during sustained fire (100 rounds per minute) and every 2 minutes for rapid fire (200 rounds per minute).

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 M2, change the barrel at the end of every firing session or if the barrel is damaged, regardless of the rate of fire.

No matter which machine gun you're firing, change the barrel more often on hot days. It heats up quicker in the heat.

CRACKED SPRING ROD NMC



Dear Editor,

In our arms room inspections, we've noticed that almost half of the driving spring rods for our M2 machine guns are cracked, usually at the end of the rod. But when you check Step 24 in the PMCS in TM 9-1005-213-23, it says the rod's OK as long as it's not broken.

We feel the rod should be replaced if it's cracked.

MSG Hans Hyland
741st Maint Co
Clackamas, OR

If driving spring rod's cracked, get it replaced



From the desk of the *Editor*

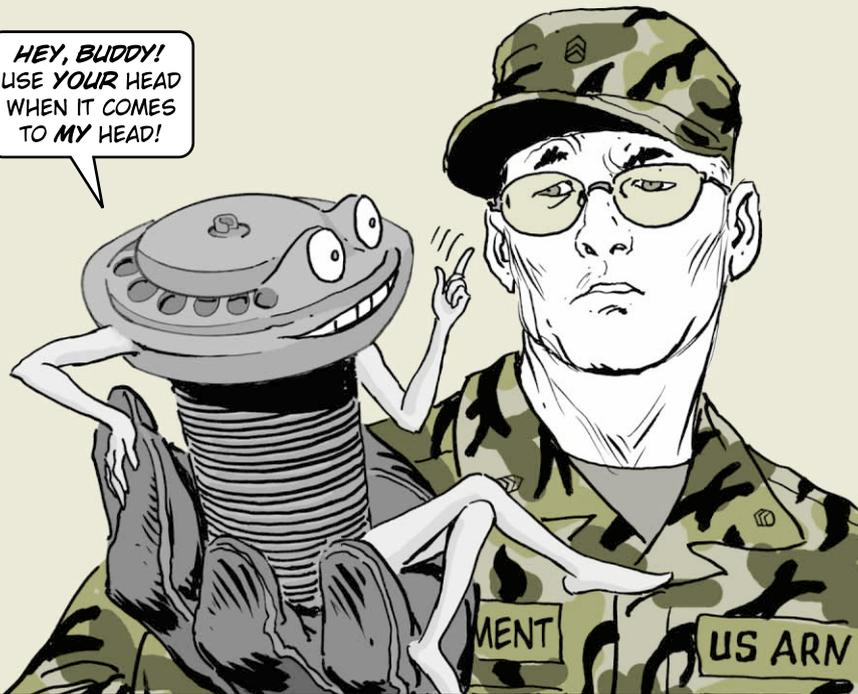
The M2 experts at TACOM-Rock Island agree with you. In the next update to TM 9-1005-213-23, Step 24 will say the M2 is not fully mission capable if the driving spring rod is broken or cracked.

Improved Aiming Post Lights

New aiming post lights are available for the M120/M121, M252, and M224 mortars. These lights are less of a radiation hazard than the old ones. Order the new M58 light with NSN 1290-01-443-8389 and the new M59 light with NSN 1290-01-443-9344. Both lights are used with all four mortar systems. When they no longer work, dispose of both the old lights and the new lights as radioactive waste.

USE YOUR HEAD

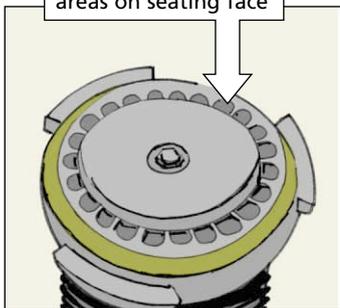
HEY, BUDDY!
USE YOUR HEAD
WHEN IT COMES
TO MY HEAD!



Use your head when it comes to the engine head on M157-series smoke generators. If you use the same head over and over again and never clean it, the head gets caked with carbon and eventually warps. Then the head seals poorly and you have trouble starting your M157 and keeping it running.

