

**THE
PREVENTIVE
MAINTENANCE
MONTHLY**

TB 43-PS-589, 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.

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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-LP)
 5307 Sparkman Circle
 Redstone Arsenal, AL 35898-5000

Or e-mail to:

psmag@logsa.army.mil

Internet address:

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

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DON'T LET THE *DIRTY* *DOZEN* DO *YOU* IN!

**LOOSE HAND-
GUARD LINERS**
Get new
handguards

**SLIP RING
SPRING
BROKEN**
Get it replaced

**CHAMBER DIRTY,
CORRODED**
Clean chamber
with CLP and
chamber brush

**REAR SIGHT
STUCK**
Unfreeze
with lube

**BUFFER & SPRING
CORRODED**
Clean and lube

**BUTTSTOCK
DRAIN CLOGGED**
Open drain with
pipe cleaner

**FRONT
SIGHT
FROZEN**
Unfreeze
with lube

**DIRT OR
CARBON IN
BARREL**
Clean
before
firing

**PIVOT PIN DETENT
STUCK, DOESN'T
ALIGN WITH
GAS TUBE**
Free with lube

**MAGAZINE
DAMAGED OR DIRT**
Inspect and lube

**BOLT CARRIER
DOESN'T ALIGN
WITH GAS TUBE**
Tell your Armorer

**TAKEDOWN
PIN CORRODED
OR STICKS**
Clean and lube

MOST OF THESE
PROBLEMS COME FROM
DIRT, MOISTURE,
AND NO LUBE IN
OUT-OF-SIGHT PLACES.

CLEAN AND LUBE
ALL PARTS, NOT
JUST THOSE THAT
ARE EASY TO
GET TO.

Issue 589

PS

December
2001

THE PREVENTIVE MAINTENANCE MONTHLY

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DON'T IGNORE SAFETY



Most of us agree that the TM is the first tool of every mechanic and operator in the Army.

A very important part of that number one tool is the short messages clearly identified throughout the TM—the **WARNINGS**, **CAUTIONS** and **NOTES**. They are just as important as the maintenance procedures themselves.

Most mechanics and operators read and heed those messages. As a result, they remain healthy and their equipment stays fully mission capable.

But some mechanics and operators skip right over the messages. They have lots of excuses for ignoring them. But they can't ignore the results: a scar here, a limp there, and other assorted dings and scratches—just like those on their equipment.

WARNINGS, **CAUTIONS** and **NOTES** are placed in TMs to protect you, your co-workers and your equipment. Read them. Heed their message. The life you save.....

WARNINGS signal danger like a red flag. They warn you of conditions which, if not avoided, could injure or kill you and the soldiers you work with.

WARNINGS

Warnings in this manual. They are repeated. Study these WARNINGS carefully; they can save you work with.



WARNING

Energized system and equipment can burn you. If **MASTER POWER** switch is **ON**, electrical system and equipment will be energized. Make sure **MASTER POWER** switch is **OFF** when you work on electrical system or equipment.

CAUTIONS accompany specific operations and maintenance procedures in your TM. If you don't follow them to the letter, you could damage or destroy your equipment.

CAUTION

Power unit can be damaged. Do not pivot steer when vehicle is moving except in a track failure emergency.

b. Check steering in left or right pivot steer.

NOTES highlight important operations and maintenance procedures. If you ignore them, you may miss a step, waste time and effort, or jeopardize safety.

TRK, and check that display screen shows present vehicle heading.

f. Move driver's control box function knob to OFF.

g. Move master power switch to OFF.

a. Move master power switch to ON.

NOTE

The verification procedures below will be changing number values. Before changing values, write down the existing value to be reprogrammed into the driver's control box upon completion of driver's control box verification.

a. Verify driver's control box functions.

b. Move master power switch to ON.

c. Rotate driver's control box function knob to XTEST (CTE).



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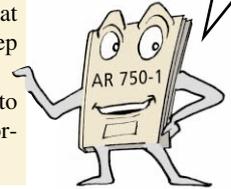


It's just plain bad business when information is available that can prevent damage to equipment and injury to personnel—and you haven't seen it.

Sad to say, many maintenance facilities and the soldiers that work in them either never see the information found in safety-of-use messages (SOUM), don't understand what they're supposed to do with the information, or don't keep track of whether the messages are being followed.

SOUMs direct you to do something to avoid danger to crew and damage to equipment. And an SOUM's importance comes right out of AR 750-1.

"COMMANDERS AT ALL LEVELS WILL ENSURE PROMPT COMPLIANCE WITH REQUIREMENTS DICTATED BY SAFETY-OF-USE MESSAGES."



SOUMs pertain to any defect or hazardous condition, actual or potential, where a high or medium safety risk condition has been determined according to AR 385-16, *System Safety Engineering and Management*, that can cause death or serious injury to personnel or damage to equipment. These messages are classified into three categories.

HERE'S A RUNDOWN OF THE VARIOUS TYPES OF SOUMS AND WHAT THEY REQUIRE

Deadline SOUM

Orders to cease operations and use of a specific model, series or design of equipment, or to cease performance of certain tasks.

Technical SOUM

Guidance that requires actions or inspections that, if the hazardous situation is present, will deadline the equipment.

Operational SOUM

Guidance that changes operating procedures or imposes limits on the use of equipment.

HERE'S HOW TO GET SOUMS



SOUMs should come through regular chain of command routes. If they don't, contact your DS unit, Logistics Assistance Office (LAO) or Safety Office. Make sure **someone** sends you SOUMs every time they get them.

NOTE THAT AR 750-6, *GROUND SAFETY NOTIFICATION SYSTEM, COVERS PROCEDURES FOR ISSUE, COMPLIANCE AND MANAGEMENT OF GROUND-BASED EQUIPMENT SOUMS...*

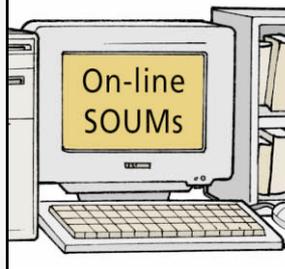
...AND AR 95-3, *AVIATION: GENERAL PROVISIONS, TRAINING, STANDARDIZATION AND RESOURCE MANAGEMENT, COVERS THE SAME INFORMATION FOR AIRCRAFT.*



If your unit has Internet access, SOUMs can be viewed at <https://aeps2.ria.army.mil/>. This site is password protected. If your unit does not have a password, get one at this site: <http://aeps.ria.army.mil/>. Once you have the password and enter the site, type in Safety of Use messages in the SEARCH box and go from there.

You can also contact the headquarters that sends the SOUMs, asking that your unit be included as a specific addressee for SOUMs in the future.

<https://aeps2.ria.army.mil/>



WHAT ABOUT
**HOW TO
HANDLE
SOUMS?**



WHATEVER
METHOD YOU USE
TO GET, USE AND
HANDLE SOUMS,
BE SURE TO
FOLLOW THE
INFO IN THE
MESSAGES. IT
CAN PREVENT
EQUIPMENT
DAMAGE AND
MAYBE SAVE
A LIFE.



Many times SOUMs don't get into the right hands locally because the recipients don't know to whom to give them for action. The best thing to do is to officially designate one person or office to clear all SOUMs that come in. In addition to giving a copy to whomever will complete the action, the designee must also give a copy to the unit commander.

Noting AR 750-1 again, commanders must get all SOUMs so they will know about the problems, and what must be done to comply with the messages. Commanders can't make sure their equipment is good to go if they're not aware of all problems.

Because SOUMs have varying lifespans, there must be some kind of file system to keep them on record. File copies should be kept at the receiving office and at the action level.

At the unit level, you might consider a file folder on each type of equipment with a note or memo in the folder. Or you could make a small pencil note in the Remarks block of each DD Form 314 or on the Scheduled Services Report, DA Form 5986-E, used in ULLS.

Either way, be sure to include the command issuing the SOUM and the SOUM's number. Then new unit personnel can track what's happened to equipment previously.

PS END

2 1/2-Ton and 5-Ton Trucks...



CARGO COVERS and KITS

Now that coated polyester cab and cargo covers have "covered" the field, keep this list of NSNs handy for ordering purposes!

Cab Covers		
Vehicle	NSN 2540-	Color
M939-series	01-417-6379	Camouflage
	01-435-4924	Tan
	01-435-4931	White
M44, M39 and M809-series	01-413-3143	Camouflage
	01-435-0126	Tan
	01-435-4933	White
2 1/2-ton extended service program	01-443-7032	Camouflage

Cargo Covers		
Vehicle	NSN 2540-	Color
M44-series (fixed and dropside)	01-434-0944	Camouflage
	01-434-0954	Tan
	01-438-4922	White
M44-series (extra-long wheelbase)	01-438-4960	Camouflage
	01-438-4927	Tan
	01-438-4956	White
M39, M809 and M939-series (fixed and dropside)	00-933-8645	Camouflage
	01-435-4936	Tan
	01-424-9440	White
M39, M809 and M939-series (extra-long wheelbase)	01-434-8725	Camouflage
	01-435-4936	Tan
	01-435-0568	White

Bow and Cover Kits		
Vehicle	NSN 2540-	Color
2 1/2-ton (cargo, fixed side)	00-319-5724	Camouflage
	01-438-8791	Tan
	01-434-6839	White
2 1/2-ton (cargo, dropside)	00-322-8957	Camouflage
	01-434-6864	Tan
	01-434-6868	White
2 1/2-ton (cargo, extra-long wheelbase)	00-327-1845	Camouflage
	01-434-6851	Tan
	01-435-4941	White
5-ton (cargo, dropside)	00-121-9082	Camouflage
	01-368-9848	Tan
	01-369-1392	White
5-ton (cargo, dropside)	00-121-9077	Camouflage
	01-423-1968	Tan
	01-423-1964	White
5-ton (cargo, extra-long wheelbase)	00-121-9081	Camouflage
	01-365-2936	Tan
	01-365-2937	White

...SO
KEEP THIS
LIST, AND
GOOD
LUCK!



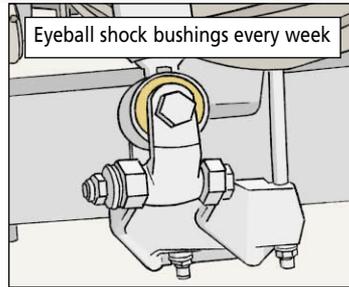


Monitor Front Shock Bushings

You drivers need to pay more attention to the front shock absorber bushings on your FMTVs. That's because the shock mounts pivot to allow movement of the front axle from side to side and forward and backward.

So the bushings get a lot more wear than normal. It means that when you pull the weekly PMCS for shock absorber leaks and missing hardware, you need to check out the bushings, too.

Once the bushings are shot, suspension damage is next—and that ain't cheap.



Lunette-type Trailers...

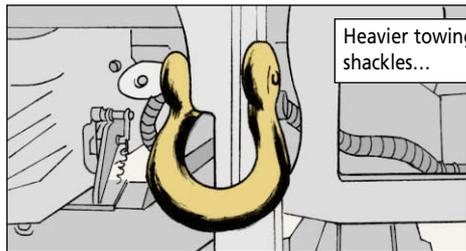
BIGGER SHACKLE TAKES BIGGER HOOK

When heavier towing shackles are added to your tactical vehicles—to meet air transport requirements—old-style trailer safety chain hooks won't work with them.

You'll need larger hooks for the larger shackles.

Replace the old chain hooks with hook, NSN 4030-01-438-1803. It works on the larger shackles and is easy to install.

Cut the trailer chain's last link, or remove its removable link. Discard the old hook. Install the new one with the pin and cotter pin that come with it.



...need new slip hooks for trailer safety chains



Trucks...

ALCOHOL KEEPS AIR LINES CLEAN

COLD WEATHER'S COMING, SO I'D BETTER MAKE SURE THE ALCOHOL EVAPORATOR IS FULL!



Cold weather will turn any moisture in your truck's air brake lines into ice, blocking the lines. That leaves you brake-less.

So if your vehicle has an alcohol evaporator to keep moisture out of the air lines, make sure it contains the alcohol it needs to do the job.

