



**THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY**

TB 43-PS-629, 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.

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PS

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MONTHLY

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Approved for  
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OOPS!

JIMMY OF THE  
JUNGLE NEEDS  
TO LEARN  
ABOUT PM!  
SEE PAGE 27.



K. JOE  
RUBEN

GULF TRAILER SALES



# WHAT IS THE COST OF OTS BUYING?

WHAT WILL OTS EQUIPMENT COST YOU IN SAFETY, DURABILITY AND REPAIR PARTS AVAILABILITY?

Purchasing items outside of normal acquisition channels to meet equipment needs presents users with hidden costs. Buying off-the-shelf (OTS) equipment may meet short-term needs but increase long-term maintenance problems.

When items are purchased OTS outside of acquisition channels, no reliable info exists about how well the equipment will perform under military conditions. Repair parts are not provisioned, no Army TM is provided, there are no NSNs, no FED LOG listing, and commodity commands may not support the equipment.

When OTS equipment breaks down, maintenance may not have the tools needed to make repairs. Injuries are risked as mechanics try to make do. Soldiers may be jeopardized when patchwork repairs fail at the worst time in the worst place. Obtaining repair parts can be difficult and costly.

Plus, buying OTS equipment increases the burden of leadership by requiring increased attention to safety, loading plans, and POL requirements among others.



WHAT IF THERE ARE NO OTHER MEANS OF MEETING MISSION REQUIREMENTS THAN TO PURCHASE OTS?

BEFORE YOU BUY, CONSIDER THAT OTS MAY...

- increase the burden of leadership by increasing safety risks,
- take money away from repair and maintenance of MTOE/TDA equipment,
- introduce maintenance difficulties, and create repair parts supply chain problems.



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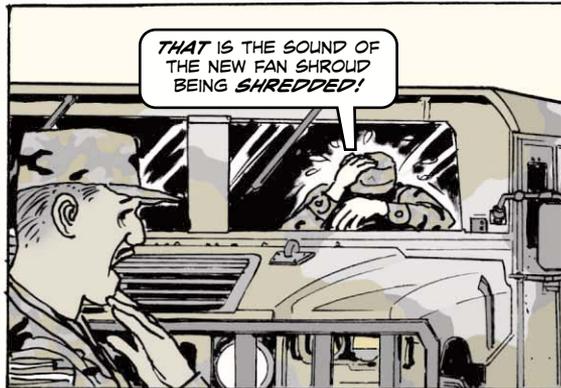
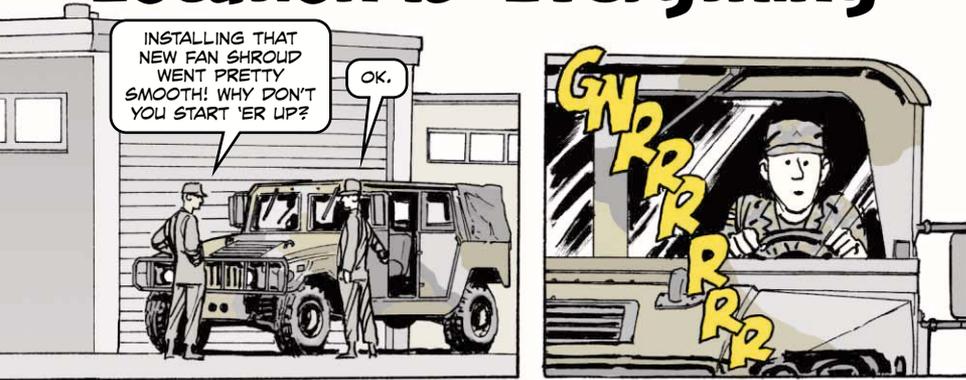
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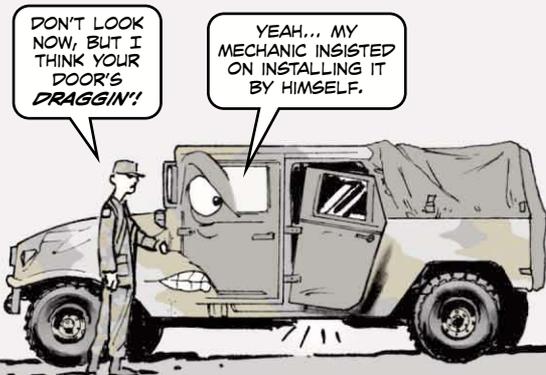
**PETER J. SCHOOMAKER**  
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# Location Is Everything



# DO AWAY WITH DRAGGIN' DOORS



**M**echanics, how the HMMWV's fan shroud holds up has a lot to do with how well it's installed. You can't just bolt it in place and expect it to come back in one piece.

You need to properly adjust the fan shroud to ensure there's enough clearance between it and the fan blades. Otherwise, the blades hit and crack it during operation. You may even shatter a fan blade.

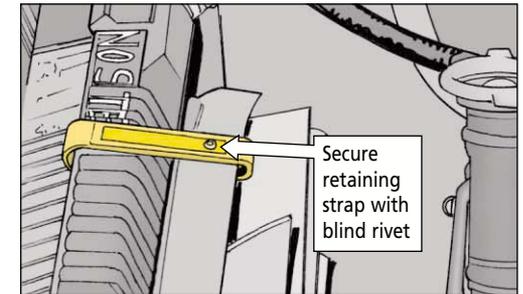
Closely follow the installation instructions that start on Page 3-110 of TM 9-2320-280-20-2 to install the shroud properly.

## Don't Forget Strap

After the shroud is properly positioned, don't forget to attach the radiator retaining strap, NSN 5340-01-251-0724. It secures the top of the shroud to the radiator.

Without it, the shroud moves around and hits the fan blades. Once again you have a damaged shroud.

Just lock the strap in place with a blind rivet, NSN 5320-01-023-2529, using the blind riveter from the organizational maintenance tool kit.



## Replace or Repair?

If the shroud does have minor damage, you can repair it using the fiberglass repair kit, NSN 2090-00-372-6064. Cracks and breaks that you can fix without removing the shroud are considered minor. Major damage means you'll have to replace the shroud.

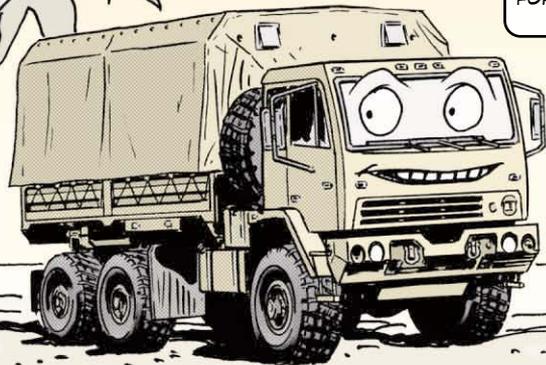
**A** mechanic who tries to install a new rear soft door on a HMMWV by himself has a lot in common with one-armed paper hangers. Mainly, he doesn't have enough hands to do the job right!

It's nearly impossible to tighten the hinges while keeping the door aligned so that the latch will work when you're finished.

Your best bet is to get a second person to lend a hand. Have your helper hold the door so the latch lines up. Then, reach in through the opened window of the door and tighten the hinges.



# Oil Check Done Right



HERE'S A **HOT PM TIP** TO KEEP MY TRANSMISSION IN GOOD SHAPE FOR HOT WEATHER DRIVING!

Operators, stay on the level when it comes to an accurate check on your FMTV's transmission oil level—and use the right oil.

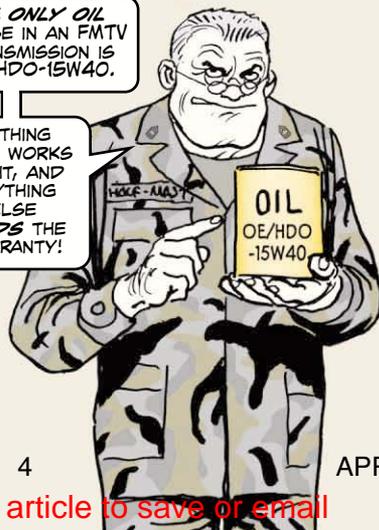
The check must be made after operations, under the following conditions:

- the transmission oil at operating temperature (160°F to 230°F). By the way, this is an AFTER check in the -10 TM's PMCS.
- the engine running
- the transmission in neutral
- the truck parked on a level surface.

The oil level should be between the HOT ADD and HOT FULL lines. Add oil as necessary if the level is below HOT ADD. If it's above HOT FULL, call in your mechanic.

THE **ONLY OIL** TO USE IN AN FMTV TRANSMISSION IS OE/HDO-15W40.

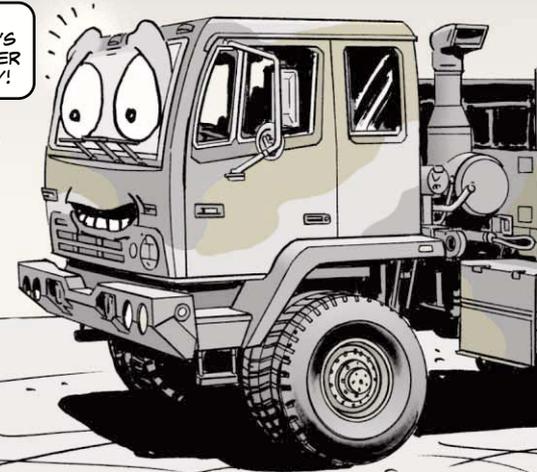
NOTHING ELSE WORKS RIGHT, AND ANYTHING ELSE **VOIDS THE WARRANTY!**



# FMTV Input Seal Warranty

HMMM... LOOKS LIKE WE'LL HAVE TO REPLACE YOUR INTERMEDIATE INPUT SEAL.

**GOOD NEWS!** IT'S STILL UNDER WARRANTY!



The FMTV manufacturer, Stewart & Stevenson, has extended the warranty for the intermediate input seal on all 5-ton FMTV vehicles with serial numbers 11438 thru 20216.

For the lowdown on the extended warranty, have your local warranty coordinator call (800) 221-3688, or fill out DA Form 2407 by email and send it to one of the following:

- [m.esker@ssss.com](mailto:m.esker@ssss.com)
- [m.scott@ssss.com](mailto:m.scott@ssss.com)
- [l.hilzendager@ssss.com](mailto:l.hilzendager@ssss.com)

The following info is needed on the form:

- vehicle serial number
- vehicle mileage
- defective component part number
- description of the defect
- component serial number or date code
- quantity
- telephone number
- fax number
- shipping address

## Component List for M1089A1 Wrecker

The component list for the FMTV M1089A1 wrecker can be found on the Interactive Electronic Technical Manual EM 0195. The IETM must be installed on a SPORT or MSD computer to be used. The SPORT/MSD computers interface with vehicle on-board diagnostic systems.

# Replace Worn Strap



**D**esert conditions have turned the original troop seat stowage straps on some FMTVs into rags.

If the straps on your trucks show signs of brittleness, cuts, tears or shredding, don't go looking for the replacement information in your truck's -24P.

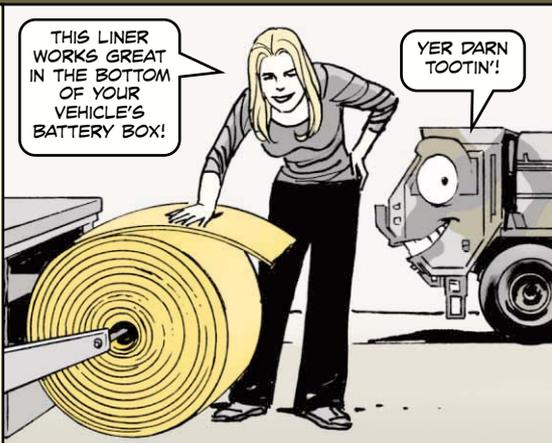
What will be added to Fig 232 in both FMTV -24Ps is a belt, NSN 2540-01-438-5919. It's 1½ inches wide with a quick-disconnect fastener. It must be riveted to the troop seat.

# BATTERY BOX LINER

**B**attery box liner works finer than anything else for absorbing battery acid in your vehicle's battery box.

The liner not only absorbs battery acid, but neutralizes it as well.

Get a roll of 1/4-in thick liner with NSN 6160-01-389-1966 and cut to the dimensions you need to line a vehicle's battery box.



# Air and Water Don't Mix



**OPERATORS, YOU'VE GOT TO DRAIN THE AIR TANKS ON YOUR FMTV EVERY DAY AFTER OPERATION.**

If you forget, moisture builds up. It creates corrosion that plugs up the entire air system, including brake valves and cylinders, CTIS filters, and gladhands. It can also lead to brake failure.

Moisture creates rust in air system components

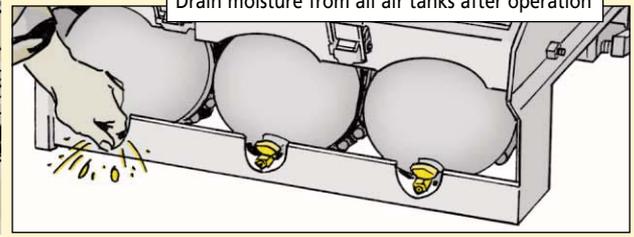


So drain the water from each air tank at the end of each day. Open each air tank's petcock just long enough to drain the water and close it. Don't leave the tanks open. That won't get rid of water, it just creates more.

How come?

The nighttime condensation builds up in the tank. When you close the tank in the morning, just before you're ready to drive, water gets trapped inside the tank. More water means more corrosion.

Drain moisture from all air tanks after operation



# BLOCK BOTTLE BLOWUPS



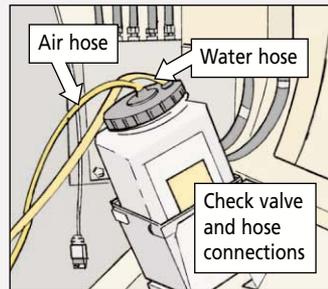
There are two reasons why those floor-mounted windshield washer bottles blow their tops.

1. You could be using a control valve other than NSN 4820-01-161-0200.
2. You could have the hoses connected wrong.

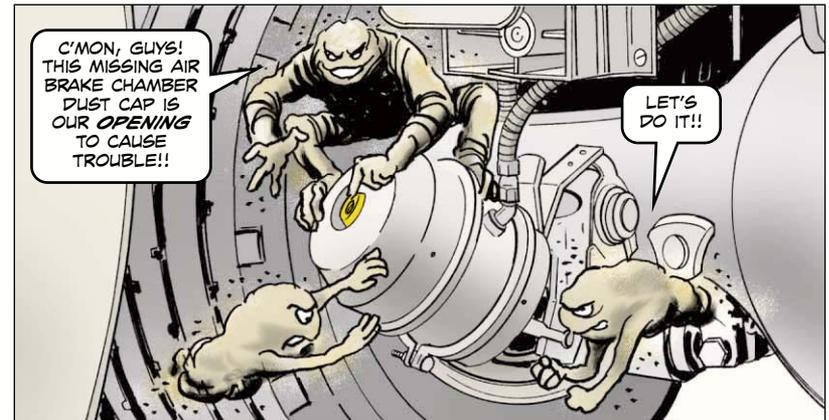
Either way, there's too much pressure on the bottle and a washer fluid fountain is the result.