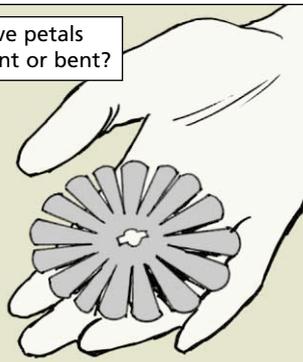
Step 4 of the PMCS in TM 3-1040-279-12&P says to check the head weekly. Do it! Look for signs of wear, especially for rounded areas on the seating face. That means the head won't seal well and it needs to be replaced.

Check for rounded areas on seating face

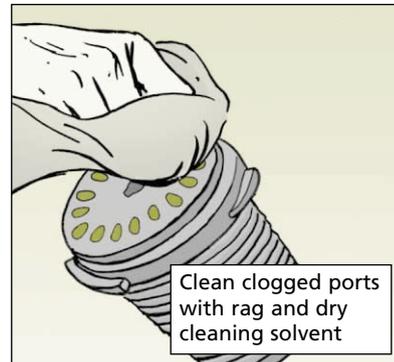


If the valve petals are bent or burnt, replace the valve. If the ports are clogged, dip a rag in dry cleaning solvent and clean them out.

Valve petals burnt or bent?

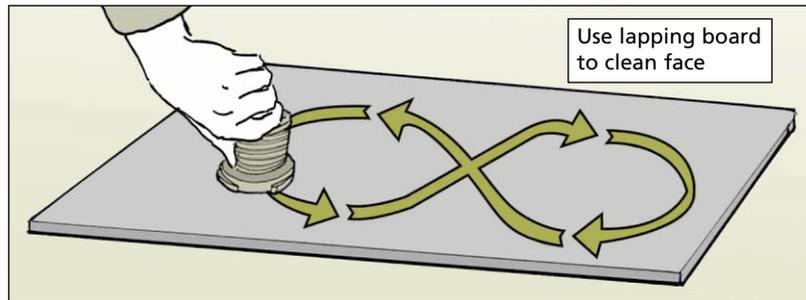


Clean clogged ports with rag and dry cleaning solvent



If the head's face is caked with carbon, put a few drops of fog oil on the lapping board and rub the face flat on the board in figure eights until the carbon is removed.

Use lapping board to clean face



Take extra valves to the field—you'll probably need them. Keep the extra valves in something like an old shoe polish can to prevent them from getting banged up.

Use can to protect valves



ALSO TAKE AN **EXTRA** HEAD TO THE FIELD. YOU'LL NEED IT IF YOU DO MUCH SMOKING.

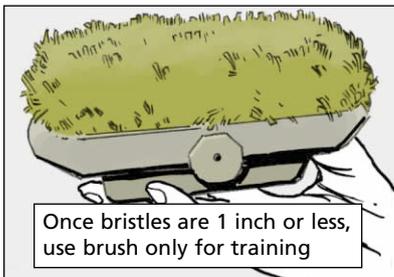


Keep It



Kkeep your M13 decon pumped up for chemical emergencies, NBC NCOs. Here's how:

Don't use the good stuff for training. Once the brush's bristles are worn to 1 inch or less or are no longer straight and hard, the brush won't do the scrubbing job deconning needs. But don't pitch it. It makes a great brush for training.

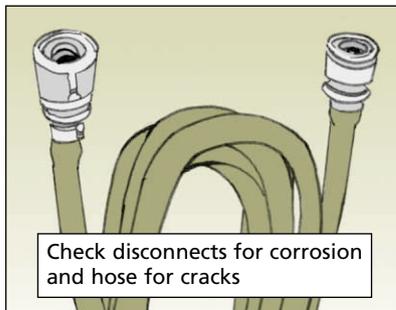


Once bristles are 1 inch or less, use brush only for training

Also for training, use the practice decon apparatus (DAP), NSN 4230-01-345-5172.

Remember, when the trainer is filled, it weighs 54 pounds. One hard fall can split it. Operators should use two hands to carry the trainer and should get help lifting it on and off trucks.

Fight corrosion. Corrosion often forms in the quick-disconnects and if left untreated can lead to leaks. Wipe corrosion out with steel wool or a battery terminal brush. Check the quick-disconnects at least quarterly for corrosion.