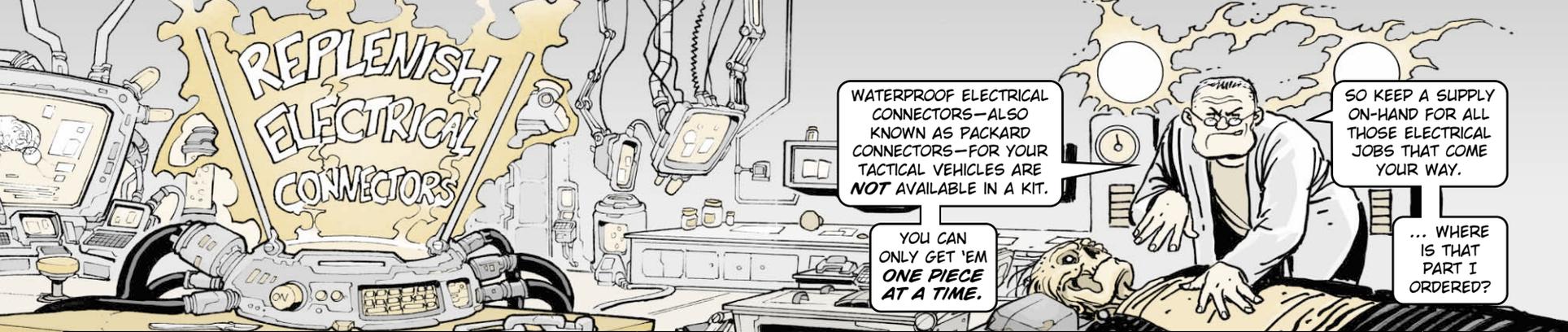
NSN 6810-00-275-6010 gets a 5-gal can of technical methanol. NSN 6810-00-224-8353 gets a 55-gal drum.

Tarp for M1077/ISO Flatrack

The NSN shown for the tarp used on the M1077 and the ISO-compatible palletized flatracks in Figs 1 and 9 of TM 9-3990-206-14&P is wrong. Make a note until the TM is updated that NSN 2540-01-457-0049 brings the correct tarp.

M35A2/A3 Starter Switch

You won't find the 4-prong, spring-back starter switch for M35A2 and M35A3 trucks in paper versions of TM 9-2320-361-20P or TM 9-2320-386-24P. Get the switch with NSN 5930-01-334-2862. The switch is shown as Item 31 of Fig 56 in the May 01 version of TM 9-2320-386-24P on EM 0037.



WATERPROOF ELECTRICAL CONNECTORS—ALSO KNOWN AS PACKARD CONNECTORS—FOR YOUR TACTICAL VEHICLES ARE **NOT** AVAILABLE IN A KIT.

SO KEEP A SUPPLY ON-HAND FOR ALL THOSE ELECTRICAL JOBS THAT COME YOUR WAY.

YOU CAN ONLY GET 'EM **ONE PIECE AT A TIME.**

... WHERE IS THAT PART I ORDERED?

NSN	Description	Quantity
5935-00-900-6281	Adapter, connector, "Y"  1	1
5975-00-660-5962	Cable nipple (male shell for 16 AWG wire)  2	100
5935-00-833-8561	Connector (male shell for 14 AWG wire)  3	1
5935-00-399-6673	Connector (ribbed male shell for 14 AWG wire)  4	1
2590-00-695-9076	Shell, headlight circuit (male shell for 12 AWG wire)  5	1
5935-00-691-5591	Shell, electrical connector (female shell for 16 AWG wire)  6	1
5935-00-572-9180	Connector (female shell for 14 AWG wire)  7	1
5935-00-695-9077	Shell, electrical connector (female shell for 12 AWG wire)  8	1
5999-00-926-3144	Electrical contact for 16 AWG wire  9	1
5999-00-057-2929	Electrical contact for 14 AWG wire  10	1

NSN	Description	Quantity
5999-00-925-6495	Electrical contact for 12 AWG wire  11	1
5940-00-846-5012	Ferrule, electrical connector, (female solder terminal for 12, 14 and 16 AWG wire)  12	5
5940-00-399-6676	Terminal assembly (female crimp terminal for 12, 14 and 16 AWG wire)  13	25/pkg
5310-00-656-0067	Slotted washer for 16 AWG wire  14	100
5310-00-833-8567	Slotted washer for 14 AWG wire  15	100
5310-00-595-7044	Slotted washer for 12 AWG wire  16	100
5310-00-298-8903	Flat washer (terminal retainer for 12 AWG wire)  17	100
5970-00-833-8562	Insulator (plastic insert for 14 and 16 AWG wire)  18	100

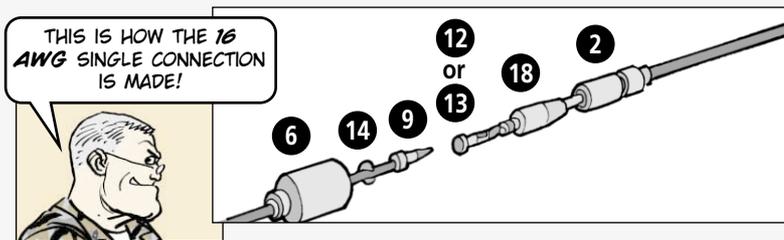
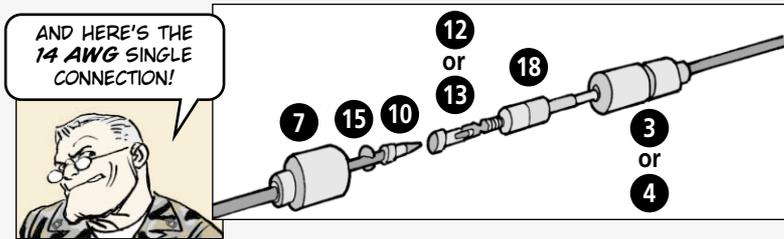
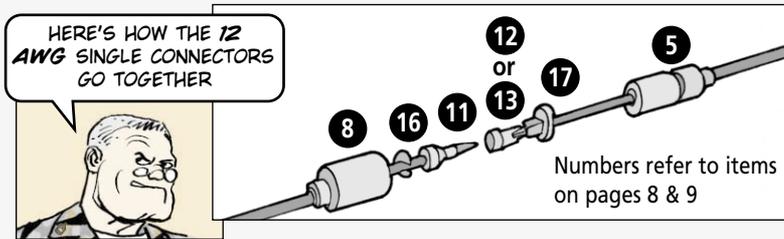


I GOT A DELIVERY HERE FOR DR. VON HALF-MAST!

"AT LAST!"



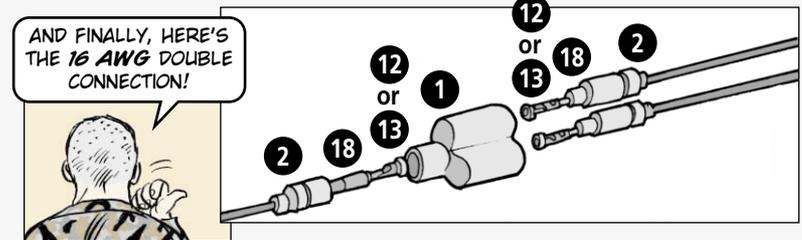
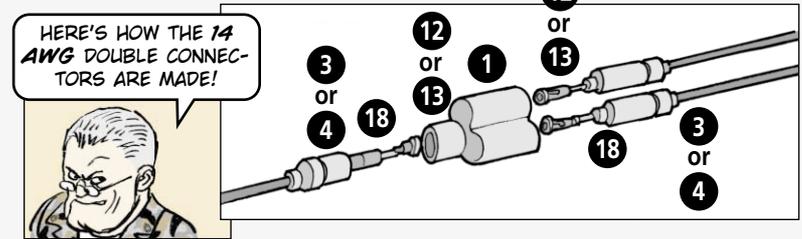
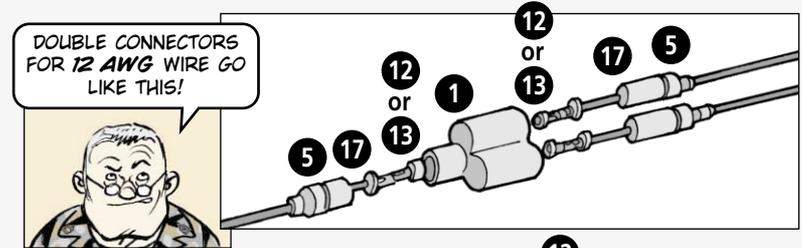
- Match the parts with the wire (12, 14 or 16 AWG wire).
- Use washer, NSN 5310-00-298-8903, instead of plastic sleeve, NSN 5970-00-833-8562, when working with 12 AWG wire.
- Use the two types of male shells (ribbed and plain) to identify the positive (+) and negative (-) hookups on polarized units. For instance, always use ribbed for positive and plain for negative—or vice-versa.
- Never mash down on the rubber shells to get a good connection. You'll just mangle the female connector and make it tougher to get a connection.



- Distinguish between the two types of female connectors—crimp-on and solder. The connector with a solid sleeve gets crimped on the wire. With the other type, you bend the larger tabs around the insulated part of the wire and the smaller tabs around the bare wire. Then add a dab of solder.

You can use either type of connector with 14 or 16 AWG wire. But for 12 AWG wire, the crimped version is better. If you use the solder type, the large tabs can't be used to latch onto the insulation because the small washer must be used. The washer goes between the insulation and the terminal. Peel off the insulation, slip on the washer and add the terminal. Bend over the tabs and solder on the terminal.

- Use a dab of silicone compound, NSN 6850-00-880-7616, to make hookups easier. Put the compound on the male shell before you mate it to the female shell. It'll also help when you disconnect.
- Don't bend connections up and down to separate them. If you can't pull on the wires to separate the connection, try inserting something between the shells—carefully—and pry gently until you can pull the connectors apart.



CONTENTS UNDER PRESSURE?



When was the last time you checked the pressure in your tank's fixed Halon fire extinguishers, crewmen?

If it wasn't before the vehicle's last operation, it's been too long. Low pressure or empty fire bottles won't help much if there's a fire.

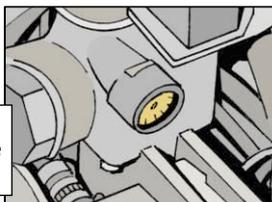
Check the pressure gauge on each of the three extinguishers before every operation. Air temperature where the extinguishers are located has a big effect on bottle pressure, so use this chart for the minimum pressure reading that's allowed:

Temperature (°F)	Minimum Pressure	Temperature (°F)	Minimum Pressure
140	1,100	40	580
120	920	30	550
100	810	20	520
90	760	10	490
80	720	0	470
70	680	-10	430
60	640	-40	390
50	610	-50	360

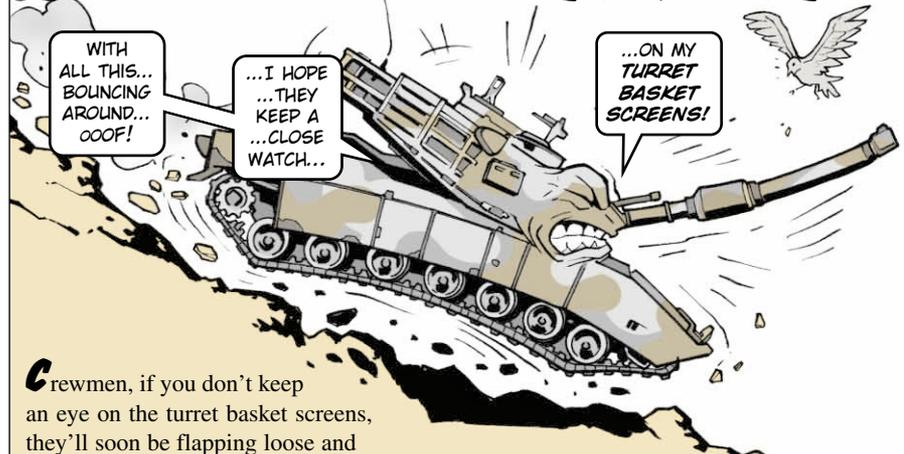
Your tank is NMC if the fire extinguisher pressure gauge reading is less than the required pressure for the temperature.

For more details, check out TACOM Maintenance Advisory Message (MAM) 01- 013.

Eyeball pressure gauge and compare to temperature



STOP FLAGGING SCREENS



Crewmen, if you don't keep an eye on the turret basket screens, they'll soon be flapping loose and tearing up the inside of your tank.

Each screen is held in place with a screw, NSN 5305-01-388-5093, and ball stud, NSN 5307-01-100-8166.

Vibration loosens the screw until it falls out or works the ball stud loose from the friction receptacle on the back of the turret wall bracket.

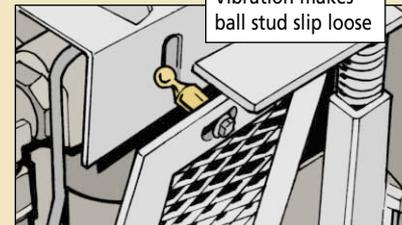
In either case, the top of the screen sags outward. The next time the turret is traversed, the screen snags and rips cables and connectors.

Stop loose screws by applying a little sealing compound, NSN 8030-00-081-2339, to the threads before you tighten them. Also, put a flat washer, NSN 5310-01-389-9681, between the screw and the screen.