Replace the control valve if it is not the one called for in your parts TM. The control valve that was used when the washer bottle was mounted above the passenger seat gives it too much pressure.

Then make sure the air hose is connected to the VAL port and the water hose is connected to the NOZ port. That will keep the system pushing windshield fluid out onto the windshield, not out the top of the bottle. Consider labeling the hoses so re-connecting them is a cinch.



# Dust Cap NSNs



A dust cap that's missing from an air brake chamber is an open door for sand, sand and more sand.

Shut the door by making sure all brake chambers on your air brake-equipped trucks and trailers have dust caps.

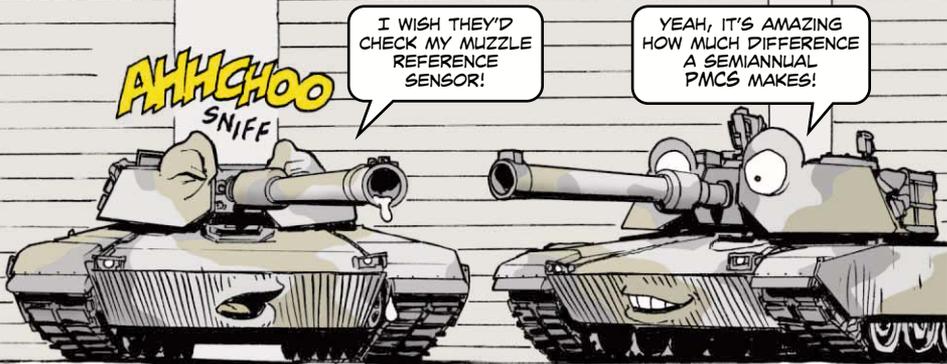
Keep this list handy for dust cap NSNs:

Trailers	NSN
M870A1	5340-00-518-5678
M871-series	2530-01-084-6975
M872/A1/A2	3040-01-065-2021
M872A3	2530-01-084-6975
M967/M969/M970	3040-01-065-2021
M967A1/M969A1/M970A1	2530-01-084-6975
M1000	5340-01-367-6668
M1076	2530-01-367-6668

Trucks	NSN
FMTV	2530-01-084-6975
M939-series	2530-01-084-6975
HEMTT	5340-01-163-2073
M915-series, tandem axle	5340-01-060-1624
M915A1-series, front axle tandem axle	5340-01-155-1840 5340-01-060-1624
M1070	5340-01-367-6668
M1074/1075	5365-01-385-0000



# Inspect MRS Twice a Year



When was the last time you checked the tritium-powered muzzle reference sensor (MRS) on that tank, mechanic?

If you didn't do it during the last semiannual PMCS, it's been too long. Here's what to do:

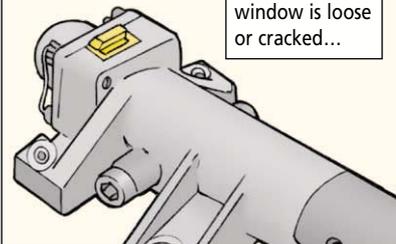
Look through the inspection window. You should see a blue light. If not, the tritium power cell could be damaged and may be leaking inside the MRS. Double-wrap the MRS in plastic and notify your support.

Take a closer look at the inspection window on top of the MRS. If the window is loose or cracked, or if condensation has formed on the underside of the window, the MRS could be leaking tritium gas. Double-wrap the MRS in plastic and notify your support.

Look for blue light through inspection window



If inspection window is loose or cracked...



...double-wrap MRS in plastic and notify support



A TRITIUM-POWERED MRS IS **NON-REPAIRABLE**, SO REPLACE A DAMAGED ONE WITH A NEW BATTERY-POWERED ELECTRONIC MRS (EMRS).

HERE'S WHAT TO ORDER...

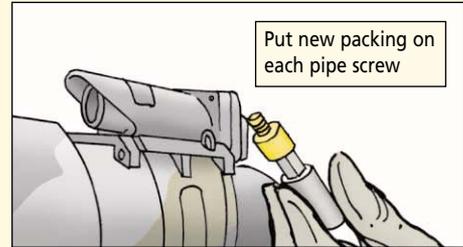
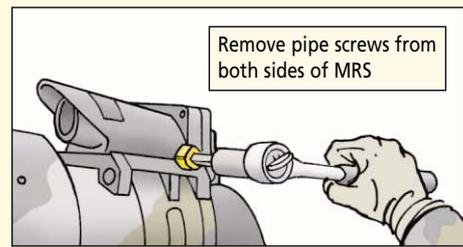


Tank	Tritium MRS, NSN 1240-01-	Battery, EMRS, NSN 1240-01-
M1/IPM1	324-2217 275-0077	475-0278
M1A1	409-0784 380-3125 276-6628 313-8932	475-0276
M1A2 SEP	444-6558 356-5887	475-0275

## Don't Forget the Desiccant

Both the tritium- and electronic-powered MRS use desiccant to absorb excess moisture. Replace that desiccant semiannually, or more often in high humidity areas. Here's how:

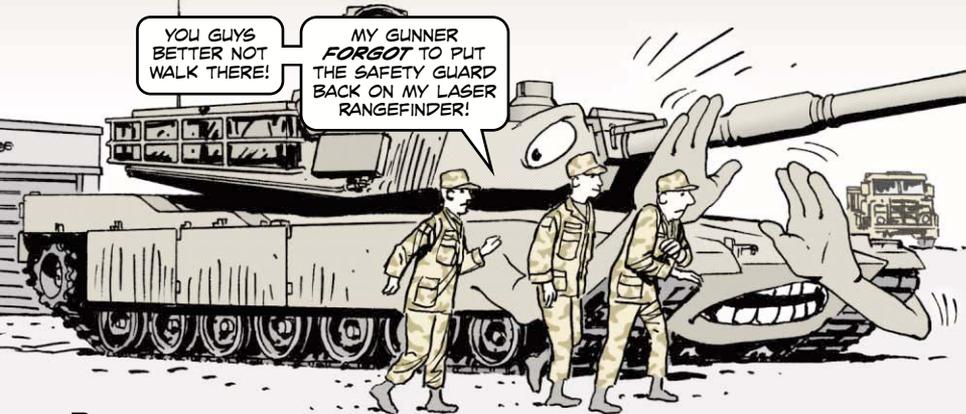
1. Wear the latex gloves that come with the desiccant kit, NSN 1240-01-424-4628, to protect yourself against potential leaks from a tritium-powered MRS.
2. Use a 3/8-in socket-head screw key to remove both pipe screws on the barrel of the MRS.
3. Remove the old O-rings.
4. Unwrap a new desiccant, NSN 6850-01-081-4193, and use it to push the old desiccant out of the barrel hole.
5. Install two new O-rings, NSN 5331-00-724-7902, onto the pipe screws. Torque the screws between 240-250 lb-in.



IF THE MRS WAS TRITIUM-POWERED, DOUBLE-BAG THE LATEX GLOVES, OLD DESICCANT, AND O-RINGS IN PLASTIC...



# FIND THE RANGE TO SAFETY



**B**oth during operation and after, gunners should always be thinking safety. So if your tank is equipped with a non-eye safe laser, NSN 1240-01-149-8302 or 1240-01-357-5085, remember these two very important details.

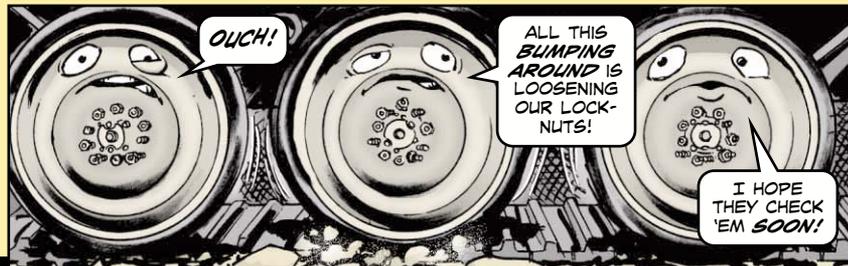
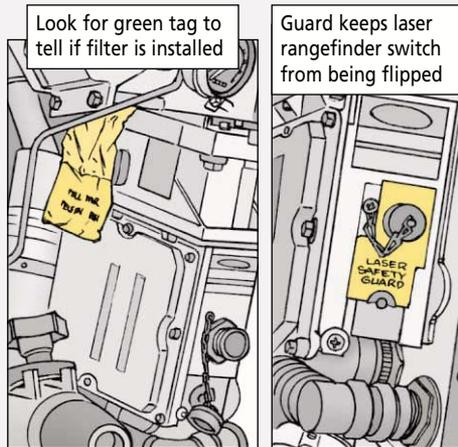
1. Always install the eye-safe filter, NSN 1015-01-234-8166, on the laser rangefinder (LRF). The filter protects others from a potentially blinding laser hit if the LRF is accidentally activated.

You can tell the filter's installed by the green tag that hangs out of the LRF.

2. Make sure you put the safety guard, NSN 5930-01-171-4788, back in place on the laser rangefinder (LRF) when the mission's complete.

The safety guard keeps you from accidentally moving the LRF switch to the armed position while moving around in the tight confines of the turret. Since the switch can't move, there's no chance of accidentally arming the laser.

If your tank's equipped with an eye-safe laser, NSN 1240-01-418-9498 or 1240-01-419-2232, the filter and safety guard are not required.

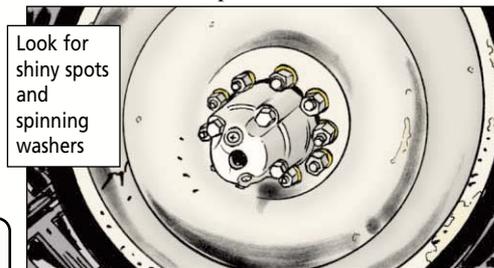


# GET LOOSE LOCKNUTS REPLACED

**T**raveling over Iraq's rocky and sandy terrain is rough on your Bradley, crewmen. It's especially tough on roadwheel locknuts.

The constant pounding and vibration loosens the locknuts. Just one loose locknut puts pressure on the surrounding ones until they start to slip. That results in wallowed out holes on the roadwheels, stripped threads and sheared studs. You may even have a roadwheel take off on an unauthorized trip of its own!

Check the roadwheel locknuts regularly. Look for shiny areas under the locknuts and washers that indicate movement. Feel the washer itself. If it moves, the locknut's loose.



ON A MISSION? RE-TIGHTEN THE LOOSE LOCKNUTS TO KEEP THE ROADWHEELS IN PLACE.

JUST MAKE SURE YOU MARK THE LOOSE LOCKNUTS WITH A DAB OF PAINT OR BY SCRIBING SO YOU CAN IDENTIFY WHICH ONES WERE LOOSE WHEN YOU GET BACK.

THEN, WHEN THE MISSION'S COMPLETE, TELL YOUR MECHANIC.

HE'LL REPLACE THE LOOSE LOCKNUTS, NSN 5310-00-175-2710, AND TORQUE 'EM TO 171-189 LB-FT.

# PUT A DAMPER ON M242 DAMPER PROBLEMS

HERE ARE A COUPLE OF TIPS FROM THE NEW YORK NATIONAL GUARD...

...FOR MAKING IT EASIER TO MAINTAIN THE M242.



Dear Editor,

To add damper fluid to the Bradley's M242 gun's recoil system, TM 9-1005-200-23&P says to push on the spring-loaded damper rod with a brazing or welding rod. That's difficult because the rod doesn't have a handle to hold onto. We've found it's easier to use the copper screwdriver that's part of the Bradley's tool kit. Its handle makes pushing on the damper rod easier.

To add damper fluid, it's also easier to use a squirt bottle rather than try to pour the fluid out of a can. We use the squirt bottle that's part of the M1 tank's BII. You can order one with NSN 8125-01-134-5409 for a little over \$2.

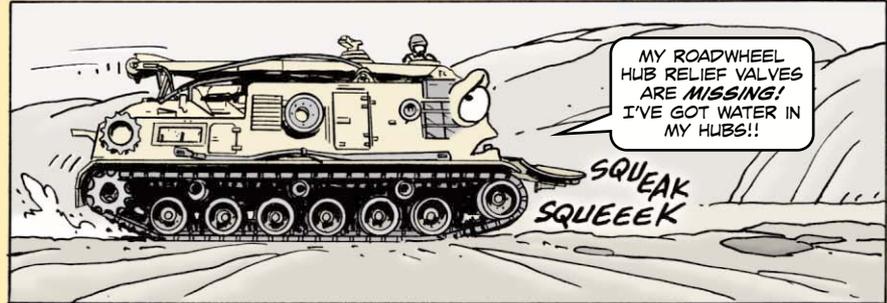
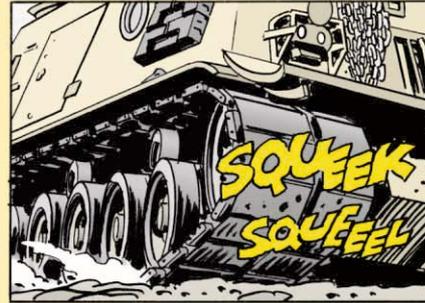
SPC Dave McIntosh  
MATES, NYARNG  
Ft Drum, NY

*Editor's note: No one will recoil from your recoil suggestions. Thanks for sharing. You can now order a damper valve tool with NSN 5120-01-452-3364.*

Squirt bottle makes filling damper assembly easier



# CHECKING VALVES BRINGS RELIEF



When was the last time you checked the roadwheel hub relief valves on your M88A1 recovery vehicle, mechanics? Take a look now, especially if you've done any recovery work recently.

Vibration can loosen the valves until they fall out. Bushes can snag the relief valve plunger and rip it loose. Either way, water gets inside the road arm spindle where it dilutes the grease and burns up the spindle bearings.

Replace a missing relief valve with NSN 4820-01-070-7670. If the relief valve won't screw in easily, the threads inside the pipe bushing may be damaged. Replace the pipe bushing with NSN 4730-00-187-1413.

If the grease is contaminated, inspect and clean the hub following the instructions starting on Page 8-9 of TM 9-2350-256-20 (Jul 96).



M109A6 Paladin,  
M992A2 Ammo Carrier...



WHAT'S  
WRONG!?!  
WHAT CAN  
I DO?

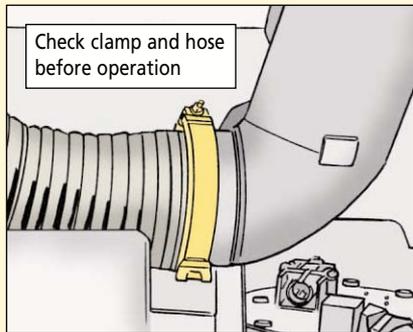
!GASP!  
CHOKED! YOU  
SHOULDA FIXED  
MY L-L-LOOSE AIR  
D-DUCT HOSE!