Check disconnects for corrosion and hose for cracks

Pumpin'

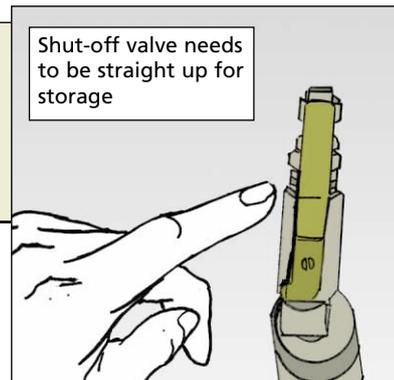


Catch hose cracks. The hose can crack in cold weather. A cracked hose will leak in the field, which is bad if you're using DS2. DS2 ruins the protection of chemical protective gear. So, check the hoses quarterly for cracks and replace cracked hoses.

Pack 'em right. Make sure operators know that if they don't pack the M13 like it shows on the storage compartment lid they will damage the brush. They also need to put the hose shut-off valve straight up for storage or it will be snapped off.



Pack like this



Shut-off valve needs to be straight up for storage

Turn in M43 (Type I) Masks



When your Apache unit gets the new M45 protective aircraft masks, turn in your old M43 (Type I) masks ASAP. The Army needs them for other aviation units. Send all M43s to:

Pine Bluff Arsenal
 Depot Operation Field Service Stock
 Non-ammo (ATTN: Terry Brodnax)
 53 990 507th St
 Pine Bluff, AR 71602-9500

Questions?
 Call Frank Fuoto at (309) 782-4285, DSN 793-4285,
 or e-mail fuotof@ria.army.mil.

WARM BEFORE YOU COOL



Environmental control units (air conditioners) need a warmup before you make operational checks following extended shutdowns or initial installation.

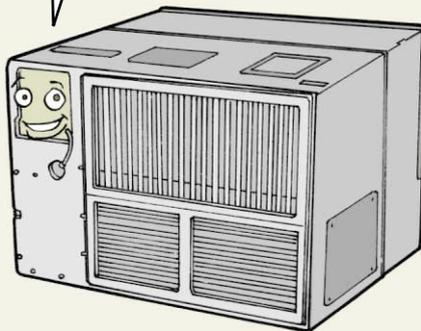
A warmup is required in order to boil out liquid refrigerant that tends to migrate into the ECU's compressor and mix with lube oil there.

If the refrigerant is not boiled out before an operational check in the COOL mode, it can cause loud knocking and even failure of the compressor.

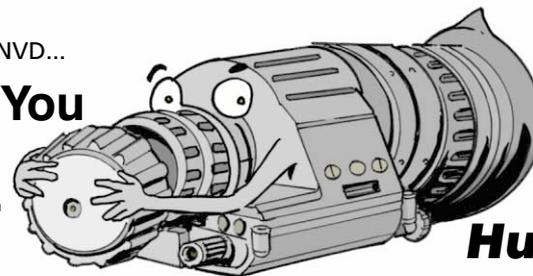
So before you make any operational checks according to TM procedures, make sure to power up your ECU following the times in the chart below.

Outside Temp	Minimum Input Power Time
60° F	5 minutes
40° F	1 hour
20° F	2 hours
Below 20° F	4 hours

THIS AFFECTS AIR CONDITIONERS COVERED BY
 TM 9-4120-400-14,
 TM 5-4120-342-14,
 TM 9-4120-401-14,
 TM 5-4120-384-14,
 TM 9-4120-402-14,
 TM 9-4120-371-14,
 TM 9-4120-404-14,
 & TM 9-4120-389-14.



What You Don't See...



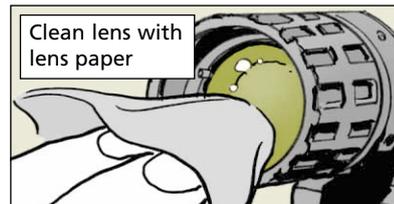
...Can Hurt You

Cleaning the lens on an AN/PVS-14 night vision device (NVD) is the user's responsibility. But many of you are taking that responsibility too lightly.