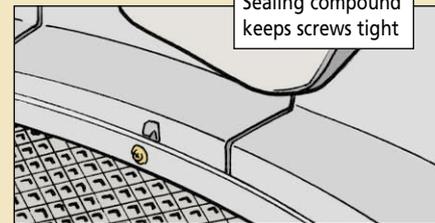
If the ball stud comes loose in its receptacle, use pliers to pinch the two tabs on the friction receptacle back together. That provides enough tension to hold the ball stud in place.

If one of the tabs breaks off, replace the friction receptacle with NSN 5340-01-100-8138.

Vibration makes ball stud slip loose



Sealing compound keeps screws tight



M1-Series Tanks...

HOT ENOUGH FOR YA?

IT'S F-F-FREEZING OUT HERE!

THAT PERSONNEL HEATER'S GONNA FEEL GOOD!

MY EU AND PCU WILL BE GLAD TO SWITCH PLACES WITH YOU.

THEY'RE TOAST!



Tankers, the warm air from your tank's personnel heater feels great during the cold days of winter. But, that warm air's not nearly as good for your tank's electronics unit (EU) and power control unit (PCU).

If the airflow deflector is missing, for instance, all that hot air blows directly onto the EU and PCU. It doesn't take much of that intense heat to burn up both.

So have your mechanic install a replacement deflector if yours is missing. That sends warm air through to the turret while preventing the direct blast of hot air that can knock out the EU and PCU.

The M1A1/A2's deflector is NSN 2805-01-203-2773. NSN 1015-01-155-2713 gets a deflector for the M1/IPM1 tank.

Until the deflector arrives, protect the EU and PCU by running the heater for only 30 minutes at a time. Let it cool off for about 15 minutes between operations.

In extreme cold, when you have to run the heater longer than 30 minutes at a time, turn the main gun over the back deck and elevate it slightly. That keeps hot air from hitting the EU and PCU by turning the heater vent in a different direction.



Hot air will burn up EU and PCU

M1-Series Tanks, M104 Wolverine...

GET STARTED ON RECALL

LOOKS LIKE YOUR STARTER MOTOR COULD HAVE SOME PROBLEMS!



YOU'D BETTER CHECK THE SERIAL NUMBER TO BE SURE!

The Prestolite starter on your tank or Wolverine may need replacing.

When some of the starters were manufactured, Prestolite forgot to apply a thread-locking compound to the solenoid's armature adjustment. They also forgot to install an improved waterproofing gasket on the starter case. Neither fault will impact performance, but the affected starters are being recalled at no cost to the Army.

You can identify recalled starters by their data plate which lists "Arcade, NY" as the point of origin and a serial number between 0040039 and 0041001 with a few exceptions.

For a list of the exceptions and details on how to turn in the starters, see TACOM Maintenance Advisory Message 01-015 or call TACOM at DSN 786- 7395/7820 or (810) 574-7395/7820.

M2A2/M3A2 Bradleys...

Bilge Pumps Are Still Important



TELL ME AGAIN,...

...WHO WAS S'POSED TO CHECK MY BILGE PUMP?

Dear Half-Mast,
Because of the added weight from armor improvements, we haven't been allowed to swim the M2A2/M3A2 Bradley since 1996. But TM 9-2350-284-10-1 still lists a defective bilge pump as a deadlining item. If we're not swimming the vehicles, what difference does it make whether the bilge pump works or not?
SSG W.F.B.

Dear Sergeant W.F.B.,
Good question!
While it's true that none of the M2/M3-series Bradleys are allowed to swim, they can still ford water up to 42 inches deep. That's why a non-op bilge pump is still an NMC fault.
Half-Mast

HALT HATCH HEADACHES



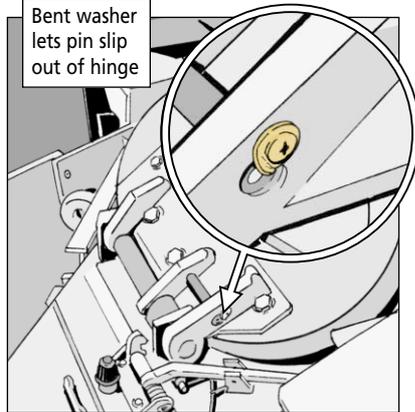
The gunner's hatch on your up armored Bradley weighs almost 100 pounds. All that keeps it from giving you a serious headache is a small washer.

The gunner's hatch up armor modification kit uses a washer, NSN 5310-01-274-3255, to secure the hinge bracket hold-up pin. The washer is a bit flimsy, so it often gets bent or broken off.

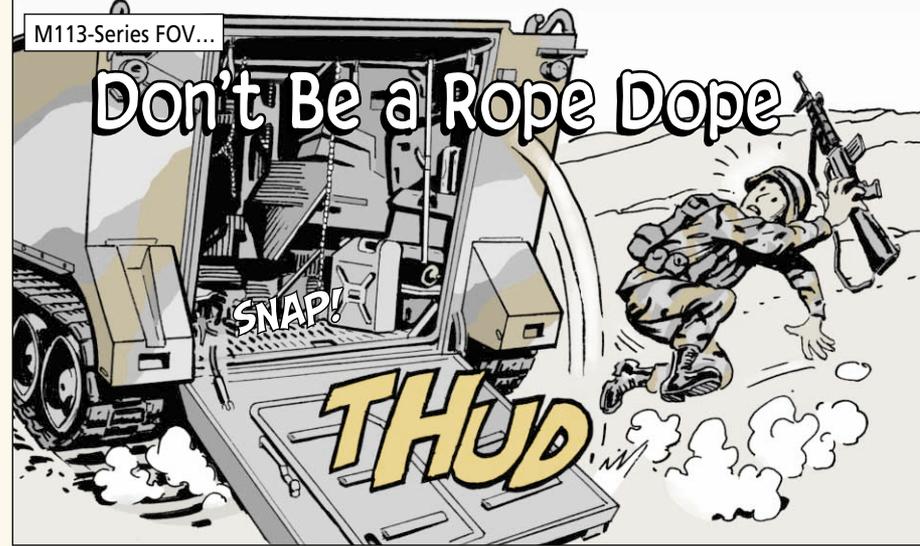
A bent or lost washer lets the hold-up pin, NSN 5315-01-440-0269, slip out of the hinge. With nothing to grab, the latch mechanism slips loose and—CRASH—down comes the hatch.

eyeball that washer right now. If it's bent, broken or missing, replace it with a new and improved washer, NSN 5310-01-460-8846. The new washer is twice as thick as the old one.

Unless the hinge screw, NSN 5305-00-988-1723, is damaged during removal, you can reuse it to secure the new washer.



Don't Be a Rope Dope



Crewmen, the wire rope on your M113-series carrier's ramp may look tough, but corrosion can turn it into a real softy. No rope means the ramp can't be raised or lowered and your vehicle is NMC.

When the ramp is completely raised, the wire rope retracts under the floor plates. Any dirty water there soaks the rope and washes away its lubricating grease. Dirt and moisture cling to the wire strands and corrosion gets the foothold it needs.

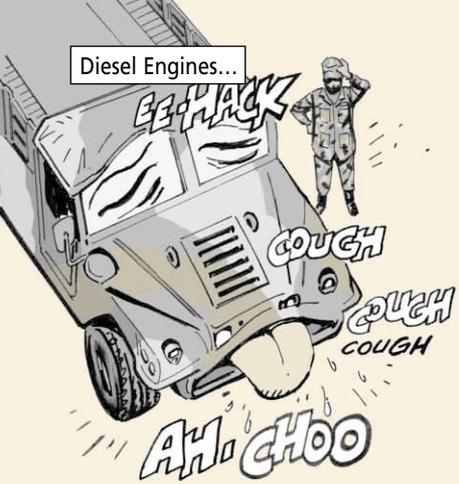
You can prevent that by giving the wire rope a good cleaning every 6 months or 1,500 miles. In areas of high humidity, you may need to clean the rope more often. Here's what to do:

1. Coat the rope with clean OE/HDO oil and scrub it with a nylon brush. The brush loosens dirt particles that get embedded between the wire strands.
2. Wipe off the excess oil with a clean cloth. Make sure you wipe in a spiraling motion, following the direction of the strands. That wipes away all of the loose dirt. Wear leather gloves to protect your hands from frayed wire, too.
3. Give the rope a light coat of CW-II grease, NSN 9150-00-530-6814.

Of course, it's also a good idea to keep the hull under the floor plates clean.



Diesel Engines...

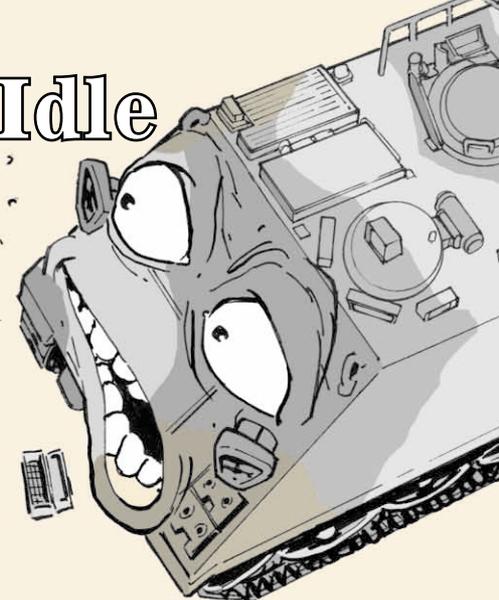


Stay Away from Low Idle



UGH!
I HOPE
THAT'S NOT
CATCHING

IT WON'T
BE IF OUR
DRIVERS
AVOID
LOW IDLE!



The engine on your combat or tactical vehicle doesn't like to run at low idle. It likes it even less when you start it up and shut it down time and again before it has a chance to heat up.

Diesel engines work best at normal operating temperatures. They run smoother and last longer.

Here's what happens when you don't let the engine get to its normal operating temperature:

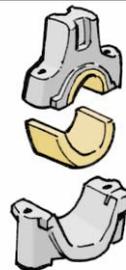
- Fuel and oil are not completely burned in the combustion chambers, leaving carbon deposits on the valve stems. Carbon hinders valve operation, resulting in burned valves and bent push rods.

- Condensation from normal engine breathing isn't boiled off. Instead, it and any unburned fuel slip around the pistons and into the crankcase. There they mix with oil to make acid and sludge.

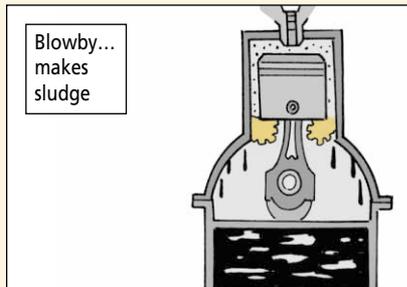
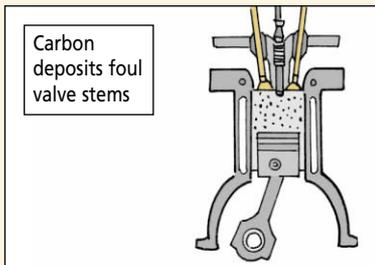
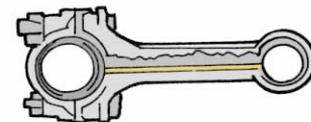
- Acid and sludge break down engine oil. Poor lubrication burns up bearings.

- Sludge also blocks lube passages. Oil can't get through to do its job, so heat and friction tear up your engine.

Heat
scorches
bearings



Sludge blocks
lube passages



High-speed idling prevents this kind of trouble. Always idle between 1,000 and 1,200 rpm. But don't idle the engine longer than 10 minutes to warm it up in the morning.

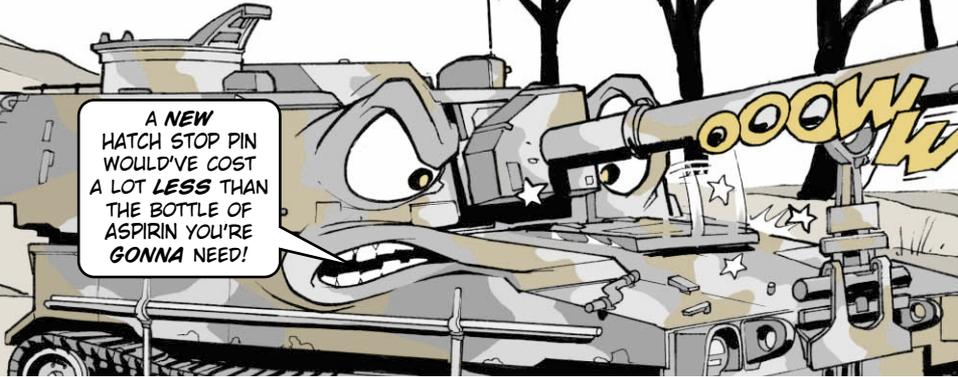
KEEP YOUR
IDLE HIGH AND
AVOID STOP-
AND-START
DRIVING.



I WISH
MY DRIVER
HAD KNOWN
THAT!