# CLAMP DOWN ON LOOSE HOSE

Dirty air is an engine killer for your Paladin and ammo carrier. That's why you crewmen need to keep a close eye on the engine's air duct hose, NSN 4720-00-999-8589.

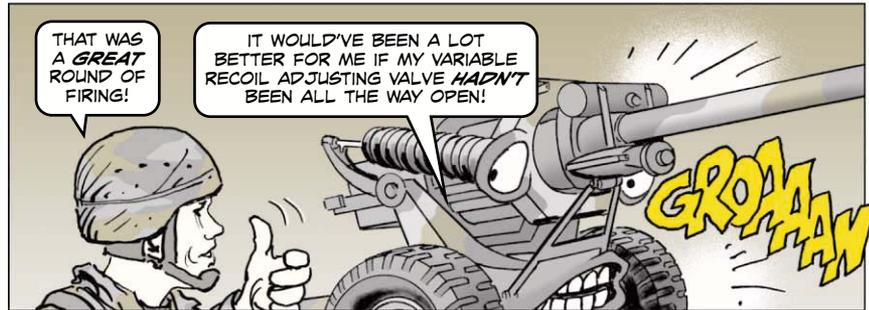
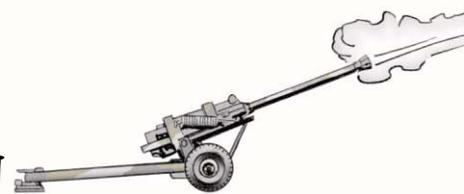
Vibration can loosen the clamp, NSN 4730-00-908-6294, that attaches the hose to the air cleaner duct. Then dirty, unfiltered air is pulled in past the clamp and the engine is damaged.

Help keep your vehicle breathing easy by checking the clamp for tightness before each operation. Eyeball the hose for cuts, tears or other damage. Report any problems to your mechanic.



M119-Series Towed Howitzers...

# Adjusting Valve Needs Adjusting



THAT WAS  
A GREAT  
ROUND OF  
FIRING!

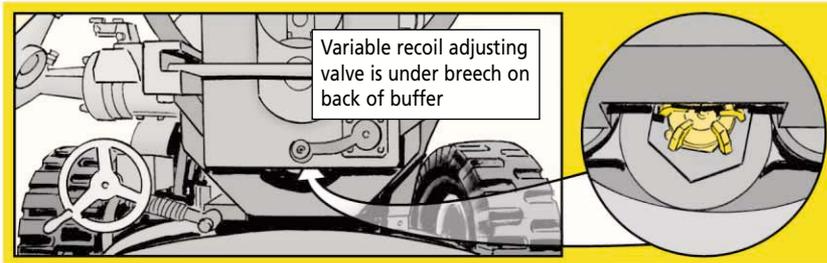
IT WOULD'VE BEEN A LOT  
BETTER FOR ME IF MY VARIABLE  
RECOIL ADJUSTING VALVE HADN'T  
BEEN ALL THE WAY OPEN!

There's been a disturbing trend found on the M119-series howitzers coming in for rebuild and repair. Many of the howitzers are arriving with the calibrated flow valve open all the way (approximately 20-21 clicks).

A completely open valve can allow the weapon to slam into battery after firing. That causes severe damage to several parts of the howitzer, including the stop plates and buffer assembly.

Prevent the damage by properly adjusting the valve—**right now!** You'll find the valve under the breech on the back of the buffer. Here's what to do:

1. Close the valve all the way by turning it clockwise as far as it'll go.



2. Turn the valve counterclockwise 12-14 clicks as a starting point.
3. When you fire the howitzer, or use the quick release apparatus, fine tune the valve by turning it clockwise to slow counterrecoil. Speed up the counterrecoil by turning the valve counterclockwise.

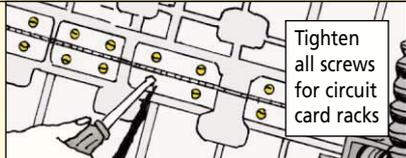


# ON THE ROAD AGAIN...

Carefully fold up the shroud. If you don't fold it properly, its buckles can puncture the shell of the radar, which can let water get at the expensive electronics inside. It's best to have three soldiers doing the job—two folding the shroud manually and another on the ground making sure they've got it folded correctly. The TM says two is enough, but the extra set of eyes will help get it right. Once the shroud is completely folded flat, make sure all its latches are locked in so the shroud can't bunch up during travel and damage the roof cover.

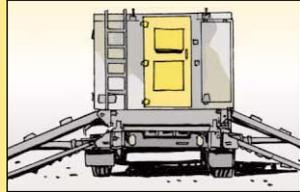


**Tighten all the screws holding the circuit card racks.** If screws are loose, the racks are loose. Bumps in the road can unseat the circuit cards and then you get faults when you power up the radar.

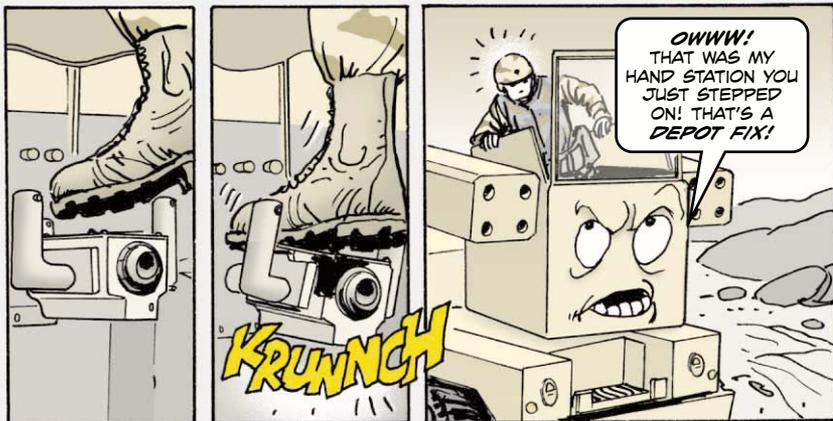


**Check that all doors are latched tight.** You don't want a door banging back and forth during travel and letting in dust and rain. Just a little dust or rain can cause big problems inside the radar. Always keep the inside of the radar clean and dry. The easiest way to do that is to keep the doors shut as much as possible whether you're traveling or sitting.

Make sure all doors are latched



# HAND STATION BROKEN?



Dear Editor,

Every Avenger unit has trouble with soldiers stepping on the hand station when they climb in or out of the turret. That breaks the rivets that hold the station's bracket to the turret. According to TM 9-1440-433-24P, the bracket is not repairable locally, which means a long trip to depot.

We've had success replacing broken rivets with blind rivets, NSN 5320-01-015-6896. These rivets are .124 to .128 inch in diameter so you must redrill the rivet holes slightly larger to install the new rivets. But we've found the rivets do a good job of keeping the hand station in place.

SPC Candy Bichon  
710th MSB  
Ft. Drum, NY

*Editor's note: A riveting idea. Thanks.*

# HOW WORN IS TOO WORN?

HEY, WAIT A MINUTE! MY BOLT STUD SLOT IS **BARELY WORN!**

I'VE STILL GOT A LOT OF FIRING IN ME!! HALF-MAST!! Y'GOTTA TELL HIM!

HE'S RIGHT.

LET'S SEE IF WE CAN MAKE THE PMCS CRITERIA **CLEARER.**



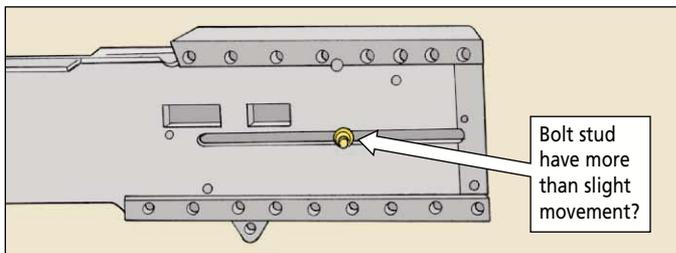
Dear Half-Mast,

PMCS Item 15 on Page 0010 00-27 in the M2 machine gun's TM 9-1005-213-23&P says that if the upper part of the slot for the M10 manual charger is worn, the M2 is not mission capable. We see lots of M2s that have slight wear in this area, so technically they should be classed NMC. But we think they are still good for battle. Can you give us a more precise criteria than "worn"?

D.S.

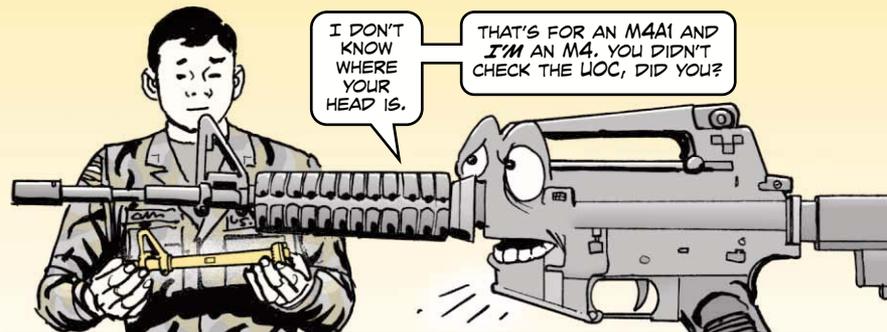
Dear D.S.,

Sure. As long as the bolt stud that travels the slot doesn't have more than a slight up-or-down or side-to-side movement, it's OK for the upper part of the slot to be slightly worn. But if the bolt is so loose in the slot that you think it will cause the M2 to malfunction, turn in the gun. *Half-Mast*



Bolt stud have more than slight movement?

# YOU-YES, YOU-WATCH UOC



I DON'T KNOW WHERE YOUR HEAD IS.

THAT'S FOR AN M4A1 AND I'M AN M4. YOU DIDN'T CHECK THE UOC, DID YOU?

Dear Editor,

In my work in Southwest Asia, I've run across armorers ordering the wrong parts for their M16s or M4s. I don't think they're paying attention to the UOCs. Can you remind them?

Bill Schwarz  
LOGSA contractor  
Redstone Arsenal, AL

*Editor's note: Of course. UOC stands for "usable on code" and is listed in the parts TM in the description column for each item. It's important to pay attention to the UOC because otherwise you could end up with an M16A4 barrel assembly for an M16A2.*



HERE ARE ALL THE UOCs FOR THE M16s AND M4/M4A1s...

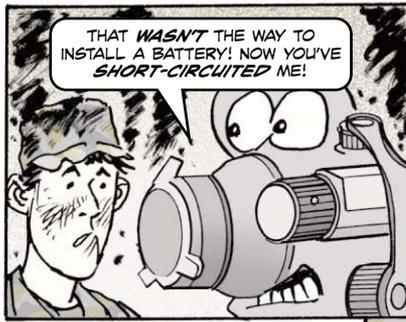
M16 AR7	M16A3 AW4	M4A1 AY6
M16A1 AR6	M16A4 AZ1	
M16A2 AR8	M4 AS1	

Remember, for M16/M16A1 parts look in TM 9-1005-249-23&P and for the M16A2/A3/A4 and M4/M4A1 versions look in TM 9-1005-319-23&P.

- Handguard assembly (M16A2)  
**UOC: AR8**
- Handguard, assembly (M4, M4A1)  
**UOC: AS1, AY6**
- Tube, bent, metallic (M16A2, M16A3, M16A4)  
**UOC: AR8, AW4, AZ1**
- Tube, bent, metallic (M4, M4A1)  
**UOC: AS1, AY6**
- Barrel, assembly (M16A2, M16A3)  
**UOC: AR8, AW4**
- Barrel, assembly (M16A4)  
**UOC: AZ1**

Check UOC before ordering parts

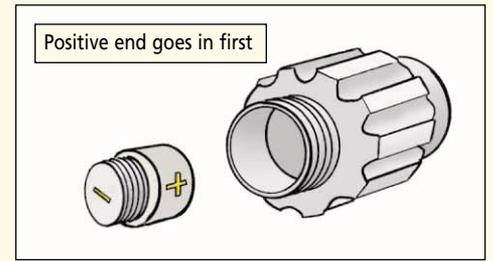
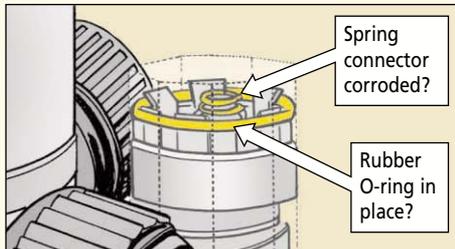
# STOP SHORT CIRCUITING SHORT



If the battery isn't installed correctly in your M16 rifle or M4 carbine's M68 reflex sight, you can short circuit the sight. And that short circuits your own sighting.

So here's what you need to do when you install the battery:

- Remove the battery cap by turning it counterclockwise.
- Check that the rubber O-ring is on the 6-pronged connection post (some earlier versions may not have the O-ring).
- Eyeball the spring connector for corrosion. Make sure the connector sticks up slightly from the foam pad. If you spot corrosion, clean it off with a wire brush.
- Check that the rubber O-ring is on the battery cap. It prevents corrosion.

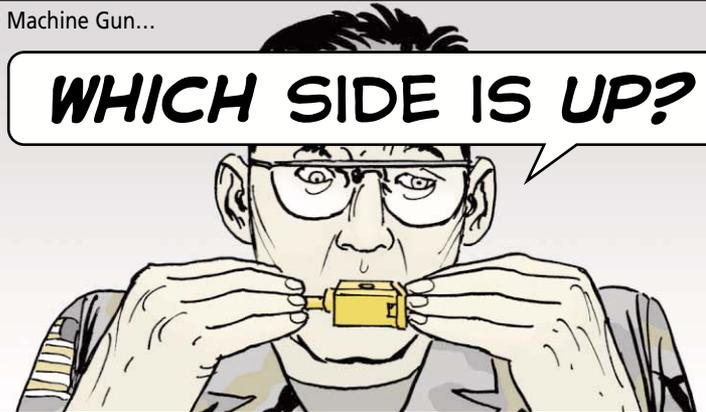


- Insert the battery in the center of the battery cap with the positive end towards the cap. Never use your finger to force the battery into the battery compartment against the contacts. Don't bend or move the prongs for better battery contact. That could lead to a short circuit.

- Never bend, cut, or modify in any way the O-ring, foam pad, spring connector, 6-pronged clip, or batter cap. That could ruin the M68.
- Turn the battery cap clockwise until it's handtight. Don't force it tighter or you could damage the sight.
- Turn the rotary switch clockwise to make sure the red dot appears.

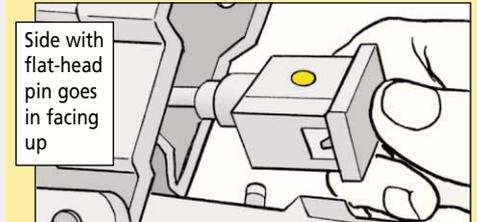
## M249 Machine Gun...