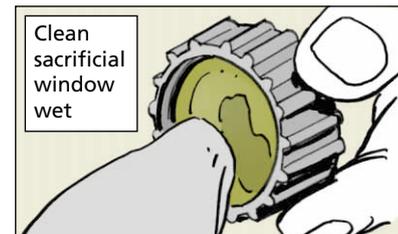
Clean the lens with lens paper, NSN 6640-01-459-4239, and water. Never clean the lens dry! Dirt pushed across a dry lens will scratch it. In a pinch, you can use your hot breath to create moisture on the lens. But don't do this in cold weather. Warm moisture hitting the cold glass could crack the lens.

Brush the demist shield clean with lens paper like you'd sweep a floor. If you can't get it clean, turn it in to your C & E shop for a new shield.

While you're cleaning the lens, don't forget the sacrificial window. Sacrificial windows **should** get dirty in the field because they're used during adverse conditions to protect the lens. Use wet lens paper to do the cleaning job.



Clean lens with lens paper



Clean sacrificial window wet

If you're cleaning the lens demist shield, NSN 5855-01-246-8272, dry is the way to go. The demist shield is coated to prevent the lens from fogging. If you clean the shield using water or your breath, you'll damage the coating.

When the NVD is not in use, make sure to keep the lens cap, NSN 5340-01-397-6608, on. Dirt buildup and scratches happen only to uncovered lenses.



Clean demist shield dry



Keep lens cap on

THAT'S A SWITCH

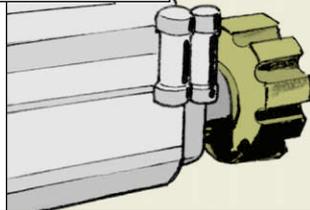
THE AN/PVS-14 NIGHT VISION DEVICE'S **RESET/OFF-ON-IR/PULL** SWITCH IS A REAL WORKHORSE. BUT ABUSE MAKES IT A WORN-OUT WORKHORSE.



HERE ARE THREE WAYS TO KEEP SO MANY OF THESE SWITCHES FROM BEING PUT OUT TO PASTURE:

1. To **momentarily** use the infra-red (IR) illuminator, turn the switch clockwise from **OFF** to **IR**, but briefly stop at **ON**. **ON** has a definite stopping point that can be ruined if you race from **OFF** to **IR** without pausing at **ON**.

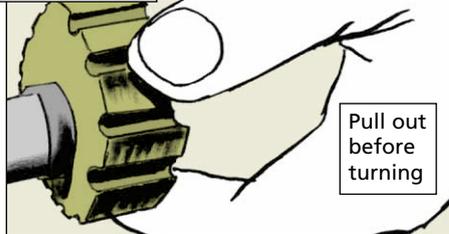
Momentary Use



Turn clockwise, briefly stopping at **ON**

2. To **continually** operate the IR illuminator, pull the switch out from **OFF** and turn it clockwise to **IR**. Release the switch and it will fall back into **IR** and stay there. Trying to put the switch in the continual IR position without pulling out the switch is not only impossible, but it could break the switch.

Continual Use



Pull out before turning

3. Don't muscle the switch into any of its positions. If you're forcing the switch into position, you're doing something wrong and you'll damage the switch!



Don't muscle switch

A Little on LIF

HOLD ON, SOLDIER! THAT'S TIGHT ENOUGH!



If you overtighten the light interference filter (LIF), NSN 5855-01-379-1410, you can crack the objective lens on your AN/PVS-14 night vision device.

The problem is excessive muscle when you use the LIF container wrench.

Even though you're given a wrench to use, the LIF should be tightened only hand tight. That means when the filter is in place and secure, stop tightening!

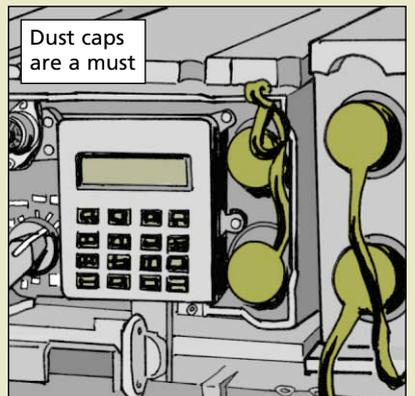
SINGARS...