Treat Hatch Pin with TLC



Easy does it when you swing open the driver's hatch on your Paladin. If you use more force than necessary, you'll snap the small pin that holds the driver's hatch stop in place.

That snapped pin makes your howitzer NMC because the hatch can no longer be secured. Item 77 of the PMCS table in TM 9-2350-314-10 gives the NMC low-down.

Don't be tempted to use an unauthorized field fix to keep the hatch stop in operation, either. If you're one of those drivers who thinks you can substitute a cotter pin or nail to keep your Paladin off the NMC list, think again.

Those quick fixes aren't made for the job. If they last long enough, the hatch stop, NSN 2510-00-774-6550, is damaged and has to be replaced. And if the quick fix gives out...well, let's just say you don't want your head in the way of an unsecured hatch.

So take it easy on the original pins by opening the hatch gently. Then, if one of the pins gets lost or broken, replace it with NSN 5315-00-584-1731.

Some units keep a few extra pins on hand. They don't cost much—less than \$1 each—and you'll be able to keep your howitzer FMC by immediately replacing any broken pins.



PREVENT CRUSHED TAILLIGHTS



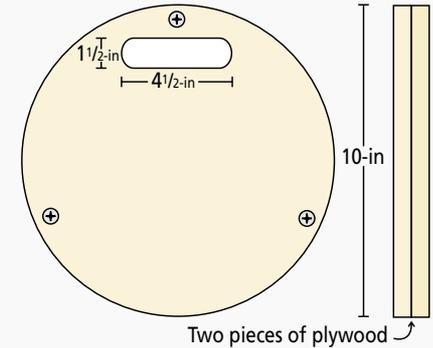
Dear Editor,

M119A1 howitzer taillight assemblies, NSN 6220-01-369-2920, get crushed when they're stored in the back of a HMMWV.

When it's time to reinstall them on your howitzer, they're badly mangled and often don't work. Nobody's happy when a ruined assembly has to be replaced. They cost more than \$670!

We protect our taillight assemblies with a wooden plate. Here's how to make and use it:

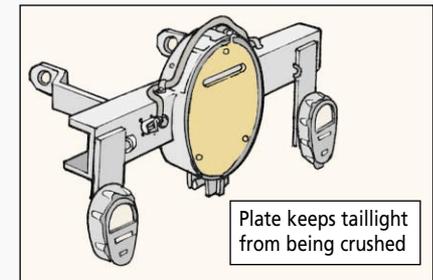
1. Cut out two 10-in diameter circles from a sheet of 3/4-in thick plywood.
2. Secure one circle on top of the other using three 1-in long drywall screws.
3. Cut an oval hole in the top of the circles to use as a handle. The hole should be approximately 4 1/2 inches long by 1 1/2 inches wide.
4. Slip the plate inside the opening of the taillight assembly. Tighten the taillight clamp screws to hold the plate securely in place.



The plate strengthens the taillight assembly and keeps it from being bent or crushed.

CW2 James A. McDonald
2/15th FA
Ft Drum, NY

From the desk of the Editor
Protecting makes a whole lot more sense than replacing. Good idea!



SEE...

Torsion Boot Look-out



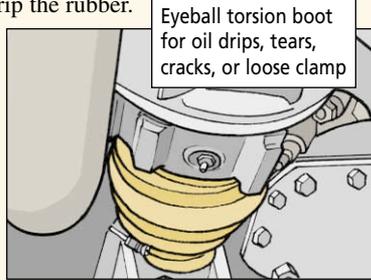
The excavator's front and rear driveshaft torsion boots are out of sight—under the vehicle—protecting the driveshaft's U-joints.

Over time, dry rot weakens the boots. Add to that a beating the boots take during off-road use. Rocks, brush and dirt tear and rip the rubber.

Once the boots tear, U-joints are exposed to dirt and water. That causes 'em to rust. Driveshaft failure is the end result.

So you operators need to crawl under the vehicle and eyeball the boots for tears, cracks and loose clamps. Do this once a month.

Report any problems to your mechanic.



Eyeball torsion boot for oil drips, tears, cracks, or loose clamp

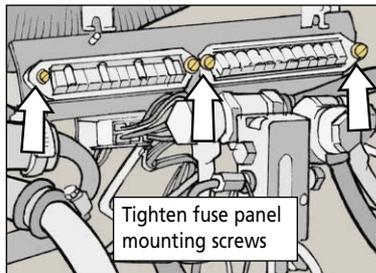
CURE FOR A LOOSE FUSE

While doing the before-operation PMCS on your small emplacement excavator, you get no instrument readings on the vehicle's dash. You try the windshield wipers and turn signals...nothing seems to work.

What gives?

The first thing to check is the fuse panel under the excavator's hood. Vibration may have loosened the panel. A loose panel shakes fuses loose. That stops current flow to wipers, turn signals and the dash, among other places.

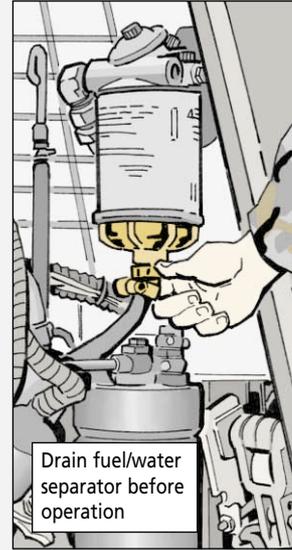
Stamp out loose fuses by tightening the fuse panel's mounting screws. That keeps the panel and fuses from shaking loose.



Tighten fuse panel mounting screws

22-Ton Crane...

WATER IN, WATER OUT!



Drain fuel/water separator before operation

Cool nights and warm days cause condensation to form in the 22-ton crane's fuel tank. That means you operators have to drain the fuel/water separator before each day's operation.

Not draining the separator will leave water and crud in the vehicle's fuel system. Then the engine runs rough...or not at all.

Open the separator—located behind the curb-side engine access door—by turning its drain cock counterclockwise. Store drained fuel in an approved hazardous waste container. Never dump it down a drain or let it run on the ground from the separator's drain hose.

If the fuel is clear, you're OK. If the fuel doesn't run clear after you've drained half a pint or so, close the valve and report it to your mechanic.

Also, make sure your mechanic replaces the fuel filter at semiannual service time.

130G Grader...

Centershift Pin Needs Exercise



Without weekly exercise, rust will "freeze" centershift pin in place

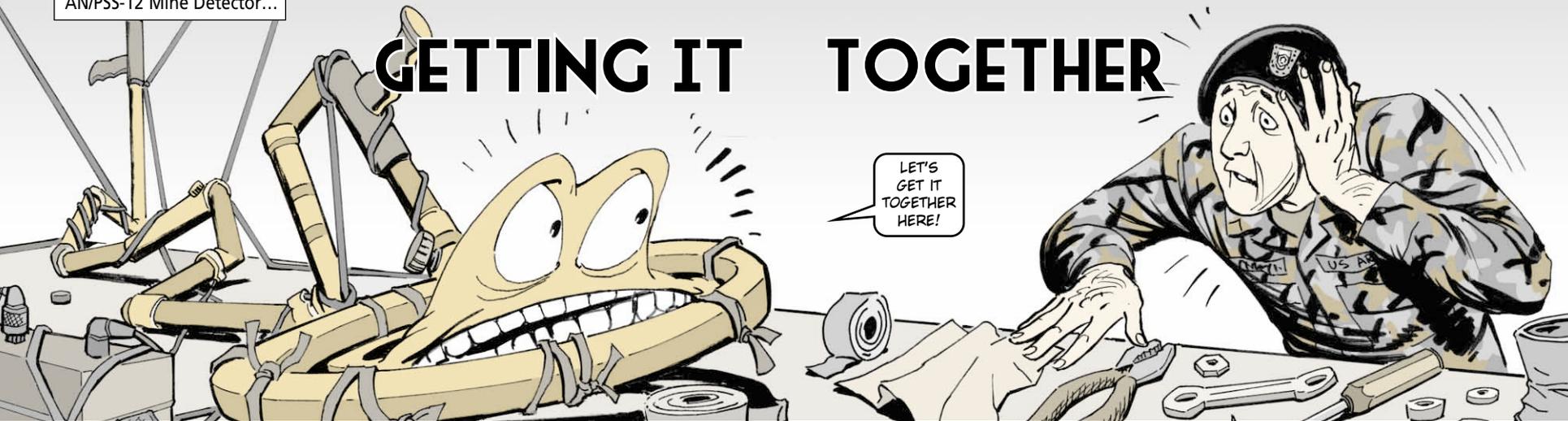
The 130G grader's centershift guide pin rusts in place when the vehicle sits too long without exercise.

When that happens, you can't move the pin in and out of the centershift hole to position the grader's blade. Your grader's sloping operations just came to a screeching halt!

It just can't be said often enough—exercise your grader! Pull the centershift pin from the centershift hole **at least once a week**. That way rust won't "freeze" the pin in place.

Pages 2-8 and 2-9 of TM 5-3805-261-10 have the lowdown on the centershift pin.

GETTING IT TOGETHER

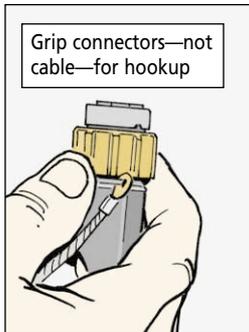


CORRECT ASSEMBLY AND DISASSEMBLY CAN MAKE ALL THE DIFFERENCE IN HOW WELL YOUR AN/PSS-12 MINE DETECTOR DETECTS.



Assembly

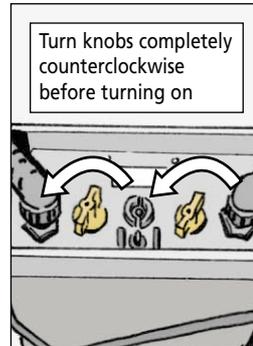
It doesn't take much twisting of the earphones and search head cables to break wiring. So, when you hook up or detach the two cables, twist and bend them as little as possible. Grip the cable connector, not the cable, for hookup or disassembly.



Remember that both cables have to be hooked up before you get a reading on the electronics unit (EU). If only one cable is connected, nothing happens. Operators then often think that something's wrong with the EU or batteries.



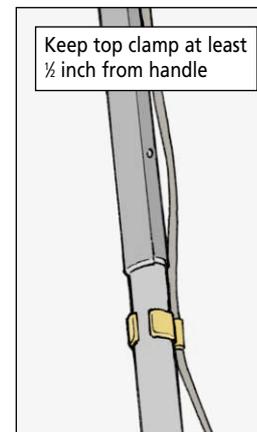
Save your hearing by turning the LOUDNESS and SENSITIVITY knobs completely counterclockwise before putting on the headphones. That lets you adjust the signal's volume while you're listening and keeps you from suffering a blow to your eardrums.



Once you have the pole to the right length, don't force the locking knob too tight. That eventually strips the knob and makes it impossible to lock the pole in place. Snug is tight enough.



Keep the pole's top cable clamp away from the aluminum handle. If the clamp touches the aluminum, it can cause signal interference. Put the clamp no closer than 1/2 inch from the handle.





HEY!
YOU'VE GOT
TO GET IT
TOGETHER
TO TAKE ME
APART!

Disassembly

Don't forget to remove the batteries when you're done detecting for at least two days. That way if they leak, they don't damage the EU. But before you open the battery compartment, disconnect the headphone and search head cables. If you don't, you can break the cables' wiring when you push off the compartment lid.

Don't wrap the search head cable around the pole. That makes the cable more likely to be stretched and its wiring broken. Coil the cable around your hand and then store the coil in the compartment for the head.



Disconnect cables before opening battery compartment lid



Store coiled cable in search head compartment

A PROPERLY
PACKED
DETECTOR
WILL BE
READY NEXT
TIME!



A CHRISTMAS TALE

T'WAS CHRISTMAS EVE,
COLD AND WINTRY. SNOW
BLANKETED THE GROUND
AND PILED UP AGAINST THE
MOTOR POOL BUILDING...



INSIDE, THE AIR WAS
ALMOST AS COLD...

CAN'T WE
PLEASE GET A
SPACE HEATER,
SGT SCROOGE?
MY FINGERS—

NO CHANCE, SPC
CRATCHETT. SPACE
HEATERS ARE
EXPENSIVE!



AND YOUR LEAVE IS
CANCELLED. THERE'S
GOING TO BE AN
INSPECTION ON
27 DECEMBER. YOUR
WORK'S GOT TO
BE DONE.

B-BUT, SIR...
IT'S CHRISTMAS.
MY FAMILY—



OH, ALL RIGHT.
TAKE TOMORROW
OFF... BUT BE EARLY
THE NEXT DAY.



I'M GOING HOME, CRATCHETT. I THINK I ATE TOO MANY OF THE COOK'S GREASY MEATBALLS.

MAKE SURE YOU GET YOUR WORK DONE BEFORE YOU LEAVE.