# WHICH SIDE IS UP?



Dear Half-Mast,  
The M249 machine gun's TM 9-1005-201-10 on Page 3-61 says to install the transfer mechanism with the headed end of the vertical pin up. I have trouble telling which is the headed end. One side of the mechanism has a pin with an indent and the opposite side has a flat-head pin. Which should go up?

Dear Mr. V.B.,  
Put the transfer mechanism in the receiver with the flat-head pin side up.



V.B.

Half-Mast

# A Helping Hand



DUDE!  
YOU SURE  
ARE  
DIRTY!!

TELL ME  
ABOUT IT!

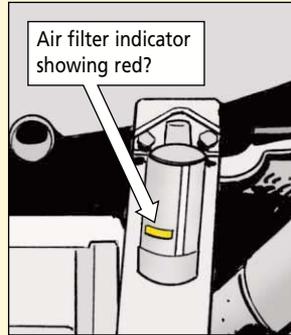
These dozers are getting a constant workout in the big sandbox. That means clean air is needed (and lots of it) so the vehicle's engine can run smoothly. Clean air means clean filters. That's where you come in with a helping hand and keen eye.

## Air Indicator Check

Eyeball the dozer's air cleaner indicator. It's right next to the filter canister. If the indicator moves from yellow to red, open the canister and pull out the primary air filter.

Use low-pressure air from a nearby tactical vehicle to blow air—30 psi or less—from inside to outside to loosen sand from the dozer's air filter element. Never bang the filter on a rock or hard surface like the dozer's track. Replace the primary air filter element once a year, or after six cleanings.

When the dozer's secondary filter becomes clogged, have your mechanic replace it.



HOW DO I TELL IF  
IT'S CLOGGED?



If, after installing a clean or new primary filter element, the indicator moves into the red zone when you try to start, the secondary filter's clogged. Black exhaust smoke is another indication of a clogged filter.

Finally, if you reset the indicator and it stays in the red zone after installing a new or clean primary filter element, that is a sure-fire indication of a clogged secondary filter.

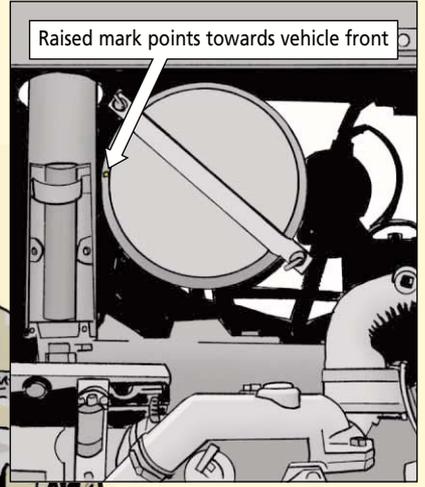
## Tight Seal Deal

With the filter elements installed, be careful how the canister lid goes back in place. That lid needs a tight seal to keep out sand.

The lid has a recessed lip with a raised mark on its outer cover.

MAKE SURE THE  
RAISED MARK  
POINTS TOWARD  
THE FRONT OF  
THE VEHICLE.

THAT WAY THE  
PRIMARY FILTER  
ELEMENT FITS  
TIGHT AGAINST  
THE LID WITH A  
GOOD SEAL.



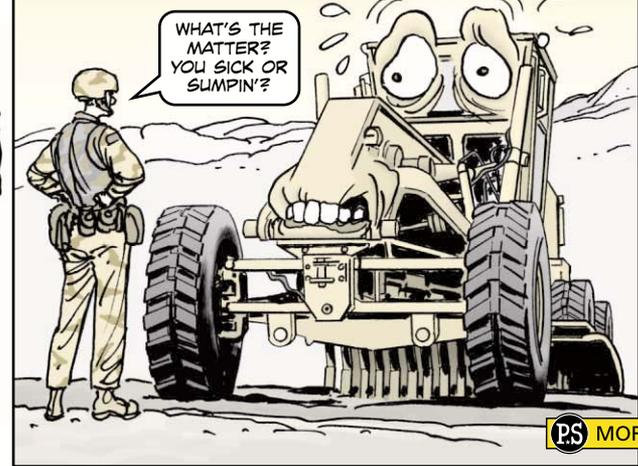
## 130G Grader...

OPERATORS,  
YOU'RE READY TO  
HEAD OUT BEFORE  
THE DAY'S RUN.  
BUT NOW THE  
GRADER'S BLADE  
WON'T ELEVATE,  
OR YOU CAN'T ROTATE  
THE CIRCLE DRIVE.  
SO WHAT GIVES?



IT COULD BE  
MISSED LUBING  
OR LACK OF  
EXERCISE.

# CIRCLE DRIVE JITTERS



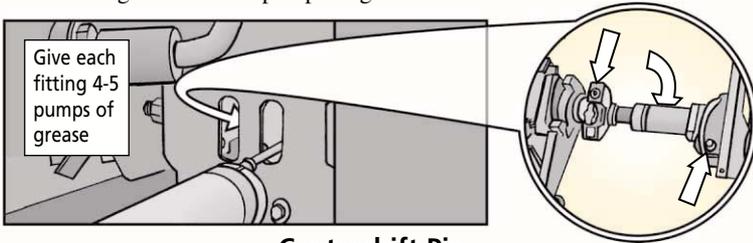
## Driveshaft Lube

Three grease fittings on the hydraulic pump's driveshaft are overlooked during scheduled services.

Without lube, the U-joints on the pump's driveshaft shake loose from vibration and excessive wear. Also, the shaft's bearings rust and burn out.

Eventually, the driveshaft and pump stop working. Then no hydraulic fluid gets pumped to the grader's blade, circle drive, scarifier or front wheel tilt. Their components shut down and your grader is NMC.

So keep the pump's driveshaft lubed. During scheduled services every month, give each of the fittings four or five pumps of grease.



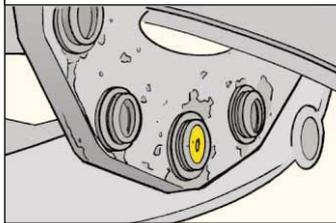
## Centershift Pin

The centershift guide pin rusts in place when the grader 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. That means your grader's sloping operations just came to a screeching halt!

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

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



A SHOT OF DRY LUBRICANT SPRAY, NSN 9150-01-260-2534, KEEPS RUST ON THE PIN AND HOLES AT BAY.



# JIMMY OF THE JUNGLE



THE NATION OF BOTANA, IN DEEPEST AFRICA...



# ROOARRR



ARE YOU ALL RIGHT?

ME OK, MUST GO NOW. HELP GIRL IN TROUBLE.



OH... THAT WAS ME! THERE WAS THIS HUGE LION... BUT... THAT LOUD CRASH WHEN YOU HIT THE TREE SCARED HIM AWAY.

THANK YOU.



THAT OK, ME JIMMY OF JUNGLE.



I'M CONNIE RODD, I WAS INVITED HERE FROM AMERICA TO HELP THE BOTAMAN ARMY WITH SOME PREVENTIVE MAINTENANCE PROBLEMS.



WE CAME TO THE JUNGLE FOR A QUICK TOUR AND I GOT SEPARATED FROM MY FRIENDS.

TOO LATE IN DAY TO FIND FRIENDS NOW. YOU COME WITH ME. WE FIND FRIENDS TOMORROW.



A SHORT TIME LATER...

THAT MY HOUSE... BUT... WHAT HAPPEN TO MY LADDER?



EEEK! A GORILLA!!



NOT WORRY, THIS MY BROTHER, CHIMP.



JIMMY, THE LADDER BROKE AGAIN. THERE'S NO WAY TO GET INTO THE TREE HOUSE.



Y-YOU CAN TALK?

OF COURSE, MY DEAR, I'M QUITE CIVILIZED!

I EVEN PUT THE TOILET SEAT BACK DOWN.



NO UNDERSTAND. LADDER JUST FALL APART?

HMM... IT LOOKS DRY AND BRITTLE. HAVE YOU TRIED APPLYING SOME KIND OF LUBRICATION? IT SHOULD PENETRATE THE FIBERS AND HELP KEEP THE WOOD SUPPLE.

LOOB-RI-KAY-SHLIN? YES, JIMMY. OIL OR GREASE. WHY DON'T YOU TRY SOME OF THAT HIPPO LARD YOU USE FOR COOKING AND SEE IF THAT WORKS?



YOU'LL HAVE TO FORGIVE JIMMY. DESPITE MY BEST EFFORTS, HE'S STILL ONE BANANA SHORT OF A BUNCH WHEN IT COMES TO PREVENTIVE MAINTENANCE.

WHY, PM IS THE WHOLE REASON I'M HERE IN BOTANA. MAYBE I CAN GIVE HIM A FEW POINTERS.

AN EXCELLENT IDEA! HE SEEMS QUITE FOND OF YOU. THINGS WOULD CERTAINLY RUN A LOT SMOOTHER AROUND HERE IF JIMMY KNEW A THING OR TWO ABOUT PM!

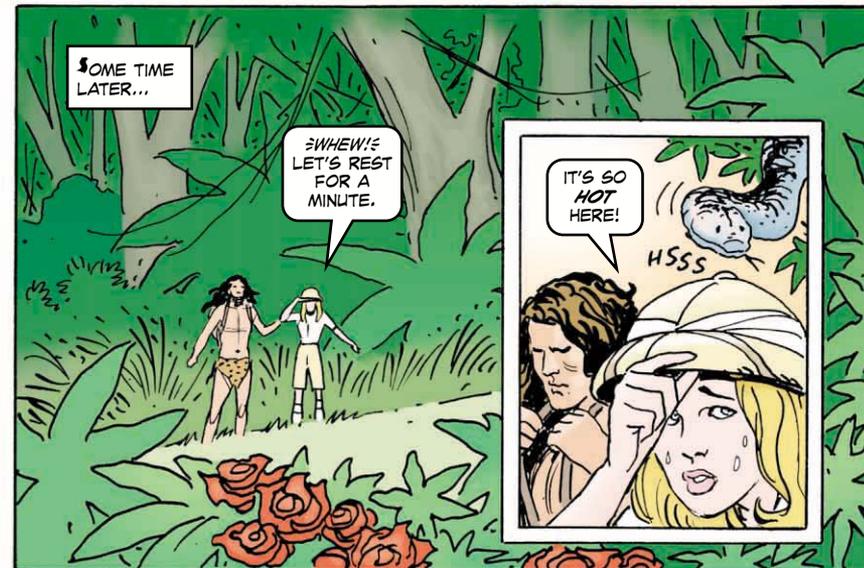
HIPPO LARD



THE NEXT DAY...

'BYE, CHIMP. WE GO NOW TO FIND CONNIE'S FRIENDS.

GOODBYE, YOU TWO... AND BE CAREFUL. IT'S A JUNGLE OUT THERE!



SOME TIME LATER...

SHWHEW!! LET'S REST FOR A MINUTE.



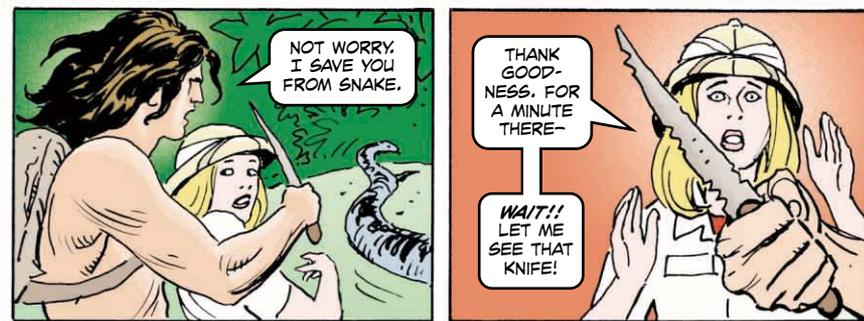
IT'S SO HOT HERE!

HSSS



EEEEK!

MISSEED ME!



NOT WORRY. I SAVE YOU FROM SNAKE.

THANK GOODNESS. FOR A MINUTE THERE-

WAIT!! LET ME SEE THAT KNIFE!



THIS KNIFE WOULDN'T CUT THROUGH **HOT BUTTER!** IT'S COVERED WITH RUST AND THE EDGE IS DULL!



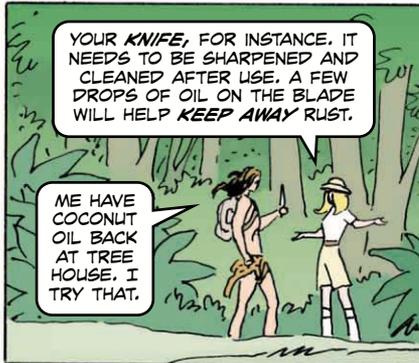
IT NEEDS A GOOD, HEALTHY DOSE OF **PREVENTIVE MAINTENANCE.**



THERE THOSE WORDS AGAIN.

WHAT MEAN **PRE-VHEN-TIVE MANE-TEN-ANTS?**

PM. IT'S THE VITAL WORK NECESSARY TO KEEP YOUR EQUIPMENT WORKING PROPERLY.

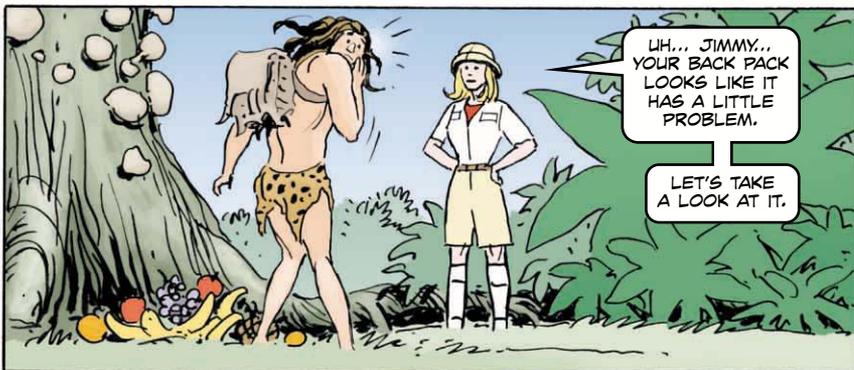


YOUR **KNIFE**, FOR INSTANCE. IT NEEDS TO BE SHARPENED AND CLEANED AFTER USE. A FEW DROPS OF OIL ON THE BLADE WILL HELP **KEEP AWAY** RUST.

ME HAVE COCONUT OIL BACK AT TREE HOUSE. I TRY THAT.



**RRRIP**



UH... JIMMY... YOUR BACK PACK LOOKS LIKE IT HAS A LITTLE PROBLEM.

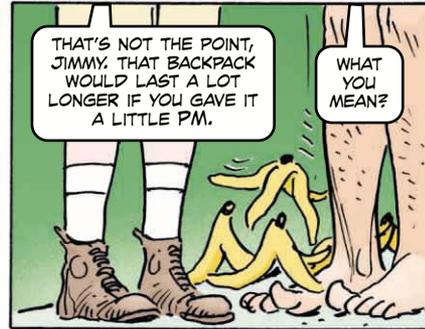
LET'S TAKE A LOOK AT IT.