Cop a Dust Cap

The advanced SINGARS improvement program (ASIP) E-model receiver-transmitter has been doing its commo job for long enough now that a few dust caps are coming up missing.

Here are four dust caps and their NSNs that you might need to replace:

Location	NSN
Back of RT	5340-01-462-0317
RT/Aud Fill	5340-01-346-4291
Aud/Data	5340-01-346-4291
GPS on VAA	5340-01-357-2333



Dust caps are a must



READING THROUGH THESE BRIEFS CAN SAVE YOU **TIME** AND **MONEY**.

SKOs on the Internet

EM 0074 is the CD ROM that contains most of the supply catalogs (SC) for the Army's sets, kits and outfits (SKOs).

You can get one through your unit's pubs account or you can access it on the Internet at the LOGSA homepage at <http://158.2.5.50/codebase/sko.html>.

Wet Bulb Kit

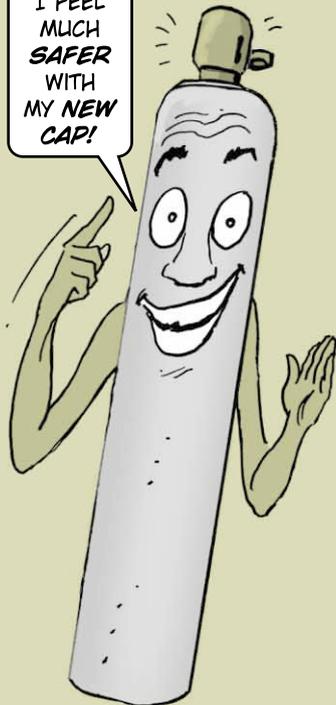
If you need a replacement part for your wet bulb-globe temperature kit, NSN 6665-00-159-2218 or NSN 6665-01-381-3023, don't waste more than \$200 by ordering a whole new kit. Order only the part you need from this list:

- **ITEM** Thermometer, small
PART NUMBER 5-09624-01
NSN 6685-01-110-4430
- **ITEM** Thermometer, medium
PART NUMBER 5-09624-02
NSN 6685-01-110-6563
- **ITEM** Thermometer, large
PART NUMBER 5-09625
NSN 6685-01-110-4429
- **ITEM** Calculator, wet bulb
PART NUMBER WBGT-CALCULATOR
NSN 6665-01-109-3246

Gas Cylinders...

TANK TOPS

I FEEL MUCH **SAFER** WITH MY **NEW CAP!**



Protective caps must be in place on acetylene and oxygen cylinders before you move them. Otherwise, they may go **BOOM!**

For **acetylene** cylinders, order a 3 ½-in diameter cap with NSN 8120-00-178-9814.

Most **oxygen** cylinders take a 3 ½-in diameter cap, NSN 8120-00-179-0076.

ULLS...

AMSS: WIN, LOSE OR DUH?



Attention unit commanders and ULLS report processors. Ever drive a tank backwards for 200 miles or drive one 4,500 miles—in a month? Did you report vehicles that don't move all month—with unchanged mileage figures as you should—-or do you just not report them?

If you're laughing, don't! These examples are from actual monthly AMSS (Army Materiel Status System) *End of Period Reports* sent to the USAMC Logistics Support Activity (LOGSA).

AMSS end of period reports are **rejected** when tracked vehicle mileage exceeds 1,000 miles (1,610 kilometers), when wheeled vehicle mileage exceeds 20,000 miles, or when any vehicle reports negative mileage. Bad equipment data will also get a report rejected.

You say, so what?

Well, **you lose** when your unit report is rejected. No one sees your usage and readiness data, including the senior Army leaders who use it to make maintenance funding decisions for every unit in the Army. So units lose the dollars they need to perform unit maintenance.

Don't gamble with your unit's future. Instead, give the *AMSS End of Period Report* the priority it deserves and make sure it meets the AMSS standard of 100 percent accuracy—before it goes to LOGSA.

OK CONNIE,
I'VE FILLED OUT
MY REPORT,
WHAT'S NEXT?