STOMACH'S RUMBLING. I'LL FEEL BETTER AFTER A GOOD NIGHT'S SLEEP.



IMAGINE THAT CRATCHETT... WANTING TO GO ON LEAVE? ...NO SENSE OF DUTY.



I SHOULD'VE **INSISTED** THAT HE WORK TOMORROW. CHRISTMAS. BAH! HUMBUG! I MUST BE GETTING **SOFT!**



OH, WELL... YAWN... HE'LL BE WORKING ALL NIGHT TONIGHT.

IN MINUTES, SGT SCROOGE FALLS ASLEEP...



LISTEN TO ME, SGT SCROOGE... CHANGE YOUR MISERLY WAYS AND MAYBE YOU CAN AVOID **MY FATE.**



YOU'RE GOING TO BE VISITED BY **THREE SPIRITS.** DO AS THEY TELL YOU... FOR YOUR OWN SAKE.



D-DID I... JUST **IMAGINE** THAT? A... BAD **DREAM?**



IT'S THOSE **MEATBALLS** DOING A JOB ON ME. I-I'VE GOT TO GET BACK TO SLEEP.



SERGEANT SCROOGE FITFULLY NODS OFF...

TAP TAP

...ONLY TO BE WAKENED BY A SOFT TAP ON HIS SHOULDER.



...ONLY TO BE AWAKENED BY A SENSE OF DREAD!

WHA-? WH- WHO'S THERE?

SGT MARLEY! B-BUT... YOU'RE-

DEAD, SGT SCROOGE. YES, BUT WE WERE BUDDIES, SO-

I'VE COME TO **WARN** YOU... SO THAT YOU WON'T HAVE TO WEAR THESE CHAINS OF **BAD PM.**



HELLO, SGT SCROOGE. I'M THE **GHOST OF CHRISTMAS PAST.**

DO YOU REMEMBER THE CHRISTMAS PRESENT YOU GOT WHEN YOU WERE TEN YEARS OLD?



"OF **COURSE** YOU DO! IT WAS A LITTLE RED PEDAL CAR. YOU **LOVED** IT, DIDN'T YOU?"



"BUT YOU NEVER TOOK CARE OF IT. NEVER OILED THE WHEELS OR TIGHTENED LOOSE NUTS. YOU LET IT RUST."





THIS M113 CARRIER HAS GONE 2000 MILES SINCE ITS ROADWHEELS WERE LUBED.

THEY SHOULD'VE BEEN LUBED 500 MILES AGO!



BUT... SGT SCROOGE TOLD ME NOT TO LUBE THEM. NOW I'VE GOT TO REPLACE THAT BURNED-OUT ROADWHEEL ARM. TALK ABOUT MONEY!



THAT'S ENOUGH, SPIRIT! CAN I GO HOME NOW?



NOT YET. THERE IS ONE MORE SPIRIT YOU MUST MEET...



...IT IS THE GHOST OF CHRISTMAS FUTURE.

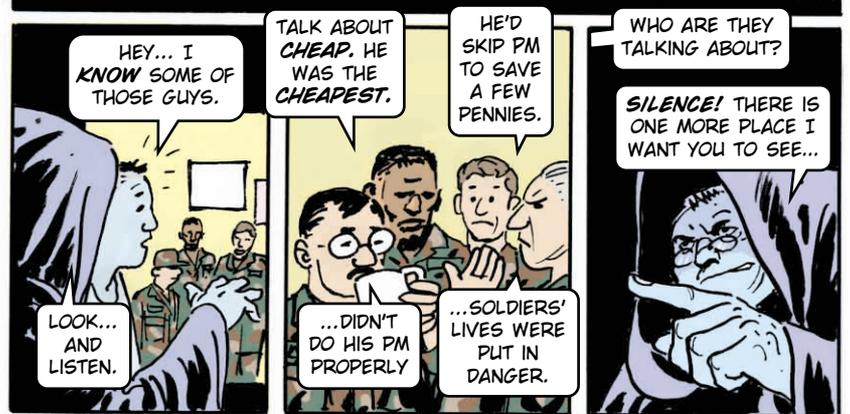


ARE YOU READY FOR YOUR JOURNEY?

N-NO... BUT... I GUESS THAT'S NOT GOING TO CHANGE YOUR MIND.

WHERE ARE YOU TAKING ME?

TO THAT OTHER MOTOR POOL BELOW.



HEY... I KNOW SOME OF THOSE GUYS.

TALK ABOUT CHEAP. HE WAS THE CHEAPEST.

HE'D SKIP PM TO SAVE A FEW PENNIES.

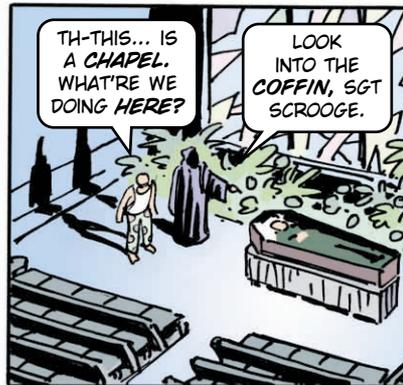
WHO ARE THEY TALKING ABOUT?

SILENCE! THERE IS ONE MORE PLACE I WANT YOU TO SEE...

LOOK... AND LISTEN.

...DIDN'T DO HIS PM PROPERLY

...SOLDIERS' LIVES WERE PUT IN DANGER.



TH-THIS... IS A CHAPEL. WHAT'RE WE DOING HERE?

LOOK INTO THE COFFIN, SGT SCROOGE.



OMIGOSH! IT'S... ME!

HOW DID I DIE, SPIRIT?



...AN AVOIDABLE ACCIDENT! YOU WERE TOO CHEAP TO PAY FOR PM, AND IT COST YOU YOUR LIFE!

OH, SPIRIT! I HAVE LEARNED THE ERROR OF MY WAYS! PLEASE GIVE ME ONE MORE CHANCE TO DO PM THE RIGHT WAY!



MOMENTS LATER...

WHA-? WHERE AM I?
I'M BACK IN MY OWN BED...

AND IT'S STILL CHRISTMAS EVE.



I'VE GOT TO GET BACK TO THE MOTOR POOL.



CRATCHETT. YOU STILL HERE? WHY AREN'T YOU HOME WITH YOUR FAMILY?

BUT... YOU TOLD ME—



FORGET IT! AND FROM NOW ON WE DO PM THE RIGHT WAY! NO MORE SHORTCUTS!

ALL PM WILL BE BY THE BOOK WITH THE PROPER TOOLS!

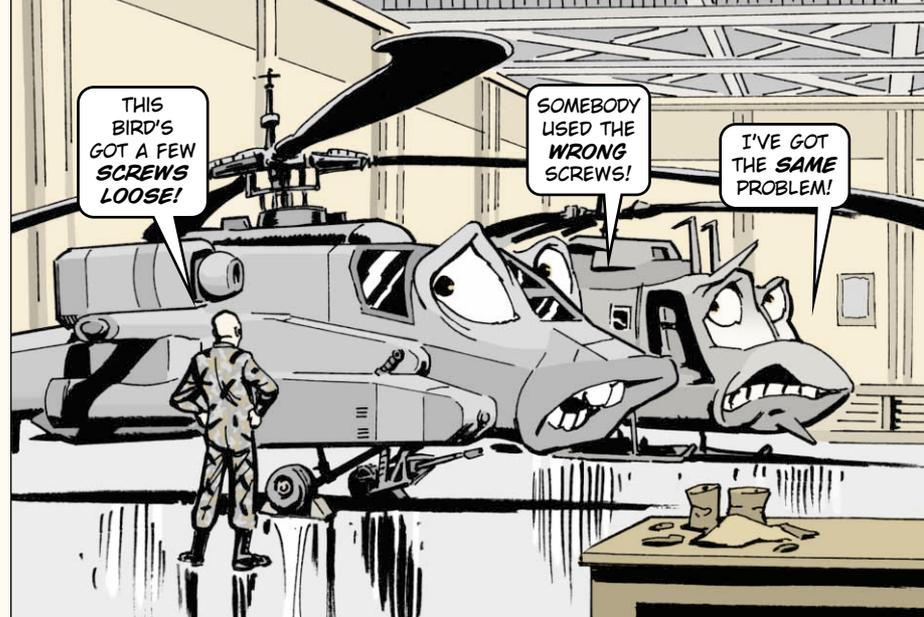


OH... AND I'LL BE GETTING US THAT SPACE HEATER!

MERRY CHRISTMAS TO ONE AND ALL!

All Aircraft...

ONE SIZE FITS ALL?



THIS BIRD'S GOT A FEW SCREWS LOOSE!

SOMEBODY USED THE WRONG SCREWS!

I'VE GOT THE SAME PROBLEM!

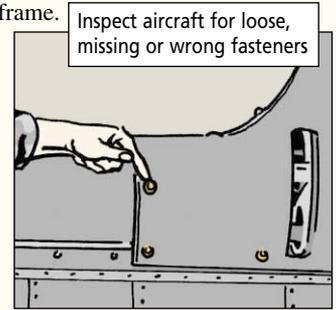
“One size fits all” is true for many baseball caps. But it does not work for aircraft hardware such as the screws, turnlock fasteners, nuts and bolts used to secure the access doors, panels and covers on your bird’s airframe.

A slightly longer bolt, fastener or screw may fit the hole, but the head sticks out a bit too far. It’ll snag your skin or rip your uniform. Worse yet, it could vibrate loose and fall out during flight. Then your bird’s doors, covers and panels could fall off.

Good PM calls for using the right part in the right place. Always. Never guess.

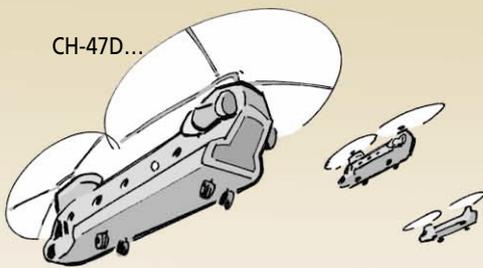
When you’re doing aircraft pre-flight checks, eyeball your aircraft for missing hardware.

If any hardware needs replacing, check your -23P manual and use the size and type of screw or turnlock fastener called for.



Inspect aircraft for loose, missing or wrong fasteners

PASS THE JAM TEST

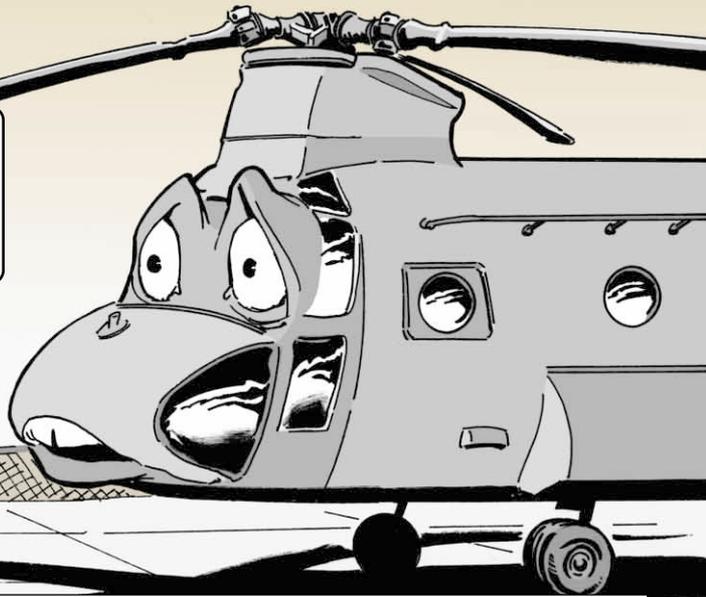


SERGEANT, WE'RE READY TO TAKE OFF!

DID YOU DO THE ILCA JAM TEST?

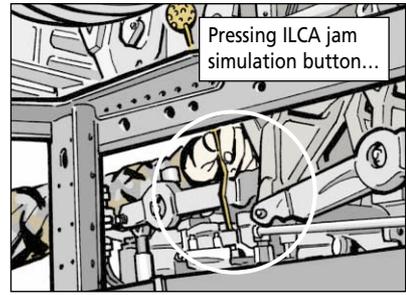
YEAH... PRESS MY ILCA BUTTON IN THE FLIGHT CONTROL CLOSET BEFORE YOU GO, BUDDY.

BUT, LAY OFF THE HEAVY METAL!

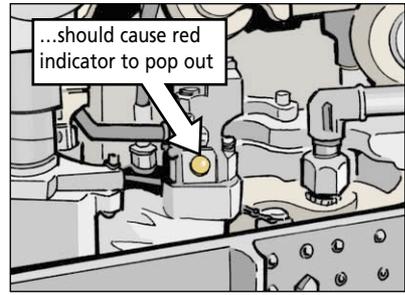


Jamming is for basketball, repairers, not for the ILCA jam simulation buttons on your Chinook.