THAT'S WHAT I THOUGHT. THIS BACKPACK HASN'T BEEN INSPECTED FOR A WHILE. THE BOTTOM HAS GIVEN OUT.



THAT HAPPEN ALL THE TIME. JIMMY MAKE **NEW ONE.**



THAT'S NOT THE POINT, JIMMY. THAT BACKPACK WOULD LAST A LOT LONGER IF YOU GAVE IT A LITTLE PM.

WHAT YOU MEAN?



THE BACK PACK SHOULD BE INSPECTED **REGULARLY.** PAY SPECIAL ATTENTION TO THE BOTTOM BECAUSE IT TAKES MOST OF THE WEIGHT YOU'RE CARRYING. IF IT BEGINS TO LOOK WEAK OR DAMAGED, PATCH IT.



NEXT, LOOK AT THE **SEAMS.** IF THEY'RE COMING UNRAVELLED OR FRAYED, REPLACE THEM. THE LEATHER STITCHING YOU USE CAN DRY-ROT AND SNAP.. USUALLY AT THE **WORST** POSSIBLE TIME.



REALLY? BUT ME USE LEATHER STITCHES TO MAKE LOINCLOTH, TOO...

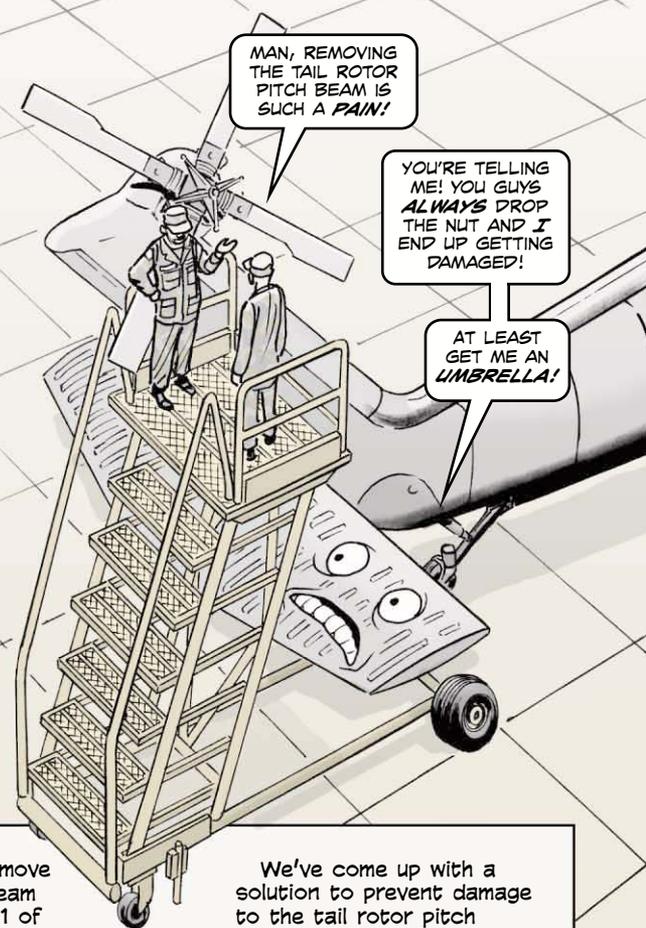


**SNAP**



HH-60L/UH60A/L...

# TAIL ROTOR PITCH BEAM



Dear Sergeant Blade,

When mechanics remove the tail rotor pitch beam following Para 5-4-41 of TM 1-1520-237-23-3, they have a tough time not damaging the dust plug and the threads on the shaft, even when they use tape to protect the threads.

The nut used with the pitch beam puller is too small to screw into the pitch beam shaft.

So the nut and the 16-lb puller have to be held in place while removing the pitch beam. Usually the nut falls out when tightening the puller. It could damage the stabilator, the dust plug or the threads when it pops out.

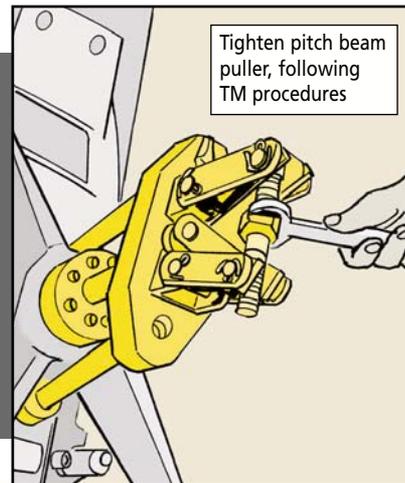
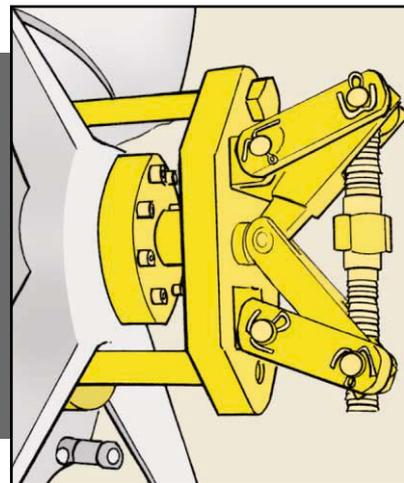
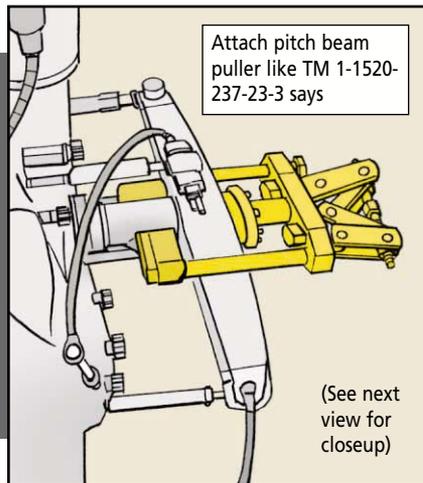
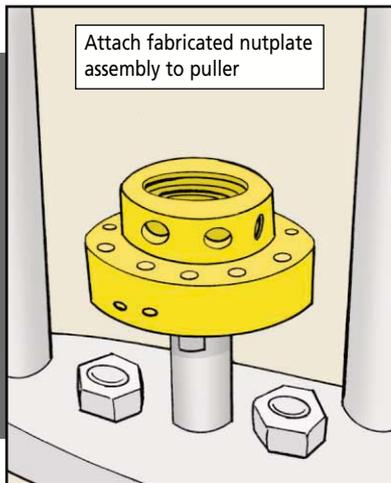
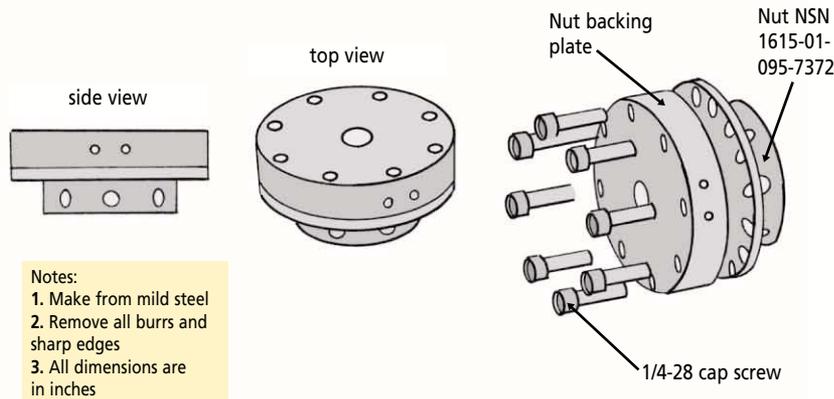
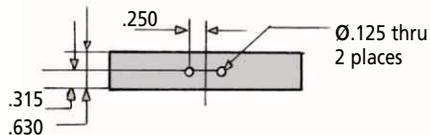
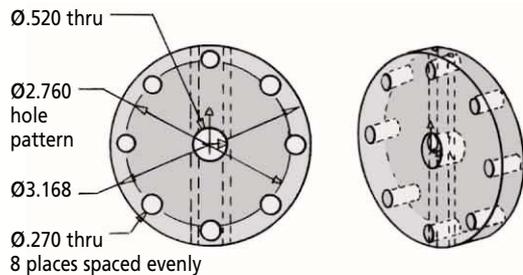
We've come up with a solution to prevent damage to the tail rotor pitch beam's dust plug and threads.

Using the existing puller, NSN 5120-00-948-3923, and a discarded nut, NSN 1615-01-095-7372, we made a round plate that attaches to the back of the nut with screws. Drill a 1/2-in hole in the center of the plate. Have your AVIM shop make the nut plate using the drawings.



The nut replaces the old smaller nut on the shaft puller, so now we can screw it into the pitch shaft to remove the pitch beam without any damage.

SGT Andres Chamorro, Jr.  
MA Army National Guard



SERGEANT CHAMORRO, GOOD JOB. YOU'VE PITCHED A **NO-HITTER** WITH THIS PITCH BEAM SOLUTION!



# Don't Go Overboard on Grease

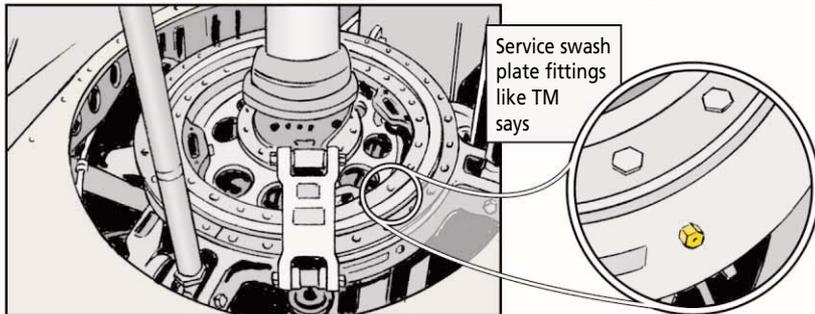
I'LL BE THERE IN JUST A MINUTE TO GREASE YOU!

JUST GIMME WHAT THE TM SAYS IS GOOD FOR ME... AND NO MORE!

**M**echanics, when it's time to service the Black Hawk swashplate at 500 hours/12 months, ease up on the grease.

Too much grease or too frequent lubrication won't improve your bird's performance.

Lubricate the swashplate like it says in Para 1-5-3 of TM 1-1520-237-23-1 and observe the **CAUTION** on Page 1-5-5. Rotate the rotor and add grease to the four fittings until you see it ooze from the upper or lower bearing seal. Wipe off any excess.



If you add that extra pump of grease just to be safe, you'll be sorry you did.

When the helicopter rotor head is at full speed, grease will be sprayed everywhere. Then you'll be cleaning up grease from the top of your bird, the inside of the hydraulic section, the transmission section and the AN/ALQ-144A countermeasure set.

You've heard the saying, "a little dab 'll do ya'." For the swashplate, a few extra dabs of grease will do you in—and make a real mess to clean up!

# WATER PRESSURE

TO GET YOU CLEAN, I'VE GOT THE PRESSURE WAY UP!

WHY NOT?

N-SPUTTER  
N-SPEFFS...  
**NO!!**

**M**echanics, let's say it's washing time again for your Chinook. You want to get it as clean as possible so you turn up the water pressure a notch. Don't!

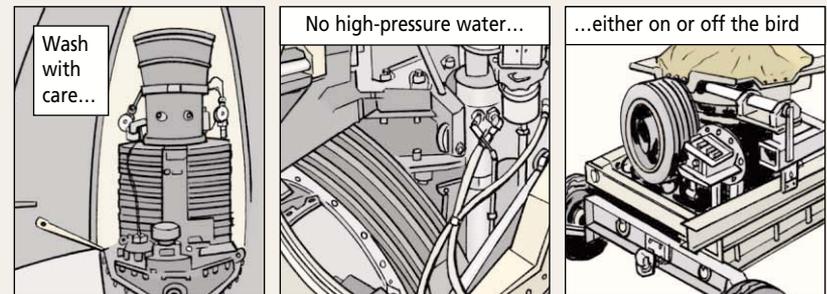
When washing the FWD and AFT combining transmission oil cooler on or off the bird, high pressure water can bend the cooler fins. Bent oil cooler fins mean air can't properly flow through the oil cooler when your aircraft is up and running.

That can cause elevated oil cooler temperatures and cause the OIL HOT light to illuminate on the caution advisory panel. Then your bird's transmission will run hotter than normal.

Low pressure water or a nozzle that has a rinse or spray flow is best, depending on what type of washer your unit uses. You can find washing instructions in TM 55-1520-240-23-1 and TM 1-1500-344-34.

Take the pressure off and wash the transmission oil cooler carefully so bent fins don't become a problem and high oil temps don't ground your bird.

Course, always follow the TM and never use high pressure water when washing any portion of the bird because it can penetrate seals and connectors causing damage to components and systems.

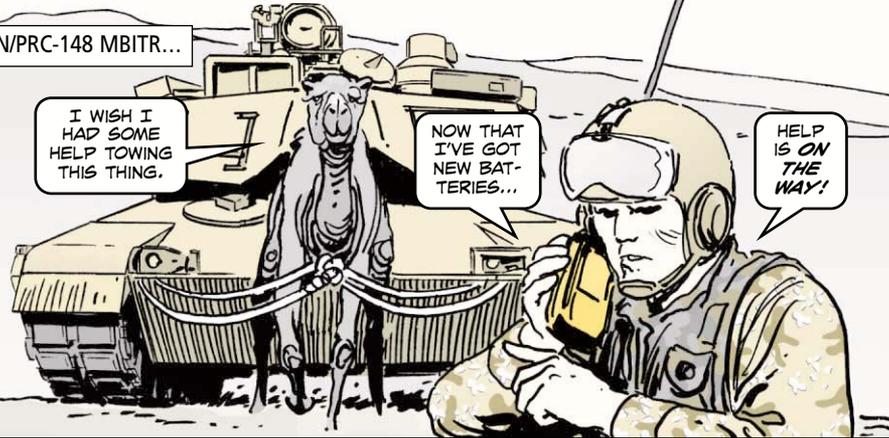


AN/PRC-148 MBITR...

I WISH I HAD SOME HELP TOWING THIS THING.

NOW THAT I'VE GOT NEW BATTERIES...

HELP IS ON THE WAY!



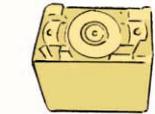
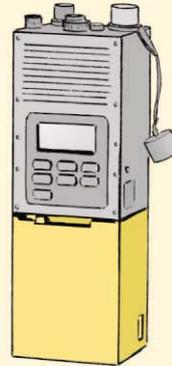
## MORE BATTERY CHOICES

The AN/PRC-148 multiband inter/intra team radio (MBITR) is a solid workhorse when your mission is in an urban environment. Now the workhorse has a few more power options.