But don't run the report to verify its accuracy. If you do, you close out the maintenance and parts ordering processes until after the report runs and the new cycle starts. Instead, view the data on the ULLS screen or by printing equipment data files. If you are not sure how to do this, get help from your supervisor or the help numbers at the end of this article.

The four most common *AMSS End of Period Report* problems areas are listed here. A yes to all four questions meets the AMSS standard.

1. Are AMSS End of Period Report Dates correct?

YES NO

The report period begins on day 16 of month one and ends on day 15 of the next month. The report should **never** be run before day 16 of the report month. For example, if the report period is 16 Apr 01 - 15 May 01, run the report on 16 May 01. If you run it too early, your report will be rejected. Then, it takes hours for you to restore your ULLS data base.

2. Is the UIC, Reporting UIC (Parent Unit) and DODAAC correct?

YES NO

Your supply sergeant can verify your unit UIC, DODAAC and your parent unit UIC.

If your unit UIC is wrong, use the UNIT TRANSFER OUT and UNIT TRANSFER IN processes to change it. Use the UNIT PARAMETER ADD/UPDATE PROCESS to correct the Reporting UIC if it's wrong.

3. Are AMSS End of Period Report Dates correct?

YES NO

The Equipment Data File (EDF) is the key to readiness info. Verify EDF data as follows. Print the Equipment Data Reports for Major Items and Weapon Systems/Sub-systems. Review them for NSN, EIC, MCSR and valid system/sub-system configuration. Update EDF records as needed.

The MMDF LOAD/UPDATE process updates the MCSR and usage reporting data in the MMDF and EDF automatically. It does not configure weapon sub-systems or input current usage values in the EDF. Confirm you have the most current MMDF with your support folks.

4. Is Usage Data (mileage) correct?

YES NO

If not, the odometer was replaced and the ULLS operator did not correctly post the new odometer reading. Close out all open dispatches then run the Roll-up by System/Sub-system Admin Number process, check the usage figures and compare to last month's report. If there is a blank, negative or excessive usage (mileage) then you must physically check the odometer. Make corrections using the following procedures.

I ANSWERED
YES FOUR TIMES
ON MY CHECKLIST
...NOW WHAT?



YOU'VE
DONE YOUR
JOB. NOW
READ ON...

Go to the ULLS MAIN MENU and select the EQUIPMENT FILE UPDATE process. Then, select the EDF CHANGE/UPDATE OPTIONS and then the UPDATE ADMIN NUMBER DATA. Enter the ADMIN NUMBER of the vehicle and press <ENTER>. Correct the CURRENT ODOMETER READING field **only**—**never** change the numbers in the CUMULATIVE EQUIPMENT READING field for any reason. Press <ENTER> and the system will do the rest. Use this procedure when reporting the new odometer reading when a new odometer is installed. Again, be sure all open dispatches are closed out then update the CURRENT ODOMETER READING field **only** and ULLS will do the rest.

Be sure to use the correct mileage unit: K for kilometers; M for miles. And **drop** the tenths of a mile—**only** report whole miles or kilometers like M 1000 for 1000.1 miles or K 1000 if it is 1000.1 kilometers.

Get help from your ULLS box tutorial, local Combat Service Support Automation Management Office (CSSAMO) or call the ULLS experts at (804) 734-1051, DSN 687- 1051 or by e-mail cao@SDCL.Lee.army.mil. LOGSA can help with AMSS readiness at (256) 955-9670 or DSN 645-9670; AMSS usage at (256) 955-8292 or DSN 645-8292 or by e-mail amxlsrr@logsa.army.mil.

CONTACT THE FOLKS
ABOVE IF YOU STILL
HAVE QUESTIONS!



SUPPLY EXCELLENCE AWARDS FY 2000



THESE ARE THE
WINNERS OF THE
**SUPPLY
EXCELLENCE
AWARDS FOR
FY 2000**

CONGRATULATIONS!
YOU'VE ALL DONE AN
OUTSTANDING JOB.