The ILCA jam simulation buttons are pushed prior to the first flight of each day to make sure the red jam indicators are working. In operation, the red indicator button pops out automatically when there's a problem in the flight control closet.



Pressing ILCA jam simulation button...



...should cause red indicator to pop out

The ILCA jam simulator buttons are hard to get at, so some folks even use a screwdriver or other hard metal tool to press them down.

Hard metal or sharp tools damages the plunger and seals of the jam simulation buttons or mushrooms them out of their close installed tolerance, making them stick.

If an ILCA jam simulation button gets damaged and can't be reset, AVIM has to replace the entire actuator assembly.

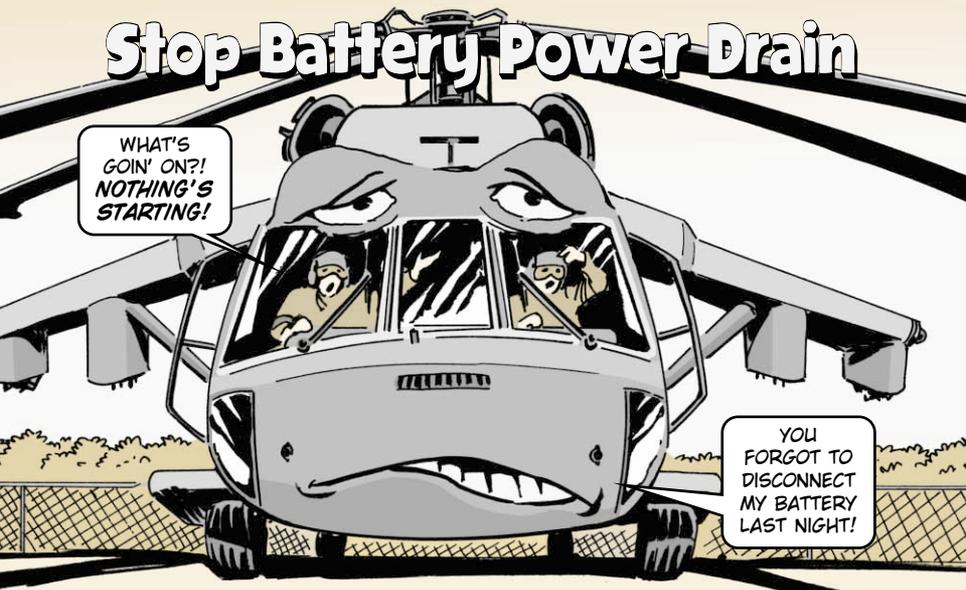
Instead of using hard metal or a screwdriver, press the buttons with a tool of wood or soft metal—like aluminum or brass.

One unit made a tool out of scrap aluminum. It has a golf ball for a grip and is flattened on the other end. Always wipe the ILCA jam simulation buttons with a clean cloth before you press them. That keeps dirt from getting into the assembly.

CHECK OUT TASK 7-104.1 OF TM 55-1520-240-23-6 FOR DETAILS IF YOUR BIRD FAILS THE JAM TEST.



Stop Battery Power Drain

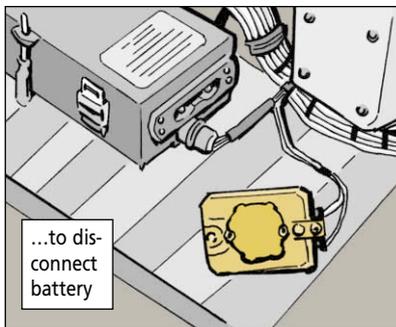
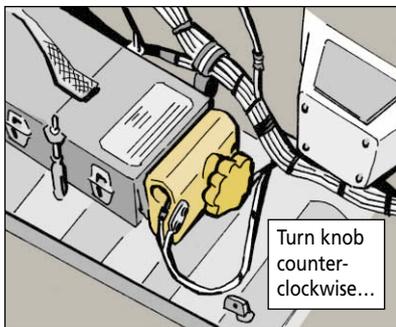


Crew chiefs, keep your Black Hawk's NiCad battery going and going and going by disconnecting it when you don't need it.

If you forget to turn off the cockpit utility lights, the battery discharges. Then there won't be enough power to start the auxiliary power unit's electronic sequence unit.

So save your bird's battery by disconnecting it at the end of each work day. Simply turn the battery connector counterclockwise.

You'll save a lot of headaches and avoid battery power drain.



A new MWO replaces the NiCad battery with a sealed lead-acid battery on all Black Hawks. It's wired differently to keep the lights from draining the battery.

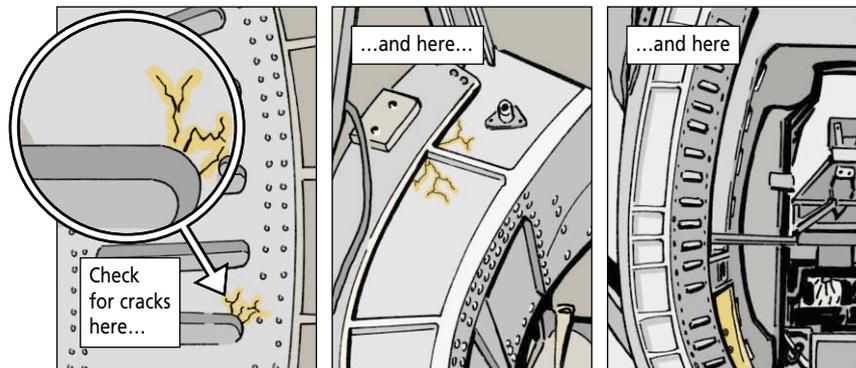
SIGNS OF AGING



Much like some people, the Army's workhorse Black Hawk fleet shows age by developing structural cracks.

But the condition of the airframe affects how your bird flies. So, in addition to your daily pre-flight checks, give your bird an extra once-over for cracks.

Eyeball the right side bulkhead behind the gunner's window, the inboard panel behind the main landing gear struts, and the frames for the right and left side sliding doors.



Go easy when closing those sliding doors, too. Slamming them too hard can create more cracks.

If you find any cracks, fix 'em according to your TM's procedures.

DON'T LEAVE OUTRIGGERS OUT



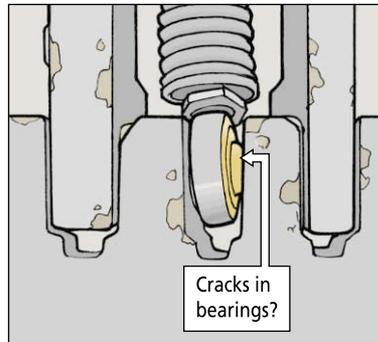
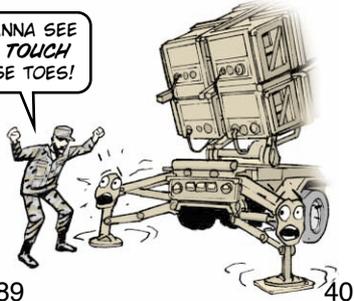
You know how good you'd be as a soldier if your feet failed you. It's the same with your Patriot. If its outriggers are in bad shape, your missile battery is in bad shape for firing.

Here's how to keep your Patriot system patriotic:

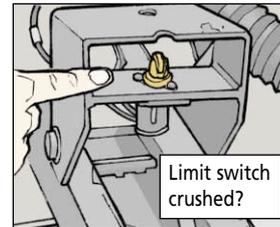
- **Exercise the outriggers.** If they don't get at least weekly exercise, the actuator oil seals dry and leak. The ball screws also need to move in and out to get a coating of lube. If the screws rust and freeze in place, you can't move the outrigger. The outriggers are covered by Item 10 in TM 9-2330-357-14&P's PMCS.

- **Look for cracks.** If the chrome bearings or the welded areas of the outriggers have even hairline cracks, they should be reported. The outrigger could be unsafe.

I WANNA SEE YOU TOUCH THOSE TOES!



- **Check the limit switches.** If a switch is crushed, the outrigger won't get the signal to stop raising. That can break its strut welds.



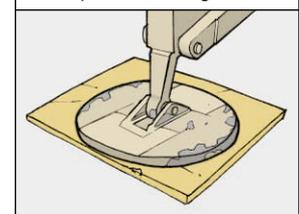
But even if the switches look OK, watch the outriggers when they're raised or lowered. If the pads snag, the welds can be broken.

Bumping a pad with your foot or hand often frees it. If that doesn't work, reverse direction. No change? Tell your repairman. Cleaning sand or ice away from the pads' pivots helps prevent snagging.



- **Don't let the pads freeze to the ground.** If that happens, the actuator can be broken when you try to raise the outrigger. Prevent pad freezing by putting plywood or three sandbags in a triangle underneath the pad. If a pad does freeze, free it by pounding a sledgehammer on the ground around the edge of the pad.

Put plywood or sandbags under pad in freezing weather



HARNESSING YOUR MASK

MPH...PHRM..
OOMP...MMPA-
PRMPH...PHRM
FRUMFF..OOMP.

CONNIE SAYS
"TO HARNESS YOUR
M40 OR M42 MASK'S
PROTECTIVE POWERS,
PAY ATTENTION TO
THE HARNESS."



It's easy to put the harness on inside out. Then the crosspiece rubs against your head, which makes for very uncomfortable training. The crosspiece should be put on so that its "T" is on top and its seams face out.

When you adjust the harness straps the first time, tighten them until they're snug. Once the straps are snug, loosen only the cheek straps when you take off your mask. Then you will need to tighten only the cheek straps when you put on the mask again, which will save time during timed drills and chemical alerts.



Carriers & Skins

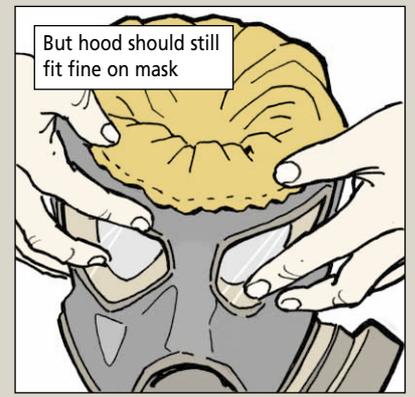
THIS SOLDIER
NEEDS HELP
WITH MY NEW
**SECOND
SKIN!**

Dear Half-Mast,
Our M40/M42-series mask carriers often tear where the straps attach. Is there anything we can do about this?
We also are getting new second skins that don't have a lip to keep the hood in place. Will this cause a problem?

SPC S. D.



Dear Specialist S. D.,
There's nothing you can do about the straps except be careful. The headshed, however, has improved the carrier and tearing should be much less of a problem in the future. The new carriers were put into the supply system late last year, so the next carriers you get should be the improved version.
The original second skin that had the lip was made for the Army only. The new skin is used by all services and doesn't have the lip. But if you install the hood like it shows in Para 3-7 in TM 3-4240-346-10 and stow the mask like it shows in Para 2-16 (M40A1) and 2-17 (M42A2), the hood should stay in place.
Half-Mast



POWER CABLE POINTS

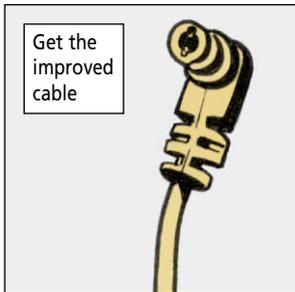


Using the external power cable NSN 6150-01-375-8661, is a great way to tap vehicle power and avoid the use of batteries to operate your AN/PSN-11 precision lightweight GPS receiver (PLGR). But you need to know a couple of things about this cable.

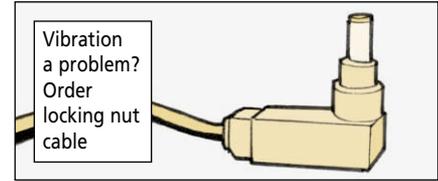
The power cable has an in-line fuse that is designed to blow when something shorts the power circuit. The fuse can only blow one time to protect your PLGR. You need to replace it right away but you also need to answer the question: "Why did the line short and the fuse blow in the first place?"

The electrical short usually results from metal-to-metal contact of the center conductor when the cable is loose, not attached to the PLGR or when a cable slips out of place due to heavy vibration. In either case, metal-to-metal contact of the center conductor shorts the line and blows the fuse.

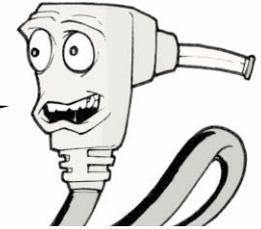
Start by checking out your external power cable. There have been some slight design variations since the PLGR external power cable was first introduced in 1993. Even though all the cables in field use have the same NSN, they are not exactly alike. On some cables the center conductor (the positive wire) is flush instead of being recessed like the original. This makes it easy for the center conductor to make metal-to-metal contact when not connected to the PLGR. Since the power cable is still "hot", when it makes metal-to-metal contact, the fuse will blow. Without corrective action, the short may eventually melt the power cable!