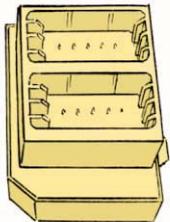
First, you can recharge the lithium-ion rechargeable battery that comes with the AN/PRC-148 with the PP-8498/U battery charger, NSN 6130-01-495-2839. All you need is the J-6588/P adapter, NSN 5940-01-493-6751. The adapter holds two batteries and charges them in about three hours.

Next, your battery choices have increased. You can now use the BA-5390, BA-5590, BA-8180, BA-8140, BB-390 or the BB-2590. To use any of these batteries, you need the BA-5590 battery adapter, NSN 5940-01-517-3990.

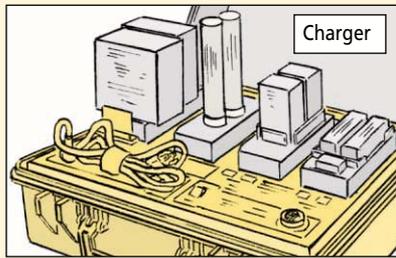
MBITR has battery choices



Battery



Adapter



Charger

AN/PSN-11...

## Keeping the PLGR in Place

WHERE ARE WE?

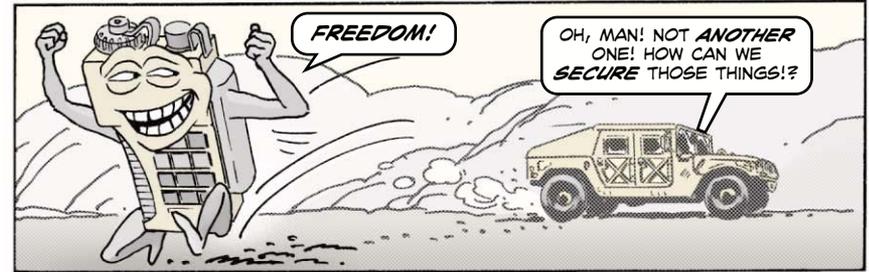
I DUNNO. CHECK THE PLGR.

HUH!? WHERE'D IT GO!?



FREEDOM!

OH, MAN! NOT ANOTHER ONE! HOW CAN WE SECURE THOSE THINGS!?



Dear MSG Half-Mast,

I am looking for an NSN for a locking bracket or bar that I can use to secure the PLGR in its vehicle mount.  
SSG R.T.

Dear Sergeant R.T.,

There is no official locking bracket or bar in the supply system to keep the PLGR secure. However, you can make one like the folks in the 1st Cav at Ft Hood did.

If you want their sketches and a photo so you can fabricate a security bracket for your PLGR, go to the PM GPS website at:  
<http://army-gps.robins.af.mil/tech/default.htm>  
Once there, click on the link:

**PLGR Security Bracket.**

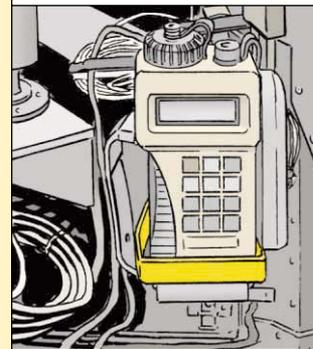
If you have questions about the bracket, email tech support at:

[Army.GPS@robins.af.mil](mailto:Army.GPS@robins.af.mil)

Or call them at DSN 468-1109 or (478) 926-1109.

*Half-Mast*

You can make a security bracket



# GIVE IT AN EASY RIDE

IF YOU'RE A **SOLDIER**, YOU'RE ON THE MOVE.

IF YOU'RE A **PIECE OF MILITARY EQUIPMENT**, YOU'RE MOVING RIGHT ALONG WITH THE TROOPS.

IF YOU'RE A **PIECE OF SENSITIVE COMMO OR ELECTRONIC EQUIPMENT**, IT IS IMPORTANT TO MAKE THAT MOVE AS CUSHIONED AS POSSIBLE.

TO HELP SENSITIVE COMMO EQUIPMENT ARRIVE IN WORKING ORDER, REST IT ON FOAM RUBBER SHEETING, NSN 9320-00-232-2474.

EACH SHEET IS 3-FT BY 3-FT AND AN INCH THICK.

TO FURTHER CUSHION THE TRIP, WRAP THE EQUIPMENT IN BUBBLE WRAP. NSN 8135-00-926-8991 BRINGS 250 FEET OF 2-FT WIDE AND 1/2-IN THICK WRAP.

ARE YOU SURE ALL THIS ELECTRONIC EQUIPMENT WILL SURVIVE IN THE BACK OF THIS TRUCK? IT'S GONNA BE A ROUGH TRIP.

YEAH, YEAH, IT'LL BE FINE. WE'RE NOT GOING ALL THAT FAR.

**NO!**

ONE OF THE MOST COMMON MISTAKES MADE WHEN TRANSPORTING ELECTRONIC EQUIPMENT IS THINKING IT CAN SURVIVE A ROUGH TRIP ON THE BED OF A BOUNCING TRUCK.

CUSHIONING ELECTRONIC EQUIPMENT WHILE MOVING IT IS AN INVESTMENT THAT WILL PAY OFF OVER AND OVER AGAIN.

# HAVE I GOT A DEAL FOR YOU!

GEE, I WONDER WHAT'S ON TV TONIGHT?

P-S-S-S-T... P-S-S-S-T... HEY, HEY, COMMO BUDDY.

WHO? ME?

COME HERE. I GOT SOMETHING TO TELL YA', BUT YOU DIDN'T HEAR IT FROM ME. GOT IT?

COPY DOWN THIS NUMBER: NSN 5330-00-966-8657. WITH THAT NUMBER AND TWO SAWBUCKS YOU CAN GET A PACK OF 382 O-RINGS!

NSN 5330-00-966-8657

HOW MUCH IS TWO SAWBUCKS?

\$20.00! CHEAP!

THE PACK HAS 30 DIFFERENT SIZES FROM 1/8 INCH TO 1 3/4 INCH INSIDE DIAMETER. A SIZING GAUGE COMES ALONG FOR THE RIPE TO HELP YOU DECIDE WHICH O-RING YOU NEED.

NOW LISTEN TO ME, BUDDY. KEEP THIS KIT STASHED AWAY FOR THOSE EMERGENCIES WHEN YOU NEED AN O-RING AND YOU NEED IT **RIGHT AWAY**. FOR ORDINARY STUFF, USE THE O-RING CALLED FOR IN YOUR TM.

IT'S THE **PERFECT** ONE FOR THE JOB AND THESE SUBS MIGHT NOT BE UP TO THE JOB.

BUT WHEN YOU NEED ONE TO DO A **QUICK** PROTECTION JOB AND YOU NEED IT RIGHT AWAY, YOU GOT IT HANDY.

P-S-S-S-T... P-S-S-S-T... HEY, COMMO BUDDY. THAT INFO SHOULD BE WORTH A **WASHINGTON** FOR ME, RIGHT?

BUT ALL I HAVE ARE LINCOLNS!

# Are You Making These Grounding Mistakes?



## Not using the right type of grounding strap.

The ground strap must be as large as possible—at least 6 AWG. A flat-surface strap is much better than a round one since there is more surface area and current passes over the surface and not through the strap. The strap should be copper or copper-clad aluminum. The best strap is made of braided copper. If steel or stainless steel must be used, it should be only temporary and inspected often for corrosion.

## Not paying attention to path impedance—resistance to current flow—when you lay out and attach the grounding strap.

Keep the ground strap as straight and as short as possible. Make sure there are no loops, kinks, knots or sharp bends.

Run the strap under or around obstacles, not over them. If an obstacle is in the way, remove it, or pick another spot for your ground rod.

The key is to make sure nothing increases the ground strap's impedance and causes failures.

## Not attaching the grounding strap correctly to the ground rod.

The generator set's three-section ground rod, NSN 5975-00-878-3791, comes with a clamp for the ground strap. The shelter's 8-ft ground rod has a thumbscrew to do the job. Too often, the clamp is lost and the thumbscrew is broken. When this is the case, the ground strap is often tied or loosely wrapped around the rod. This does not provide the good connection that's needed to conduct the current down the rod and into the earth.

So, check your ground rods. Order replacements for missing clamps with NSN 5975-01-034-8882. For missing thumbscrews, a nut, bolt and washer should do the job, but a replacement clamp can be ordered with NSN 5999-00-496-5834. The clamp for the three-section rod is too narrow to use on the 8-ft rod.

If you're missing a clamp or thumbscrew and no replacement is handy, tie the ground strap to the rod with at least 24 tightly wound turns of stripped telephone wire or other bare wire. Use this as a temporary fix until a clamp or screw can be found.

## Not driving the 8-ft ground rod, NSN 5975-00-296-5324, beneath the soil surface.

Before you drive the rod into the ground, dig a hole about 18 inches square and 8 inches deep. Then drive the top of the rod to about 3 inches above the bottom of the hole. Keeping the top of the rod below the surface of the ground reduces dangerous voltages near the rod during a storm. And also keeps you from tripping over it.

After you attach the ground strap to the rod, fill the hole with water and let it soak in. Then fill the hole with dirt. Add water as often as needed to keep the soil moist around the rod. A good constant source of water is your air-conditioning unit. Run a tube from the air-conditioner drain to the rod area to keep the soil wet.

Just because the connection between the strap and the rod is out of sight doesn't mean it should be out of mind. Check it every day to make sure it stays connected and tight. People walking around the ground can unintentionally pull the strap loose. Unless you check it regularly, you won't know if you're still grounded.

If rocky or frozen ground stops you from driving a ground rod deep enough, consider other forms of grounding or multiple ground rods. See TC 11-6 or FM 5-424 to learn how.



## Not wearing safety goggles when driving ground rods.

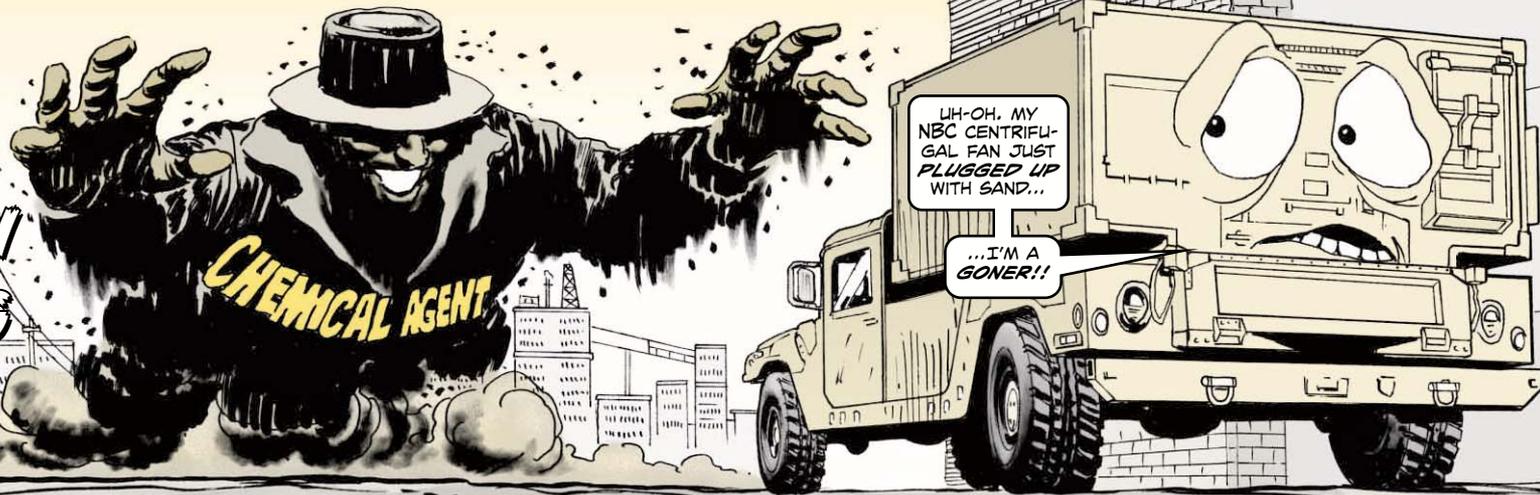
Safety goggles protect your eyes from flying metal chips. Don't think for a minute that a piece of metal won't chip and fly off while you're doing the hammering. Lucky Larson thought that, and now he's called One-Eyed Willie.



William "Lucky" Larson is now "One-Eyed" Willie

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

# KEEP NBC FAN FANNING

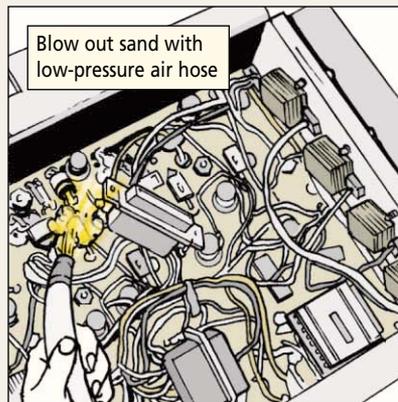


Dear Editor,

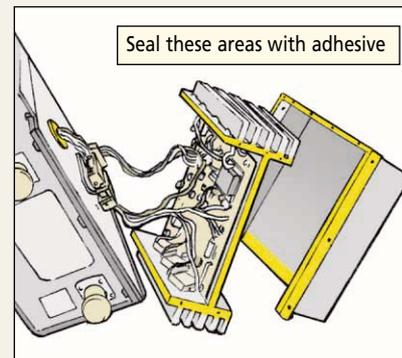
The NBC centrifugal fan, NSN 4140-01-234-8170, that's used on many shelters doesn't have much protection from the elements. It has no gaskets or seals to seal out dust and moisture. Operating in the desert, the fan can quickly fill with sand and shut down. Moisture can kill it just as quickly in a rainy area. If the NBC centrifugal fan stops working, the van loses the positive pressure that shuts out chemical agents in an attack.

A little PM and synthetic rubber adhesive, NSN 8040-00-843-0802, can give NBC centrifugal fans and shelter crews much more protection.

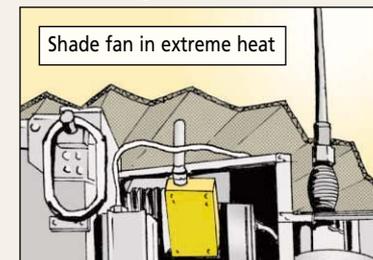
Remove the fan assembly from its mounting bracket and then remove the heat sink assembly from the fan assembly. Be careful not to damage the wire harness connecting the heat sink to the fan. Use compressed air to blow out any sand in the fan. Reinstall the heat sink.



Seal any seams and openings with the synthetic rubber adhesive. Reinstall the fan assembly after the adhesive is thoroughly dry. See TACOM-SBC maintenance advisory message 04-013-014 for more info.



Crews operating in Iraq should remember that the NBC centrifugal fans are designed to run in temperatures up to 120°F. But in hotter weather, the fans may burn out. If it's over 100°, rig a shade for the fan to keep it out of direct sunlight.