ACTIVE ARMY

MTOE Company With Property Book

Winner: None
Runner-up: None

MTOE Company Without Property Book

Winner: HHC, DISCOM,
25th ID, HI (USARPAC)
Runner-up: 72d Ord Co,
Pusan, Korea (EUSA)

MTOE Battalion With Property Book

Winner: 532d MI Bn, Seoul, Korea
(INSCOM)
Runner-up: 78th Sig Bn, Camp Zama,
Japan (FORSCOM)

MTOE Battalion Without Property Book

Winner: 205th MI Bn,
Ft Shafter, HI (INSCOM)
Runner-up: 725th MSB,
25th ID(L), HI (USARPAC)

TDA (Small)

Winner: Army Aviation Test Center,
Ft. Rucker, AL (ATEC)
Runner-Up: D Co, 1/46th Inf,
Ft Knox, KY (TRADOC)

TDA (Large)

Winner: 751st MI Bn,
Camp Humphreys, Korea (INSCOM)
Runner-up: UN Security Command,
Panmunjom, Korea (EUSA)

DSU (Small)

Winner: 20th Sup Gp,
Camp Carroll, Korea (EUSA)
Runner-up: C Co, 25th Avn Regt,
25th ID (L), HI (USARPAC)

DSU (Medium)

Winner: 542d Maint Co,
Ft Lewis, WA (FORSCOM)
Runner-up: 22d ASG, Italy (USAREUR)

DSU (Large)

Winner: B Co, 782d MSB, 82d Abn Div,
Ft Bragg, NC (FORSCOM)
Runner-up: A Co, 704th MSB, 4th ID,
Ft Hood, TX (FORSCOM)



**KEEP
UP THE
GOOD
WORK!**

ARMY RESERVE

MTOE Company With Property Book

Winner: 802d Ord Co, Gainesville, GA
Runner-up: 912th Med Co
(Dental Svcs), Independence, MO

MTOE Company Without Property Book

Winner: 1932d Med Team,
Independence, MO
Runner-up: 317th Support Center
(Rear Area Operations Center),
Wiesbaden, Germany

Battalion With Property Book

Winner: 844th Engr Bn, Knoxville, TN
Runner-up: 388th Med Bn, Hays, KS

Battalion Without Property Book

Winner: 317th QM Bn,
Lawrence, KS
Runner-up: 443d Civil Affairs Bn,
Warwick, RI

TDA (Small)

Winner: SETAF Augmentation Unit,
Vicenza, Italy
Runner-up: 1st Bn, 379th Regt,
95th Div, Oklahoma City, OK

TDA (Large)

Winner: HQ, 7th ARCOM,
Schwetzingen, Germany
Runner-up: 5502d USA Hospital,
Aurora, CO

ARMY NATIONAL GUARD

MTOE Company With Property Book

Winner: HHC, 30th Engr Bde,
Charlotte, NC (Region 2)
Runner-up: 1157th Trans Co,
Oshkosh, WI (Region 3A)

MTOE Company Without Property Book

Winner: HHC, 682d Engr Bn,
Willmar, MN (Region 3A)
Runner-up: Svc Btry, 1/113th FA,
High Point, NC (Region 2)

MTOE Battalion With Property Book

Winner: 527th Engr Bn,
Ruston, LA (Region 3B)
Runner-up: 210th Finance Bn,
Jackson, MS (Region 2)

MTOE Battalion Without Property Book

Winner: HQ, 67th FSB,
Lincoln, NE (Region 2)
Runner-up: 150th Engr Bn,
Meridian, MS (Region 2)

TDA (Small)

Winner: None
Runner-up: None

TDA (Large)

Winner: 209th Tng Regt,
Camp Ashland, NE
Runner-up: National Training Site,
Camp Shelby, MS

DSU (Small)

Winner: B Co, 29th Spt Bn, Honolulu, HI
Runner-up: B Co, 192d Spt Bn, Salinas, PR

DSU (Medium)

Winner: USPFO for North Carolina,
Raleigh, NC
Runner-up: None

DSU (Large)

Winner: USPFO for Louisiana,
Alexandria, LA
Runner-up: USPFO for Texas, Austin, TX