If you replace the power cable, carefully trace the markings to identify the positive line (with fuse) and the ground line. And if you get a flush connector tip, it's a good idea to put a flap of tape over the tip when you remove the PLGR to avoid metal-to-metal contact.



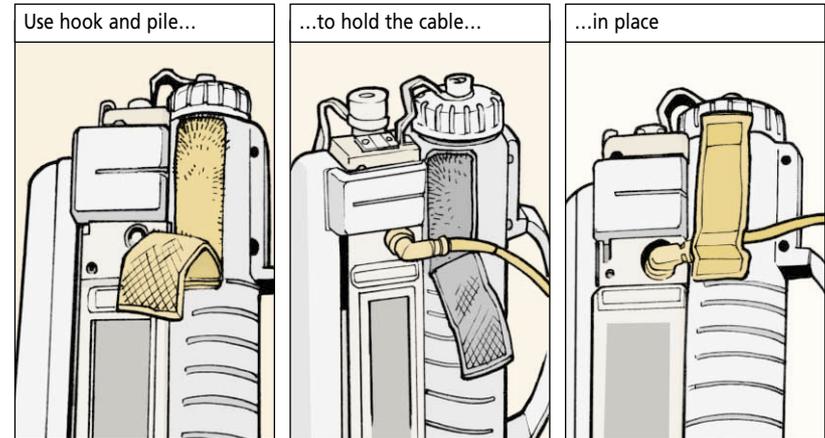
THE GOOD NEWS IS THAT REQUESTS FOR THIS CABLE, NSN 6150-01-375-8661, WILL NOW BE FILLED WITH AN IMPROVED VERSION THAT HAS A RECESSED POSITIVE CONDUCTOR AND BETTER GROUND MARKINGS!



The vibration problem can be addressed by ordering a cable with a locking knurled nut, NSN 6150-01-469-6066 to make a positive connection that stays connected.

One complication with the knurled nut solution is that if you are also using the SINGARS ground plate there isn't quite enough thread left for the nut to grip. In that case use some self-adhesive hook-and-pile tape to keep the plug in place.

Just run a strip of 1-in hook-and-pile tape, NSN 8315-01-445-8812, from the primary battery cap to the start of the handle right beside the J2/J3/J4 connector covers.



When you connect the power cable, fasten it down with the hook and pile. You can also try putting a piece of high-density foam or other non-metallic material between the PLGR mount and the back of the PLGR to firmly hold connectors in place.

It Demands Careful Cleaning



A night crawl through muck and mud can make a thorough cleaning job a must for your night vision goggles, AN/PVS-7B or -7D.

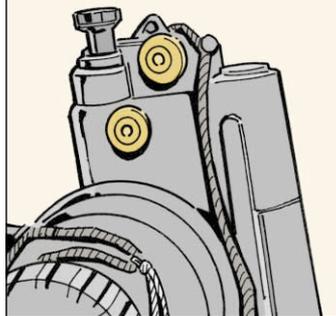
TM 11-5855-262-10-2 gives you the good word on careful cleaning, but there is an area on the face of the goggles that the TM doesn't tell you **how** to clean. That area is where the high light detector and infrared source are located.

These two indented sensors catch and hold dirt like a spider's web catches a fly. They need to be cleaned, but here is where our story has a twist. The problem is not that you aren't cleaning them. The problem is you're cleaning them too hard!

The only thing holding these sensors in place is a rubber seal. When you're cleaning in the indented areas, you're pushing the sensors out of their seals and into the goggle body. That makes your NVG NMC!

So never use a cleaning swab, stick or other pointed device to clean this area. It's just too easy to push the sensors out of their seal.

Go easy on high-light detector and infrared sensors

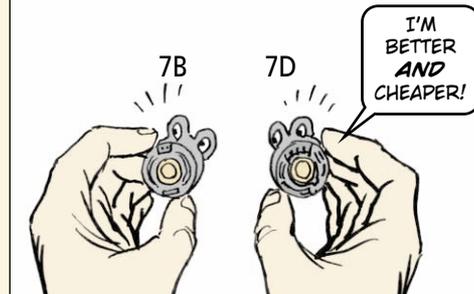


Instead, clean away loose dirt with lens brush, NSN 7920-00-205-0565. For more stubborn dirt, use your finger covered with water-dampened lens tissue, NSN 6640-00-240-5851, and lightly clean the area. Start on the surface of the sensor and pull toward you instead of pushing in.



If a sensor does pop out of its seal and into the goggle body, turn the goggles in.

A BETTER, CHEAPER TUBE



Keeping an NSN list of hard-to-find parts is usually a good idea. But a good idea can sometimes lead to a bad result. Here's an example:

For the AN/PVS-7B night vision goggles (NVG), you probably have NSN 5855-01-328-3540 listed for the image intensifier tube. On your list for the AN/PVS-7D, you probably have NSN 5855-01-422-4720 listed.

But these two tubes are interchangeable. And, not only is the 7D a better tube, it's cheaper! If you order it to put on your 7B's, you'll save your unit \$400 on each tube.

If you check the FED LOG-AMDF, you'll see that the 7B NSN is in a "Use Until Exhausted" posture. Then you are to order the 7D tube. But here's the catch—the 7B NSN has already been dropped from TM 11-5855-262-23&P-2! Only the 7D tube is listed. That means you can order it now for your 7Bs as well as your 7Ds.

NSN 5855-01-328-3540

NSN 5855-01-422-4720

7B



7D



7D is cheaper

REPAIRS MADE EASIER



THINK THIS TEXT FIX WILL WORK?

SOMEHOW I DON'T THINK SO!

Tentage repair kit, NSN 8340-00-262-5767, has been updated. It now comes with 3 yards of green coated-polyester fabric and 3 yards of tan coated-polyester fabric to repair polyester tents that are now in the system.

The cotton duck material that was originally furnished with the repair kit is no longer available.

IF YOU DON'T NEED THE ENTIRE KIT, YOU CAN GET THE FABRIC SEPARATELY...



NSN 8305-	Fabric
01-238-0342	Polyester green
01-238-8076	Polyester tan

YOU CAN ALSO GET A ROLL OF GREEN REPAIR TAPE FOR SMALL REPAIRS ON POLYESTER OR COTTON DUCK TENTS AND TARPS WITH NSN 8340-01-423-6231.

IT'S 3 INCHES WIDE AND 50 FEET LONG.

IT HAS PRESSURE-SENSITIVE ADHESIVE ON THE BACK TO MAKE FOR EASY APPLICATION.



HERE'S HOW TO USE GREEN REPAIR TAPE!

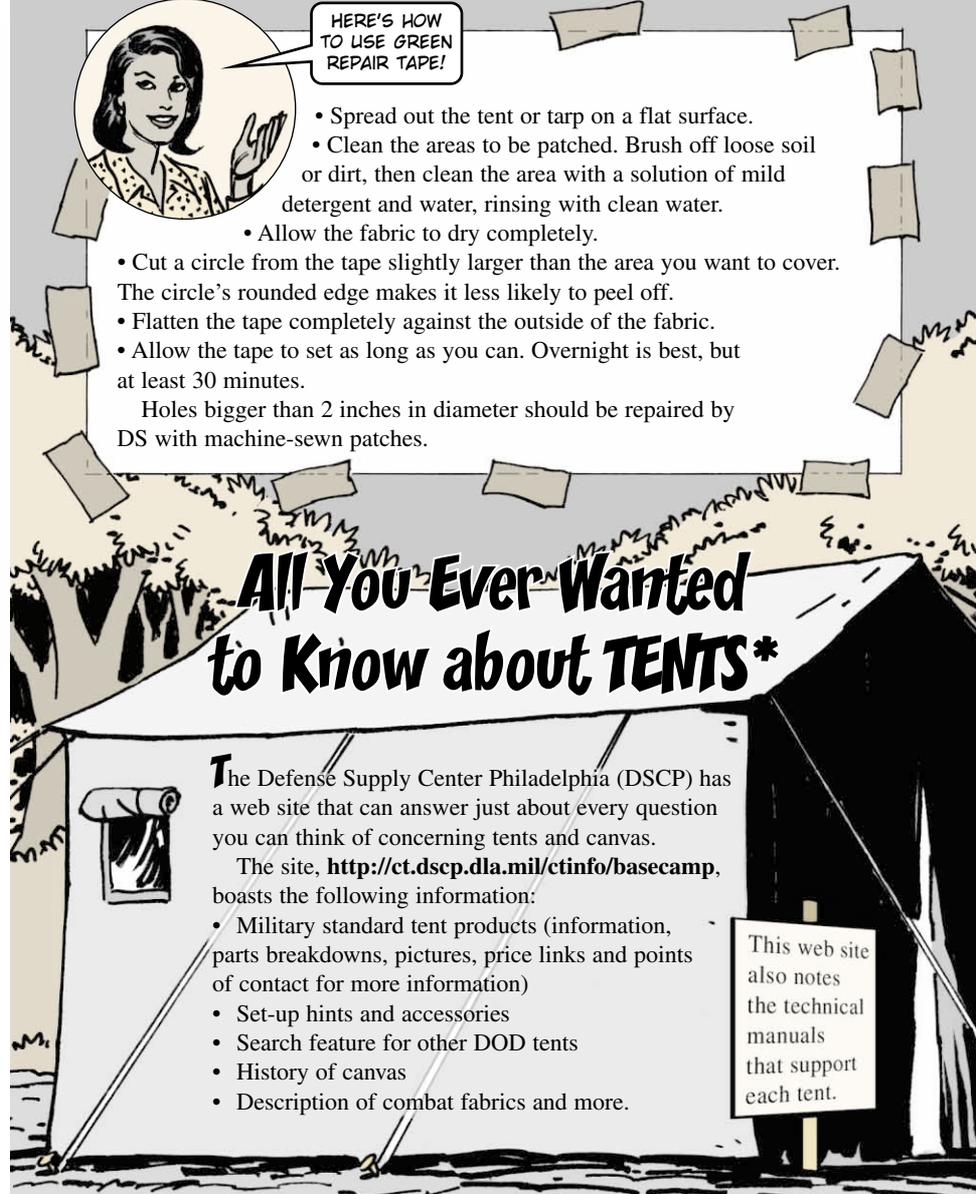


- Spread out the tent or tarp on a flat surface.
- Clean the areas to be patched. Brush off loose soil or dirt, then clean the area with a solution of mild detergent and water, rinsing with clean water.
- Allow the fabric to dry completely.

- Cut a circle from the tape slightly larger than the area you want to cover. The circle's rounded edge makes it less likely to peel off.
- Flatten the tape completely against the outside of the fabric.
- Allow the tape to set as long as you can. Overnight is best, but at least 30 minutes.

Holes bigger than 2 inches in diameter should be repaired by DS with machine-sewn patches.

All You Ever Wanted to Know about TENTS*



The Defense Supply Center Philadelphia (DSCP) has a web site that can answer just about every question you can think of concerning tents and canvas.

The site, <http://ct.dscpl.dla.mil/ctinfo/basecamp>, boasts the following information:

- Military standard tent products (information, parts breakdowns, pictures, price links and points of contact for more information)
- Set-up hints and accessories
- Search feature for other DOD tents
- History of canvas
- Description of combat fabrics and more.

This web site also notes the technical manuals that support each tent.

Hearing Protection...

LISTEN UP...



IF YOU STILL CAN



IF YOU WORK IN A NOISY AREA, OR THE TM SAYS TO WEAR HEARING PROTECTION WHEN OPERATING YOUR EQUIPMENT, **DO IT.**

EVEN NOISE THAT DOESN'T SEEM LOUD CAN CAUSE DAMAGE.

What to Wear

Sometimes you're told what type of hearing protection to use. If not, what you choose depends on the noise level.

Ear canal caps can be used only when the noise level is under 95 decibels. Get preformed, reusable ear canal caps with these NSNs:

NSN	Qty
6515-00-392-0726	1 ea
6515-01-149-4133	10 ea
6515-01-059-1821	12 ea

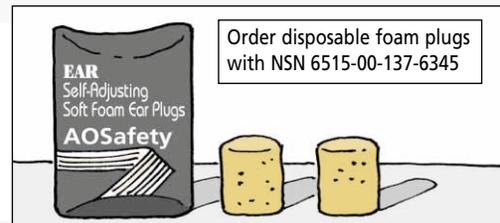


Ear canal caps have headbands

All caps come with headbands and must be ordered through your medical folks and individually fitted before they can be worn.

Foam earplugs and ear muffs are effective from 85-103 decibels if properly worn and maintained. Get 200 pairs of disposable foam plugs with NSN 6515-00-137-6345. The plugs are individually wrapped and come in a box with an adhesive back. That makes it easy to stick the box to a wall or door at the entrance to your work area for visitors who may not have hearing protection.