James Pratt  
Ft Huachuca, AZ

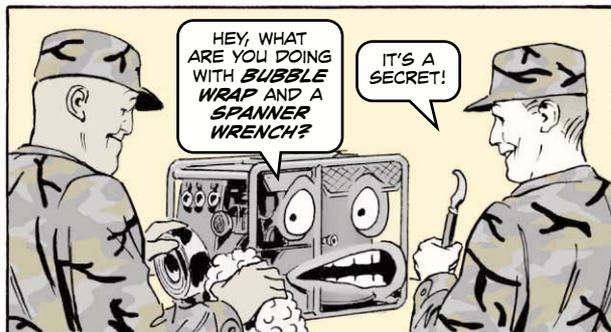
**Editor's note:** We are a fan of your suggestions. All shelter crews should **immediately** blow out and seal NBC centrifugal fans. Some of the shelters that use the fan are the AN/TSM-191(V)2 electronic shop, AN/TSQ-179(V) Target Acquisition Subsystem, Theater High Altitude Air Defense, and the AN/TPQ-36 and AN/TPN-31 radar sets.

If you have any questions about how to do this, contact TACOM-SBC's Steve Sutton at DSN 793-1687/(309) 782-1687 or email [steve.sutton@us.army.mil](mailto:steve.sutton@us.army.mil)

M17-Series Decon,  
M12A1 Decon....

CONNIE, HOW  
CAN WE TAKE  
CARE OF OUR  
65-GPM PUMP?

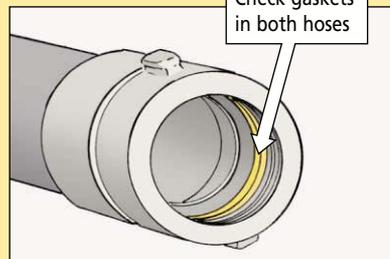
LET ME  
TELL YOU  
A LITTLE  
SECRET...



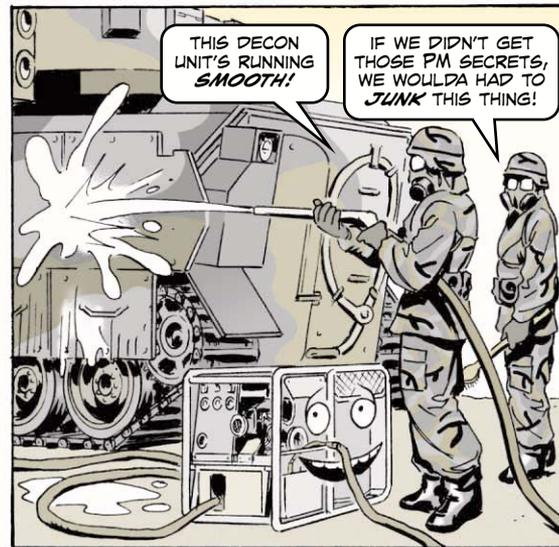
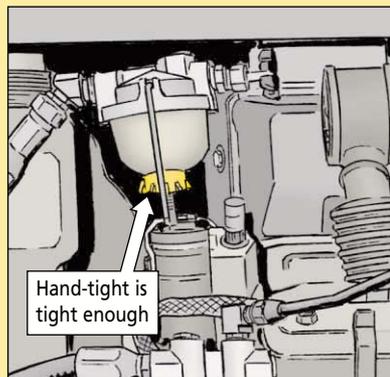
The 65-gpm pump used with the M17 and M12 decons is the little helper that generally does its job without much attention from you. But if it stops pumping, you soon stop deconning. Here are some secrets for keeping the pump pumped up.

### In the Motorpool

Before you go to the field, make sure both the inlet and outlet hose connector gaskets are in place and in good shape. If a gasket is missing or cracked, you can't build up water pressure for pumping. Order new gaskets with PN 13230E5325 from Schleyer Pump, (765) 643-3334.



After you drain the pump housing, tighten the wing nut hand-tight only. Forcing the nut tighter can damage it and make draining difficult later.

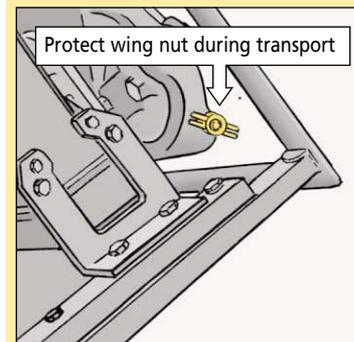


PSST!  
I'VE  
GOT PM  
SECRETS  
FOR YOU,  
TOO!



### In the Field

Watch out for the wing nut on the drain valve when you load and transport the pump. The nut can be easily damaged if something is banged against it. Then you can't fill the pump. Give the nut extra protection for transport by taping bubble wrap or something similar over it.



Be careful connecting the hoses. If you crossthread a hose, it leaks and you'll have trouble building up pressure. Crossthreading can also damage the hose gasket. If the hose is screwed on correctly, the locking ring should turn easily. If it doesn't, take the hose off and try again.

Once you have the hose connected right, tighten the locking ring hand-tight and then use the spanner wrench to give the ring 1/2 turn more. Stop there. Any tighter can damage the hose gasket.



Remember, never run salt water through the pump. Salt corrodes the engine and locks up the pump.

# NO MORE ANNUAL WIPE TEST

I'M AFRAID IT'S TIME FOR YOUR ANNUAL WIPE TEST.

I DON'T NEED THAT TEST ANYMORE. (THANK GOD-NESS!)



There is one fewer thing to worry about when it comes to your chemical agent monitors (CAM) and improved chemical agent monitors (ICAM). The annual wipe test for radiation leaks is no longer required.

The only time direct support needs to wipe test your CAMs or ICAMs is when their drift tube modules or membrane assembly is reinstalled or replaced. CAMs and ICAMs cannot be reissued to units until the wipe test results are received.

For more info, see TACOM maintenance advisory message 04-035. Your TACOM logistics assistance representative can get you a copy.

# Turn In DS2

The Army is no longer going to decon with DS2, the decontaminant used with the M11 and M13 decon systems. All chemical companies and NBC NCOs need to turn in any of their stocks of DS2.

The DS2 NSNs affected are 4230-01-133-4124 (M13 DAP), 6850-01-136-8888 (M13 refill), 6850-00-753-4870 (5-gal pail) and 6850-00-753-4827 (1 1/3-qt can).

Turn in DS2 through your local Supply Support Activity (SSA). They will coordinate DS2 disposal with their Defense Reutilization and Marketing Office (DRMO) following the guidance in TACOM-SBC Supply Advisory Message 04-12-012.

The M11 DAP is replaced by the M100 sorbent decon system, NSN 4230-01-466-9095, on a 1-to-1 basis. The M13 DAP for immediate decon operations is replaced by the M100 on a 1-to-3 basis—replace every one M13 with three M100s.

For thorough decon operations, HQDA recommends using super tropical bleach (STB), NSN 6850-00-297-6653.

Questions? Contact TACOM's Mary McDonough at DSN 793-7240/(309) 782-7240 or email:

[mcdonoughm@ria.army.mil](mailto:mcdonoughm@ria.army.mil)

# ID the HAZMAT



Hazardous materials (HAZMAT) need to be properly identified. It's the law. Problem is, HAZMAT labels, signs and placards no longer carry NSNs. That's why you need to get acquainted with a commercial manufacturer. One recommended manufacturer is Labelmaster. Their website is at:

<http://www.labelmaster.com>

There you can find and order labels, signs and placards that meet regulations and safety requirements for domestic and international shipments.

After reaching the home page, click on Government in the top banner. The government page contains General Services Administration (GSA) contract information. To get GSA contract pricing online, you must first register for a GSA account.

Comply with DOT and OSHA, hazardous materials...

Back Forward Stop Refresh Preferences Print Add

Address: http://www.labelmaster.com/

**LABELMASTER** Call 1-800-621-5808

Label & Sign | HazMat | Safety & Spill | Transportation | Books & Software | Warehouses

Quick Search:  Go!

● Entire Site ● Products ● News

Account Login

email address:

password:  Go!

Create a Login Now!  
Forgot your password?

Quick Shop:

Select Product:

Express Order Form

Customer Resource!

PS MORE

If you don't already have a GSA account, go to the left-hand banner and click on **Create a Login Now!** You'll be asked to submit personal information and to create a password.

Customer Resources — A comprehensive list of valuable resources. **NEW!** — NFPA Products and CFR Library.

Express Order Form — Your fastest ordering solution.

helps you to find the hazmat products and resources you need to stay in compliance!

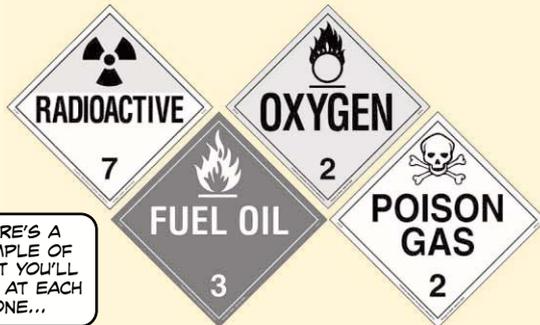
## Exploring Products

To browse through the product catalog, go to the home page and click on Store. You'll see links to several product categories, including Labels, Placarding & Placarding Systems, Forms and Regulatory Information.

- **Placarding and Placarding Systems:** placards, placard holders and upgrade kits



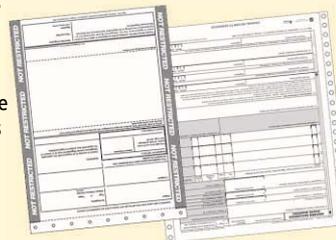
HERE'S A SAMPLE OF WHAT YOU'LL FIND AT EACH ONE...



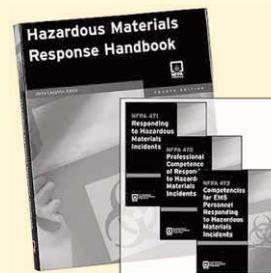
- **Labels:** Air, waste, biohazard, explosive and hazard class shipping labels



- **Forms:** HAZMAT shipping forms and waste manifests



- **Regulatory Information:** National Fire Protection Association publications and federal and international regulations.



The website includes color pictures of labels, placards and signs, along with their dimensions and what they're made of. You can also order Labelmaster's full catalog online.

IF YOU *CAN'T* REACH THE WEBSITE, OR IF YOU'RE NOT ABLE TO ORDER ONLINE, YOU CAN CONTACT LABELMASTER BY REGULAR MAIL, EMAIL, PHONE OR FAX. THEIR ADDRESS IS...



Labelmaster  
P.O. Box 46402  
Chicago, IL 60646-0402

Or  
American Labelmark Company  
5724 N. Pulaski Road  
Chicago, IL 60646-6797

Send email to:  
webmaster@labelmaster.com

Phone : (800) 621-5808  
Fax: (800) 723-4327

YOU'LL FIND ADDITIONAL SOURCES FOR HAZMAT LABELS, SIGNS AND PLACARDS AT THE FOLLOWING WEB SITES...



GSA Advantage  
[https://www.gsaadvantage.gov/advgsa/main\\_pages/start\\_page.jsp](https://www.gsaadvantage.gov/advgsa/main_pages/start_page.jsp)

HAZMATPAC  
<http://www.hazmatpac.com>

The International Compliance Center  
<http://www.thecompliancecenter.com>

UNZ & Company  
<http://www.unzco.com>

# MSDS FOR STORAGE CABINETS

MSDS



Y'KNOW WHAT WOULD BE GREAT? A LIST OF ALL THE HAZARDOUS MATERIALS IN EACH CABINET.

I'VE GOT IT. IT'S THE BINDER OF MSDS ON TOP OF THE CABINET!

UPDATE THE BINDER WHENEVER YOU ADD OR DELETE ITEMS FROM THE CABINET.



It's most likely you keep a master file of material safety data sheets (MSDS) for all hazardous materials (HAZ-MAT) in your shop. But have you ever considered creating separate files of MSDS for the contents of your flammable storage cabinets?

Each cabinet is packed with paint, lubricant, oil, engine primer, sealing compound, spray adhesive and other flammables and HAZ-MAT. By creating a file of MSDS for each cabinet—and storing that file with the cabinet—you'll save precious time finding the sheets you need. Just keep the MSDS in a three-ring binder with clear-plastic document protectors to shield the paper. Stow the binder on top of the cabinet where it's handy.

Material Safety Data Sheets...

# SAFETY SHEETS ONLINE

If you're ordering products from Lighthouse for the Blind Industries, you can get material safety data sheets (MSDS) from their website. To access their home page, go to <http://www.lhbindustries.com>

You're not required to enter a login ID or password to view or print MSDS. From the home page, click on the **ONLINE CATALOG** link on the left side of the screen.

Once you get to the catalog you'll see links to product categories such as *aerosol cleaners*, *maintenance products* and *paints and coatings*. These links lead to individual items that you can order online.

The next screen brings up the search field. If you know the product's item number or NSN, type it in. Click on **Search**. You'll get a link to the item's detail page.

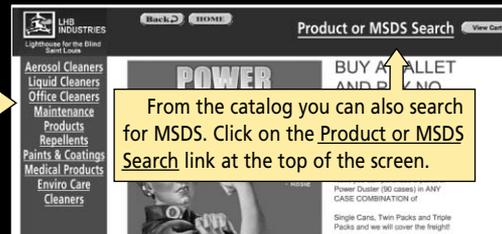
The detail page contains information about the item, including size, units, price and a link for downloading the MSDS.



<http://www.lhbindustries.com>

- About Us
- Online Catalog
- Manufact. Information
- J W O D
- Jobs @ LH

Click on **ONLINE CATALOG** for products



From the catalog you can also search for MSDS. Click on the **Product or MSDS Search** link at the top of the screen.