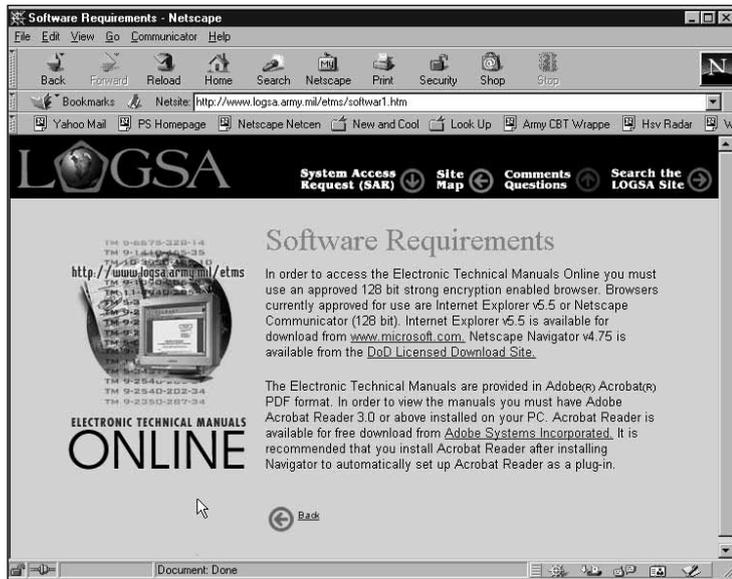
**HOPE TO SEE YOU
HERE NEXT YEAR**

New Access to ETMs

In the past, the only browser you could use to access electronic technical manuals (ETMs) on the LOGSA website was Netscape Communicator 4.75 with 128-bit encryption.

Now, Internet Explorer 5.5 with 128-bit encryption has passed all security requirements and also can be used.

Whichever browser you choose, you'll find links to get a free download under the [software requirements](#) on the ETM welcome page at <http://www.logsarmy.mil/etms>.



If you have the Adobe Acrobat Reader installed on your computer, it's recommended that you remove it before downloading the browser. Then when the browser's loaded, reload the Acrobat Reader using the web site's link to Adobe. That way the reader is set up as a plug-in to the browser and allows you to view the electronic file quicker.

Remember, you'll still need a user ID and password to access any publication with restricted distribution. Get the online access form by clicking on [System Access Request \(SAR\)](#) at the website.

Connie's
POST
SCRIPTS



YOU DON'T NEED
A 6 1/2 SENSE TO
DO THE RIGHT
THING!

Sheridan Seatbelts

Don't spend \$980 to order a new seat-belt assembly for your M551-series Sheridan when all you need is a \$40 lapbelt, NSN 1680-01-457-6960. Make a note until the NSN is added to Fig 130 of TM 9-2350-230-24P-1.

CUCV Still Reportable

CUCVs will be in the supply system for the next 9 years as reportable items. When supply system parts run out, cannibalization and the commercial market will be your only parts sources. But check TB 43-0002-81 for the Maintenance Expenditure Limits, because CUCVs 11 years old and older have dropped off the list.

STE-M1/FVS Adapter

Use NSN 4730-00-187-0840 to order the straight pin adapter for your STE- M1/FVS test set. The adapter, NSN 4730- 01-112-2286, shown for Item 25 in Fig F16 of TM 9-4910-751-14&P, is obsolete.

Asset Visibility Training

The AMC Logistics Support Activity (LOGSA) is offering computer-based training on asset visibility reporting through the Internet and on CD-ROM. The course covers reporting procedures, regulations, automated tools and products, and troubleshooting. You can find the course at the LOGSA home page, <http://www.logsarmy.mil>, or write for the CD-ROM at:

LOGSA
ATTN: AMXLS-MS
Redstone Arsenal, AL 35898-7466
Questions? Call (256) 313-2488/2473, DSN 897-2488/2473

M915 Truck Web Page

Info on the training, operation, maintenance and fielding of M915-series trucks can be found on the M915 Family of Vehicles web page: <http://www.acala1.ria.army.mil/DLCM/dsa/LCA/AF/M915>

M1A2 Commander's Control

Need a new commander's control handle assembly for your M1A2 tank? Order NSN 1290-01-466-7722. Item 6 in Fig 31 of TM 9-2350-288-24P-2 is an older configuration that is no longer available.

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

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