According to an Army Policy letter dated 13 Jun 01, all foam earplug procurements **must** come from DLA. Credit card holders **should not** purchase the earplugs locally.

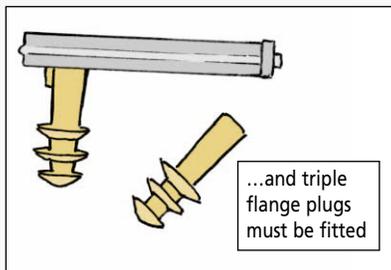
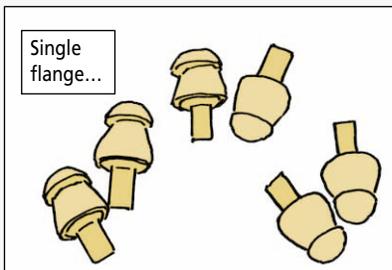


Order disposable foam plugs with NSN 6515-00-137-6345



Reusable ear muffs are considered safety items and can be purchased through regular channels. Get a pair of muffs with NSN 4240-00-022-2946.

For noise exposures from 103-108 decibels, your medical clinic will need to order and fit you with single-flange or triple-flange earplugs that must be worn in combination with noise muffs or a noise-attenuating helmet. The earplugs come in a handy carrying case. Get an extra 20 carrying cases with NSN 6515-01-100-1674.



Noise exposure above 108 decibels also requires double hearing protection along with consideration of exposure time. Check with your local medical folks for details.

If you're not sure of the noise level in your work area, get the safety office to test it. That's the only way to be completely sure you're wearing the right hearing protection.



Warn Others

CAUTION
HEARING PROTECTION REQUIRED

Once your ears are protected, make sure others are aware of the need to safeguard their hearing.

Post some of these 10x14-in warning signs in your work area:

Legend	NSN 9905-01-
CAUTION Hearing Protection Required	100-8205
CAUTION Hearing Protection Required In This Area	031-1247
CAUTION High Noise Area Wear Earplugs	122-1140



Tools...

HOMEMADE 'HOOK' FOR TIGHT SPOTS

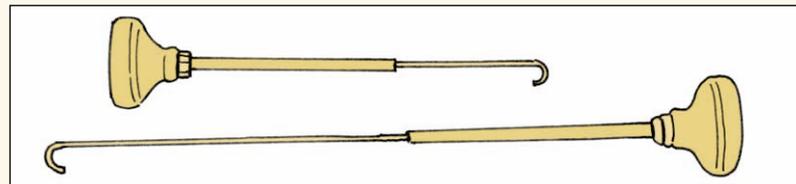


Installing small springs, retrieving hard-to-reach parts and hooking cables and wires are often very frustrating maintenance tasks.

Mostly, the problem is that you can't easily get an arm and hand close to the work area. But Louis Gorenc, an equipment specialist at Tank-automotive and Armaments Command, solved this problem when he was a heavy equipment mechanic. He came up with a simple tool for working in tight spots.

Get your hands on a worn-out or broken power take-off (PTO) cable. One from a dump truck or other vehicle that uses a PTO will do.

Cut the 1/2-in steel wire (cable core) off at the length you want and form a small diameter hook at the end.

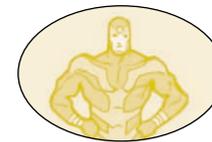


Make several tools of various lengths for close work and a longer one for really hard-to-reach places.

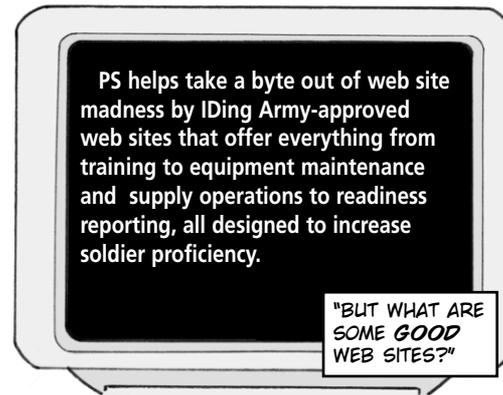
ON-LINE WARRIOR



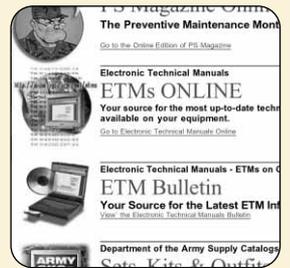
BYTES



ON-LINE WARRIOR
MAKING THE INTERNET
SAFE FOR THE US ARMY!



<http://www.logsa.army.mil/pubs.htm>



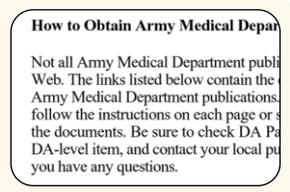
This web site gets you TMs, TBs, LO, MWOs or SBs. Just click on the ETM site and follow the instructions. For supply catalogs (SC), click on the Sets, Kits and Outfits On-line and follow its instructions. Get a password by clicking on the System Access Request (**SAR**) link.

<http://www.usapa.army.mil>



This site is home to ARs, DA Pams and Cirrs, HQDA general orders, memos and letters, multi-service pubs and DA, OF and SF forms. It provides for on-line pubs ordering and initial distribution establishment and offers an automated DA Form 2028 for changes to admin pubs.

<http://www.armymedicine.army.mil/armymed/publications/publications.htm>



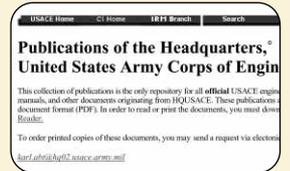
This site gets you medical unique TMs, FM's and the SB 8-75-series pubs.

<http://www.adtdl.army.mil/atdls.htm>



This site gets you Army doctrine and training pubs such as FM's, TC's, soldier training packages (STPs), school listings, resident and non-resident courses and correspondence courses.

<http://www.usace.army.mil/usace-docs>



This site gets you TM 5-series, engineer manuals, books, directives and any other pub unique to the Corps of Engineers.



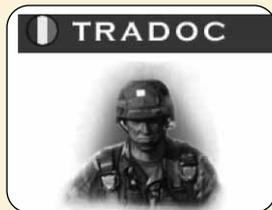
PS MORE →

OTHER WEB SITES OF INTEREST INCLUDE...



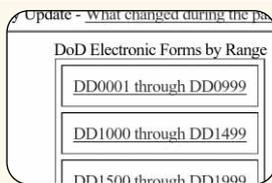
<http://www.tradoc.army.mil/schools.htm>

The US Army Training and Doctrine Command (TRADOC) offers a web site where you can access all the MOS-producing schools. Just go to the web-site and click on the school of your choice.



<http://web1.whs.osd.mil/icdhome/DDEFORMS.htm>

If you need a DoD form, you need to go to the DoD web site.



<http://www.logsa.army.mil/psmag/psonline.htm>

If you are looking for an article you read in PS Magazine, just go to our web site and check out our on-line issues—from PS 446 (Jan 90) to the present. You'll need Acrobat 4.0, or higher, to access PS issues/articles.

Don't have it?

Not to worry, 'cause you can download a free copy at our web site.



NOW YOU CAN BE AN ON-LINE WARRIOR, TOO!



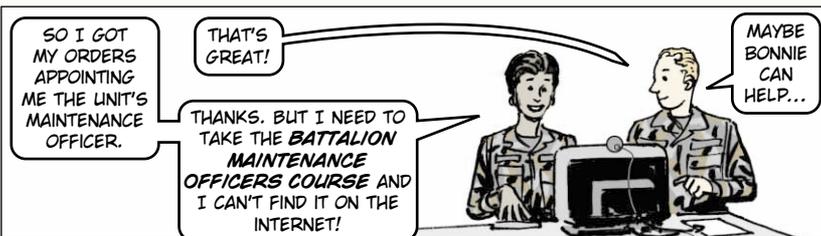
THANKS!

PS END

PS 589

Training...

BMOC Replaced By MLC



The course includes 10 lessons on maintenance management, the Unit Level Logistics System-Ground (ULLS-G) database maintenance, ULLS-G system security, Sage Database Inquiry (SDI), daily preventive maintenance checks and services, scheduled maintenance, Class IX procedures, prescribed load list management, licensing and dispatch program and Army Materiel Status System (AMSS).

Go to the MLC web site at <http://147.238.160.40/mlc/index.htm> and either read about the sub-courses or click on the [Course Overview and Orientation](#). Then, enroll by clicking on the [Enroll](#) or [Take Exam](#) button which is located in the upper left side of every MLC web page.



IF YOU STILL HAVE QUESTIONS, CONTACT THE MLC ASSISTANCE FOLKS AT DSN 464-8119/2509, (502) 624-8119/2509, OR E-MAIL mlc@16cav.knox.army.mil

59

DEC 01

POST SCRIPTS

PS 589
DEC 01

Bradley Webbing Strap

Use NSN 5340-00-479-2947 to order a new webbing strap for the squad compartment stowage rack on your M2A2/M3A2 Bradley. The NSN listed as Item 42 in Fig 227 of TM 9-2350-284-24P-1 is wrong.

FMTV C6 Transfer Bolt

The C6 transfer bolt, NSN 5306-01-480-3141, used on basic model FMTVs should be installed without any lube applied to the bolt head or threads. The right dry torque for the bolt is 38-45 lb-ft.

FMTV Towing Caution

Do not remove the driveshafts when flat towing (all wheels on the ground) basic or A1 model FMTVs as long as you **don't go more than 100 miles or faster than 35 mph**. Flat towing farther or faster will damage the transmission. Lift towing requires driveshaft removal for the axle contacting the ground. **Note:** To prevent driveshaft failure, use new end cap bolts, NSN 5305-01-479-7857, when reattaching any FMTV driveshaft. The new bolt replaces the one currently found in FTMV parts manuals.

M88A1 SEATS

The driver's and mechanic's seats, NSN 2540-00-657-9725, for the M88A1 recovery vehicle will no longer be available once stocks are depleted. The replacement seat comes as a two-piece set. NSN 2540-00-740-4668 gets the seat and NSN 2540-01-473-4063 brings the cushion. Make a note until the items are added to Fig 232 of TM 9-2350-256-24P-1.

M915A1 FIFTH WHEEL

Use NSN 2510-01-143-1218 to get the tractor truck's fifth wheel assembly. The part number for Item 6 in Fig 114 of TM 9-2320-283-24P has changed to FW2535-505956.

M992A2 OIL COOLER

Item 7 in Fig 298A of TM 9-2350-293-24P lists the wrong part number for the M992A2 ammo carrier's oil cooler. The correct part number is B50-5577. That crosses to NSN 2930-01-456-2586 on the FED LOG-AMDF. Make a note until the TM is updated.

MK 19 TOOL FOR ARMORERS

MWO 9-1010-230-50-1 changes the MK 19 machine gun's fixed secondary drive lever to an adjustable lever. The lever is adjusted with a tool, NSN 1005-01-467-9435, that is being sent free to units now. Armorers and direct support maintenance will receive one tool per unit. You can use the tool now to check for correct feed slide adjustment of the fixed secondary drive lever. Instructions on how to check both levers come with the tool. Support fixes the fixed lever, but you can adjust the adjustable lever with the tool.

M35A3 OIL PRESSURE TRANSMITTER

Use NSN 6620-00-993-5546 to request the oil pressure transmitter for the 2 1/2-ton extended service program (ESP) truck. The parts info shown for Item 6 in Fig 54 of TM 9-2320-386-24P (Jan 96) is wrong.

HEMTT PINTLE ASSEMBLY

Order NSN 2540-01-475-9206 to get the HEMTT's pintle assembly. The NSN shown for Item 1 in Fig 239 of TM 9-2320-279-24P-1 is wrong.

8V71T Engine Compression Tester

Use NSN 4910-01-266-2110 to get the cylinder compression tester for the 8V71T engine on the M109-series SP howitzer, M992A2 ammo carrier and M578 recovery vehicle. NSN 4910-00-870-6283 listed for Item 2 in Fig 67 of TM 9-2815-202-24P gets the tester for the 6V53 engine. Make a note until the TM is updated.

M149 Water Faucet

Use NSN 4510-01-433-0396 to get a faucet made to dispense potable water from your M149-series water trailer. The stock number shown for Item 1 of Fig 28 in TM 9-2330-267-14&P brings a faucet that cannot be used for potable water. Make a note until your TM is updated.

PLS Transports Wheeled Vehicles

You can now transport light wheeled vehicles such as the HMMWV and the 4K forklift on the palletized load system (PLS). MTMCTEA Pam 55-20, *Tiedown Handbook for Truck Movements*, has the center of gravity info. Blocking and tiedown procedures are found in MTMCTEA Pam 55-19, *Tiedown Handbook for Rail Movements*. View both of these pams at <http://www.tea.army.mil>.

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