**THE DETAIL PAGE HAS A LINK...**

**...TO THE MSDS.**

**PS MORE**

Item No.	394390
NSN	7510-00-469-7910
Description	Black Stencil Ink Aerosol Can
Units	12/box
Price	\$29.52

Section 1 - Chemical Product And Company Identification	Section 2 - Composition / Information On Ingredients	Section 3 - Fire Fighting Measures	Section 4 - Accidental Release																																										
<p>Manufacturer: LHB Industries, 4012 Grandview Plaza, Building, MO 63134</p> <p>Product ID: 50-0482, Special Making Ink</p> <p>LHB Part Number: 7510-00-469-7910</p>	<table border="1"> <thead> <tr> <th>CAS No.</th> <th>Ingredient</th> <th>Wt%</th> <th>ACGIH TLV</th> <th>OSHA PEL</th> <th>OSHA PEL (Ceiling)</th> </tr> </thead> <tbody> <tr> <td>75009</td> <td>Propylene</td> <td>100</td> <td>1000 ppm</td> <td>1000 ppm</td> <td>1000 ppm</td> </tr> <tr> <td>108-98-9</td> <td>Toluene</td> <td>100</td> <td>100 ppm</td> <td>100 ppm</td> <td>100 ppm</td> </tr> <tr> <td>67-64-1</td> <td>Acetone</td> <td>100</td> <td>1000 ppm</td> <td>1000 ppm</td> <td>1000 ppm</td> </tr> <tr> <td>100-101-7</td> <td>Xylene</td> <td>100</td> <td>100 ppm</td> <td>100 ppm</td> <td>100 ppm</td> </tr> <tr> <td>100-114-7</td> <td>Ethyl Benzene</td> <td>100</td> <td>100 ppm</td> <td>100 ppm</td> <td>100 ppm</td> </tr> <tr> <td>100-107-1</td> <td>Benzene</td> <td>100</td> <td>100 ppm</td> <td>100 ppm</td> <td>100 ppm</td> </tr> </tbody> </table>	CAS No.	Ingredient	Wt%	ACGIH TLV	OSHA PEL	OSHA PEL (Ceiling)	75009	Propylene	100	1000 ppm	1000 ppm	1000 ppm	108-98-9	Toluene	100	100 ppm	100 ppm	100 ppm	67-64-1	Acetone	100	1000 ppm	1000 ppm	1000 ppm	100-101-7	Xylene	100	100 ppm	100 ppm	100 ppm	100-114-7	Ethyl Benzene	100	100 ppm	100 ppm	100 ppm	100-107-1	Benzene	100	100 ppm	100 ppm	100 ppm	<p>Classified under NFPA 704 Health Hazard 2, Physical Hazard 2, Reactivity Hazard 1.</p> <p>EXTINGUISHING MEDIA: Carbon Dioxide, Dry Chemical, Halon, Water (Fog Only).</p> <p>Special Fire Fighting Procedures: Do not use water to extinguish when subject to conditions. Do not use water to extinguish when subject to conditions. Do not use water to extinguish when subject to conditions. Do not use water to extinguish when subject to conditions.</p>	<p>PERSONAL PROTECTIVE EQUIPMENT: Wear safety glasses and use of other eye protection. Use of other eye protection. Use of other eye protection.</p>
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If you don't know the product's item number or NSN, you can search by entering a few descriptive words in the search field. Or you can click on one of the product categories. Either method will yield multiple links leading to an item's detail page, where you can download the MSDS.

THE **MOST** COMPREHENSIVE DOD SOURCE FOR MSDS IS THE **HAZARDOUS MATERIALS INFORMATION RESOURCE SYSTEM (HMIRS)**  
WEBSITE AT:  
<http://www.dlis.dla.mil/hmirs/default.asp>

IT'S THE OFFICIAL DOD REPOSITORY FOR MSDS.



PS  
END

Locks...

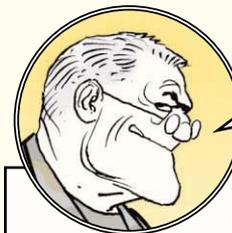
# LOCK PROGRAM FOR SECURITY



YOU NEVER KNOW WHO'S LURKING IN THE SHADOWS, WATCHING, WAITING PATIENTLY FOR AN UNGUARDED MOMENT.

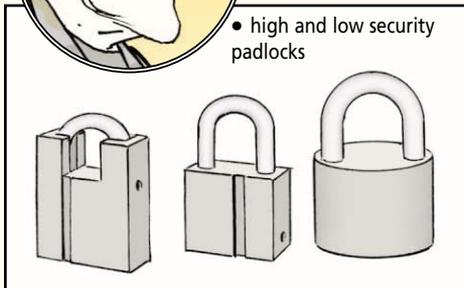
YOU NEVER KNOW WHO'S THE THIEF SCHEMING TO STEAL SOMETHING OF VALUE.

THAT'S WHY YOU NEED TO PUT SOME THINGS UNDER **LOCK AND KEY**, THINGS LIKE WEAPONS, FUNDS, JEWELS, MAPS, DRAWINGS, PLANS AND CLASSIFIED DOCUMENTS.

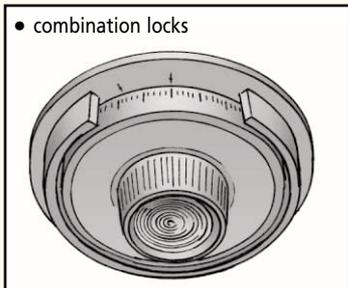


THE DOD LOCK PROGRAM CAN HELP SECURE YOUR VALUABLES. ITS WEBSITE IS AT <http://locks.nfesc.navy.mil/index7.htm>

THERE YOU'LL FIND A **COMPLETE SOURCE** OF INFORMATION ON LOCKS, SAFES AND SECURITY CONTAINERS, INCLUDING...

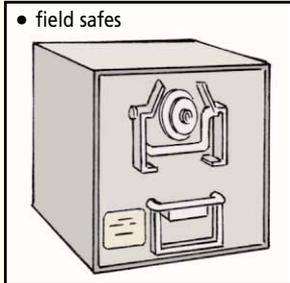


- high and low security padlocks

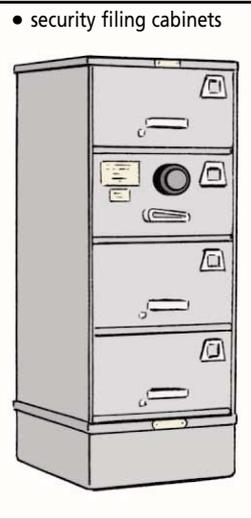


- combination locks

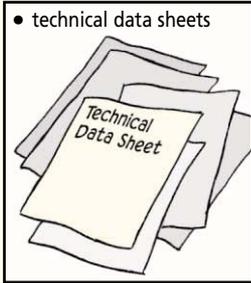
- high security hasps
- high security doors
- vault doors
- weapon storage containers
- map and plan containers
- NSNs and ordering information



- field safes



- security filing cabinets



- technical data sheets



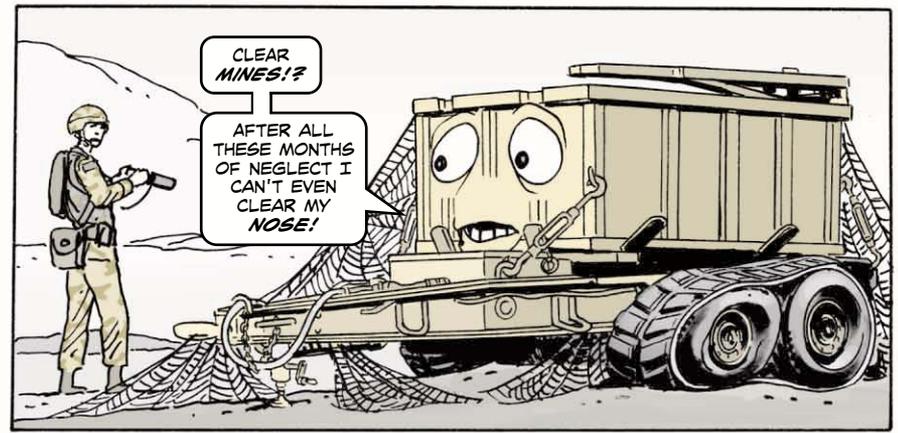
- an 800 number for technical support, 1-800-290-7607

- security chains
- security seals and tamper indicating devices
- federal and military specifications
- newsletters addressing security issues and locking devices
- training information



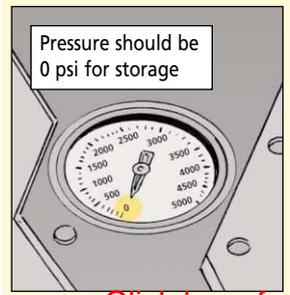
THE DOD LOCK PROGRAM IS THE **KEY** TO YOUR SECURITY PROBLEMS.

# TAKE OFF THE PRESSURE

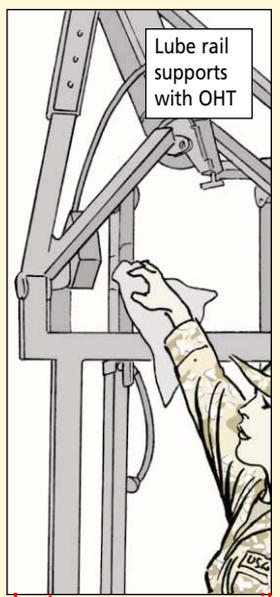


In most engineer units, MICLICs spend much of the year sitting. If they're sitting and **ignored** by you, the MICLICs are not going to be ready to clear any mines when it comes time for action. Use this PM when your MICLICs are going to sit a spell:

**Take off the pressure—**  
If you leave the system pump pumped up, the pressure wears out the pump and it leaks. The pump must be replaced. When you're through operating, hit the release valve and raise and lower the launcher rail until the pressure gauge reads 0.



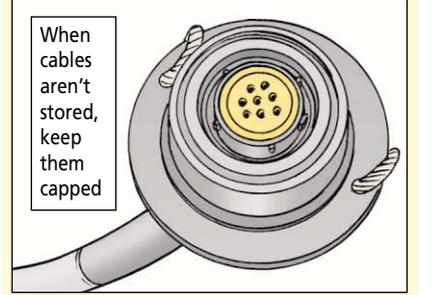
**Lube it—**A MICLIC that sits without lubrication is a MICLIC that is going to rust up. So pay attention to the lube chart on Page 3-1 in TM 9-1375-215-13&P and lube where and when it tells you to. Pay special attention to the two launcher rail supports. They need coatings of OHT. Weekly, raise and lower the launcher rail to make sure it still moves smoothly. Relube the supports if it doesn't.



**Keep it covered—**A MICLIC that sits uncovered in the rain can have all its lubricants washed away. Water can also get in the pump and ruin it. A cover from a 1 1/2-ton trailer works well, or you can have your canvas shop make a cover.



**Store cables—**There is no point leaving the cables out in the cold, heat, sun, and rain if the MICLIC isn't going to be used for weeks. That only shortens the life of cables that in some cases are worth big bucks. Remove the cables and store them inside or in the storage box. When cables are on the MICLIC, keep them hooked up or capped. That seals out water and dirt that will corrode pins and plug holes. If you're missing caps, cover the connectors with plastic bags and secure the bags with ties.



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

# GET A PUBS LIST FOR YOUR EQUIPMENT



**CONNIE!**  
I NEED HELP!  
WE'RE MISSING  
A LUBE ORDER,  
A MAINTENANCE  
WORK ORDER,  
A -24&P TM, AND  
I DON'T KNOW  
WHAT ELSE!

HOW DO I MAKE  
SURE I HAVE ALL  
THE PUBS WE  
NEED TO DO  
MAINTENANCE?

NO PROBLEM,  
SOLDIER!  
LOGSA'S  
PUBLICATIONS  
DATA BASE  
CAN HELP.

Putting together a publications list for all your unit's equipment could take you days, even weeks. But the Logistics Support Activity (LOGSA) can do the work for you much quicker.

The Equipment Oriented Publications Data Base (EOPDB) gives LOGSA the ability to put together a pubs listing tailored to your unit's property book.

## What You Have To Do

To use the service, you'll need to define what maintenance levels you want covered. You also need to give your name, rank, unit identification code (UIC) for each unit concerned, military mailing address, email address, and DSN or commercial phone numbers.

You can send your information to EOPDB at the following email address:  
**eopdb@logsa.redstone.army.mil**

If you want a pubs list for 10 or fewer line item numbers (LINs), or, if you have any questions about this service, you can call DSN 897-6115 or (256) 313-6115.

One thing that the EOPDB folks can't do is order your pubs. You'll have to get your pubs clerk to do that.



REMEMBER  
TO PROVIDE  
THESE ITEMS  
IN YOUR  
REQUEST...

- the maintenance level,
- the UIC or UICs,
- your name and rank,
- military mailing address and email address,
- DSN and commercial phone numbers



## Night Vision Goggles Objective Lens

The aviation night vision imaging system (ANVIS), AN/AVS-6(V)3, has a new objective lens assembly, PN A3279596. Order it with NSN 5855-01-519-4171. Make a note until the advance copies of TM 11-5855-313-10 and TM 11-5855-313-23P are fielded.

## Get HAZMAT Questions Answered

You can get answers to questions on hazardous materials regulations, packaging, marking, labeling, certification, documentation, placarding, etc., from the Logistics Support Activity Packaging, Storage, and Containerization Center website at:

[https://www.logsa.army.mil/pscc/PSCC\\_WebDev/P&T/HAZMAT/fatmanqa.htm/question.cfm](https://www.logsa.army.mil/pscc/PSCC_WebDev/P&T/HAZMAT/fatmanqa.htm/question.cfm)

## FIRE SUPPRESSION SYSTEM WARNING

Crewmen, in the event of a fire on your combat vehicle, make sure you stop the engine before discharging the fire suppression system. Halon or FM 200 that's burned through the engine produces hydrogen fluoride. That's a toxic chemical that can burn your skin and lungs. Can't stop the engine first? Stay away from the engine exhaust.

## Generator STIR Program

Beginning at the start of FY05, diesel generators and power units/plant trailers coming home from Operations Iraqi Freedom-2 and Enduring Freedom-5 are being restored to a serviceable condition by CECOM using a desert operations special test, inspection and repair (STIR) document. Evaluations and repairs can take place on- or off-site. For more information on generator STIR, email JoAnne Collins at:

**Joanne.Collins@mail1.monmouth.army.mil**  
or call her at: DSN 987-3450 or (732) 427-3450.

## Packaging and HAZMAT Help

If you're heading to the front lines of the global war on terror, make sure your equipment arrives fully mission capable. A new Army service provides on-site packaging and hazardous materials assistance to deploying and redeploying units. It's free of charge.

For more information, contact the LOGSA Packaging, Storage and Containerization Center at the following email addresses and phone numbers:

**kenneth.hill@logsa.redstone.army.mil**  
DSN 795-9176 or (570) 895-9176

**mary.smith@logsa.redstone.army.mil**  
DSN 795-6408 or (570) 895-6408

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

Would You Stake Your Life <sup>right now</sup> on the Condition of Your Equipment?

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

**1 FRONT SIGHT FROZEN:**  
Unfreeze with lube  
and wipe off excess

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

**3 LOOSE HANDGUARD LINERS:**  
Get new  
handguards

**12 SLIP RING SPRING BROKEN:**  
Get it replaced

**4 BOLT CARRIER DOESN'T ALIGN WITH GAS TUBE:**  
Tell your armorer

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

**5 PIVOT PIN DETENT STUCK, WON'T HOLD PIN:**  
Free with lube and wipe dry

**10 REAR SIGHT STUCK:**  
Unfreeze with lube  
and wipe off excess

**6 MAGAZINE DAMAGED OR DIRTY:**  
Inspect, lube, and  
wipe clean. Replace  
if necessary

**9 BUFFER & SPRING CORRODED:**  
Clean and very  
lightly lube

**7 TAKEDOWN PIN CORRODED OR STICKS::**  
Clean, lube and  
wipe dry

**8 BUTTSTOCK DRAIN CLOGGED:**  
Open drain  
with paper  
clip

In the desert, remember these three rules:

- Clean often
- Easy on lube
- Wipe clean outside of weapon